

Chapter 4: Mitigation Strategy

The third major step in the FEMA Hazard Mitigation Planning Process is the development of a five-year mitigation strategy for each jurisdiction. The chapter includes:

- Description of goals for hazard mitigation in the next five years;
- List of possible mitigation actions;
- Description of existing capabilities to address hazard mitigation;
- Evaluation of the proposed hazard mitigation actions to be considered in the next five years; and
- The mitigation strategy for each jurisdiction.

Adams County Plan Update Changes to the Plan Structure

The previous plan broke out the topics of the mitigation strategy into numerous chapters. Upon review of other recently approved plans, it was determined that a new organization is easier to read and follow. It offers a better natural flow than the previous plan and reduces the complexity of the discussion. This chapter consolidates the outline of the previous plan and focuses on the capabilities to implement very specific mitigation actions. The number of actions to be considered is also reduced to make the more actionable.

The remaining parts of this chapter are organized as follows:

- **Section 4.1 - Status of Mitigation Actions** reviews the status of identified mitigation actions from the previous plan that expired in October 2017;
- **Section 4.2 – Assessment of Mitigation Actions** outlines various topics, such as the FEMA-identified types of mitigation actions, that inform the reader about the other sections of the plan;
- **Section 4.3 - Goals and Objectives** identifies the goals and objectives identified by the planning team and planning consultant at the fifth planning meeting and with consideration of the previous plan’s goals and objectives;
- **Section 4.4 - Possible Mitigation Actions** lists possible mitigation actions (new and carryover) for each of the Priority 1 hazards for each participating jurisdiction;
- **Section 4.5 - Capability Assessment** describes the capabilities of each jurisdiction to address the various proposed mitigation actions outlined for them.
- **Section 4.6 - Evaluation Process for Alternative Mitigation Measures** details the STAPLE-E evaluation process.
- **Section 4.7 - Evaluation Results for Alternative Mitigation Measures** details the STAPLE-E evaluation results that are used for prioritization of hazard mitigation projects.
- **Section 4.8 - Selection of Alternative Measures by Jurisdiction** lists in a table the selected actions by jurisdiction for quick review.
- **Section 4.9 - Implementation Strategy by Jurisdiction** provides tables containing a timeline for the selected mitigation actions by jurisdiction along with possible leadership and priority rating.
- **Section 4.10 - Mitigation Action Summaries** provides details about mitigation actions selected, including primary hazards addressed, jurisdictions implementing, funding options, goals addressed, and benefits.
- **Section 4.11 - Implementation of the National Flood Insurance Program** provides additional language and information on compliance with the NFIP where applicable in the planning area.
- **Section 4.12 – Implementation of Climate Change Resilience Actions** provides a brief summary of climate change impacts on the county, as understood today.

4.1: Status of Mitigation Actions from the Previous Plan

The previous multi-jurisdictional plan adopted and approved in July 2012 outlined numerous hazard mitigation actions for the planning area’s jurisdictions. This section contains reviews the current status of

these actions. For those actions that are “complete” or “ongoing”, the results are outlined. For “ongoing” projects, it is assumed that they will continue without adding them to the updated plan, unless otherwise noted. For those that are “not started” or “underway”, the plan states why they are not yet complete. These latter projects are potential considerations for “carryover” actions in the future mitigation strategy laid out in the second half of the chapter.

This part of the plan addresses the following Stafford Act requirement:

Section 201.6 (d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

Figure 4.1: Adams County (Rural and County Assets in Any Location) Previous Mitigation Actions

Mitigation Action	Status	Comments
Adopt a thorough emergency operation plan (EOP).	Underway	EMA and other partners are preparing this document and it will remain updated.
Assure plans are in use and current.	Not started	No comprehensive or similar plan is adopted. - <i>carryover</i>
Backup files and records - store in alternate locations.	Ongoing	Processes and protocols are in place and effective.
Construct public safe rooms in or near existing and future community assets and parks.	Not started	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed. – <i>carryover</i>
Develop volunteer base - trained and stand-by groups	Not started	This requires extensive organization and available volunteers who will serve. – <i>carryover</i>
Develop/maintain security at applicable critical assets	Not started	No investments have been made as priorities are needed as well as technology decisions. – <i>carryover</i>
Establish alert systems for vulnerable populations.	Complete	Recent investments have addressed this issue to satisfaction of local officials.
Expand law enforcement capabilities.	Underway	As funding is available; no longer considered a mitigation action.
Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens.	Ongoing	As funding is available and project are identified. Will proceed without regard to mitigation plan.
Install computers in emergency vehicles.	Underway	Law enforcement complete; others are not; no longer considered a mitigation action.
Install GPS units in emergency vehicles.	Underway	Law enforcement complete; others are not; no longer considered a mitigation action.
Integrate tornado safe room retrofits into critical assets/facilities.	Not started	No FEMA 361 safe rooms have been pursued, although larger public structures exist and could be retrofitted. - <i>carryover</i>
Promote NOAA weather radio – citizen purchase (rebate incentive).	Ongoing	Process is ongoing but informal and without a long-term rebate program. With the cell-based services now available, local interest in this has declined.
Promote the construction of private in-home tornado safe rooms City Council.	Not started	EMA has not performed this level of education and promotion with individual property owners. – <i>carryover</i>
Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems.	Underway	Project is a long-term investment. – <i>carryover</i>
Purchase snow trucks, plows, sanders.	Ongoing	This measure is undertaken as funding is available and on a scheduled basis without regard to the mitigation plan.
Purchase stand-by portable pumps and generators.	Not started	County has not purchased adequate equipment numbers. – <i>carryover</i>
Purchase/install backup fixed power generators and pumps.	Complete	Installed at the most critical assets.
Replace bridges and culverts.	Ongoing	This measure is undertaken as funding is available and a long-term measure without regard to the mitigation plan.
Restricted access procedures.	Ongoing	Implemented when and where needed. No additional policy is required.
Special needs/oxygen user registration.	Not started	This would require a partnership with fire, EMS, and utility providers. – <i>carryover</i>
Work with DNR to reduce excess wildlife numbers.	Ongoing	Local officials have little direct impact on this issue.

The City of Carbon participated in the previous plan but, as a very small town with limited capabilities and activities, did not participate in the plan update. There were nine selected actions in the previous plan, few of them which were addressed, at least at the local level. Most of the actions selected are part of the countywide actions for the plan update, so the town will benefit from the implementation of this plan.

Figure 4.2: Corning Previous Mitigation Actions

Mitigation Action	Status	Comments
Acquire modern chemicals and equipment for firefighting.	Ongoing	As needs are identified and funds are available, the local fire department is improving its capabilities; no longer considered a mitigation action.
Backup files and records - store in alternate locations.	Underway	Electronic backups are in place but no backup physical location is used. – <i>carryover</i>
Construct public safe rooms in or near existing and future community assets and parks.	Not started	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed. – <i>carryover</i>
Construct storm water drainage (underground, culverts, curb & gutter, etc.).	Ongoing	Efforts will continue as funds are available without regard to mitigation plan.
Demolish abandoned properties.	Ongoing	As funding is available and properties arise, the City undertakes to the best possible ability per city ordinances; process will continue without regard to mitigation plan.
Establish neighbor watch programs for vulnerable populations after a hazard event.	Not started	Program requires organizational leadership and willing participants. – <i>carryover</i>
Initial community briefings immediately after events.	Ongoing	Protocol is now in place; no longer considered a mitigation action.
Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens.	Not started	More outreach is required to ensure local leaders understand the benefits of such efforts. – <i>carryover</i>
Install computers in emergency vehicles.	Complete	Applicable vehicles under local control are equipped.
Install GPS units in emergency vehicles.	Complete	Applicable vehicles under local control are equipped.
Install siren warning systems.	Complete	Recent purchases have gotten city up to standard throughout the developed areas.
Integrate tornado safe room retrofits into critical assets/facilities.	Not started	No FEMA 361 safe rooms have been pursued, although larger public structures exist and could be retrofitted. – <i>carryover</i>
New or upgrade fire stations.	Complete	City modernized and expanded the fire station in approximately 2012-13; no longer considered a mitigation action.
Promote NOAA weather radio – citizen purchase (rebate incentive).	Ongoing	Process is ongoing but informal and without a long-term rebate program. With the cell-based services now available, local interest in this has declined.
Purchase new fire trucks/ambulances.	Ongoing	Fire equipment is purchased as funds are available; no longer considered a mitigation action.
Purchase SCBA - self-contained breathing apparatus.	Ongoing	Fire equipment is purchased as funds are available; no longer considered a mitigation action.
Purchase snow trucks, plows, sanders.	Ongoing	City equipment is purchased as funds are available, on a schedule, and will be maintained without regard for mitigation plan.
Purchase stand-by portable pumps and generators.	Ongoing	City has access to this kind of equipment and increases supply as funds are available and needs are identified.
Purchase/install backup fixed power generators and pumps.	Underway	Some assets have them but not all applicable assets. – <i>carryover</i>
Replace bridges and culverts.	Ongoing	Efforts will continue as funds are available without regard to mitigation plan.
Remove dead vegetation on public properties and nuisance areas.	Ongoing	Efforts will continue as funds are available without regard to mitigation plan.

Figure 4.3: Nodaway Previous Mitigation Actions

Mitigation Action	Status	Comments
Backup files and records - store in alternate locations.	Not started	Project delayed by limited resources and lack of considerable administrative activity and file volume. – <i>carryover</i>

Mitigation Action	Status	Comments
Construct public safe rooms in or near existing and future community assets and parks.	Not started	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed. – <i>carryover</i>
Create continuity of operations & succession plan for Nodaway.	Not started	Requires central leadership and organization. – <i>carryover</i>
Develop/enforce snow removal policies.	Not started	Due to low population density and few people parking in roadways, the action has not been considered. – <i>carryover</i>
Encourage citizen purchase/use of smoke detectors.	Not started	Fire department has limited resources and has not yet started a formal program. – <i>carryover</i>
Increase public awareness on household hazardous materials.	Ongoing	A county/regional effort is underway and special programs now exist to address these kinds of materials.
Initial community briefings immediately after events.	Ongoing	Protocol is now in place; no longer considered a mitigation action.
Integrate tornado safe room retrofits into critical assets/facilities.	Not started	Resources have not yet been made available; there are no major high-traffic buildings that are candidates for integration so the measure does not make sense as a standalone action.
Post "No Dumping" signs.	Not started	No resources made available for this action. – <i>carryover</i>
Promote good landscaping practices among property owners.	Not started	No formal or sustained effort of this nature has been initiated in Adams County. – <i>carryover</i>
Promote NOAA weather radio – citizen purchase (rebate incentive).	Ongoing	Process is ongoing but informal and without a long-term rebate program. With the cell-based services now available, local interest in this has declined.
Promote tree and vegetation maintenance on private properties.	Not started	No formal or sustained effort of this nature has been initiated in Adams County. – <i>carryover</i>
Purchase snow trucks, plows, sanders.	Not started	No resources made available for this action. – <i>carryover</i>
Purchase stand-by portable pumps and generators.	Not started	No resources made available for this action. – <i>carryover</i>

Figure 4.4: Prescott Previous Mitigation Actions

Mitigation Action	Status	Comments
Acquire modern chemicals and equipment for firefighting.	Ongoing	As needs are identified and funds are available, the local fire department is improving its capabilities; no longer considered a mitigation action.
Backup files and records – store in alternate locations.	Ongoing	Process in place with city clerk able to store duplicate key files away from the office.
Clear and deepen ditches on right-of ways.	Complete	Projects in key parts of the city have been undertaken by the City and SIRWA (who recently updated its water mains in those ditches).
Construct public safe rooms in or near existing and future community assets and parks.	Not started	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed. – <i>carryover</i>
Demolish abandoned properties.	Ongoing	As funding is available and properties arise, the City undertakes to the best possible ability per city ordinances; process will continue without regard to mitigation plan.
Establish alert systems for vulnerable populations.	Complete	Recent investments have addressed this issue to satisfaction of local officials.
Increase public awareness on household hazardous materials.	Ongoing	A county/regional effort is underway and special programs now exist to address these kinds of materials.
Integrate tornado safe room retrofits into critical assets/facilities.	Not started	No FEMA 361 safe rooms have been pursued, although larger public structures exist and could be retrofitted. – <i>carryover</i>
Promote NOAA weather radio – citizen purchase (rebate incentive).	Ongoing	Process is ongoing but informal and without a long-term rebate program. With the cell-based services now available, local interest in this has declined.
Promote good landscaping practices among property owners.	Ongoing	City does this on a limited basis through its nuisance and junk vehicle regulations. – <i>carryover</i>
Purchase new fire trucks/ambulances.	Ongoing	Fire equipment is purchased as funds are available; no longer considered a mitigation action.

Mitigation Action	Status	Comments
Purchase SCBA – self-contained breathing apparatus.	Complete	Fire equipment is purchased through recent FEMA AFG fire grants; no longer considered a mitigation action.
Purchase stand-by portable pumps and generators.	Not started	No resources made available for this action. – <i>carryover</i>
Purchase/install backup fixed power generators and pumps.	Not started	No resources made available for this action. – <i>carryover</i>
Rail and highway safety education programs for youth.	Ongoing	This is an ongoing effort in a regional/statewide level with no specific local involvement.

Figure 4.5: Southwest Valley Schools Previous Mitigation Actions

Mitigation Action	Status	Comments
Clear and deepen ditches on right-of ways.	Not started	No resources made available for this action. – <i>carryover</i>
Construct public safe rooms in or near existing and future community assets and parks.	Not started	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed. – <i>carryover</i>
Emergency response guidebooks in key school vehicles.	Ongoing	Provided where needed as vehicles are updated or such guides are available.
Integrate tornado safe room retrofits into critical assets/facilities.	Not started	No FEMA 361 safe rooms have been pursued, although larger public structures exist and could be retrofitted. – <i>carryover</i>
Post an information sign or kiosk.	Complete	Installed on main campus property.
Purchase road closure barricades.	Not started	No resources made available for this action. – <i>carryover</i>
Purchase snow trucks, plows, sanders.	Ongoing	School equipment is purchased as funds are available and on a schedule and will be maintained without regard for mitigation plan.
Tree planting projects on school properties.	Ongoing	Projects are completed by school staff as needed without regard to the mitigation plan.
Tree trimming projects on school properties.	Ongoing	Projects are completed by school staff as needed without regard to the mitigation plan.

Prescott Schools participated in the previous plan but the district has since been absorbed by the Creston and Nodaway Valley Districts through consolidation and the district no longer exists as its own entity. The former Prescott School building in Prescott is not a private property. None of the mitigation actions outlined in the previous plan have been undertaken.

4.2: Assessment of Mitigation Actions

This section outlines some of the factors involved in the assessment of mitigation actions as the planning team considers which actions should be included in the plan update for the next five years.

Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Efforts by Federal, State, and local governments can restrict development in vulnerable areas, direct new development to less vulnerable areas, and promote ways to safeguard existing development in hazard-prone areas. Individuals can also participate through practicing sound personal safety and property protection measures. According to the 2013 FEMA document “Local Mitigation Planning Handbook,” there are four major categories of mitigation actions, as outlined in Figure 4.6.

Figure 4.6: Types or Categories of Mitigation Actions

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes and enforcement • NFIP Community Rating System • Capital improvement programs • Open space preservation • Stormwater management regulations and master plans
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p> <p>Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program. <i>Task 9 – Create a Safe and Resilient Community</i> provides more information on these programs.</p>	<ul style="list-style-type: none"> • Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits. • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> • Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	<p>These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as <i>StormReady</i>¹ or <i>Firewise</i>² Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • StormReady • Firewise Communities

1 For more information on the National Weather Service's StormReady, see <http://www.stormready.noaa.gov/>.

2 For more information on the Firewise Communities program, see <http://www.firewise.org/>.

4.3: Mitigation Goals and Objectives

As we turn to the future of mitigation in Adams County, it is important consider local goals and objectives, which the actions to be identified will address.

This part of the plan addresses the following Stafford Act requirement:

Section 201.6 (c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The Adams County Hazard Mitigation Planning Team at its second meeting reviewed the risk assessment and other planning documents drafted to date. The intent of the review was to develop goals and objectives that would be fiscally feasible and yet highly beneficial. During the second meeting, the goals and objectives were created and initially evaluated.

The hazard goals are based on a four-pronged approach to emergency response, recognizing that mitigation actions affect all elements:

- Preparedness activities ensure the community and its residents are ready for a disaster and that they respond effectively. Preparedness involves determining what the community will do if essential services break down, developing a plan for contingencies, and practicing the plan.
- Response activities begin as soon as the disaster threatens. Response includes access control, search and rescue, mass care, medical services, and restoring essential services.
- Recovery activities help the community to return to pre-disaster condition. They include rebuilding services, infrastructure (utilities, communications, and transportation systems), facilities, operations, and the lives affected by the disaster.
- Mitigation activities are sustained actions that reduce the long-term risk of disasters. They reduce threats to the public health and safety, reduce or eliminate damages caused by disaster, and reduce the burden placed on local, state, and federal preparedness, response and recovery activities.

Adams County Plan Update Changes to the Mitigation Goals and Objectives

While there is no fundamental problem or flaws with the existing goals and objectives, the planning team considered a new list of potential options, from which it selected goals and objectives for consideration. These new goals and objectives reflect updated issue statements resulting from the new risk assessment.

The planning team, with assistance from the public, the consultant, current local plans, elected officials, and FEMA/IHSEMD guidance, established the following goals, generally in order of significance, to make the county and all jurisdictions safer and more disaster resilient. The goals were created as part of the second planning team meeting using a survey process where the team members ranked language suggestions for numerous goals and objectives. These goals and objectives apply to all the currently participating and future participating jurisdictions in the countywide multi-jurisdictional plan.

Goal 1: Protect the health and safety of the public.

- Objective 1: Improve warning capabilities against hazards.
- Objective 2: Increase efforts to educate the public about hazards.
- Objective 3: Implement structural and property improvement projects that will result in protection of life and safety.
- Objective 4: Adopt and enforce protective ordinances and regulations.

Goal 2: Protect public property from hazards.

- Objective 1: Improve infrastructure and critical facilities.
- Objective 2: Increase public officials' awareness about protective measures.

Goal 3: Improve public response to hazards and make recovery easier.

- Objective 1: Provide backup or redundancy systems for critical infrastructure and assets.
- Objective 2: Improve local planning and organizational efficiency and gain understanding into mitigation needs.
- Objective 3: Enhance cross-agency and intra- and inter-county communications.
- Objective 4: Enhance the continuity of government during and after hazard event.

Goal 4: Be as efficient as possible with public funds.

- Objective 1: Set aside funding and maximize the use of outside sources of funding.
- Objective 2: Become and remain compliant with state and federal mitigation requirements and programs.
- Objective 3: Maximize the use of technology in hazard mitigation.
- Objective 4: Prioritize mitigation projects, based true costs and benefits, annually and with each budget.

Please note that the above goals and objectives were created by planning team members with consideration of the goals and objectives included in other plans in the area and the previous Adams County plan.

4.4: Possible Mitigation Actions

The next step in the development of a mitigation strategy is to formulate a “comprehensive range of mitigation actions” to apply to the various hazards outlined in previous chapters to which the planning area and its participating jurisdictions are vulnerable. The following matrices include the list of potential mitigation actions that can address the Priority 1 Hazards as identified in Chapter 3. Based on numerous sources of mitigation action ideas, the following includes policies, actions, programs, and projects that impact lives, properties, and community sustainability and resilience. Only mitigation actions listed in this section are considered in the mitigation alternatives analysis/evaluation and strategies sections in the remaining sections of this chapter.

This part of the plan addresses the following Stafford Act requirement:

Section 201.6 (c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

As part of the plan update, the county’s plan preparer, the Southern Iowa Council of Governments, worked with the planning team to update the list of potential projects. The work involved consideration of many lists of mitigation projects from the following sources:

- State of Iowa Hazard Mitigation Plans adopted in 2007, 2010, 2013, and 2018;
- Previous Adams County Hazard Mitigation Plan;
- Other mitigation plans adopted in the region and recommended for review by FEMA Region VII and the Iowa HSEMD; and
- FEMA resources, including the new “Mitigation Ideas, A Resource for Reducing Risk to Natural Hazards” published in 2013.

Possible Mitigation Actions by Hazard Type

The following matrices include the list of potential mitigation actions that can address the Priority 1 Hazards as identified in Chapter 3. These do not include commonly known response actions, such as purchasing fire equipment or acquiring an ambulance. Based on numerous sources of mitigation action ideas, the following includes policies, actions, programs, and projects that impact lives, properties, and community sustainability and resilience. Only mitigation actions listed in this section are considered in the mitigation alternatives analysis/evaluation and strategies sections in the remaining chapters of this plan. In some cases, mitigation actions from the previous plan may be combined for brevity, while others may be expanded for clarity.

General Mitigation Alternatives Involving All Hazards:

The following table shows the identified possible mitigation actions to address all hazards in a general nature and are not specific to one or more priority hazards. The reason for this is to avoid the need for the planning team to evaluate each action’s impact on each hazard.

Figure 4.7: Mitigation Alternatives Involving All Hazards

Mitigation Action	Primary Category
Adopt a continuity of operations & succession plan for the jurisdiction.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Encourage property owners to own adequate property insurance.	Education and awareness programs
Establish alert systems and specific outreach efforts for vulnerable populations.	Education and awareness programs
Initiate community preparedness programs.	Education and awareness programs

Mitigation Action	Primary Category
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	Education and awareness programs
Implement a comprehensive multi-media public education campaign for multiple hazards.	Education and awareness programs
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	Local plans and regulations
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Local plans and regulations
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	Education and awareness programs
Participate and market the local Reverse E911 alert program.	Education and awareness programs
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Education and awareness programs
Store digital and hard copies of public records in low-risk, offsite locations.	Local plans and regulations

Dam/Levee Failure Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address dam/levee failure.

Figure 4.8: Mitigation Alternatives Involving Dam/Levee Failure

Mitigation Action	Primary Category
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Structure and infrastructure projects
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Natural systems protection
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Implement stream modifications/channel improvements and stream bank stabilization.	Natural systems protection
Install retention and detention structures.	Structural and infrastructure projects
Perform dam and levee inspections.	Local plans and regulations
Preserve open spaces in hazard areas.	Local plans and regulations
Purchase road closure barricades.	Local plans and regulations

Drought Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address drought.

Figure 4.9: Mitigation Alternatives Involving Drought

Mitigation Action	Primary Category
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Natural systems protection
Check and test water wells (clean when needed).	Structure and infrastructure projects
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Structure and infrastructure projects
Develop a drought emergency plan, including water conservation measures.	Natural systems protection
Develop a vegetation management plan.	Natural systems protection
Develop agreements for secondary water sources for use during droughts.	Natural systems protection
Encourage the implementation of water-saving measures, including soil and water conservation practices.	Natural systems protection
Enforce burning restrictions.	Prevention
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Structure and infrastructure projects
Install pressure tanks/towers for potable water.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Replace, expand, or improve water and sewer lines.	Structure and infrastructure projects
Plan for and carry out efforts to add water supply for fire suppression.	Local plans and regulations

Extreme Heat Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address drought.

Figure 4.10: Mitigation Alternatives Involving Extreme Heat

Mitigation Action	Primary Category
Bury exposed utility and communications infrastructure.	Structure and infrastructure projects

Mitigation Action	Primary Category
Establish backup utilities and communications infrastructure; use the latest technology.	Structure and infrastructure projects
Formally designate and stock community post disaster shelters; maintain and publicize shelter location list (cooling shelters).	Structure and infrastructure projects
Fund weatherization programs to more low-income households.	Structure and infrastructure projects
Implement tree planting programs and install shade structures in crowd centers.	Natural systems protection
Provide adequate access to safe drinking water in all public spaces, including outdoor spaces, such as parks and playgrounds.	Structure and infrastructure projects
Strengthen exposed utility and communications infrastructure.	Structure and infrastructure projects

Flood, Flash Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address flash flood.

Figure 4.11: Mitigation Alternatives Involving Flash Flood

Mitigation Action	Primary Category
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Natural systems protection
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	Structure and infrastructure projects
Adopt International Building Code and/or International Residential Code.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Adopt/enforce tree trimming ordinances.	Local plans and regulations
Clear and deepen roadside ditches.	Structure and infrastructure projects
Complete storm water drainage or watershed studies of known flood areas.	Local plans and regulations
Conduct study on possible illegal use of sump pumps and sewer lines.	Local plans and regulations
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Structure and infrastructure projects
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	Structure and infrastructure projects
Develop/update/publicize local evacuation and shelter-in-place plans.	Education and awareness programs
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Structure and infrastructure projects
Employ construction measures that direct water away from structures.	Structure and infrastructure projects
Encourage clustering of residential lots outside of hazard areas in subdivision design/review (as part of updated subdivision ordinance).	Local plans and regulations
Encourage property owners to install sewer system backflow devices.	Education and awareness programs
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	Education and awareness programs
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Flood proof critical assets in the community/construct flood protection around assets.	Structure and infrastructure projects
Harden public buildings and utilities (structural retrofits).	Structure and infrastructure projects
Identify and/or map erosion hazard areas.	Natural systems protection
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	Structure and infrastructure projects
Implement storm water management regulations.	Local plans and regulations
Implement stream modifications/channel improvements and stream bank stabilization.	Natural systems protection
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Structure and infrastructure projects
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Structure and infrastructure projects
Install flood walls and retaining walls around critical infrastructure.	Structural and infrastructure projects
Install retention and detention structures.	Structural and infrastructure projects
Perform dam and levee inspections.	Local plans and regulations
Preserve open spaces in hazard areas.	Local plans and regulations
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Natural systems protection
Purchase road closure barricades.	Local plans and regulations
Purchase/install backup fixed power generators and pumps.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Structure and infrastructure projects

Flood, River Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address river flood events.

Figure 4.12: Mitigation Alternatives Involving River Flood

Mitigation Action	Primary Category
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Natural systems protection
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	Structure and infrastructure projects
Adopt the current FIRM maps as applicable to each jurisdiction.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Complete storm water drainage or watershed studies of known flood areas.	Local plans and regulations
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Structure and infrastructure projects
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	Structure and infrastructure projects
Implement all aspects of the NFIP (National Flood Insurance Program).	Local plans and regulations
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Structure and infrastructure projects
Encourage the implementation of water-saving measures, including soil and water conservation practices.	Education and awareness programs
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	Education and awareness programs
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Flood proof critical assets in the community/construct flood protection around assets.	Structural and infrastructure projects
Implement storm water management regulations.	Local plans and regulations
Implement stream modifications/channel improvements and stream bank stabilization.	Natural systems protection
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Structure and infrastructure projects
Install flood gauges.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Maintain sandbags in dry storage.	Structure and infrastructure projects
Participate in the FEMA Community Rating Service (CRS) program.	Local plans and regulations
Perform dam and levee inspections.	Local plans and regulations
Preserve open spaces in hazard areas.	Local plans and regulations
Purchase road closure barricades.	Local plans and regulations
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Structure and infrastructure projects

Hazardous Materials Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address hazardous materials.

Figure 4.13: Mitigation Alternatives Involving Hazardous Materials

Mitigation Action	Primary Category
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Natural systems protection
Adopt International Building Code and/or International Residential Code.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Build highway or rail overpasses to reduce intersection accidents.	Structure and infrastructure projects
Check and test water wells (clean when needed).	Structure and infrastructure projects
Codify restricted access procedures.	Local plans and regulations
Construct storage facilities for pesticides, insecticides, and chemicals.	Structure and infrastructure projects
Plan for and support hazardous materials projects, participate in regional teams, keep current with training.	Local plans and regulations
Designate/enforce HAZMAT transportation routes.	Local plans and regulations
Develop/maintain hazardous materials inventories by location.	Local plans and regulations
Develop/update/publicize local evacuation and shelter-in-place plans.	Education and awareness programs
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Structure and infrastructure projects

Mitigation Action	Primary Category
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Education and awareness programs
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Identify, evaluate, and pursue funding for idled environmentally compromised properties, commonly called brownfields.	Structure and infrastructure projects
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Structure and infrastructure projects
Encourage property owners to install sewer system backflow devices.	Education and awareness programs
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	Structure and infrastructure projects
Install access barriers around certain chemical tanks.	Structure and infrastructure projects
Install air monitors at critical assets and population centers.	Structure and infrastructure projects
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	Structure and infrastructure projects
Install pressure tanks/towers for potable water.	Structure and infrastructure projects
Install sprinkler systems in public buildings.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Plan for and carry out efforts to add water supply for fire suppression.	Local plans and regulations
Post “no dumping” signs.	Education and awareness programs
Purchase road closure barricades.	Local plans and regulations
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Remove asbestos from public buildings.	Natural systems protection
Routinely inspect fire hydrants.	Local plans and regulations

Infrastructure Failure Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address infrastructure failure.

Figure 4.14: Mitigation Alternatives Involving Infrastructure Failure

Mitigation Action	Primary Category
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Structure and infrastructure projects
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Natural systems protection
Adopt International Building Code and/or International Residential Code.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Adopt State fire codes.	Local plans and regulations
Adopt/enforce tree trimming ordinances.	Local plans and regulations
Bridge and culvert improvements and upsizing.	Structure and infrastructure projects
Bury exposed utility and communications infrastructure.	Structure and infrastructure projects
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Structure and infrastructure projects
Demolish abandoned properties.	Structure and infrastructure projects
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Structure and infrastructure projects
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Education and awareness programs
Encourage property owners to install sewer system backflow devices.	Education and awareness programs
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	Education and awareness programs
Enforce multi-family housing extinguisher laws.	Local plans and regulations
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Flood proof critical assets in the community/construct flood protection around assets.	Structural and infrastructure projects
Fund weatherization programs to more low-income households.	Structure and infrastructure projects
Harden public buildings and utilities (structural retrofits).	Structure and infrastructure projects
Implement storm water management regulations.	Local plans and regulations
Implement stream modifications/channel improvements and stream bank stabilization.	Natural systems protection
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Structure and infrastructure projects
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Structure and infrastructure projects
Install access barriers around certain chemical tanks.	Structure and infrastructure projects
Install and/update anti-virus software and emergency communications technology.	Local plans and regulations
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	Structure and infrastructure projects

Mitigation Action	Primary Category
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Structure and infrastructure projects
Install sprinkler systems in public buildings.	Structure and infrastructure projects
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Structure and infrastructure projects
Maintain trees proactively on public property and ROW areas.	Local plans and regulations
Plan for and carry out efforts to add water supply for fire suppression.	Local plans and regulations
Post “no dumping” signs.	Education and awareness programs
Prepare and practice a mass casualty plan.	Local plans and regulations
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Natural systems protection
Purchase/install backup fixed power generators and pumps.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Require burial of utility lines in new development.	Local plans and regulations
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Local plans and regulations
Routinely inspect fire hydrants.	Local plans and regulations
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Structure and infrastructure projects

Pandemic Human Disease Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address pandemic human disease.

Figure 4.15: Mitigation Alternatives Involving Pandemic Human Disease

Mitigation Action	Primary Category
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Check and test water wells (clean when needed).	Local plans and regulations
Codify restricted access procedures.	Local plans and regulations
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	Local plans and regulations
Create and maintain a special needs/oxygen user registration program or inventory.	Local plans and regulations
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	Education and awareness programs
Establish alert systems for vulnerable populations.	Local plans and regulations
Help community leaders and businesses to improve local public health response readiness.	Local plans and regulations
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	Local plans and regulations
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	Structure and infrastructure projects
Implement specialized ventilation systems and projects.	Structure and infrastructure projects
Increase community and individual engagement in disease prevention efforts.	Education and awareness programs
Invest in the latest broadband infrastructure.	Structure and infrastructure projects
Modernize infectious disease surveillance to drive public health actions.	Local plans and regulations
Reduce disease transmitted by animals and insects and foodborne infections.	Local plans and regulations

Severe Winter Storm Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address severe winter storm events.

Figure 4.16: Mitigation Alternatives Involving Severe Winter Storm

Mitigation Action	Primary Category
Adopt International Building Code and/or International Residential Code.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Adopt/enforce tree trimming ordinances.	Local plans and regulations
Bury exposed utility and communications infrastructure.	Structure and infrastructure projects
Create and maintain a special needs/oxygen user registration program or inventory.	Local plans and regulations
Develop/enforce snow removal policies.	Local plans and regulations
Fund weatherization programs to more low-income households.	Structure and infrastructure projects
Harden public buildings and utilities (structural retrofits).	Structure and infrastructure projects
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Structure and infrastructure projects

Mitigation Action	Primary Category
Install highway guardrails to keep vehicles on roadway.	Structure and infrastructure projects
Install quick-connect emergency generator hook-ups for facilities.	Structure and infrastructure projects
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Maintain trees proactively on public property and ROW areas.	Local plans and regulations
Obtain sand and salt supplies well in advance of winter.	Local plans and regulations
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Natural systems protection
Purchase road closure barricades.	Local plans and regulations
Purchase snow trucks, plows, sanders.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Purchase/install backup fixed power generators and pumps.	Structure and infrastructure projects
Require burial of utility lines in new development.	Local plans and regulations
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Structure and infrastructure projects

Terrorism Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address terrorism.

Figure 4.17: Mitigation Alternatives Involving Terrorism

Mitigation Action	Primary Category
Codify restricted access procedures.	Local plans and regulations
Conduct intensive local and regional intelligence, drills, and scenarios.	Local plans and regulations
Construct storage facilities for pesticides, insecticides, and chemicals.	Structure and infrastructure projects
Create and maintain a special needs/oxygen user registration program or inventory.	Local plans and regulations
Develop/maintain hazardous materials inventories by location.	Local plans and regulations
Develop/maintain security at applicable critical assets.	Structure and infrastructure projects
Develop/update/publicize local evacuation and shelter-in-place plans.	Local plans and regulations
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Harden public buildings.	Structure and infrastructure projects
Install air monitors.	Structure and infrastructure projects
Install and/or update anti-virus software.	Local plans and regulations
Install access barriers around certain chemical tanks.	Structure and infrastructure projects
Install blast barriers.	Structure and infrastructure projects
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	Structure and infrastructure projects
Install pressure tanks/towers for potable water.	Structure and infrastructure projects
Install sprinkler systems in public buildings.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Prepare and implement a mass casualty plan to address of terrorism and infectious disease outbreaks.	Local plans and regulations
Purchase road closure barricades.	Local plans and regulations
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Strengthen organizational capabilities, including staffing and equipment, for counter-terrorism and intelligence gathering efforts.	Local plans and regulations

Thunderstorm/Lightning/Hail Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address thunderstorm/lightning/hail.

Figure 4.18: Mitigation Alternatives Involving Thunderstorm/Lighting/Hail

Mitigation Action	Primary Category
Adopt International Building Code and/or International Residential Code.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Adopt/enforce tree trimming ordinances.	Local plans and regulations
Bury exposed utility and communications infrastructure.	Structure and infrastructure projects
Create and maintain a special needs/oxygen user registration program or inventory.	Local plans and regulations
Demolish abandoned properties.	Structure and infrastructure projects
Enforce nuisance regulations to rid the area of debris that could be a hazard.	Local plans and regulations

Mitigation Action	Primary Category
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Fund weatherization programs to more low-income households.	Structure and infrastructure projects
Harden public buildings and utilities (structural retrofits).	Structure and infrastructure projects
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Structure and infrastructure projects
Install hazard signs in area campgrounds, parks, and open spaces.	Education and awareness programs
Install warning siren(s).	Structure and infrastructure projects
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Structure and infrastructure projects
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Structure and infrastructure projects
Promote annual storm spotter training.	Education and awareness programs
Promote the value of installation of private in-home tornado safe rooms.	Education and awareness programs
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Education and awareness programs
Purchase/install backup fixed power generators and pumps.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Require burial of utility lines in new development.	Local plans and regulations
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Education and awareness programs
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Structure and infrastructure projects

Tornado/Windstorm Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address tornado/windstorm.

Figure 4.19: Mitigation Alternatives Involving Tornado/Windstorm

Mitigation Action	Primary Category
Adopt International Building Code and/or International Residential Code.	Local plans and regulations
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Local plans and regulations
Adopt manufactured home development storm shelter ordinances.	Local plans and regulations
Adopt/enforce tree trimming ordinances.	Local plans and regulations
Bury exposed utility and communications infrastructure.	Structure and infrastructure projects
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Structure and infrastructure projects
Construct storage facilities for pesticides, insecticides, and chemicals.	Structure and infrastructure projects
Create and maintain a special needs/oxygen user registration program or inventory.	Local plans and regulations
Demolish abandoned properties.	Structure and infrastructure projects
Distribute tornado shelter location information.	Education and awareness programs
Enforce burning restrictions.	Local plans and regulations
Enforce nuisance regulations to rid the area of debris that could be a hazard.	Local plans and regulations
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Natural systems protection
Fund weatherization programs to more low-income households.	Structure and infrastructure projects
Harden public buildings and utilities (structural retrofits).	Structure and infrastructure projects
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Structure and infrastructure projects
Install hazard signs in area campgrounds, parks, and open spaces.	Education and awareness programs
Install highway guardrails to keep vehicles on roadway.	Structure and infrastructure projects
Install warning siren(s).	Structure and infrastructure projects
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Maintain trees proactively on public property and ROW areas.	Local plans and regulations
Prepare and practice a mass casualty plan.	Local plans and regulations
Promote annual storm spotter training.	Education and awareness programs
Promote the value of installation of private in-home tornado safe rooms.	Education and awareness programs
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Natural systems protection
Provide safe room education for builders and developers.	Education and awareness programs
Purchase road closure barricades.	Local plans and regulations

Mitigation Action	Primary Category
Purchase/install backup fixed power generators and pumps.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects
Require burial of utility lines in new development.	Local plans and regulations
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Education and awareness programs
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Structure and infrastructure projects

Transportation Incidents Mitigation Alternatives:

The following table shows the identified possible mitigation actions to address transportation incidents.

Figure 4.20: Mitigation Alternatives Involving Transportation Incidents

Mitigation Action	Primary Category
Build highway or rail overpasses to reduce intersection accidents.	Structure and infrastructure projects
Designate emergency routes and add signage for emergency procedures for travelers.	Local plans and regulations
Develop/enforce snow removal policies.	Local plans and regulations
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Structure and infrastructure projects
Implement airport zoning.	Local plans and regulations
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Structure and infrastructure projects
Install highway guardrails to keep vehicles on roadway.	Structure and infrastructure projects
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Structure and infrastructure projects
Institute alternative bus routes and plans for road closures.	Local plans and regulations
Obtain sand and salt supplies well in advance of winter.	Local plans and regulations
Purchase road closure barricades.	Local plans and regulations
Purchase snow trucks, plows, sanders.	Structure and infrastructure projects
Purchase stand-by portable pumps and generators.	Structure and infrastructure projects

The above tables, while lengthy, offer a comprehensive range of actions that can address the many hazards identified in the plan. This information is the foundation for the following pages that outline future mitigation actions that should be undertaken by the jurisdictions participating in the plan.

In addition to these items, during the online survey process, four other ideas were given. One of them is, “Create a list of elderly people that needs monitoring.” This is addressed within “Establish alert systems and specific outreach efforts for vulnerable populations.” The implied idea is that we can only reach out to these populations if we know who they are. Another is, “Work as a community to achieve a goal.” It is implied in the planning process that people will work together, but the statement is a good one of admonishment. A third one is, “Inform community (those unable to do their own) about snow removal professionals.” This falls under “Develop/enforce snow removal policies.” It adds a layer to the process, however, that we should partake in education and awareness effort to remind people that it is important and that people are available to assist. The final one is, “Designate a citizen as a FEMA representative.” This is a good idea and is effectively in place through the appointment and hiring of the emergency management coordinator.

Status of Possible Mitigation Actions by Jurisdiction

The following tables show the general status of mitigation actions, from the tables above, relevant to each jurisdiction. Projects that are completed or ongoing are not to be included in the new plan, even though ongoing activities will still have an impact. It is assumed that ongoing activities will continue without the plan being implemented. New, underway, or carryover activities will be considered in the evaluation and prioritization sections of the plan and may be included in the implementation strategy. New actions are items not previously anticipated, either in a previous plan or in general. Underway items may or may not be in the previous plan but are being implemented to some degree and are eligible for inclusion as a future action. Carryover actions are from the previous plan and were not implemented but may make sense to

include in the new plan. Some new and carryover actions may be removed from future consideration because they are not relevant, per comments, to a given jurisdiction.

Adams County (Rural and County-owned Facilities) Status of Potential Mitigation Actions:

Based on the priority hazards that are most likely to impact Adams County’s rural area and critical assets and the lists of possible actions from the tables above, the following is a summary of possible mitigation actions to be considered in the following parts of the plan.

Figure 4.21: Potential Mitigation Actions for Adams County

Potential Mitigation Action	Status	Comments
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	New	FEMA priority
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	New	FEMA priority
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	New	FEMA priority
Adopt a continuity of operations & succession plan for the jurisdiction.	Complete	This is an ongoing part of the adopted EOP.
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Underway	Partially complete but not all codes sections are updated; things like zoning can be added.
Adopt International Building Code and/or International Residential Code.	New	
Adopt manufactured home development storm shelter ordinances.	New	Few manufactured home areas present but could be future issue.
Adopt State fire codes.	New	
Adopt the current FIRM maps as applicable to each jurisdiction.	Complete	FEMA priority
Adopt/enforce tree trimming ordinances.	Ongoing	Enforced in areas of concern to county infrastructure, such as roads and utilities.
Bury exposed utility and communications infrastructure.	New	
Check and test water wells (clean when needed).	Ongoing	Practice in place through SIRWA and other providers as well as farmers; funding available to those in need.
Complete storm water drainage or watershed studies of known flood areas.	Ongoing	Plans are in place or in development as needs are identified.
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Complete	Adequate public water body and farm pond numbers.
Construct storage facilities for pesticides, insecticides, and chemicals.	New	Unsure of scope of need or relevance of public regulation of private properties.
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	New	Generally unneeded in rural areas with low development density.
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Carryover	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed.
Create and maintain a special needs/oxygen user registration program or inventory.	Complete	Information is available from third parties to County officials.
Demolish abandoned properties.	Ongoing	Performed on a limited basis where risks to the public justify county investment.
Develop a drought emergency plan, including water conservation measures.	New	
Develop a vegetation management plan.	Complete	As far as properties of County concern, there is process, funding, and staffing in place.
Develop agreements for secondary water sources for use during droughts.	Complete	County has identified needs are adequately met.
Develop volunteer base - trained and stand-by groups	Complete	This requires extensive organization and available volunteers who will serve; County has identified adequate resources exist as of 2021.

Potential Mitigation Action	Status	Comments
Develop/enforce snow removal policies.	New	Generally unneeded in rural areas with low development density and few people who park on the rural roads.
Develop/maintain security at applicable critical assets.	Carryover	No investments have been made as priorities are needed as well as technology decisions.
Distribute tornado shelter location information.	New	Not relevant until FEMA rated shelters are in place.
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	New	FEMA priority
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	New	FEMA priority
Encourage property owners to install sewer system backflow devices.	New	Generally unneeded in rural areas, which lack public sewer collection systems.
Encourage property owners to own adequate property insurance.	New	
Encourage the implementation of water-saving measures, including soil and water conservation practices.	Ongoing	County indicates enough resources are provided to this effort on an ongoing basis.
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	New	
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	New	FEMA priority
Enforce burning restrictions.	Ongoing	Implemented by county ordinance when conditions warrant.
Enforce multi-family housing extinguisher laws.	New	Already enforced at other levels of government; no rural multi-family housing
Enforce nuisance regulations to rid the area of debris that could be a hazard.	New	
Establish alert systems and specific outreach efforts for vulnerable populations.	New	
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	New	
Flood proof critical assets in the community/construct flood protection around assets.	Underway	Significant investments have been made but more can be done with additional funding; FEMA priority
Fund weatherization programs to more low-income households.	Underway	Some government funds invested in this effort, but more need than funds available.
Harden public buildings and utilities (structural retrofits).	New	FEMA priority
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	New	A requisite action.
Implement a comprehensive multi-media public education campaign for multiple hazards.	New	
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	New	
Implement all aspects of the NFIP (National Flood Insurance Program).	New	FEMA priority
Implement storm water management regulations.	New	
Implement stream modifications/channel improvements and stream bank stabilization.	Underway	FEMA priority; more improvements can be made with additional resources.
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Underway	Significant investments each year on this issue and always a need that exceeds available funds.
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Carryover	FEMA priority; no comprehensive plan or similar planning in place.
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	New	
Initiate community preparedness programs.	New	
Install access barriers around certain chemical tanks.	Complete	County indicates this has been adequately addressed.
Install and/update anti-virus software and emergency communications technology.	Ongoing	Investments made as needed.

Potential Mitigation Action	Status	Comments
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	Complete	Many installed when there was a State grant program; County has indicated adequate numbers available.
Install flood gauges.	New	Nearest in watershed is near Clarinda
Install hazard signs in area campgrounds, parks, and open spaces.	Complete	
Install highway guardrails to keep vehicles on roadway.	New	
Install pressure tanks/towers for potable water.	Complete	Various locations around the county on SIRWA's system.
Install quick-connect emergency generator hook-ups for facilities.	New	
Install sprinkler systems in public buildings.	New	
Install warning siren(s).	New	
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	New	
Institute alternative bus routes and plans for road closures.	Complete	Provided by schools; county aware of protocols.
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	New	
Maintain sandbags in dry storage.	Ongoing	
Maintain trees proactively on public property and ROW areas.	Ongoing	
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	New	
Obtain sand and salt supplies well in advance of winter.	Ongoing	
Participate and market the local Reverse E911 alert program.	Complete; ongoing	Rave Alert/Smart 911 system instituted throughout the county.
Participate in the FEMA Community Rating Service (CRS) program.	New	
Perform dam and levee inspections.	Ongoing	
Plan for and carry out efforts to add water supply for fire suppression.	Complete	Several water sources are in place.
Post “no dumping” signs.	Complete	
Prepare and practice a mass casualty plan.	Ongoing	
Preserve open spaces in hazard areas.	New	
Promote annual storm spotter training.	Ongoing	
Promote the value of installation of private in-home tornado safe rooms.	Carryover	EMA has not performed this level of education and promotion with individual property owners.
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Ongoing	Performed by third parties, such as ISU Extension and agricultural groups.
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Ongoing	
Provide safe room education for builders and developers.	New	
Purchase road closure barricades.	Complete	
Purchase snow trucks, plows, sanders.	Complete	
Purchase stand-by portable pumps and generators.	Carryover	County has not purchased adequate equipment numbers.
Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems	Underway; carryover	Project is a long-term investment.
Purchase/install backup fixed power generators and pumps.	New	FEMA priority
Replace, expand, or improve water and sewer lines.	New	
Require burial of utility lines in new development.	New	
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	New	
Routinely inspect fire hydrants.	New	
Special needs/oxygen user registration.	Carryover	This would require a partnership with fire, EMS, and utility providers.
Store digital and hard copies of public records in low-risk, offsite locations.	Complete; ongoing	
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Underway	Underway on major power lines owned by the REC but more funds can continue the work; FEMA priority.

City of Corning Status of Potential Mitigation Actions:

Based on the priority hazards that are most likely to impact Corning and the lists of possible actions from the tables above, the following is a summary of possible mitigation actions to be considered in the following parts of the plan.

Figure 4.22: Potential Mitigation Actions for the City of Corning

Potential Mitigation Action	Status	Comments
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	New	FEMA priority
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	New	FEMA priority
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	New	FEMA priority
Adopt a continuity of operations & succession plan for the jurisdiction.	Complete	This is an ongoing part of the adopted EOP.
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Underway	Partially complete but not all codes sections are updated; zoning is in place but the code is old.
Adopt International Building Code and/or International Residential Code.	New	
Adopt manufactured home development storm shelter ordinances.	New	
Adopt State fire codes.	New	
Adopt the current FIRM maps as applicable to each jurisdiction.	Complete	FEMA priority
Adopt/enforce tree trimming ordinances.	Ongoing	City/Utility partnership where it impacts roads and utilities.
Backup files and records - store in alternate locations.	Carryover	Electronic backups are in place but no backup physical location is used.
Build highway or rail overpasses to reduce intersection accidents.	New	
Bury exposed utility and communications infrastructure.	New	
Check and test water wells (clean when needed).	New	Not relevant to Corning – has public water.
Clear and deepen roadside ditches.	Complete	
Codify restricted access procedures.	Complete	
Complete storm water drainage or watershed studies of known flood areas.	New	
Conduct intensive local and regional intelligence, drills, and scenarios.	New	
Conduct study on possible illegal use of sump pumps and sewer lines.	Complete	
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Complete	
Construct storage facilities for pesticides, insecticides, and chemicals.	New	
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	Ongoing	
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Carryover	FEMA priorities; resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed.
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	New	
Create and maintain a special needs/oxygen user registration program or inventory.	New	
Designate emergency routes and add signage for emergency procedures for travelers.	New	
Designate/enforce HAZMAT transportation routes.	Complete	
Develop/enforce snow removal policies.	Ongoing	
Develop/maintain hazardous materials inventories by location.	Ongoing	
Develop/maintain security at applicable critical assets.	New	City is exploring use of cameras with sheriff's office.
Develop/update/publicize local evacuation and shelter-in-place plans.	Ongoing	
Distribute tornado shelter location information.	New	Not relevant until FEMA rated shelters are in place.
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	Ongoing	Performed by the local hospital and social media campaigns
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	New	

Potential Mitigation Action	Status	Comments
Employ construction measures that direct water away from structures.	New	
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Underway	Efforts have been implemented but can be expanded with more resources.
Encourage clustering of residential lots outside of hazard areas in subdivision design/review (as part of updated subdivision ordinance.)	New	
Encourage property owners to install sewer system backflow devices.	Ongoing	Complete through media and sewer enforcement.
Encourage property owners to own adequate property insurance.	New	
Encourage the implementation of water-saving measures, including soil and water conservation practices.	New	
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	New	
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	New	FEMA priority
Enforce burning restrictions.	Ongoing	Policies in place.
Enforce multi-family housing extinguisher laws.	New	
Enforce nuisance regulations to rid the area of debris that could be a hazard.	New	
Establish alert systems and specific outreach efforts for vulnerable populations.	Ongoing	
Establish neighbor watch programs for vulnerable populations after a hazard event.	Carryover	Program requires organizational leadership and willing participants.
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Underway	More can be done with additional outside resources.
Flood proof critical assets in the community/construct flood protection around assets.	Complete	Key assets have been addressed, such as water and sewer plants.
Fund weatherization programs to more low-income households.	Underway	More can be done with additional outside resources.
Harden public buildings and utilities (structural retrofits).	New	FEMA priority
Help community leaders and businesses to improve local public health response readiness.	New	
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	New	A requisite action.
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	New	
Identify and/or map erosion hazard areas.	Complete	City reports the information has been obtained, although it has not been provided as part of plan; likely the data pertains to city owned properties and ROWs where erosion has occurred.
Identify, evaluate, and pursue funding for idled environmentally compromised properties, commonly called brownfields.	New	
Implement a comprehensive multi-media public education campaign for multiple hazards.	New	
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	Ongoing	County GIS system
Implement airport zoning.	Complete	
Implement all aspects of the NFIP (National Flood Insurance Program).	Ongoing	FEMA priority: Coming participates in the program.
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	New	
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	Underway	Completed over time as funds available; additional sewers need addressed.
Implement specialized ventilation systems and projects.	New	
Implement storm water management regulations.	New	
Implement stream modifications/channel improvements and stream bank stabilization.	New	Not within the jurisdiction of the city.
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	New	
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	New	Existing comprehensive plan is 20 years old and does not have a mitigation section.

Potential Mitigation Action	Status	Comments
Increase community and individual engagement in disease prevention efforts.	New	
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	New	
Initiate community preparedness programs.	Ongoing	
Install access barriers around certain chemical tanks.	Complete	
Install air monitors.	New	
Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens.	Carryover	More outreach is required to ensure local leaders understand the benefits of such efforts.
Install and/update anti-virus software and emergency communications technology.	Complete; ongoing	
Install blast barriers.	New	
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	New	Wet hydrants in the city; action not relevant.
Install flood gauges.	New	Nearest in watershed is near Clarinda
Install flood walls and retaining walls around critical infrastructure.	New	FEMA priority
Install hazard signs in area campgrounds, parks, and open spaces.	Complete	
Install highway guardrails to keep vehicles on roadway.	New	
Install pressure tanks/towers for potable water.	Complete	
Install quick-connect emergency generator hook-ups for facilities.	New	
Install retention and detention structures.	New	
Install sprinkler systems in public buildings.	New	
Install warning siren(s).	Complete	
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	New	Not relevant within the city itself.
Institute alternative bus routes and plans for road closures.	Complete	Provided by schools; county aware of protocols.
Invest in the latest broadband infrastructure.	New	Some efforts made but not nearly to the level of need.
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	New	
Maintain sandbags in dry storage.	Ongoing	
Maintain trees proactively on public property and ROW areas.	Ongoing	
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Complete	City indicates buildings of importance (critical assets) are addressed.
Modernize infectious disease surveillance to drive public health actions.	Ongoing	
Obtain sand and salt supplies well in advance of winter.	Ongoing	
Participate and market the local Reverse E911 alert program.	Complete; ongoing	Rave Alert/Smart 911 system instituted throughout the county.
Participate in the FEMA Community Rating Service (CRS) program.	New	
Perform dam and levee inspections.	Ongoing	
Plan for and carry out efforts to add water supply for fire suppression.	Complete	
Post “no dumping” signs.	Complete	
Prepare and practice a mass casualty plan.	New	
Preserve open spaces in hazard areas.	New	
Promote annual storm spotter training.	Ongoing	
Promote the value of installation of private in-home tornado safe rooms.	New	EMA has not performed this level of education and promotion with individual property owners.
Promote to property owners the importance of tree and vegetation maintenance on private properties.	New	
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Ongoing	
Provide safe room education for builders and developers.	New	
Purchase road closure barricades.	Complete	
Purchase snow trucks, plows, sanders.	Ongoing	As needed and funds available.
Purchase stand-by portable pumps and generators.	Ongoing	As needed and funds available.
Purchase/install backup fixed power generators and pumps.	Carryover	Some assets have them but not all applicable assets.
Reduce disease transmitted by animals and insects and foodborne infections.	Ongoing	Performed by USDA and State ag agencies and food supply leaders

Potential Mitigation Action	Status	Comments
Remove asbestos from public buildings.	Complete	
Require burial of utility lines in new development.	Complete	
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	New	
Routinely inspect fire hydrants.	Ongoing	
Store digital and hard copies of public records in low-risk, offsite locations.	Complete; ongoing	
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Underway	CMU can complete more with additional outside resources.
Strengthen organizational capabilities, including staffing and equipment, for counter-terrorism and intelligence gathering efforts.	New	

City of Nodaway Status of Potential Mitigation Actions:

Based on the priority hazards that are most likely to impact Nodaway and the lists of possible actions from the tables above, the following is a summary of possible mitigation actions to be considered in the following parts of the plan.

Figure 4.23: Potential Mitigation Actions for the City of Nodaway

Potential Mitigation Action	Status	Comments
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	New	FEMA priority
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	New	FEMA priority
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	New	FEMA priority
Adopt a continuity of operations & succession plan for the jurisdiction.	Complete	This is an ongoing part of the adopted EOP.
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	New	
Adopt International Building Code and/or International Residential Code.	New	
Adopt manufactured home development storm shelter ordinances.	New	
Adopt State fire codes.	New	
Adopt the current FIRM maps as applicable to each jurisdiction.	Complete	FEMA priority
Adopt/enforce tree trimming ordinances.	Ongoing	City/Utility partnership where it impacts roads and utilities.
Backup files and records - store in alternate locations.	Carryover	Project delayed by limited resources and lack of considerable administrative activity and file volume.
Bury exposed utility and communications infrastructure.	New	
Complete storm water drainage or watershed studies of known flood areas.	New	
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	New	Not applicable to Nodaway.
Construct storage facilities for pesticides, insecticides, and chemicals.	New	Not applicable to Nodaway.
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	New	
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Carryover	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed; FEMA priority
Create and maintain a special needs/oxygen user registration program or inventory.	New	
Create continuity of operations & succession plan for Nodaway.	Carryover	Requires central leadership and organization.
Demolish abandoned properties.	New	
Develop/enforce snow removal policies.	Carryover	Due to low population density and few people parking in roadways, the action has not been considered.
Distribute tornado shelter location information.	New	Not relevant until FEMA rated shelters are in place.
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	New	FEMA priority

Potential Mitigation Action	Status	Comments
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Carryover	Fire department has limited resources and has not yet started a formal program.
Encourage property owners to install sewer system backflow devices.	Ongoing	
Encourage property owners to own adequate property insurance.	New	
Encourage the implementation of water-saving measures, including soil and water conservation practices.	New	
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	New	
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	New	FEMA priority
Enforce burning restrictions.	Ongoing	Policies in place.
Enforce multi-family housing extinguisher laws.	New	Not applicable to Nodaway; no multi-family structures.
Enforce nuisance regulations to rid the area of debris that could be a hazard.	New	
Establish alert systems and specific outreach efforts for vulnerable populations.	Complete	
Establish backup utilities and communications infrastructure; use the latest technology.	New	FEMA priority
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	New	
Flood proof critical assets in the community/construct flood protection around assets.	Complete	FEMA priority
Formally designate and stock community post disaster shelters; maintain and publicize shelter location list (cooling shelters).	New	
Fund weatherization programs to more low-income households.	New	
Harden public buildings and utilities (structural retrofits).	New	FEMA priority
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	New	Requisite action.
Implement a comprehensive multi-media public education campaign for multiple hazards.	New	
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	Ongoing	County GIS system
Implement all aspects of the NFIP (National Flood Insurance Program).	New	FEMA priority
Implement storm water management regulations.	New	
Implement stream modifications/channel improvements and stream bank stabilization.	New	Not within the jurisdiction of the city.
Implement tree planting programs and install shade structures in crowd centers.	New	Not applicable to Nodaway.
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	New	
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	New	
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	New	
Initiate community preparedness programs.	Ongoing	
Install access barriers around certain chemical tanks.	New	Not applicable to Nodaway; no major chemical storage areas.
Install and/update anti-virus software and emergency communications technology.	New	
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	New	Wet hydrants in the city; action not relevant.
Install flood gauges.	New	Nearest in watershed is near Clarinda
Install hazard signs in area campgrounds, parks, and open spaces.	New	Not applicable to Nodaway; no significant recreation areas in the city.
Install highway guardrails to keep vehicles on roadway.	New	Not applicable to Nodaway.
Install quick-connect emergency generator hook-ups for facilities.	New	
Install sprinkler systems in public buildings.	New	Not applicable to Nodaway; no larger or heavily occupied public buildings.
Install warning siren(s).	Complete	
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	New	

Potential Mitigation Action	Status	Comments
Institute alternative bus routes and plans for road closures.	Complete	
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	New	
Maintain sandbags in dry storage.	New	
Maintain trees proactively on public property and ROW areas.	Ongoing	
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	New	Not applicable to Nodaway.
Obtain sand and salt supplies well in advance of winter.	New	
Participate and market the local Reverse E911 alert program.	Complete; ongoing	Rave Alert/Smart 911 system instituted throughout the county.
Participate in the FEMA Community Rating Service (CRS) program.	New	
Perform dam and levee inspections.	New	Not applicable to Nodaway.
Plan for and carry out efforts to add water supply for fire suppression.	Complete	
Post "No Dumping" signs.	Carryover	No resources made available for this action.
Prepare and practice a mass casualty plan.	New	
Preserve open spaces in hazard areas.	New	
Promote annual storm spotter training.	Ongoing	
Promote good landscaping practices among property owners.	Carryover	No formal or sustained effort of this nature has been initiated in Adams County.
Promote the value of installation of private in-home tornado safe rooms.	New	
Promote to property owners the importance of tree and vegetation maintenance on private properties.	New	
Promote tree and vegetation maintenance on private properties.	Carryover	No formal or sustained effort of this nature has been initiated in Adams County.
Provide adequate access to safe drinking water in all public spaces, including outdoor spaces, such as parks and playgrounds.	Complete	
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Ongoing	FEMA priority
Provide safe room education for builders and developers.	New	FEMA priority
Purchase road closure barricades.	New	
Purchase snow trucks, plows, sanders.	Carryover	No resources made available for this action.
Purchase stand-by portable pumps and generators.	Carryover	No resources made available for this action.
Purchase/install backup fixed power generators and pumps.	New	
Require burial of utility lines in new development.	New	
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	New	
Routinely inspect fire hydrants.	Ongoing	
Store digital and hard copies of public records in low-risk, offsite locations.	New	
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	New	FEMA priority

City of Prescott Status of Potential Mitigation Actions:

Based on the priority hazards that are most likely to impact Prescott and the lists of possible actions from the tables above, the following is a summary of possible mitigation actions to be considered in the following parts of the plan.

Figure 4.24: Potential Mitigation Actions for the City of Prescott

Potential Mitigation Action	Status	Comments
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	New	FEMA priority
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	New	FEMA priority
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	New	FEMA priority
Adopt a continuity of operations & succession plan for the jurisdiction.	Complete	This is an ongoing part of the adopted EOP.
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	New	

Potential Mitigation Action	Status	Comments
Adopt International Building Code and/or International Residential Code.	New	
Adopt manufactured home development storm shelter ordinances.	New	
Adopt State fire codes.	New	
Adopt the current FIRM maps as applicable to each jurisdiction.	Complete	FEMA priority
Adopt/enforce tree trimming ordinances.	Ongoing	City/Utility partnership where it impacts roads and utilities.
Backup files and records – store in alternate locations.	Ongoing	Process in place with city clerk able to store duplicate key files away from the office.
Bury exposed utility and communications infrastructure.	New	
Clear and deepen ditches on right-of ways.	Complete	Projects in key parts of the city have been undertaken by the City and SIRWA (who recently updated its water mains in those ditches).
Complete storm water drainage or watershed studies of known flood areas.	Complete	Completed by engineer through USDA grant from 2017-18
Conduct study on possible illegal use of sump pumps and sewer lines.	New	
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	New	Pond/lake north of city boundary is a concern due to flooding potential; city is concerned about condition of the dam.
Construct storage facilities for pesticides, insecticides, and chemicals.	New	
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	New	Engineering study three years ago focused on areas where this infrastructure makes sense.
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Carryover	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed.
Create and maintain a special needs/oxygen user registration program or inventory.	New	
Develop/enforce snow removal policies.	Ongoing	
Develop/update/publicize local evacuation and shelter-in-place plans.	New	
Distribute tornado shelter location information.	New	Not relevant until FEMA rated shelters are in place.
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	New	
Employ construction measures that direct water away from structures.	New	
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Ongoing	Fire department works hard on this issue annually
Encourage clustering of residential lots outside of hazard areas in subdivision design/review (as part of updated subdivision ordinance.)	New	
Encourage property owners to install sewer system backflow devices.	Ongoing	
Encourage property owners to own adequate property insurance.	New	
Encourage the implementation of water-saving measures, including soil and water conservation practices.	New	
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	New	
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	New	Engineering study three years ago focused on areas where this infrastructure makes sense.
Enforce burning restrictions.	Ongoing	
Enforce multi-family housing extinguisher laws.	New	Not applicable to Prescott; no multi-family structures.
Enforce nuisance regulations to rid the area of debris that could be a hazard.	New	
Establish alert systems and specific outreach efforts for vulnerable populations.	Ongoing	Recent investments have addressed this issue to satisfaction of local officials.
Establish backup utilities and communications infrastructure; use the latest technology.	Underway	Countywide effort underway to modernize communications.
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	New	
Flood proof critical assets in the community/construct flood protection around assets.	Complete	Pertains mostly to wastewater lagoons.

Potential Mitigation Action	Status	Comments
Formally designate and stock community post disaster shelters; maintain and publicize shelter location list (cooling shelters).	New	
Fund weatherization programs to more low-income households.	New	
Harden public buildings and utilities (structural retrofits).	New	FEMA priority
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	New	Requisite action
Identify and/or map erosion hazard areas.	Complete	
Implement a comprehensive multi-media public education campaign for multiple hazards.	New	
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	Ongoing	County GIS system
Implement all aspects of the NFIP (National Flood Insurance Program).	Ongoing	FEMA priority; City is participating.
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	New	
Implement storm water management regulations.	New	
Implement stream modifications/channel improvements and stream bank stabilization.	Underway	Some work has been done to the stream through the middle of town but more work is needed.
Implement tree planting programs and install shade structures in crowd centers.	New	Not applicable to Prescott.
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	New	
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	New	
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	New	
Increase public awareness on household hazardous materials	Ongoing	A county/regional effort is underway and special programs now exist to address these kinds of materials.
Initiate community preparedness programs.	New	
Install access barriers around certain chemical tanks.	New	Not applicable to Prescott; no major chemical storage areas.
Install and/update anti-virus software and emergency communications technology.	Completed	In place on City equipment
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	New	Wet hydrants in the city; action not relevant.
Install flood gauges.	New	Nearest in watershed is near Clarinda
Install hazard signs in area campgrounds, parks, and open spaces.	New	Not applicable to Prescott; no significant recreation areas in the city.
Install highway guardrails to keep vehicles on roadway.	New	Not applicable to Prescott.
Install quick-connect emergency generator hook-ups for facilities.	New	FEMA priority
Install retention and detention structures.	New	FEMA priority
Install sprinkler systems in public buildings.	New	Not applicable to Prescott; no larger or heavily occupied public buildings.
Install warning siren(s).	Complete	
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	New	
Institute alternative bus routes and plans for road closures.	Complete	
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	New	
Maintain sandbags in dry storage.	Ongoing	
Maintain trees proactively on public property and ROW areas.	Ongoing	
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	New	Not applicable to Prescott.
Obtain sand and salt supplies well in advance of winter.	Ongoing	
Participate and market the local Reverse E911 alert program.	Complete; ongoing	Rave Alert/Smart 911 system instituted throughout the county.
Participate in the FEMA Community Rating Service (CRS) program.	New	
Perform dam and levee inspections.	New	Dam north of town is of interest to the city.

Potential Mitigation Action	Status	Comments
Plan for and carry out efforts to add water supply for fire suppression.	Complete	Options investigated and rural water system improved
Post “no dumping” signs.	Complete	
Prepare and practice a mass casualty plan.	New	
Preserve open spaces in hazard areas.	New	
Promote annual storm spotter training.	Ongoing	
Promote good landscaping practices among property owners.	Carryover	City does this on a limited basis through its nuisance and junk vehicle regulations.
Promote the value of installation of private in-home tornado safe rooms.	New	
Promote to property owners the importance of tree and vegetation maintenance on private properties.	New	
Provide adequate access to safe drinking water in all public spaces, including outdoor spaces, such as parks and playgrounds.	Complete	
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Ongoing	Process is ongoing but informal and without a long-term rebate program. With the cell-based services now available, local interest in this has declined.
Provide safe room education for builders and developers.	New	
Purchase road closure barricades.	Complete	On hand and available for local use.
Purchase snow trucks, plows, sanders.	Complete	On hand and available for local use.
Purchase stand-by portable pumps and generators.	New	
Purchase/install backup fixed power generators and pumps	Carryover	No resources made available for this action.
Rail and highway safety education programs for youth.	Ongoing	This is an ongoing effort in a regional/statewide level with no specific local involvement.
Require burial of utility lines in new development.	New	
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	New	
Routinely inspect fire hydrants.	Ongoing	Provided by SIRWA
Store digital and hard copies of public records in low-risk, offsite locations.	Ongoing	
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	New	FEMA priority

Southwest Valley School District Status of Potential Mitigation Actions:

Based on the priority hazards that are most likely to impact Southwest Valley Community School District (Corning campus) property and the lists of possible actions from the tables above, the following is a summary of possible mitigation actions to be considered in the following parts of the plan.

Figure 4.25: Potential Mitigation Actions for the Southwest Valley Community School District

Potential Mitigation Action	Status	Comments
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	New	FEMA priority
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	New	FEMA priority; does not apply to school district
Adopt a continuity of operations & succession plan for the jurisdiction.	New	
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Complete	
Adopt International Building Code and/or International Residential Code.	Complete	School district has building design codes for its buildings.
Adopt manufactured home development storm shelter ordinances.	New	Not applicable for the school district
Adopt State fire codes.	Complete	
Adopt/enforce tree trimming ordinances.	New	Not applicable for the school district
Build highway or rail overpasses to reduce intersection accidents.	New	Not applicable for the school district
Bury exposed utility and communications infrastructure.	New	
Check and test water wells (clean when needed).	Ongoing	Performed by CMU.
Clear and deepen ditches on right-of ways.	Carryover	No resources made available for this action.
Codify restricted access procedures.	Complete	
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	New	Not applicable for the school district

Potential Mitigation Action	Status	Comments
Construct storage facilities for pesticides, insecticides, and chemicals.	New	Not applicable for the school district
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Carryover	Resources have not yet been made available; more education on the value of this measure and where this measure is specifically needed.
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	New	
Create and maintain a special needs/oxygen user registration program or inventory.	New	Not applicable for the school district
Designate emergency routes and add signage for emergency procedures for travelers.	New	
Develop/enforce snow removal policies.	Ongoing	
Distribute tornado shelter location information.	New	Not relevant until FEMA rated shelters are in place.
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	New	
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	New	
Emergency response guidebooks in key school vehicles.	Ongoing	Provided where needed as vehicles are updated or such guides are available.
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	New	Not applicable for the school district
Encourage property owners to install sewer system backflow devices.	New	Not applicable for the school district
Encourage property owners to own adequate property insurance.	New	Not applicable for the school district
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	New	Not applicable for the school district
Enforce burning restrictions.	Ongoing	As needed.
Enforce multi-family housing extinguisher laws.	New	Not applicable for the school district
Enforce nuisance regulations to rid the area of debris that could be a hazard.	New	Not applicable for the school district
Establish alert systems and specific outreach efforts for vulnerable populations.	Complete	
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	New	Not applicable for the school district
Flood proof critical assets in the community/construct flood protection around assets.	New	
Fund weatherization programs to more low-income households.	New	Not applicable for the school district
Harden public buildings and utilities (structural retrofits).	New	FEMA priority
Help community leaders and businesses to improve local public health response readiness.	New	
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	New	Requisite action
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	New	
Implement a comprehensive multi-media public education campaign for multiple hazards.	New	
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	Ongoing	County GIS system
Implement airport zoning.	New	Not applicable for the school district
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	New	
Implement specialized ventilation systems and projects.	New	
Implement storm water management regulations.	New	
Implement stream modifications/channel improvements and stream bank stabilization.	New	Stream exist to west of athletic fields.
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	New	
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Complete	School plans include mitigation topics
Increase community and individual engagement in disease prevention efforts.	New	
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	New	
Initiate community preparedness programs.	New	

Potential Mitigation Action	Status	Comments
Install access barriers around certain chemical tanks.	New	Not applicable for the school district
Install and/update anti-virus software and emergency communications technology.	Ongoing	
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	New	Wet hydrants in the city; action not relevant.
Install hazard signs in area campgrounds, parks, and open spaces.	New	Not applicable for the school district
Install highway guardrails to keep vehicles on roadway.	New	Not applicable for the school district
Install quick-connect emergency generator hook-ups for facilities.	New	
Install sprinkler systems in public buildings.	New	
Install warning siren(s).	Complete	Provided by City of Corning in vicinity of school campus
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Complete	
Institute alternative bus routes and plans for road closures.	Complete	
Invest in the latest broadband infrastructure.	New	Provided at school but not at homes of all students
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	New	
Maintain trees proactively on public property and ROW areas.	Ongoing	
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	New	
Modernize infectious disease surveillance to drive public health actions.	New	
Obtain sand and salt supplies well in advance of winter.	Ongoing	
Participate and market the local Reverse E911 alert program.	Complete; ongoing	Rave Alert/Smart 911 system instituted throughout the county.
Plan for and carry out efforts to add water supply for fire suppression.	Complete	
Post “no dumping” signs.	New	Not applicable for the school district
Post an information sign or kiosk.	Complete	Installed on main campus property.
Prepare and practice a mass casualty plan.	New	
Promote annual storm spotter training.	Ongoing	
Promote the value of installation of private in-home tornado safe rooms.	New	School could be a partner but is not a direct provider
Promote to property owners the importance of tree and vegetation maintenance on private properties.	New	School could be a partner but is not a direct provider
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Complete	Weather radio located at school
Provide safe room education for builders and developers.	New	School could be a partner but is not a direct provider
Purchase road closure barricades.	Carryover	No resources made available for this action.
Purchase snow trucks, plows, sanders.	Ongoing	School equipment is purchased as funds are available and on a schedule and will be maintained without regard for mitigation plan.
Purchase stand-by portable pumps and generators.	New	
Purchase/install backup fixed power generators and pumps.	New	
Reduce disease transmitted by animals and insects and foodborne infections.	New	Not applicable for the school district
Require burial of utility lines in new development.	New	Not applicable for the school district
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	New	Not applicable for the school district
Routinely inspect fire hydrants.	Ongoing	Performed by CMU.
Store digital and hard copies of public records in low-risk, offsite locations.	Ongoing	
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	New	
Tree planting projects on school properties.	Ongoing	Projects are completed by school staff as needed without regard to the mitigation plan.
Tree trimming projects on school properties.	Ongoing	Projects are completed by school staff as needed without regard to the mitigation plan.

CHI Health Status of Potential Mitigation Actions:

Based on the priority hazards that are most likely to impact CHI Health-Corning campus property and the lists of possible actions from the tables above, the following is a summary of possible mitigation actions to be considered in the following parts of the plan.

Figure 4.26: Potential Mitigation Actions for the CHI Health

Potential Mitigation Action	Status	Comments
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	New	FEMA priority
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	New	FEMA priority; does not apply to hospital
Adopt a continuity of operations & succession plan for the jurisdiction.	new	
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Complete	
Adopt International Building Code and/or International Residential Code.	Complete	CHI Health has building design codes for its buildings.
Adopt manufactured home development storm shelter ordinances.	New	Not applicable for the hospital
Adopt State fire codes.	Complete	
Adopt/enforce tree trimming ordinances.	New	Not applicable for the hospital
Bury exposed utility and communications infrastructure.	New	
Check and test water wells (clean when needed).	Ongoing	Performed by CMU.
Codify restricted access procedures.	Complete	
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	New	Not applicable for the hospital
Construct storage facilities for pesticides, insecticides, and chemicals.	New	Not applicable for the hospital
Construct/integrate public safe rooms in or near existing and future community assets and parks.	New	
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	New	
Create and maintain a special needs/oxygen user registration program or inventory.	Ongoing	Process in place at hospital
Develop/enforce snow removal policies.	Ongoing	
Distribute tornado shelter location information.	New	Not relevant until FEMA rated shelters are in place.
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	New	
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	New	
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	New	Not applicable for the hospital
Encourage property owners to install sewer system backflow devices.	New	Not applicable for the hospital
Encourage property owners to own adequate property insurance.	New	Not applicable for the hospital
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	New	Not applicable for the hospital
Enforce burning restrictions.	Ongoing	As needed.
Enforce multi-family housing extinguisher laws.	New	Not applicable for the hospital
Enforce nuisance regulations to rid the area of debris that could be a hazard.	New	Not applicable for the hospital
Establish alert systems and specific outreach efforts for vulnerable populations.	Complete	
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	New	Not applicable for the hospital
Flood proof critical assets in the community/construct flood protection around assets.	New	Not applicable for the hospital
Fund weatherization programs to more low-income households.	New	Not applicable for the hospital
Harden public buildings and utilities (structural retrofits).	New	FEMA priority
Help community leaders and businesses to improve local public health response readiness.	New	
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	New	Requisite action
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	New	
Implement a comprehensive multi-media public education campaign for multiple hazards.	New	
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	Ongoing	County GIS system

Potential Mitigation Action	Status	Comments
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	New	
Implement specialized ventilation systems and projects.	New	
Implement storm water management regulations.	New	
Implement stream modifications/channel improvements and stream bank stabilization.	New	Not applicable for the hospital
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Complete	All roadways are modern
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Complete	Hospital plans include mitigation topics
Increase community and individual engagement in disease prevention efforts.	New	
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	New	
Initiate community preparedness programs.	New	
Install access barriers around certain chemical tanks.	Complete	
Install and/update anti-virus software and emergency communications technology.	Complete	
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	New	Not applicable for the hospital
Install hazard signs in area campgrounds, parks, and open spaces.	New	Not applicable for the hospital
Install highway guardrails to keep vehicles on roadway.	New	Not applicable for the hospital
Install quick-connect emergency generator hook-ups for facilities.	New	
Install sprinkler systems in public buildings.	New	
Install warning siren(s).	Complete	Provided by City of Corning in vicinity of hospital campus
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	New	
Institute alternative bus routes and plans for road closures.	New	Not applicable for the hospital
Invest in the latest broadband infrastructure.	New	Needed for patients in rural areas to communicate with providers
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	New	
Maintain trees proactively on public property and ROW areas.	Ongoing	
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	New	
Modernize infectious disease surveillance to drive public health actions.	New	
Obtain sand and salt supplies well in advance of winter.	Ongoing	
Participate and market the local Reverse E911 alert program.	Complete; ongoing	Rave Alert/Smart 911 system instituted throughout the county.
Plan for and carry out efforts to add water supply for fire suppression.	Complete	
Post “no dumping” signs.	New	Not applicable for the hospital
Prepare and practice a mass casualty plan.	New	
Promote annual storm spotter training.	Ongoing	
Promote the value of installation of private in-home tornado safe rooms.	New	Not applicable for the hospital
Promote to property owners the importance of tree and vegetation maintenance on private properties.	New	Not applicable for the hospital
Provide more NOAA weather radios to the public if more grant funds can be obtained and promote the use of weather radio and other notification tools available to the public.	Complete	Weather radio located at hospital
Provide safe room education for builders and developers.	New	Not applicable for the hospital
Purchase road closure barricades.	Complete	
Purchase snow trucks, plows, sanders.	Complete	
Purchase stand-by portable pumps and generators.	New	
Purchase/install backup fixed power generators and pumps.	New	
Reduce disease transmitted by animals and insects and foodborne infections.	New	
Require burial of utility lines in new development.	New	Not applicable for the hospital
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	New	Not applicable for the hospital
Routinely inspect fire hydrants.	Ongoing	Performed by CMU.
Store digital and hard copies of public records in low-risk, offsite locations.	Ongoing	
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	New	

4.5: Capability Assessment by Jurisdiction for Possible Future Mitigation Actions

This section elaborates on the evaluation factors of existing jurisdictional capabilities and evaluates possible future mitigation actions to determine which ones should be considered for implementation in the next five years.

Review Category: Existing Authorities

Existing authorities are the governments, staffing, and other legal entities that have authority to undertake a specific mitigation action to address identified hazards. Generally, in Adams County the primary authority is the specific jurisdiction in which the action will be undertaken. However, as listed of the tables in this chapter, sometimes the targeted jurisdiction is partnering, secondary, or simply affected by someone else's authority. An example is the City of Prescott, which has delegated authority to supply water and to treat wastewater to SIRWA and electricity to Alliant Energy. Some mitigation actions that might make a lot of sense for a jurisdiction can be eliminated from the final strategy because the jurisdiction lacks authority to implement it and the existing authority has no interest.

Other authorities include FEMA and other State and Federal agencies. These authorities might implement a project without local input as to whether it should be included in the local plan. For this reason, some mitigation actions might be implemented or cancelled depending on these external authorities that are beyond the scope of the local planning process. The authorities are also described in the tables of this plan.

The relationship between authorities and the actions in this strategy can be expounded so that capabilities are improved if all parties read and accept the strategy outlined in this plan. While external authorities are not required to adopt the plan, they can accept the strategy and include projects and ideas in their budgets and policies. Also, through potential changes in State and Federal laws and regulations, local authorities can have more power to implement projects, through such things as expanded local taxation powers and ability to be more flexible with local budgets and program funding. Local staff limitations, especially in small jurisdictions, also are significant.

Review Category: Existing Policies

Existing policies have been created to address mitigation issues. Most local jurisdictions' policies are geared toward other elements of the emergency management: response and recovery. Less local emphasis in policies is found in preparedness and mitigation, leaving much of that emphasis to FEMA, the State of Iowa, and other agencies. There are notable exceptions, usually where hazard mitigation is incidental to other local priorities. For example, some jurisdictions have building codes or zoning to address general quality of life issues. These ordinances do not necessarily consider modern mitigation best practices for things like wildfire prevention and wind protection. However, as a mitigation action, jurisdictions should consider such best practices when reviewing and updating ordinances. In the area of public warning and education, the jurisdictions have policies in place directed toward mitigation. These policies are more easily implemented because of the modest cost.

Locally, the key inhibitors to policymaking for mitigation are as follows: a) financial, b) under-appreciation of hazard risks, c) lack of political will to implement something new or not specifically mandated by a higher level of government, d) lack of awareness of the policy option and need for it, and e) lack of staffing and expertise to carry out the policy. Several of these inhibitions can be overcome by participating in the planning process and reading the final plan. Others, such as the staffing and financial concerns, will take more support from FEMA, the State, and other organizations to overcome. The tables in this section also detail some of the policy issues for the various mitigation actions.

Review Category: Existing Programs

Locally, there are relatively few existing mitigation programs, and many of them that exist are operated by the Adams County Emergency Management Agency. As opposed to projects, which are often one-time investments in things like infrastructure and are implemented by all jurisdictions, mitigation programs tend to be recurring or continuous, and many of these are among the “ongoing” and “carryover” actions listed in the first part of the chapter. The EMA is responsible for coordinating numerous agencies, staff and volunteers, funding mechanisms, and programs, many of which involve State and Federal resources.

With appropriate funding and staffing, local jurisdictions can initiate and implement substantial programs that can continuously and sustainably mitigate hazards. These might include training and educational efforts, permitting and certification programs, and other recurring activities. Without funding and staffing, local jurisdictions lack the means to expand these capabilities. Grant funds from various agencies, often focused on projects because elected officials and staff see tangible benefits from them, should also be used to develop and sustain long-term programs that can potentially affect more people. It takes much time and effort to put these into effect, often longer than the service terms of existing elected officials. When this is the case, outside assistance is often necessary to motivate action and coordinate the effort.

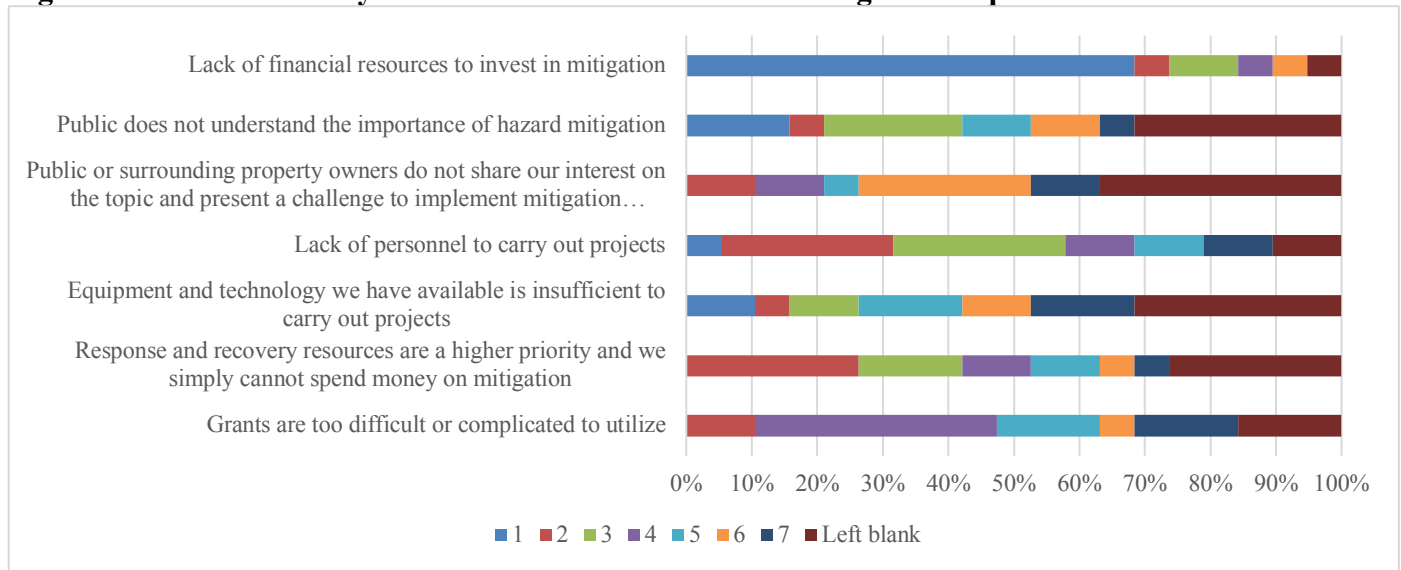
Review Category: Existing Resources

Often, the greatest limitation to local hazard mitigation strategy implementation is the lack of local funding. Iowa’s property and sales tax laws are the primary methods for funding local government operations, including Cities, Counties, School Districts, and others. Some organizations, such as schools and hospitals, also receive fees for services. Increasingly, due to the many now antiquated laws for these taxes, local governments have had to become more creative in raising funding, such as the imposition of local option taxes, tax increment financing for infrastructure projects, special taxing districts, a growing array of fees and enterprise funds, investments, bonding in increasing amounts, and government resource sharing. Similarly, old laws that require certain offices in each jurisdiction and a growing range of State and Federal mandates and regulations also make normal operations more difficult for small communities.

One feature of this plan update is the elimination of many of the “response-oriented” projects from consideration. These are not actually mitigation projects but rather are capabilities that should be met outside of the mitigation plan. For example, purchasing fire equipment or building an EMS station adds to the capabilities of the jurisdiction to mitigate hazards. Having equipment, training, personnel, and related resources enables the jurisdiction to implement mitigation actions related to certain hazards, particularly fires, human disease incidents, and infrastructure failures. These same resources can be channeled into natural hazard response, recovery, and mitigation. For example, the same fire personnel can be used as storm spotters, public education experts about all hazards, and building inspectors, all of which can prevent hazards and alert the public to threats, as well as emergency response we often imagine. Chapter 2 details many of these kinds of capabilities. This section identifies how these resources are either limited or are available for use in specific applicable mitigation actions.

Public Survey Results – Mitigation Capabilities

A public survey, in which 19 persons responded, asked the following: “Please rank each of the following shortfalls or issues related to capabilities to mitigate hazards (leave blank any that you feel do not apply).” Figure 4.27 shows the results outline the most to the least level of concern of the seven options given.

Figure 4.27: Public Survey Results About Concerns Over Mitigation Capabilities

By far the most considerable concern, not surprisingly, was the lack of financial resources to invest in mitigation. Over half of the respondents considered this concern to be the top or #1 concern. Mismatched concern or appreciation of risks and the need for mitigation issues are also concerns. Several items were not selected at all, giving the impression that they were not concerns for some people, but most issues gained at least 50% affirmation as legitimate concerns. In addition to the specific mitigation actions in the plan, addressing these concerns is also vital as a sustained action throughout the planning area.

Capabilities for Mitigation by Jurisdiction

Now that a foundation is laid through the discussion of mitigation review categories, the next step is to take these ideas and evaluate specific mitigation actions in light of special jurisdictional characteristics. The following tables are designed to accomplish this in a brief description. For this assessment, the planning team assumes that mitigation actions that are “complete,” “ongoing,” “new,” or with a statement that they are not relevant to a jurisdiction are not included in this series of tables. Actions that are “new,” “underway,” or “carryover” and otherwise not eliminated are listed in the following tables. In the next update, these projects will be re-assessed.

Mitigation Capability Analysis by Action in Rural Adams County

The following table lists “New,” “Underway,” and “Carryover” mitigation actions and corresponding capabilities that can be expanded by action as well as capability limitations. Also, a brief conclusion is provided, whether the individual action should be considered in cost-benefit review or should be eliminated from further review.

Figure 4.28: Capability Analysis of Mitigation Actions – Rural Adams County/County Assets

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Jurisdiction authorized; administratively possible but technically a challenge with existing resources.	Extensive effort needed to identify unique needs and issues; county leaders identify no urgent need or political will; high cost.	There has been no thorough analysis of what structures need this intervention.	Eliminate
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Jurisdiction authorized in many instances; some technical and admin resources available; relatively low cost.	Requires sustained political will and legal resources; political will is low; county leaders identify no urgent need.	Somewhat	Eliminate

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	A FEMA priority; Jurisdiction authorized; administratively possible but technically a challenge with existing resources; however, State and FEMA resources are available.	Can be very expensive; county leaders indicated no known need; requires outside resources, especially engineering.	Yes, along major streams, primarily impacting bridges and other County property	Consider
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Jurisdiction authorized; administratively possible with State assistance; technical resources available; low cost.	Requires long-term sustained action to enforce and utilize the codes.	Somewhat; County leaders indicate these are in place, so action may be limited to review and edit	Consider
Adopt International Building Code and/or International Residential Code.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; modest political will.	Somewhat; given the modest amount of growth in the County, this is not vitally needed.	Eliminate
Adopt manufactured home development storm shelter ordinances.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; modest political will.	Not really; there are few manufactured homes in the rural area or likely to be built.	Eliminate
Adopt State fire codes.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; modest political will.	Somewhat; given the modest amount of growth in the County, this is not vitally needed.	Eliminate
Bury exposed utility and communications infrastructure.	Grant funding may be available; FEMA priority.	Very expensive; County has no jurisdiction; utility owner has little will to carry out.	Somewhat; low population density results in low benefit vs. cost.	Eliminate
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	Jurisdiction authorized; modest admin requirements; technical assistance available; high political will.	Can be very expensive; requires long-term maintenance.	Yes, in specific locations where industrial development exists	Consider
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Jurisdiction authorized; grants available; FEMA priority. Technical assistance available.	Requires long-term operations and maintenance; very expensive.	Yes, in areas of vulnerable populations, such as campgrounds	Consider
Develop a drought emergency plan, including water conservation measures.	Likely not to be expensive; technically feasible.	County has little jurisdiction; third parties have limited will or already are working on the issue; administratively challenging over time.	Somewhat	Eliminate
Develop/maintain security at applicable critical assets	Jurisdiction authorized; technical assistance is available; grants likely.	Can be expensive; requires monitoring and maintenance; requires long-term technical assistance; modest political will.	Somewhat, in very specific locations.	Eliminate
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Jurisdiction authorized; technical assistance is available; FEMA priority; grants likely; modest admin requirements; reduces maintenance requirements of existing infrastructure; considerable political will.	Very expensive; requires long-term maintenance.	Yes, especially in flood hazard areas; this is a major priority of CMU to provide water to Corning and industrial areas west of town.	Consider
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Jurisdiction authorized; technical and admin staff in place in for of fire departments; grant funds may be available.	Can be expensive and difficult to sustain an incentive program.	Yes, especially for low-income persons	Consider
Encourage property owners to own adequate property insurance.	Jurisdiction authorized; technical and admin staff available; low cost	Little political will; would rather rely on private sector.	Somewhat; especially for flood insurance.	Eliminate

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	Jurisdiction authorized; admin staff available; technical staff obtainable; likely low cost.	Can be a challenge if placed in an ordinance, such as zoning; little political will.	Not really; there is not extensive levels of rural development	Eliminate
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	Jurisdiction authorized; non-County admin and technical staff available; grants available.	Can be expensive if the effort includes cost-share incentives; difficult to get recalcitrant owners to participate.	Yes, but existing efforts are effective; this may be limited to increasing scope and county involvement in those efforts.	Consider
Enforce multi-family housing extinguisher laws.	Jurisdiction generally authorized through State code; technical resources available.	No admin resources available; no political will; can be expensive.	No, there are no notable multi-family housing in rural parts of county.	Eliminate
Enforce nuisance regulations to rid the area of debris that could be a hazard.	Jurisdiction authorized; technical resources available.	Limited admin resources available; little political will; can be expensive.	Not really; low density does not justify the effort.	Eliminate
Establish alert systems and specific outreach efforts for vulnerable populations.	Jurisdiction authorized; partners, admin staff, and technical resources available; grants may be available; may not be expensive; County has political will.	Communications equipment can be expensive; would have to identify the best methods of outreach for given populations; requires sustained action.	Yes, in some situations it will have a very direct impact, although populations will need to be formally identified before launch.	Consider
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Jurisdiction authorized in most cases; brownfield sites may elicit grant funding; technical resources available; admin staff may be available.	Legal challenges may be involved in some unique situations; can be expensive	Yes, in some locations, not yet formally identified	Consider
Flood proof critical assets in the community/construct flood protection around assets.	Jurisdiction authorized; admin staff available; technical staff obtainable; grant funding possible; FEMA priority.	Can be expensive; County has limited political will; requires engineering study.	Yes, if not addressed by another mitigation action already listed.	Consider
Fund weatherization programs to more low-income households.	Jurisdiction authorized; admin and technical staff and resources available; grants available; high political will.	Can be expensive; may require a third-party administrative entity for a sustainable program.	Yes, especially for older homes and vulnerable populations	Consider
Harden public buildings and utilities (structural retrofits).	Jurisdiction or partner organization authorized; admin resources available; technical resources obtainable.	Can be very expensive; may require engineering and other outside resources; unclear political will.	Yes	Consider
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	A requisite action that encourages budgeting and implementation of the plan; admin resources available; few tech resources needed; low cost.	Sets the county and other entities up for pushback if actions are not taken.	Yes, if sustained	Consider
Implement a comprehensive multi-media public education campaign for multiple hazards.	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; low cost.	Can be difficult to enhance and then sustain; requires dedicated funding and marketing plan.	Yes, if sustained	Consider
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	GIS mapping is already in place for some layers; admin resources in place; technical resources obtainable; modest cost.	Requires County to increase its role in the GIS system; requires sustained effort to keep maps current and useful.	Yes, if sustained	Consider
Implement all aspects of the NFIP (National Flood Insurance Program).	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; superficially low cost; FEMA priority.	Can be expensive depending on the scope of effort; modest political will.	Somewhat, although development pressure is low.	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Implement storm water management regulations.	Jurisdiction generally authorized; technical resources obtainable; drafting regulations is not expensive.	Admin and technical staff for sustained activity is not available; little political will.	Not really in rural underdeveloped areas; other actions can address this issue more effectively.	Eliminate
Implement stream modifications/channel improvements and stream bank stabilization.	Jurisdiction generally authorized; technical and admin resources obtainable; some work has been done.	Can be very expensive; sustained actions can stretch resources, given the length of streams; modest political will.	Yes, in some locations	Eliminate
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Jurisdiction authorized; high political will; tech and admin staff and resources available; grants possible.	Very expensive; requires prioritization of projects and outside engineering.	Yes	Consider
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Jurisdiction authorized; highly supported by FEMA; moderate admin requirements; tech resources available; can improve efficiencies; low cost.	Planning can be expensive and require a lot of time investment, depending on level of effort.	Yes, indirectly	Consider
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Jurisdiction has modest authority; provided by third parties, so the expense is not borne by County; grants available.	Can be very expensive; requires intensive engineering and design; requires admin and maintenance of new infrastructure.	Yes, but on a third-party level, not provided directly by County	Consider
Initiate community preparedness programs.	Jurisdiction has authority; FEMA supported; grants available; likely low cost; technical resources available.	Requires sustained effort and long-term administration.	Yes	Consider
Install flood gauges.	Jurisdiction has modest authority; outside entities would likely provide funds, tech resources, and admin.	Project would be generated by third parties with no County influence.	Not really, given scope of flooding in the area	Eliminate
Install highway guardrails to keep vehicles on roadway.	County has jurisdiction only on County secondary roads; grants possible; technical resources available.	County has no jurisdiction on the highways most in need the action; moderate to high cost; requires maintenance.	Modest need where County has jurisdiction	Eliminate
Install quick-connect emergency generator hook-ups for facilities.	County has jurisdiction; grants likely; lower cost than a fixed generator for a facility that is not used full-time; technical resources available; admin costs low.	Can be expensive; requires compatible technology with generators; requires long-term maintenance.	Yes, depending on the structure and its use; a shelter at Lake Icaria may be an example.	Consider
Install sprinkler systems in public buildings.	County has jurisdiction; grants possible; technical resources available; admin costs are modest.	Can be very expensive; requires long-term maintenance and adequate water pressure.	Yes, where necessary for buildings occupied regularly	Consider
Install warning siren(s).	County has jurisdiction; grants possible; technical resources available; admin costs are modest.	Requires long-term maintenance and testing.	Yes, in outdoor settings, such as recreational areas	Consider
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	County has jurisdiction only on County land and along secondary roads; technical resources are modest; grants possible.	Requires admin and continuous long-term maintenance; can be expensive.	Not really, given the topography of the county	Eliminate
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	Jurisdiction authorized; a requisite action; low costs; builds support for other actions and reduces costs for them; little technical resources needed.	Requires sustained admin and engagement.	Yes, indirectly	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Jurisdiction authorized; grants likely; technical resources available.	Requires long-term admin and maintenance; can be expensive.	Yes, on a few properties	Consider
Participate in the FEMA Community Rating Service (CRS) program.	Jurisdiction authorized and showing some political will; FEMA supported and recommended; grants may be available; tech resources available.	Requires long-term admin resources.	Yes, in limited circumstances	Consider
Preserve open spaces in hazard areas.	Jurisdiction has modest authority; tech resources available.	Takes land out of private use and requires public investment; may have political backlash; little political will.	Not really, given this issue is addressed through other actions.	Eliminate
Promote the value of installation of private in-home tornado safe rooms.	Jurisdiction authorized and showing some political will; FEMA supported and recommended; low cost; tech resources available.	Requires long-term effort to engage the public.	Yes	Consider
Provide safe room education for builders and developers.	Jurisdiction authorized; likely low cost; modest admin involved.	Very little local technical expertise; little political will; few likely developers in the area.	Not really it this scale	Eliminate
Purchase stand-by portable pumps and generators.	Jurisdiction authorized; grants likely available; lower cost than a fixed generator; portable and moving equipment available; little tech and admin resources needed.	Can be expensive; requires long-term maintenance.	Yes	Consider
Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems	Jurisdiction authorized; a local priority at this time to address P-25 requirements; grants likely; high political will; existing staff available to use equipment.	Can be very expensive; requires long-term maintenance; requires continued technical investments.	Yes	Consider
Purchase/install backup fixed power generators and pumps.	Jurisdiction authorized; grants likely available; moderate tech and admin resources needed.	Can be expensive; requires long-term maintenance.	Yes	Consider
Replace, expand, or improve water and sewer lines.	Jurisdiction authorized but not directly involved; grants likely available; high tech resources needed but available to SIRWA.	Would be very expensive; requires support of third parties.	Yes, if SIRWA identifies needs	Consider
Require burial of utility lines in new development.	Jurisdiction authorized; admin staff available; technical staff obtainable; likely low cost.	Can be a challenge if placed in an ordinance, such as zoning; little political will.	Not really; there is not extensive levels of rural development	Eliminate
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Jurisdiction authorized; admin staff available; technical staff obtainable; likely low cost.	Can be a challenge if placed in an ordinance, such as zoning; little political will.	Not really; there is not extensive levels of rural development	Eliminate
Routinely inspect fire hydrants.	Jurisdiction authorized but not directly involved; low cost; requires little technical resources.	More of an admin strategy that requires consistency and some investment.	Yes	Consider
Special needs/oxygen user registration.	Jurisdiction authorized but not directly involved; low cost; requires little technical resources.	More of an admin strategy that requires consistency; could result in legal issues if people demand privacy.	Yes	Consider
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Jurisdiction authorized but not directly involved; grants likely available; high tech	Would be very expensive; requires support of third parties; requires extensive engineering.	Yes	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
	resources needed but available to REC, etc.			

For those mitigation actions that are not under direct jurisdiction of the County and its component government agencies, there is a conviction that the County can collaborate effectively with the third-parties involved to accomplish these activities, so they are listed as “consider” actions.

County officials and partners were surveyed about the County’s programs. Those taking the survey indicated generally high ratings for all the seven categories listed. The lowest scores were given for about the community’s enforcement of regulations and ordinances and for its effectiveness in managing disaster debris. The County rated above average its willingness to implement Firewise, StormReady, NFIP, and the CRS programs, none of which are in use today.

County officials were also surveyed about the County’s resources. The County stated the main resource limitations were the lack of political will to make tough decisions necessary to carry out long-term, controversial, or complicated projects, lack of financial resources already in the jurisdiction, and too many competing projects and interests.

When asked what might make the County more likely to implement the plan, they mentioned a desire for planning tools and resources to help the process.

Mitigation Capability Analysis by Action in City of Corning

The following table lists “New,” “Underway,” and “Carryover” mitigation actions and corresponding capabilities that can be expanded by action as well as capability limitations. Also, a brief conclusion is provided, whether the individual action should be considered in cost-benefit review or should be eliminated from further review.

Figure 4.29: Capability Analysis of Mitigation Actions – City of Corning

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Jurisdiction authorized; administratively possible with State assistance; technical resources available; low cost.	Requires long-term sustained action to enforce and utilize the codes.	Somewhat, at least in a targeted or indirect way	Consider
Adopt International Building Code and/or International Residential Code.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; modest political will.	Somewhat; given the modest amount of growth in the city, this is not vitally needed.	Eliminate
Adopt manufactured home development storm shelter ordinances.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; modest political will.	Not really; there are few manufactured homes in the city or likely to be built.	Eliminate
Adopt State fire codes.	Jurisdiction authorized; modest admin and technical requirements initially; low cost; high political will.	Requires long-term sustained action and extensive technical assistance for enforcement	Yes, in specific situations or areas of the city	Consider
Backup files and records - store in alternate locations.	Jurisdiction authorized; high admin requirements but can improve organization; few technical requirements unless digital systems; likely low cost.	Can be expensive if there are many files or expensive digital systems; requires consistent and long-term sustained effort; can require heavy IT.	Yes	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Build highway or rail overpasses to reduce intersection accidents.	Jurisdiction authorized, although highways most likely in question are State owned; technical resources available.	Very expensive; requires engineering; requires long-term maintenance.	At Coming's scale, this project does not really make sense.	Eliminate
Bury exposed utility and communications infrastructure.	Grant funding may be available; FEMA priority; can improve quality of life directly; high political will; City has its own utility.	Very expensive; only will happen with outside resources assisting.	Yes	Consider
Complete storm water drainage or watershed studies of known flood areas.	Jurisdiction authorized; grant funding is available; relatively low cost; modest admin requirements.	Requires technical expertise, which is reasonably easy to obtain.	Yes, can reduce flash flooding if actions are implemented	Consider
Conduct intensive local and regional intelligence, drills, and scenarios.	Jurisdiction authorized; grant funding possible; relatively low cost; technical resources available.	Admin and training staff are limited in rural Iowa; sustainably engaging volunteers is a challenge.	Yes, if sustained and well promoted	Consider
Construct storage facilities for pesticides, insecticides, and chemicals.	Jurisdiction authorized on public and certain private property; modest admin requirements.	Can be expensive; can require extensive management and technical resources.	Yes, if locations are identified following this planning effort	Consider
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Jurisdiction authorized; grants available; FEMA priority. Technical assistance available.	Requires long-term operations and maintenance; very expensive.	Yes, in areas of vulnerable populations	Consider
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	Jurisdiction authorized; COVID protocols can be used to build this measure; tech resources available; likely low cost.	Requires vigilance and follow-through when it may be long time until next pandemic; administration required over long time.	Yes, at least the framework with occasional discussions	Consider
Create and maintain a special needs/oxygen user registration program or inventory.	Jurisdiction authorized – fire and utilities; low cost; requires little technical resources.	More of an admin strategy that requires consistency; could result in legal issues if people demand privacy.	Yes	Consider
Designate emergency routes and add signage for emergency procedures for travelers.	Jurisdiction generally authorized; modest admin and tech assistance needed; moderate cost.	Requires maintenance and long-term administration.	Given the size of the city, benefits are modest.	Eliminate
Develop/maintain security at applicable critical assets.	Jurisdiction authorized; technical assistance is available; grants likely; City is already working on this in and around the city hall.	Can be expensive; requires monitoring and maintenance; requires long-term technical assistance; modest political will.	Yes, in very specific locations.	Consider
Distribute tornado shelter location information.	Jurisdiction authorized; low cost; little resources needed.	Requires sustained effort to be effective.	No; not until a FEMA shelter is built.	Eliminate
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Jurisdiction authorized; technical assistance is available; FEMA priority; grants likely; modest admin requirements; reduces maintenance requirements of existing infrastructure.	Very expensive; requires long-term maintenance.	Yes, especially in flood hazard areas	Consider
Employ construction measures that direct water away from structures.	Jurisdiction authorized; technical assistance is available; FEMA priority; grants possible; modest admin requirements; reduces maintenance requirements of existing infrastructure.	Can be expensive; requires long-term maintenance.	Yes, especially in flood hazard areas	Consider
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Jurisdiction authorized; technical and admin staff in place; grant funds may be available.	Can be expensive and difficult to sustain an incentive program.	Yes, especially for low-income persons	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Encourage clustering of residential lots outside of hazard areas in subdivision design/review (as part of updated subdivision ordinance.)	Jurisdiction authorized; technical and admin resources available; city already has zoning.	Can add to cost of development review; requires sustained administration.	Not really; current zoning generally addresses this and modest development is likely.	Eliminate
Encourage property owners to own adequate property insurance.	Jurisdiction authorized; technical and admin staff available; low cost	Little political will; would rather rely on private sector.	Somewhat; especially for flood insurance.	Eliminate
Encourage the implementation of water-saving measures, including soil and water conservation practices.	Jurisdiction authorized; technical resources provided by third parties; modest admin required; low cost.	Requires sustained action; can be very expensive to actually make improvements; modest political will.	Somewhat; if third parties wish to complete	Consider
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	Jurisdiction authorized; admin staff available; technical staff obtainable; low cost; zoning exists.	Little political will; requires staffing to enforce; adds to development costs.	Not really; there is not extensive levels of development in wildfire areas	Eliminate
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	Jurisdiction authorized; non-City admin and technical staff available; grants available.	Can be expensive if the effort includes cost-share incentives; difficult to get recalcitrant owners to participate.	Yes, especially in downtown and other impervious areas	Consider
Enforce multi-family housing extinguisher laws.	Jurisdiction authorized or can access State authority; fire department can assist.	Technical resources may be required; staff limitations.	Yes, especially in downtown area	Consider
Enforce nuisance regulations to rid the area of debris that could be a hazard.	Jurisdiction authorized; technical resources available; city has experience in this already and access to legal team; some admin resources.	Requires sustained admin and tech resources; can be expensive.	Yes; especially in older parts of the city	Consider
Establish neighborhood watch programs for vulnerable populations after a hazard event.	Jurisdiction authorized; partners and admin staff available; technical resources available; grants may be available; may not be expensive.	Communications equipment can be expensive; would have to identify the best methods of outreach for given populations; requires sustained action.	Yes, in some situations it will have a very direct impact, although populations must be identified before launch.	Consider
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Jurisdiction authorized in most cases; brownfield sites may elicit grant funding; technical resources and admin staff available.	Legal challenges may be involved in some unique situations; can be expensive	Yes, in some locations, not yet formally identified	Consider
Fund weatherization programs to more low-income households.	Jurisdiction authorized; admin and technical staff and resources available; grants available; strong political will.	Can be expensive; may require a third-party administrative entity for a sustainable program.	Yes, especially for older homes and vulnerable populations	Consider
Harden public buildings and utilities (structural retrofits).	Jurisdiction or partner organization authorized; admin resources available; technical resources obtainable; strong political will.	Can be very expensive; may require engineering and other outside resources.	Yes	Consider
Help community leaders and businesses to improve local public health response readiness.	Jurisdiction authorized; likely low cost; outside technical resources available.	Requires long-term admin and vigilant response; challenge to engage some segments of population.	Yes, if sustained	Consider
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	A requisite action that encourages budgeting and implementation of the plan; admin resources available; few tech resources needed; low cost.	Sets the city and other entities up for pushback if actions are not taken.	Yes, if sustained	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	Jurisdiction is marginally authorized, depending on actions of State; likely low cost.	Requires extensive administration and enforcement; may result in legal challenge if improperly imposed.	Not really until a new pandemic actually occurs	Eliminate
Identify, evaluate, and pursue funding for idled environmentally compromised properties, commonly called brownfields.	Jurisdiction authorized; outside technical resources available; low cost to identify; grants available.	Expensive to actually address these hazards; requires engineering; requires vigilance to deal with regulations and testing.	Yes, at least to identify locations	Consider
Implement a comprehensive multi-media public education campaign for multiple hazards.	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; low cost.	Can be difficult to enhance and then sustain; requires dedicated funding and marketing plan.	Yes, if sustained	Consider
Implement all aspects of the NFIP (National Flood Insurance Program).	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; superficially low cost; FEMA priority.	Can be expensive depending on the scope of effort; requires some outside tech resources.	Yes	Consider
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	Jurisdiction authorized; grants available; outside technical assistance available; State priority; partners available.	Can be very expensive; requires long-term maintenance and admin; may require engineering.	Yes	Consider
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	Jurisdiction authorized and has experience in this; admin and tech resources are available; FEMA and EPA priorities.	Can be expensive; requires continued maintenance.	Yes; especially where problems identified by engineer; can extend the life of the infrastructure.	Consider
Implement storm water management regulations.	Jurisdiction generally authorized; technical resources obtainable; little up-front costs.	Admin and technical staff for sustained activity is not yet available.	Yes; as part of a citywide storm water utility.	Consider
Implement specialized ventilation systems and projects.	Jurisdiction authorized; requires modest admin.	Requires engineering; can be expensive.	Unknown, but worth inclusion	Consider
Implement stream modifications/channel improvements and stream bank stabilization.	Jurisdiction generally authorized; technical and admin resources obtainable; some work has been done.	Can be very expensive; sustained actions can stretch resources.	Yes, in some locations	Consider
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Jurisdiction authorized; high political will; tech and admin staff and resources available; grants possible.	Very expensive; requires prioritization of projects and outside engineering.	Yes	Consider
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Jurisdiction authorized; highly supported by FEMA; moderate admin requirements; tech resources available; can improve efficiencies; low cost.	Planning can be expensive and require a lot of time investment, depending on level of effort.	Yes, indirectly	Consider
Increase community and individual engagement in disease prevention efforts.	Jurisdiction authorized; staffing is available; tech resources available.	Requires admin and sustained action to be effective.	Yes	Consider
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas) – Coming electrical loops project.	Jurisdiction has modest authority; some provided by third parties, so the expense is not borne by City; grants available; high political will.	Can be very expensive; requires intensive engineering and design; requires admin and maintenance of new infrastructure.	Yes, with some infrastructure, especially electrical	Consider
Install air monitors.	Jurisdiction has authority; modest up-front admin costs; vendors can provide tech assistance.	Can be expensive and requires long-term infrastructure management.	Yes, in very specific locations, following detailed analysis	Consider
Install alternative or sustainable storm water control options	Jurisdiction has authority; modest up-front admin	Can be expensive; requires long-term maintenance.	Yes, in specific areas as part of a well-	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
such as buffer strips, bioswales, and rain gardens.	effort; tech assistance is available.		planned storm water management plan	
Install blast barriers.	Jurisdiction has authority.	Can be expensive; requires extensive technical resources and long-term management.	Maybe, but risk is not high enough to justify the cost.	Eliminate
Install dry hydrants in areas without appropriate water mains and domestic fire hydrants.	Jurisdiction has authority; technical and admin resources available.	Can be expensive; requires long-term maintenance.	Not really; wet hydrants are available in all areas where need is considerable	Eliminate
Install flood gauges.	Jurisdiction has authority.	Can be expensive; requires extensive technical resources and long-term management.	Not a direct impact on the city	Eliminate
Install flood walls and retaining walls around critical infrastructure.	Jurisdiction has authority; technical and admin resources available; will help preserve and extend life of infrastructure; FEMA priority.	Can be expensive; requires long-term maintenance and consulting engineering work.	Yes, in some locations not identified as part of planning process but likely near Nodaway River.	Consider
Install highway guardrails to keep vehicles on roadway.	City has jurisdiction only on City streets; grants possible; technical resources available.	City has no jurisdiction on the highways most in need the action; moderate to high cost; requires maintenance.	Complete on Highway 34; not really needed elsewhere	Eliminate
Install quick-connect emergency generator hook-ups for facilities.	Jurisdiction has authority; grants likely; lower cost than a fixed generator for a facility that is not used full-time; technical resources available; admin costs low.	Can be expensive; requires compatible technology with generators; requires long-term maintenance.	Yes, depending on the structure and its use	Consider
Install retention and detention structures.	Jurisdiction has authority but some private land may need to be acquired; technical and admin resources available.	Little political will; requires long-term maintenance and some engineering; can be expensive.	Yes, in some areas, but they are not essential	Eliminate
Install sprinkler systems in public buildings.	Jurisdiction authority; grants possible; technical resources available; admin costs are modest.	Can be very expensive; requires long-term maintenance and adequate water pressure.	Yes, where necessary for buildings occupied regularly	Consider
Invest in the latest broadband infrastructure.	Jurisdiction authorized; grants available; outside technical assistance available; State priority; partners available.	Very expensive; requires long-term maintenance and admin; requires engineering; must rely on private providers.	Yes	Consider
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	Jurisdiction authorized; a requisite action; low costs; builds support for other actions and reduces costs for them; little technical resources needed.	Requires sustained admin and engagement.	Yes, indirectly	Consider
Participate in the FEMA Community Rating Service (CRS) program.	Jurisdiction authorized; FEMA supported and recommended; grants may be available.	Requires long-term admin resources; little political will; little local resources to carry out.	Yes, in limited circumstances	Eliminate
Prepare and practice a mass casualty plan.	Jurisdiction authorized; expertise available at partner government levels; low cost; FEMA supported and recommended; can improve admin capabilities.	Has modest technical and admin costs; requires local vigilance.	Yes	Consider
Preserve open spaces in hazard areas.	Jurisdiction authorized with zoning and land ownership powers; FEMA supported and recommended; can reduce financial exposure.	Requires extensive admin and technical assistance and may require public ownership over a longer period.	Yes, especially near the river, where flooding is likely	Consider
Promote the value of installation of private in-home tornado safe rooms.	Jurisdiction authorized; low admin and technical costs;	Requires a champion to keep this in the forefront.	Yes	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
	FEMA supported and recommended; low cost.			
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Jurisdiction authorized; power supplier often is involved; modest admin costs but can be difficult to enforce anything beyond promotion.	Can be expensive if more than just promotion; requires a champion to keep this in the forefront.	Yes	Consider
Provide safe room education for builders and developers.	Jurisdiction authorized; modest admin and technical costs and effort; FEMA supported.	Challenge to keep this issue in the forefront; limited relevance of the City itself promoting to individual builders.	Potentially, but does not make sense for City to lead the effort.	Eliminate
Purchase/install backup fixed power generators and pumps.	Jurisdiction authorized; modest admin and technical staff needed; high political will; helps with governmental operations	Requires an operations and maintenance strategy; requires fuel; may require engineering.	Yes	Consider
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Jurisdiction authorized; zoning in place; enforcement available.	Requires knowledge of practices to effectively enforce; modest political will.	Yes, but there is little development occurring	Eliminate
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Jurisdiction authorized for utilities it owns; technical resources available; may reduce operations costs; moderate political will.	Very expensive; requires engineering.	Yes	Consider
Strengthen organizational capabilities, including staffing and equipment, for counter-terrorism and intelligence gathering efforts.	Jurisdiction authorized; moderate political will; basic admin staff available.	Requires extensive expertise and leadership from outside on the city; few local staff and resources available.	Potentially, but may not make sense for direct involvement at City level	Eliminate

For those mitigation actions that are not under direct jurisdiction of the City and its component government agencies, there is a conviction that the City can collaborate effectively with the third-parties involved to accomplish these activities, so they are listed as “consider” actions.

City officials and partners were surveyed about the City’s programs. Those taking the survey indicated generally high ratings for all the seven categories listed. On a scale of one to seven, with one being a very high rating, most people gave all the services as two to four rating. The worst rating was a five, but there was no consistency on what was given a five rating among the three people that completed the survey. The County rated above average as to its willingness to implement Firewise, StormReady, NFIP, and the CRS programs, none of which are in use today.

City officials were also surveyed about the City’s resources. The City stated the main resource limitations were the lack of political will to make tough decisions necessary to carry out long-term, controversial, or complicated projects, lack of resources available to navigate the legal aspects of hazard mitigation, and too many competing projects and interests.

When asked what might make the City more likely to implement the plan, they mentioned the desires for more people involved and more training and information.

Mitigation Capability Analysis by Action in City of Nodaway

The following table lists “New,” “Underway,” and “Carryover” mitigation actions and corresponding capabilities that can be expanded by action as well as capability limitations. Also, a brief conclusion is provided, whether the individual action should be considered in cost-benefit review or should be eliminated from further review.

Figure 4.30: Capability Analysis of Mitigation Actions – City of Nodaway

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Jurisdiction authorized; FEMA priority; outside resources available.	Very limited local admin and technical resources; could be very expensive; likely limited political will or financial resources.	Somewhat, but indirect; other than flooding, there are few unique hazards impacting public or critical assets.	Eliminate
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Jurisdiction authorized; FEMA priority; outside resources available.	Very limited local admin and technical resources; could be expensive; requires managing acquired land; likely limited political will or financial resources.	Not really; development demand is very limited.	Eliminate
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	Jurisdiction authorized; FEMA priority; outside resources available; may save community money by preventing future losses.	Very limited local admin and technical resources; could be very expensive; likely limited political will or financial resources.	Potentially; a study is needed to determine extent of need.	Eliminate
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Jurisdiction authorized; administratively possible with State assistance; technical resources available; low cost.	Requires long-term sustained action to enforce and utilize the codes.	Somewhat, at least in a targeted or indirect way	Consider
Adopt International Building Code and/or International Residential Code.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; little political will.	Not really; development demand is very limited.	Eliminate
Adopt manufactured home development storm shelter ordinances.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; little political will.	Not really; while there are manufactured homes, a development of them is unlikely	Eliminate
Adopt State fire codes.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; city lacks these resources.	Yes, in specific situations or areas of the city	Eliminate
Backup files and records - store in alternate locations.	Jurisdiction authorized; high admin requirements but can improve organization; few technical requirements unless digital systems; likely low cost.	Can be expensive if there are many files or expensive digital systems; requires consistent and long-term sustained effort; can require heavy IT.	Perhaps, but there are few records; most are stored online.	Eliminate
Bury exposed utility and communications infrastructure.	Grant funding may be available; FEMA priority.	Very expensive; only will happen with outside resources assisting.	Yes, but this is outside of control of City.	Eliminate
Complete storm water drainage or watershed studies of known flood areas.	Jurisdiction authorized; grant funding is available; relatively low cost; modest admin requirements.	Requires technical expertise, which is reasonably easy to obtain.	Yes, can reduce flash flooding if actions are implemented	Consider
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	Jurisdiction authorized; grants available; FEMA priority; can reduce public operations costs and improve admin of city.	Requires long-term operations and maintenance; very expensive; requires prioritization or phasing to be feasible.	Yes, in areas of vulnerable populations	Consider
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Jurisdiction authorized; grants available; FEMA priority; technical assistance available.	Requires long-term operations and maintenance; very expensive.	Yes, in areas of vulnerable populations	Consider
Create and maintain a special needs/oxygen user registration program or inventory.	Jurisdiction authorized – fire and utilities; low cost; requires little technical resources.	More of an admin strategy that requires consistency; could result in legal issues if people demand privacy.	Yes	Consider
Create continuity of operations & succession plan for Nodaway.	Jurisdiction authorized; FEMA priority; technical assistance available; low	Requires constant review and updating and public commitment.	Yes	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
	cost; can make admin of city more efficient.			
Demolish abandoned properties.	Jurisdiction authorized; modest admin and technical costs; limited technology required.	Can be expensive and requires prioritization due to limited funds; may require enforcement beyond desire of city leadership.	Yes	Consider
Develop/enforce snow removal policies.	Jurisdiction authorized; relatively low cost and normal activity; modest technical and admin costs.	Requires consistent effort and may involve enforcement.	Yes, but only makes sense if city has a snow removal plan and process	Eliminate
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Jurisdiction authorized; technical assistance is available; FEMA priority; grants likely; modest admin requirements; reduces maintenance requirements of existing infrastructure.	Very expensive; requires long-term maintenance.	Yes, especially in flood hazard areas	Consider
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	Jurisdiction authorized; technical and admin staff in place; grant funds may be available.	Can be expensive and difficult to sustain an incentive program.	Yes, especially for low-income persons	Consider
Encourage property owners to own adequate property insurance.	Jurisdiction authorized; technical and admin staff available; low cost	Little political will; would rather rely on private sector.	Somewhat; especially for flood insurance.	Eliminate
Encourage the implementation of water-saving measures, including soil and water conservation practices.	Jurisdiction authorized; technical resources provided by third parties that could be used in the city; modest admin required; low cost.	Requires sustained action; can be very expensive to actually make improvements; modest political will.	Somewhat; if third parties wish to complete	Eliminate
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	Jurisdiction authorized; admin staff available; technical staff obtainable; likely low cost	Little political will; requires staffing to enforce; adds to development costs; no zoning currently.	Not really; there is not extensive levels of development in wildfire areas	Eliminate
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	Jurisdiction authorized; non-City admin and technical staff available; grants available.	Can be expensive if the effort includes cost-share incentives; difficult to get recalcitrant owners to participate.	Not really; the lack of slopes and impervious surfaces limits the need.	Eliminate
Enforce nuisance regulations to rid the area of debris that could be a hazard.	Jurisdiction authorized; technical resources available; some admin resources.	Requires sustained admin and staff to identify and enforce problems; can be expensive; little political will.	Yes	Consider
Establish backup utilities and communications infrastructure; use the latest technology.	Jurisdiction authorized; modes admin requirements; countywide priority.	Can be very expensive; requires engineering and other technical resources.	Yes	Consider
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Jurisdiction authorized in most cases; brownfield sites may elicit grant funding; technical resources and admin staff available.	Legal challenges may be involved in some unique situations; can be expensive	Yes, in some locations, not yet formally identified	Consider
Formally designate and stock community post disaster shelters; maintain and publicize shelter location list (cooling shelters).	Jurisdiction authorized; outside resources could assist.	Limited location options and staffing to manage; technical resources are limited; requires expense to maintain food and misc. items.	Somewhat, but there are no natural structures in the city that can meet this need.	Eliminate
Fund weatherization programs to more low-income households.	Jurisdiction authorized; admin and technical staff and resources available from third parties; grants available.	Can be expensive; may require a third-party administrative entity for a sustainable program; modest political will.	Yes, but only if performed by a third party	Eliminate
Harden public buildings and utilities (structural retrofits).	Jurisdiction or partner organization authorized; admin resources available;	Can be very expensive; may require engineering and other outside resources.	Yes, at least for city hall and fire station.	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
	technical resources obtainable.			
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	A requisite action that encourages budgeting and implementation of the plan; admin resources available; few tech resources needed; low cost.	Sets the city and other entities up for pushback if actions are not taken.	Yes, if sustained	Consider
Implement a comprehensive multi-media public education campaign for multiple hazards.	Jurisdiction authorized; tech and admin staff in place; low cost.	Can be difficult to enhance and then sustain; requires dedicated funding and marketing plan.	Yes, if sustained	Consider
Implement all aspects of the NFIP (National Flood Insurance Program).	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; superficially low cost; FEMA priority.	Can be expensive depending on the scope of effort; requires some outside tech resources.	Yes	Consider
Implement storm water management regulations.	Jurisdiction generally authorized; technical resources obtainable; drafting regulations is not expensive.	Admin and technical staff for sustained activity is not yet available; limited political will.	Somewhat, but most issues are in public ROW.	Eliminate
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Jurisdiction authorized; high political will; tech and admin staff and resources available; grants possible; reduces future maintenance costs.	Very expensive; requires prioritization of projects and outside engineering.	Yes	Consider
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Jurisdiction authorized; a requisite action highly supported by FEMA; moderate admin requirements; tech resources available; can improve efficiencies; low cost.	Planning can be expensive and require a lot of time investment, depending on level of effort.	Yes, indirectly	Consider
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Jurisdiction has modest authority; some provided by third parties, so the expense is not borne by City; grants available.	Can be very expensive; requires intensive engineering and design; requires admin and maintenance of new infrastructure.	Yes, but to be provided by third parties who own utilities	Eliminate
Install and/update anti-virus software and emergency communications technology.	Jurisdiction authorized; modest cost; can improve admin of the city and save money over time.	Can be somewhat expensive for maintain over time and requires vigilance.	Yes, for specific operations and computers	Consider
Install quick-connect emergency generator hook-ups for facilities.	Jurisdiction authorized; grants likely; lower cost than a fixed generator for a facility that is not used full-time; technical resources available; admin costs low.	Can be expensive; requires compatible technology with generators; requires long-term maintenance.	Yes, depending on the structure and its use	Consider
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Jurisdiction authorized; moderate admin and technical costs up front.	Permanent snow fences would be expensive to build and maintain; living fences would be difficult to manage.	Not really within the city boundaries; makes more sense along rural highways.	Eliminate
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	Jurisdiction authorized; a requisite action; low costs; builds support for other actions and reduces costs for them; little technical resources needed.	Requires sustained admin and engagement.	Yes, indirectly	Consider
Maintain sandbags in dry storage.	Jurisdiction authorized; can have multiple uses; daily storage is not expensive	Can be expensive to purchase; requires place to store and means to mobilize to flooded area.	Not really; there are no high-risk critical assets that sandbags	Eliminate

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
			would provide ideal protection.	
Obtain sand and salt supplies well in advance of winter.	Jurisdiction authorized; can have multiple uses; daily storage is not expensive; savings if purchased early.	Requires place to store; can be expensive.	Not really; limited number of streets and areas needing treated to justify the cost	Eliminate
Participate in the FEMA Community Rating Service (CRS) program.	Jurisdiction authorized; FEMA supported and recommended; grants may be available.	Requires long-term admin resources; little political will; little local resources to carry out.	Yes, in limited circumstances	Eliminate
Post "No Dumping" signs.	Jurisdiction authorized; modest cost; little technical costs; admin costs beyond enforcement are limited.	Enforcement is infeasible; can be expensive to attempt to enforce.	Not really; no specific area is a unique problem.	Eliminate
Prepare and practice a mass casualty plan.	Jurisdiction authorized; expertise available at partner government levels; low cost; FEMA supported and recommended; can improve admin capabilities.	Has modest technical and admin costs; requires local vigilance.	Yes, although the population is not large or densely compacted	Eliminate
Preserve open spaces in hazard areas.	Jurisdiction authorized with zoning and land ownership powers; FEMA supported and recommended; can reduce financial exposure.	Requires extensive admin and technical assistance and may require public ownership over a longer period.	Not really, due to the limited development pressure	Eliminate
Promote good landscaping practices among property owners.	Jurisdiction authorized; low admin and technical costs; FEMA supported and recommended; low cost.	Requires a champion to keep it in the forefront.	Somewhat, but the limited density of development negates benefits	Eliminate
Promote the value of installation of private in-home tornado safe rooms.	Jurisdiction authorized; low admin and technical costs; FEMA supported and recommended; low cost.	Requires a champion to keep it in the forefront.	Yes	Consider
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Jurisdiction authorized; power supplier often is involved; modest admin costs but can be difficult to enforce anything beyond promotion.	Can be expensive if more than just promotion; requires a champion to keep it in the forefront.	Yes	Consider
Provide safe room education for builders and developers.	Jurisdiction authorized; modest admin and technical costs and effort; FEMA supported.	Challenge to keep this issue in the forefront; limited relevance of the City itself promoting to individual builders.	Potentially, but does not make sense for City to lead the effort.	Eliminate
Purchase road closure barricades.	Jurisdiction authorized; modest admin and technical staff needed; relatively low cost.	Need policy on deployment of barricades; storage required.	Perhaps, if County is unwilling or unable to share when needed.	Eliminate
Purchase snow trucks, plows, sanders.	Jurisdiction authorized; modest admin and technical staff needed.	Requires trained driver; requires storage and maintenance; can be expensive.	Yes, if private parties or county are unwilling to provide an affordable contract	Consider
Purchase stand-by portable pumps and generators.	Jurisdiction authorized; modest admin and technical staff needed; helps with governmental operations.	Requires storage, maintenance, and fuel, as well as management and deployment plan.	Yes, if there are electrical hookups	Consider
Purchase/install backup fixed power generators and pumps.	Jurisdiction authorized; modest admin and technical staff needed; helps with governmental operations.	Requires an operations and maintenance strategy; requires fuel; may require engineering.	Yes, at fire station at least or any church that feeds people in disasters	Consider
Require burial of utility lines in new development.	Jurisdiction has modest authority; modest upfront cost and admin requirements.	Limited will to enforce; no zoning present; modest technical resources available.	Not really, as there is limited development potential	Eliminate

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Jurisdiction has modest authority; modest upfront cost and admin requirements.	Limited will to enforce; no zoning present; modest technical resources available.	Not really, as there is limited development potential	Eliminate
Store digital and hard copies of public records in low-risk, offsite locations.	Jurisdiction has authority; modest technical and admin support needed; can save city operations money over time; modest upfront costs.	Requires sustained effort and a management plan or policy.	Yes, with a part-time city hall that is not always managed, this makes sense.	Consider
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Jurisdiction authorized for utilities it owns; technical resources available; may reduce operations costs; moderate political will.	Very expensive; requires engineering	Yes, but City has no authority.	Eliminate

Mitigation Capability Analysis by Action in City of Prescott

The following table lists “New,” “Underway,” and “Carryover” mitigation actions and corresponding capabilities that can be expanded by action as well as capability limitations. Also, a brief conclusion is provided, whether the individual action should be considered in cost-benefit review or should be eliminated from further review.

Figure 4.31: Capability Analysis of Mitigation Actions – City of Prescott

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Jurisdiction authorized; FEMA priority; outside resources available; high local political will; grants possible.	Limited local admin and technical resources; could be very expensive; likely limited financial resources.	Yes, as demonstrated by flash flooding problems in the city in past years.	Consider
Acquire and use conservation easements and restrictive covenants to prevent development in known hazard areas.	Jurisdiction authorized; FEMA priority; outside resources available.	Very limited local admin and technical resources; could be expensive; requires managing acquired land; limited political will and funds.	Not really; development demand is very limited.	Eliminate
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	Jurisdiction authorized; FEMA priority; outside resources available; may save community money by preventing future losses.	Very limited local admin and technical resources; could be very expensive; likely limited political will and funds.	Yes, in a few instances, but priorities must be determined.	Consider
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	Jurisdiction authorized; administratively possible with State assistance; technical resources available; low cost.	Requires long-term sustained action to enforce and utilize the codes.	Somewhat, at least in a targeted or indirect way	Consider
Adopt International Building Code and/or International Residential Code.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; limited political will.	Not really; limited development potential and city wishes to follow State requirements only	Eliminate
Adopt manufactured home development storm shelter ordinances.	Jurisdiction authorized; modest admin and technical requirements initially; low cost.	Requires long-term sustained action and extensive technical assistance for enforcement; limited political will.	Not really; there are few manufactured homes in the city or likely to be built.	Eliminate
Adopt State fire codes.	Jurisdiction authorized; modest admin and technical requirements initially; low cost; moderate political will.	Requires long-term sustained action and extensive technical assistance for enforcement	Yes, if the City has little direct enforcement responsibility	Consider
Bury exposed utility and communications infrastructure.	Grant funding may be available; FEMA priority; very direct impact; high political will.	Very expensive; only will happen with outside resources assisting and Alliant wishes to proceed.	Yes	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Conduct study on possible illegal use of sump pumps and sewer lines.	Jurisdiction authorized; modest up-front admin costs; can reduce infrastructure operating costs.	Can be expensive and requires enforcement on private property; limited political will; city has no local capabilities.	Somewhat, but past studies have shown no immediate concern.	Eliminate
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Jurisdiction authorized; high political will because a small dam is upstream from city; has talked with owner and IDNR; grants possible; FEMA priority.	Expensive; requires engineering; requires ongoing maintenance and extensive technical resources.	Yes, an aging dam upstream of city is a source of risk; stream passes through middle of city.	Consider
Construct storage facilities for pesticides, insecticides, and chemicals.	Jurisdiction authorized on public and certain private property; modest admin requirements.	Can be expensive; can require extensive management and technical resources.	Not really a need within city boundaries	Eliminate
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	Jurisdiction authorized; grants available; FEMA priority; can reduce public operations costs and improve admin of city; engineer has already drawn up a plan for part of the city.	Requires long-term operations and maintenance; very expensive; requires prioritization or phasing to be feasible; unsure of political will after last abortive effort.	Yes, especially pertaining streets and ROW areas in middle of town	Consider
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Jurisdiction authorized; grants available; FEMA priority; technical assistance available.	Requires long-term operations and maintenance; very expensive; low political will due to the expense and limited outdoor recreation and public buildings.	Yes, in areas of vulnerable populations	Consider
Create and maintain a special needs/oxygen user registration program or inventory.	Jurisdiction authorized – fire and utilities; low cost; requires little technical resources.	More of an admin strategy that requires consistency; could result in legal issues if people demand privacy; little political will.	Yes	Eliminate
Develop/update/publicize local evacuation and shelter-in-place plans.	Jurisdiction authorized; modest local resources needed; admin and overall costs are modest.	Technical requirements high; little political will; requires complex actions to plan and carry out effectively.	Not really; other than railroad, there is little major hazardous materials uses.	Eliminate
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Jurisdiction authorized; technical assistance is available; FEMA priority; grants likely; modest admin requirements; reduces maintenance requirements of existing infrastructure.	Very expensive; requires long-term maintenance.	Yes, especially in flood hazard areas	Consider
Employ construction measures that direct water away from structures.	Jurisdiction authorized; technical assistance is available; FEMA priority; grants possible; modest admin requirements; reduces maintenance requirements of existing infrastructure.	Can be expensive; requires long-term maintenance.	Not really a need in this community, based on location of critical structures	Eliminate
Encourage clustering of residential lots outside of hazard areas in subdivision design/review (as part of updated subdivision ordinance.)	Jurisdiction authorized; technical and admin resources available.	Can add to cost of development review; requires sustained administration; no zoning is in place.	Not really; development pressure is modest	Eliminate
Encourage property owners to own adequate property insurance.	Jurisdiction authorized; technical and admin staff available; low cost; high political will.	would rather rely on private sector to have a key role; limited local expertise beyond insurance agents.	Yes	Consider
Encourage the implementation of water-saving measures, including soil and water conservation practices.	Jurisdiction authorized; technical resources provided by third parties that could be used in the city; modest admin required; low cost.	Requires sustained action; can be very expensive to actually make improvements.	Yes, as part of a plan developed five years ago for storm water management	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Encourage the use of non-combustible materials (i.e. stone, brick, etc.) for structures in wildfire hazard areas.	Jurisdiction authorized; admin staff available; technical staff obtainable; likely low cost.	No zoning exists; requires staffing to enforce; adds to development costs.	Not really; there is not extensive levels of development in wildfire areas	Eliminate
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	Jurisdiction authorized; non-City admin and technical staff available; grants available; concepts already included in a five-year old engineering plan.	Can be expensive if the effort includes cost-share incentives; difficult to get recalcitrant owners to participate.	Yes, especially in downtown and other impervious areas identified by engineering study	Consider
Enforce nuisance regulations to rid the area of debris that could be a hazard.	Jurisdiction authorized; technical resources available; city has access to legal team; some admin resources.	Requires sustained admin and tech resources; can be expensive.	Yes	Consider
Establish backup utilities and communications infrastructure; use the latest technology.	Jurisdiction authorized; modes admin requirements; countywide priority.	Can be very expensive; requires engineering and other technical resources.	Yes, as long as taken on by third party	Consider
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	Jurisdiction authorized in most cases; brownfield sites may elicit grant funding; technical resources and admin staff available.	Legal challenges may be involved in some unique situations; can be expensive.	Yes, in some locations, not yet formally identified	Consider
Formally designate and stock community post disaster shelters; maintain and publicize shelter location list (cooling shelters).	Jurisdiction authorized; outside resources could assist.	Limited location options and staffing to manage; technical resources are limited; requires expense to maintain food and misc. items; can be expensive.	Somewhat, but there are no natural structures in the city that can meet this need.	Eliminate
Fund weatherization programs to more low-income households.	Jurisdiction authorized; admin and technical staff and resources available; grants available.	Can be expensive; may require a third-party administrative entity for a sustainable program.	Yes, especially for older homes and vulnerable populations	Consider
Harden public buildings and utilities (structural retrofits).	Jurisdiction or partner organization authorized; admin resources available; technical resources obtainable.	Can be very expensive; may require engineering and other outside resources; limited political will due to cost; city does not own the utilities.	For the library and fire station, yes.	Eliminate
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	A requisite action that encourages budgeting and implementation of the plan; admin resources available; few tech resources needed; low cost.	Sets the city and other entities up for pushback if actions are not taken.	Yes, if sustained	Consider
Implement a comprehensive multi-media public education campaign for multiple hazards.	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; low cost.	Can be difficult to enhance and then sustain; requires dedicated funding and marketing plan.	Yes, if sustained and performed mostly by third parties	Consider
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	Jurisdiction authorized and has experience in this; admin and tech resources are available; FEMA and EPA priorities.	Can be expensive; requires continued maintenance.	Yes, but project would have to be done by SIRWA.	Consider
Implement storm water management regulations.	Jurisdiction generally authorized; technical resources obtainable; drafting regulations is not expensive.	Admin and technical staff for sustained activity is not yet available; limited political will.	Somewhat, but most issues are in public ROW.	Eliminate
Implement stream modifications/channel improvements and stream bank stabilization.	Jurisdiction generally authorized; technical and admin resources obtainable; some work has been done; some engineering work is completed.	Can be very expensive; sustained actions can stretch resources.	Yes, in some locations	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Jurisdiction authorized; high political will; tech and admin staff and resources available; grants possible.	Very expensive; requires prioritization of projects and outside engineering.	Yes	Consider
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	Jurisdiction authorized; highly supported by FEMA; moderate admin requirements; tech resources available; can improve efficiencies; low cost.	Planning can be expensive and require a lot of time investment, depending on level of effort; modest political will to initiate new planning efforts.	Yes, indirectly	Consider
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Jurisdiction has modest authority; some provided by third parties, so the expense is not borne by City; grants available.	Can be very expensive; requires intensive engineering and design; requires admin and maintenance of new infrastructure.	Yes, but to be provided by third parties who own utilities	Consider
Initiate community preparedness programs.	Jurisdiction authorized; likely low cost; technical guidance available.	No local staff to carry it out; limited admin and technical resources available locally; little political will for a sustained activity.	Somewhat, but only if sustained and properly implemented	Eliminate
Install flood gauges.	Jurisdiction has authority.	Can be expensive; requires extensive technical resources and long-term management.	Not a direct impact on the city	Eliminate
Install quick-connect emergency generator hook-ups for facilities.	Jurisdiction has authority; grants likely; lower cost than a fixed generator for a facility that is not used full-time; technical resources available; admin costs low.	Can be expensive; requires compatible technology with generators; requires long-term maintenance; very little political will.	Yes, depending on the structure and its use	Eliminate
Install retention and detention structures.	Jurisdiction has authority but some private land may need to be acquired; technical and admin resources available.	Little political will; requires long-term maintenance and some engineering; can be expensive.	Yes, in some areas, but they are not essential	Eliminate
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Jurisdiction authorized; moderate admin and technical costs up front.	Permanent snow fences would be expensive to build and maintain; living fences would be difficult to manage.	Not really within the city boundaries; makes more sense along rural highways.	Eliminate
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	Jurisdiction authorized; low costs; builds support for other actions and reduces costs for them; little technical resources needed.	Requires sustained admin and engagement.	Yes, indirectly, if groups can be found that are willing to be engaged	Consider
Participate in the FEMA Community Rating Service (CRS) program.	Jurisdiction authorized; FEMA supported and recommended; grants may be available.	Requires long-term admin resources; little political will; little local resources to carry out.	Yes, in limited circumstances	Eliminate
Perform dam and levee inspections.	Not necessarily expensive but does have admin costs/paperwork.	Jurisdiction not authorized or equipped/trained; outside resources available and provided by IDNR and/or other agencies.	A dam near city is a concern but city is not able to perform inspections.	Eliminate
Prepare and practice a mass casualty plan.	Jurisdiction authorized; expertise available at partner government levels; low cost; FEMA supported and recommended; can improve admin capabilities.	Has modest technical and admin costs; requires local vigilance.	Yes, although the population is not large or densely compacted; best led by county agency.	Consider
Preserve open spaces in hazard areas.	Jurisdiction authorized with zoning and land ownership powers; FEMA supported and recommended; can reduce financial exposure.	Requires extensive admin and technical assistance and may require public ownership over a longer period.	Not really, due to the limited development pressure	Eliminate

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Promote good landscaping practices among property owners.	Jurisdiction authorized; low admin and technical costs; FEMA supported and recommended; low cost.	Requires a champion to keep it in the forefront.	Generally, yes	Consider
Promote the value of installation of private in-home tornado safe rooms.	Jurisdiction authorized; low admin and technical costs; FEMA supported and recommended; low cost.	Requires a champion to keep it in the forefront.	Yes, as long as performed by a third party	Consider
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Jurisdiction authorized; power supplier often is involved; modest admin costs but can be difficult to enforce anything beyond promotion.	Can be expensive if more than just promotion; requires a champion to keep it in the forefront.	Yes	Consider
Provide safe room education for builders and developers.	Jurisdiction authorized; modest admin and technical costs and effort; FEMA supported.	Challenge to keep this issue in the forefront; limited relevance of the City itself promoting to individual builders; little political will.	Potentially, but does not make sense for City to lead the effort.	Eliminate
Purchase stand-by portable pumps and generators.	Jurisdiction authorized; modest admin and technical staff needed; helps with governmental operations.	Requires storage, maintenance, and fuel, as well as management and deployment plan; modest political will.	Yes, if there are electrical hookups	Eliminate
Purchase/install backup fixed power generators and pumps	Jurisdiction authorized; modest admin and technical staff needed; helps with governmental operations.	Requires an operations and maintenance strategy; requires fuel; may require engineering.	Yes, at fire station at least or any church that feeds people in disasters	Consider
Require burial of utility lines in new development.	Jurisdiction has modest authority; modest upfront cost and admin requirements.	Limited will to enforce; no zoning present; modest technical resources available.	Not really, as there is limited development potential.	Eliminate
Require or encourage wind engineering and construction techniques: anchor bolts, interlocking roof shingles, etc.	Jurisdiction has modest authority; modest upfront cost and admin requirements.	Limited will to enforce; no zoning present; modest technical resources available.	Not really, as there is limited development potential.	Eliminate
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Jurisdiction authorized for utilities it owns; technical resources available; may reduce operations costs; moderate political will	Very expensive; requires engineering.	Yes	Consider

For those mitigation actions that are not under direct jurisdiction of the City and its component government agencies, there is a conviction that the City can collaborate effectively with the third-parties involved to accomplish these activities, so they are listed as “consider” actions.

City officials and partners were surveyed about the City’s programs. Fire, EMS, and communications equipment were rated high. The community’s enforcement of regulations and ordinances and consistency in following them was rated slightly below average, as was the City’s effectiveness at watershed management planning or programs. The responses to “we try to stay on top of capital improvements and facility maintenance needs rather than be reactive to events” and “the quality and recency of my jurisdiction’s regulations, ordinances, and policies,” were below average but the city indicated projects are being worked on and ordinances are being updated. An average score was given to “our community has an effective way to manage disaster debris.” The City rated above average or average as to its willingness to implement Firewise, StormReady, NFIP, and the CRS programs, none of which are in use today.

City officials were also surveyed about the City’s resources. Several responses were of great concern and negatively impact the City. These include: “lack of financial resources already in the jurisdiction,” “lack of staff to apply for and manage grants,” “lack of staff or consultants to implement actions and manage

projects,” “lack of political will to make tough decisions necessary to carry our long-term, controversial, or complicated projects.”

Mitigation Capability Analysis by Action in Southwest Valley School District (Corning campus properties)

The following table lists “New,” “Underway,” and “Carryover” mitigation actions and corresponding capabilities that can be expanded by action as well as capability limitations. Also, a brief conclusion is provided, whether the individual action should be considered in cost-benefit review or should be eliminated from further review.

Figure 4.32: Capability Analysis of Mitigation Actions – Southwest Valley School District

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Jurisdiction authorized; outside technical aid available; grants likely; FEMA priority.	Very expensive; requires engineering and other technical assistance.	Possibly for bus barn, which is near or in flood zone	Consider
Adopt a continuity of operations & succession plan for the jurisdiction.	Jurisdiction authorized; FEMA priority; regional and state expertise and technical assistance available; low costs; can save jurisdiction money.	Requires sustained actions, a champion, and collaboration with third parties.	Yes	Consider
Bury exposed utility and communications infrastructure.	Jurisdiction authorized only on District property.	Moderate to high cost; requires cooperation of utility provider; high technical needs; little political will.	Not really; issues on property are limited.	Eliminate
Clear and deepen ditches on right-of ways.	Jurisdiction authorized; moderate costs.	Moderate technical costs and needs; little political will	Not really; issues on property are limited.	Eliminate
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Jurisdiction authorized; grants available; FEMA priority; technical assistance available.	Requires long-term operations and maintenance; very expensive.	Yes, in areas of vulnerable populations	Consider
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	Jurisdiction authorized; COVID provided a basis for this activity; State and regional priority; resources available; low cost.	Requires sustained actions, a champion, and collaboration with third parties.	Yes	Consider
Designate emergency routes and add signage for emergency procedures for travelers.	Jurisdiction authorized and a process is in place for designation of bus routes; cost is relatively low; moderate admin and technical assistance needed.	Requires annual action and possibly signage.	Somewhat	Consider
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	Jurisdictions authorized; likely low cost.	Requires sustained action and expertise well beyond what the School can offer.	Somewhat, but should be performed by third parties.	Eliminate
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Jurisdiction authorized only on District property.	Can be expensive and require third-party engineering.	Not really a need on District property at this time.	Eliminate
Flood proof critical assets in the community/construct flood protection around assets.	Jurisdiction authorized; grants available; FEMA priority. Technical assistance available.	Requires long-term operations and maintenance; very expensive.	Not really a need on District property at this time.	Eliminate
Harden public buildings and utilities (structural retrofits)	Jurisdiction authorized; admin and technical resources available.	Can be very expensive; may require engineering and other outside resources; limited political will due to cost; District does not own utilities.	Somewhat, but occupied buildings are sturdy enough to withstand most hazards.	Eliminate

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Help community leaders and businesses to improve local public health response readiness.	Jurisdiction authorized; admin and technical staff available; COVID has built infrastructure to carry this out; can be modest cost.	Could be expensive for sustained activity; requires champions and sustained partnership with county public health.	Yes, during pandemic response	Consider
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	A requisite action that encourages budgeting and implementation of the plan; admin resources available; few tech resources needed; low cost.	Sets the District and other entities up for pushback if actions are not taken.	Yes, if sustained	Consider
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	Jurisdiction authorized; admin and technical staff available; COVID has built infrastructure to carry this out; can be modest cost.	Requires specific policies; requires champions; may result in legal action if not handled correctly.	Yes, during pandemic response	Consider
Implement a comprehensive multi-media public education campaign for multiple hazards.	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; low cost.	Can be difficult to enhance and then sustain; requires dedicated funding and marketing plan.	Yes, if sustained	Consider
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	Jurisdiction authorized; may help with hiring future staff; certain actions can be low-costs.	Requires strong collaboration with public health and hospital; requires extensive IT tech resources; can be expansive.	Yes	Consider
Implement specialized ventilation systems and projects.	Jurisdiction authorized; may make sense as part of larger improvement project and can be lower cost way to reduce infections.	Can be expensive; requires engineering and tech resources.	Yes	Consider
Implement storm water management regulations.	Jurisdiction authorized on District property; technical resources obtainable; drafting regulations is not expensive.	Admin and technical staff for sustained activity is not yet available.	Somewhat, but very limited need on District property.	Eliminate
Implement stream modifications/channel improvements and stream bank stabilization.	Jurisdiction authorized on District property; technical resources obtainable; modest admin requirements.	Can be expensive and require State-level approval of modifications; engineering required to be effective.	Yes, west of athletic fields	Consider
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	Jurisdiction authorized on District property; tech and admin staff and resources available; grants possible.	Very expensive; requires prioritization of projects and outside engineering.	Yes	Consider
Increase community and individual engagement in disease prevention efforts.	Jurisdictions authorized; likely low cost; experience gained through COVID response.	Requires sustained action and expertise, champions, and partnerships with other entities.	Yes	Consider
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Jurisdiction has limited authority; most provided by third parties, grants available.	Can be very expensive; requires intensive engineering and design; requires admin and maintenance of new infrastructure.	Somewhat but little of the development will be on School property.	Eliminate
Initiate community preparedness programs.	Jurisdiction authorized; low cost; educational staff in place.	May be beyond the scope of education provided by the school; requires outside expertise and sustained efforts.	Yes, but school may not be natural partner or leader for the wider community.	Eliminate
Install quick-connect emergency generator hook-ups for facilities.	Jurisdiction authorized; can be a low-cost option to a full fixed generator; staff in place to maintain and administer.	Requires maintenance and engineering.	Yes, for secondary buildings, such as bus barn, not critical for daily use	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Install sprinkler systems in public buildings.	Jurisdiction authorized; may be a function of State law; grants likely available; offers operational savings.	Expensive; requires maintenance and engineering; requires high water flow capacity.	Yes, for buildings requiring this intervention	Consider
Invest in the latest broadband infrastructure.	Jurisdiction authorized; grants likely available; offers operational savings.	Expensive; requires maintenance and engineering;	Yes, where infrastructure is lacking	Consider
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	Jurisdiction authorized; a requisite action; low costs; builds support for other actions and reduces costs for them; little technical resources needed.	Requires sustained admin and engagement.	Yes, indirectly	Consider
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Jurisdiction authorized; grants likely; technical resources available.	Requires long-term admin and maintenance; can be expensive.	Yes, where needed	Consider
Modernize infectious disease surveillance to drive public health actions.	Jurisdiction authorized; admin and technical staff available; COVID has built infrastructure to carry this out; can be modest cost.	Could be expensive for sustained activity; requires champions and sustained partnership with county public health/hospital.	Yes	Consider
Prepare and practice a mass casualty plan.	Jurisdiction authorized; expertise available at partner government levels; low cost; FEMA supported and recommended; can improve admin capabilities.	Has modest technical and admin costs; requires local vigilance.	Yes	Consider
Promote the value of installation of private in-home tornado safe rooms.	Jurisdiction authorized; school is a good venue for distribution of information to property owners; low cost.	May be beyond the scope of education provided by the school; requires outside expertise and sustained efforts.	Not really; school could be a venue for another entity to distribute this information.	Eliminate
Promote to property owners the importance of tree and vegetation maintenance on private properties.	Jurisdiction authorized; school is a good venue for distribution of information to property owners; low cost.	May be beyond the scope of education provided by the school; requires outside expertise and sustained efforts.	Not really; school could be a venue for another entity to distribute this information.	Eliminate
Provide safe room education for builders and developers.	Jurisdiction authorized; modest admin and technical costs and effort; FEMA supported; low cost.	May be beyond the scope of education provided by the school; requires outside expertise and sustained efforts.	Not really; school could be a venue for another entity to distribute this information.	Eliminate
Purchase road closure barricades.	Jurisdiction authorized; modest admin and technical staff needed; relatively low cost.	Need policy on deployment of barricades; storage required.	Yes, in limited circumstances on District property	Consider
Purchase stand-by portable pumps and generators.	Jurisdiction authorized; modest admin and technical staff needed; helps with School operations.	Requires storage, maintenance, and fuel, as well as management and deployment plan.	Yes, if there are electrical hookups	Consider
Purchase/install backup fixed power generators and pumps.	Jurisdiction authorized; modest admin and technical staff needed; high political will; helps with governmental operations.	Requires an operations and maintenance strategy; requires fuel; may require engineering.	Yes, for major occupied structures	Consider
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Jurisdiction authorized for utilities it owns; technical resources available; may reduce operations costs.	Very expensive; requires engineering	Yes, pertaining to District property	Consider

For those mitigation actions that are not under direct jurisdiction of the District and its component government agencies, there is a conviction that the District can collaborate effectively with the third-parties involved to accomplish these activities, so they are listed as “consider” actions.

District officials and partners were surveyed about the District’s programs. Seven program areas, such as emergency services, regulations and ordinances, enforcement, planning, and other activities are rated. The official rated them high to very high. The District rated above average or average as to its willingness to implement Firewise, StormReady, NFIP, and the CRS programs, none of which are in use today.

Mitigation Capability Analysis by Action in CHI Health-Corning

The following table lists “New,” “Underway,” and “Carryover” mitigation actions and corresponding capabilities that can be expanded by action as well as capability limitations. Also, a brief conclusion is provided, whether the individual action should be considered in cost-benefit review or should be eliminated from further review.

Figure 4.33: Capability Analysis of Mitigation Actions – CHI Health-Corning

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Jurisdiction authorized; outside technical aid available; grants likely; FEMA priority.	Very expensive; requires engineering and other technical assistance.	For current property, not a need	Eliminate
Adopt a continuity of operations & succession plan for the jurisdiction.	Jurisdiction authorized; FEMA priority; regional and state expertise and technical assistance available; low costs; can save jurisdiction money.	Requires sustained actions, a champion, and collaboration with third parties.	Yes	Consider
Bury exposed utility and communications infrastructure.	Jurisdiction authorized only on Hospital property.	Moderate to high cost; requires cooperation of utility provider; high technical needs.	Not really; issues on property are limited.	Eliminate
Construct/integrate public safe rooms in or near existing and future community assets and parks.	Jurisdiction authorized; grants available; FEMA priority. Technical assistance available.	Requires long-term operations and maintenance; very expensive.	Yes, in areas of vulnerable populations	Consider
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	Jurisdiction authorized; COVID provided a basis for this activity; State and regional priority; resources available; low cost.	Requires sustained actions, a champion, and collaboration with third parties.	Yes	Consider
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	Jurisdictions authorized; likely low cost; is a natural function of the Hospital.	Requires sustained action.	Yes	Consider
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	Jurisdiction authorized only on Hospital property.	Can be expensive and require third-party engineering.	Not really a need on Hospital property at this time.	Eliminate
Harden public buildings and utilities (structural retrofits).	Jurisdiction authorized; admin and technical resources available.	Can be very expensive; may require engineering and other outside resources; limited political will due to cost; Hospital does not own utilities.	Somewhat, but occupied buildings are sturdy enough to withstand most hazards.	Eliminate
Help community leaders and businesses to improve local public health response readiness.	Jurisdiction authorized; admin and technical staff available; COVID has built infrastructure to carry this out; can be modest cost.	Could be expensive for sustained activity; requires champions and sustained partnership with county public health.	Yes, during pandemic response	Consider
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	A requisite action that encourages budgeting and implementation of the plan; admin resources available;	Sets the Hospital and other entities up for pushback if actions are not taken.	Yes, if sustained	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
	few tech resources needed; low cost.			
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	Jurisdiction authorized; admin and technical staff available; COVID has built infrastructure to carry this out; can be modest cost.	Requires specific policies; requires champions; may result in legal action if not handled correctly.	Yes, during pandemic response	Consider
Implement a comprehensive multi-media public education campaign for multiple hazards.	Jurisdiction authorized and already doing this to some degree; tech and admin staff in place; low cost.	Can be difficult to enhance and then sustain; requires dedicated funding and marketing plan.	Yes, if sustained	Consider
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	Jurisdiction authorized; may help with hiring future staff; certain actions can be low-costs.	Requires strong collaboration with public health and other entities on the system; requires extensive IT tech resources; can be expensive.	Yes	Consider
Implement specialized ventilation systems and projects.	Jurisdiction authorized; may make sense as part of larger improvement project and can be lower cost way to reduce infections.	Can be expensive; requires engineering and tech resources.	Yes	Consider
Implement storm water management regulations.	Jurisdiction authorized on Hospital property; technical resources obtainable; drafting regulations is not expensive.	Admin and technical staff for sustained activity is not yet available.	Somewhat, but very limited need on Hospital property.	Eliminate
Increase community and individual engagement in disease prevention efforts.	Jurisdictions authorized; likely low cost; experience gained through COVID response.	Requires sustained action and expertise, champions, and partnerships with other entities.	Yes	Consider
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	Jurisdiction has limited authority; most provided by third parties, grants available.	Can be very expensive; requires intensive engineering and design; requires admin and maintenance of new infrastructure.	Somewhat but little of the development will be on Hospital property.	Eliminate
Initiate community preparedness programs.	Jurisdiction authorized; low cost; educational staff in place.	Requires outside expertise and sustained efforts.	Yes, but Hospital may not be natural partner or leader for the wider community.	Eliminate
Install quick-connect emergency generator hook-ups for facilities.	Jurisdiction authorized; can be a low-cost option to a full fixed generator; staff in place to maintain and administer.	Requires maintenance and engineering.	Yes, for secondary non-occupied buildings.	Consider
Install sprinkler systems in public buildings.	Jurisdiction authorized; may be a function of State law; grants likely available; offers operational savings.	Expensive; requires maintenance and engineering; requires high water flow capacity.	Yes, for buildings requiring this intervention	Consider
Install windbreaks (permanent and seasonal). Use snow fences or “living snow fences” (e.g. rows of trees or other vegetation) to limit wind effects.	Jurisdiction authorized; moderate admin and technical costs up front.	Permanent snow fences would be expensive to build and maintain; living fences would be difficult to manage.	Not really a direct benefit to Hospital	Eliminate
Invest in the latest broadband infrastructure.	Jurisdiction authorized; grants likely available; offers operational savings.	Expensive; requires maintenance and engineering;	Yes, where infrastructure is lacking	Consider
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	Jurisdiction authorized; a requisite action; low costs; builds support for other actions and reduces costs for them; little technical resources needed.	Requires sustained admin and engagement.	Yes, indirectly	Consider

Mitigation Action	Significant Capabilities	Significant Shortcomings	Solves a Problem or Addresses a Need?	Result
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Jurisdiction authorized; grants likely; technical resources available.	Requires long-term admin and maintenance; can be expensive.	Yes, where needed	Consider
Modernize infectious disease surveillance to drive public health actions.	Jurisdiction authorized; admin and technical staff available; COVID has built infrastructure to carry this out; can be modest cost.	Could be expensive for sustained activity; requires champions and sustained partnership with county public health/state agencies.	Yes	Consider
Prepare and practice a mass casualty plan.	Jurisdiction authorized; expertise available at partner government levels; low cost; FEMA supported and recommended; can improve admin capabilities.	Has modest technical and admin costs; requires local vigilance.	Yes	Consider
Purchase stand-by portable pumps and generators.	Jurisdiction authorized; modest admin and technical staff needed; helps with Hospital operations.	Requires storage, maintenance, and fuel, as well as management and deployment plan.	Yes, if there are electrical hookups	Consider
Purchase/install backup fixed power generators and pumps.	Jurisdiction authorized; modest admin and technical staff needed; high political will; helps with governmental operations	Requires an operations and maintenance strategy; requires fuel; may require engineering.	Yes, for major occupied structures	Consider
Reduce disease transmitted by animals and insects and foodborne infections.	Jurisdiction authorized; perhaps low cost; outside expertise available.	Requires vigilance; hospital staff are not focused on animal issues; can be expensive, depending on actions recommended.	Not really; not a normal hospital function	Eliminate
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	Jurisdiction authorized for utilities it owns; technical resources available; may reduce operations costs.	Very expensive; requires engineering	Yes, pertaining to District property	Consider

4.6: Evaluation Process for Alternative Mitigation Measures

All participating jurisdictions were involved in the identification of possible mitigation actions, as outlined in the handouts used in Appendix C and contents of this chapter. The jurisdictions covered in the plan also helped with the evaluation of mitigation alternatives listed in this chapter through the prescribed process, as outlined in the next section.

This part of the plan addresses the following Stafford Act requirement:

Section 201.6 (c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Earlier in this chapter, the planning team identified by jurisdiction the mitigation actions that should be considered in the analysis that are not complete, underway, or in place. At the second planning meeting, the planning team reviewed each alternative for further discussion. The individual jurisdictions analyzed each action during this phase and some were eliminated from further consideration in some jurisdictions simply because they made no sense with the demographics and capabilities of the area. This section outlines actions that passed through the capability review.

Using FEMA and IHSEMD guidance publications, the planning team evaluated each of the proposed alternatives to determine which ones to remove from further consideration and to prioritize the remaining actions or measures.

Stakeholder Survey

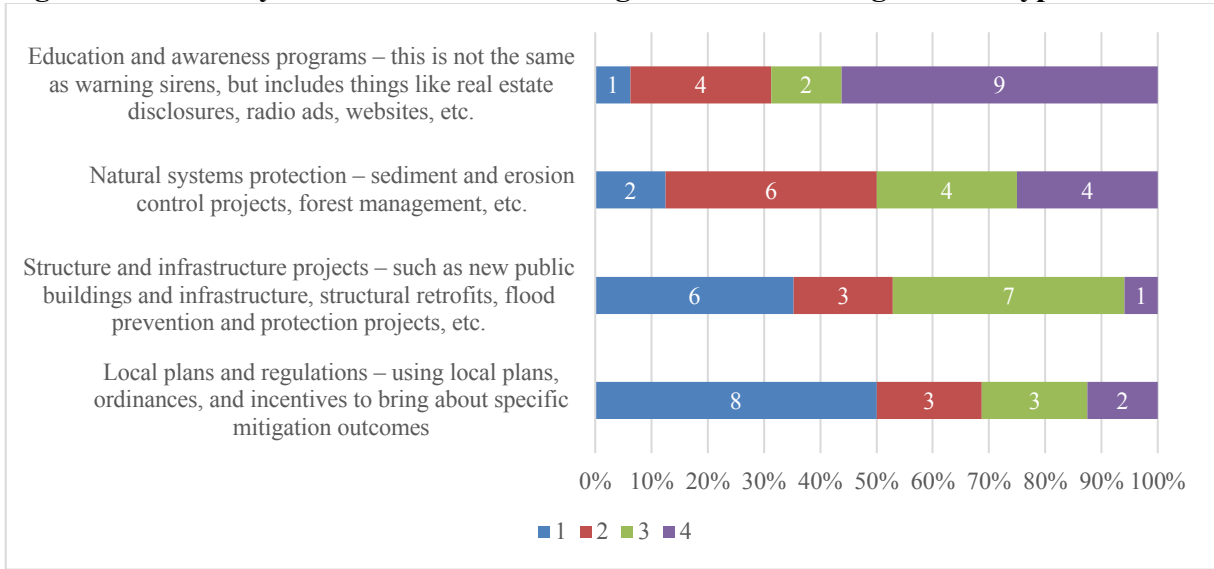
Early in the planning process, in early 2021, an online survey was performed to gauge general interest in implementing various possible mitigation actions. Each action was arranged under one of four primary types of measures shown in Section 4.2. These are simply example mitigation actions and are not necessarily tied to any given jurisdiction. The goal of this survey was to understand the types of factors that went into the actions with the most support versus those with the least support. The weight of factors like cost, administrative and technical needs and costs, and political will may potentially be measured to some degree by this process.

Adams County Plan Update – Stakeholder Survey

This new process has not been tried with previous plans. The following charts outline the results of the stakeholder surveys by category. Following the charts is a description of findings, which will help with the process of prioritizing actions. Seventeen people responded to the survey in late winter 2021. Of these, four stated they serve all of Adams County, four stated they serve or live in “rural” Adams County, six stated they serve or living in Corning, and three state they live in or serve Prescott.

The second question on the survey was about the relative importance of each of the four types of mitigation actions. It reads: “The following describe each of the major FEMA defined types of mitigation actions. Please rank the relative importance of each for your jurisdiction based on the description provided and the ability of your description to carry out possible projects.” Sixteen of the 17 people responded.

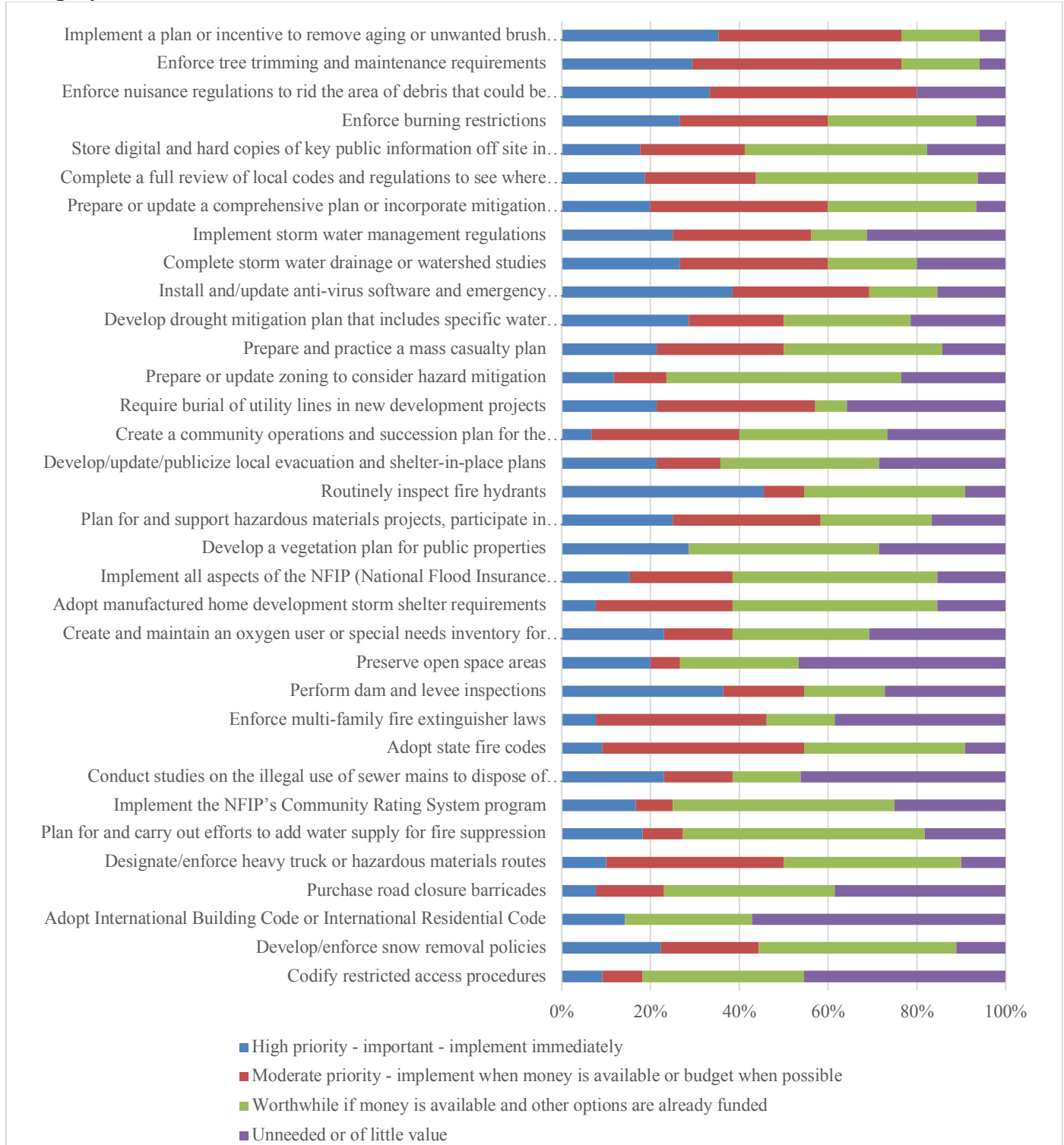
Figure 4.34: Survey Results of Potential Mitigation Action Categories or Types



As this chart shows, local planning and regulations projects were seen as the most popular, with structural and infrastructure projects coming in a close second. The least popular option was education and awareness programs. Local plans received the top vote by half the respondents, while education and awareness programs received the lowest vote by over half. This only shows us relative preference. It is likely many people see value in all four types of actions but simply see the most value in the local plans and regulations option.

Another question reads: “Please provide a rating of relevance or importance of the following ‘local plans and regulations’ type mitigation actions for your jurisdiction for implementation in the next five years (if unsure or no opinion, leave a line blank).” Some people, instead of rating an action, selected “already complete or in place,” which is reflected in the results by an absence of a score.

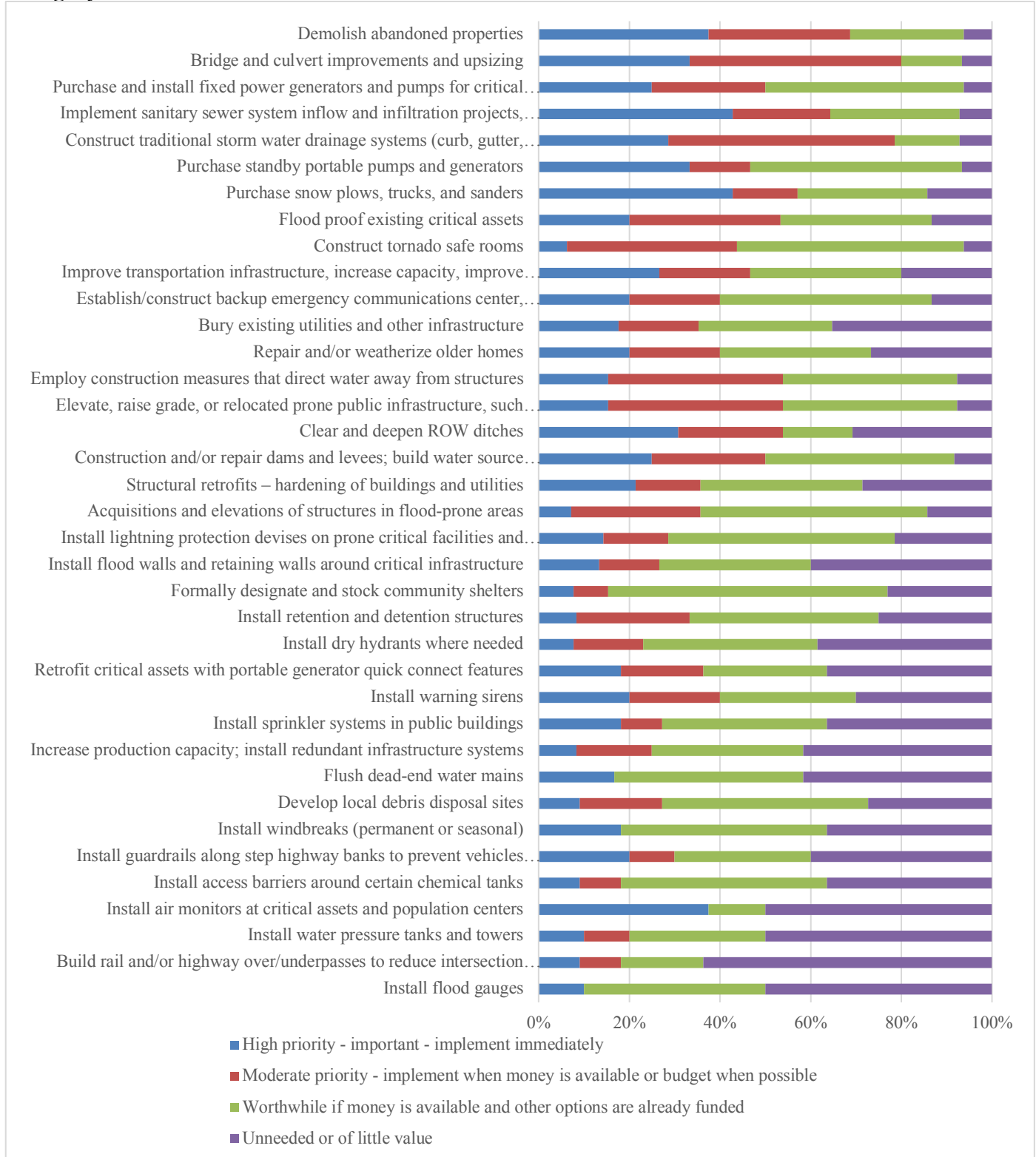
Figure 4:35: Survey Results of Potential Mitigation Actions in the “Local Plans and Regulations” Category



The most popular actions are toward the top of the chart. The most support is found for those that have a direct impact on function and response, such as protection of digital data and files and enforcement of some basic regulations and policies. Some of them that have an impact on revitalization of the community, such as tree trimming projects and enforcement of nuisance violations, was supported. Widespread support was found for most of these kinds of actions, with the lowest support toward those that are related to specific hazards, such as flooding.

Another question reads: “Please provide a rating of relevance or importance of the following ‘structural and infrastructure projects’ type mitigation actions for your jurisdiction for implementation in the next five years (if unsure or no opinion, leave a line blank).” Some people, instead of rating an action, selected “already complete or in place,” which is reflected in the results below by an absence of a score.

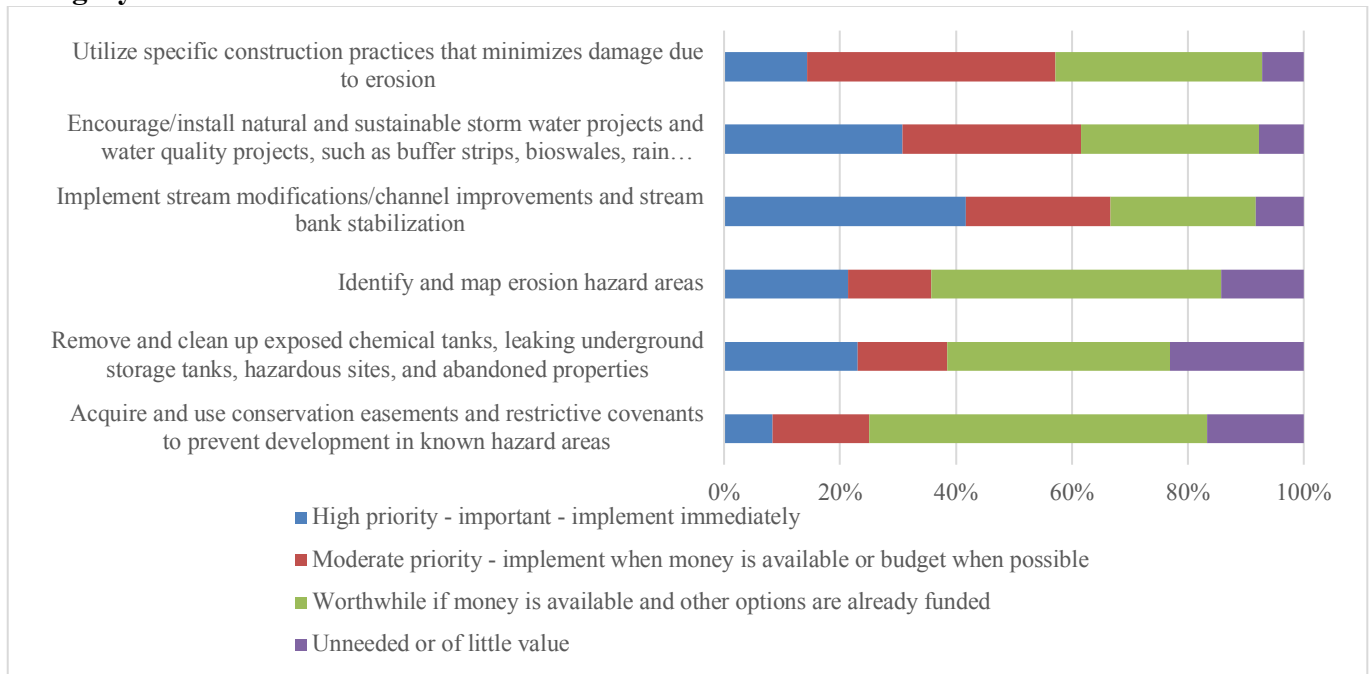
Figure 4:36: Survey Results of Potential Mitigation Actions in the “Structural and Infrastructure” Category



The most popular actions are toward the top of the chart. Generally, the most popular ones are those that have a direct impact on necessary daily needed infrastructure, such as roads, bridges, and electrical infrastructure. Ones that are less popular have limited geographical scope are where need is considered generally met by existing infrastructure and facilities.

Another question reads: “Please provide a rating of relevance or importance of the following ‘natural systems protection’ type mitigation actions for your jurisdiction for implementation in the next five years (if unsure or no opinion, leave a line blank).” Some people, instead of rating an action, selected “already complete or in place,” which is reflected in the results below by an absence of a score.

Figure 4:37: Survey Results of Potential Mitigation Actions in the “Natural Systems Protection” Category



Overall, there is moderate support for these types of actions from those surveyed. Those that impact water quality and reduce storm water flooding seem to have the most support.

The final question reads: “Please provide a rating of relevance or importance of the following ‘education and awareness programs’ type mitigation actions for your jurisdiction for implementation in the next five years (if unsure or no opinion, leave a line blank).” Some people, instead of rating an action, selected “already complete or in place,” which is reflected in the results by an absence of a score.

Figure 4:38: Survey Results of Potential Mitigation Actions in the “Public Education and Awareness” Category



It seems like the greatest support is found for actions that inform and involve the general public and result in the public being more proactive in hazard mitigation. Overall the level of support is pretty consistent among the various actions proposed.

STAPLE-E

Each action was reviewed according to STAPLE-E criteria: **Social, Technical, Administrative, Political, Legal, Economic, and Environmental considerations**. The planning team has reviewed each of the proposed hazard mitigation alternatives and scored them on several factors for each STAPLE-E criterion. The planning team created 11 questions that are designed to comprehensively evaluate each mitigation action in terms of costs and benefits. Each alternative action is evaluated on a plus scale. Questions are designed to ensure a “yes” or “not applicable” answer. Each question gets four points for a strong positive answer in scientific or technical terms and or based on public input in that jurisdiction (if public input is made). To the right of the chart is a locally determined rating for overall priority, as given by public input, with “high” being given 5 points, “moderate” being given 3 points, and “low” being given 1 point. The totals are to the right. The raw spreadsheets used to calculate the scores are in Appendix C.

The maximum score is 49 (4 times 11 plus 5 for a high interest item). Overall, the highest priority items have the highest scores.

The evaluation process does not necessarily pit two similar mitigation actions for one hazard and then selects one over the other. This is mainly because most mitigation measures impact many different hazards. The planning team wanted the scores to be independent of one another, with all projects being evaluated on their own merit.

Adams County Plan Update – STAPLE-E

The prioritization process in this chapter/plan differs extensively from the previous plan. Looking at other approved plans in the State of Iowa, the planning team used a simpler review sheet that simplified the process for the reviewers at the meeting and had fewer analytic questions on which scores were based.

4.7: Evaluation Results of Alternative Mitigation Measures

The following tables provide the summary of the analysis of the proposed mitigation actions by jurisdiction, which will be used for creating a formal strategy for each jurisdiction in the next section of this plan. Please note that the local evaluation of actions means that an action may have differing scores for varying jurisdictions. For example, in one jurisdiction, the initiation and updating of zoning to include mitigation ideas may be considered more administratively feasible and politically acceptable than another community, even though the need in terms of hazard mitigation for zoning may be equal in both communities.

Rural Adams County Alternative Mitigation Measure Scores

Adams County officials and staff, with the assistance of the countywide planning team, participated in the evaluation of a list of alternative mitigation measures. The following matrix shows the resulting scores and the identification of projects to be prioritized as a future mitigation measures, outlined in the next section. Items listed as “future” are those that are important but of such priority that they are not likely to be implemented within the next five years.

Figure 4.39: STAPLE-E Score and Relative Priority – Rural Adams County

Mitigation Action	STAPLE-E Score	Relative Priority
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	42	High
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	37	High
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	36	High
Routinely inspect fire hydrants.	36	High
Construct/integrate public safe rooms in or near existing and future community assets and parks.	33	High
Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems.	32	High
Harden public buildings and utilities (structural retrofits).	31	High
Implement a comprehensive multi-media public education campaign for multiple hazards.	31	High
Establish alert systems and specific outreach efforts for vulnerable populations.	30	High
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	28	High
Initiate community preparedness programs.	28	High
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets – including the Lake Icaria pumphouse project.	27	High
Implement all aspects of the NFIP (National Flood Insurance Program).	26	High
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.)	26	High
Special needs/oxygen user registration.	25	Medium
Flood proof critical assets in the community/construct flood protection around assets.	24	Medium
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	24	Medium
Install warning siren(s).	24	Medium
Purchase stand-by portable pumps and generators.	24	Medium

Mitigation Action	STAPLE-E Score	Relative Priority
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	23	Medium
Promote the value of installation of private in-home tornado safe rooms.	23	Medium
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	22	Medium
Participate in the FEMA Community Rating Service (CRS) program.	22	Low
Fund weatherization programs to more low-income households.	21	Medium
Purchase/install backup fixed power generators and pumps.	19	Medium
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	18	Low
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	17	Low
Replace, expand, or improve water and sewer lines.	17	Low
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	16	Low
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	15	Low
Install sprinkler systems in public buildings.	14	Future
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	14	Low
Install quick-connect emergency generator hook-ups for facilities.	12	Low
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	12	Future

City of Corning Alternative Mitigation Measure Scores

City of Corning officials and staff, with the assistance of the countywide planning team, participated in the evaluation of a list of alternative mitigation measures. The following matrix shows the resulting scores and the identification of projects to be prioritized as a future mitigation measures, outlined in the next section. Items listed as “future” are those that are important but of such priority that they are not likely to be implemented within the next five years.

Figure 4.40: STAPLE-E Score and Relative Priority – City of Corning

Mitigation Action	STAPLE-E Score	Relative Priority
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	45	High
Bury exposed utility and communications infrastructure.	43	High
Adopt State fire codes.	41	High
Backup files and records - store in alternate locations.	39	High
Implement all aspects of the NFIP (National Flood Insurance Program).	38	High
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	38	High
Prepare and practice a mass casualty plan.	36	High
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	36	High
Enforce multi-family housing extinguisher laws.	35	High
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	35	High
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	33	High
Enforce nuisance regulations to rid the area of debris that could be a hazard.	32	High
Promote to property owners the importance of tree and vegetation maintenance on private properties.	30	High
Complete storm water drainage or watershed studies of known flood areas.	29	High
Conduct intensive local and regional intelligence, drills, and scenarios.	27	Medium
Encourage the implementation of water-saving measures, including soil and water conservation practices.	26	Medium
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	25	Medium
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	25	Medium
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	25	Medium
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	22	Medium
Employ construction measures that direct water away from structures.	22	Medium
Invest in the latest broadband infrastructure.	22	Medium

Mitigation Action	STAPLE-E Score	Relative Priority
Construct/integrate public safe rooms in or near existing and future community assets and parks.	21	Medium
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	21	Medium
Implement a comprehensive multi-media public education campaign for multiple hazards.	20	Low
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	20	Low
Increase community and individual engagement in disease prevention efforts.	20	Low
Install flood walls and retaining walls around critical infrastructure.	18	Low
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	17	Low
Develop/maintain security at applicable critical assets.	17	Low
Help community leaders and businesses to improve local public health response readiness.	16	Low
Install quick-connect emergency generator hook-ups for facilities.	14	Low
Implement storm water management regulations.	13	Low
Promote the value of installation of private in-home tornado safe rooms.	13	Low
Install air monitors.	12	Future
Install sprinkler systems in public buildings.	11	Future
Fund weatherization programs to more low-income households.	10	Low
Create and maintain a special needs/oxygen user registration program or inventory.	7	Future
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	7	Future
Establish neighborhood watch programs for vulnerable populations after a hazard event.	6	Future
Purchase/install backup fixed power generators and pumps.	5	Future
Construct storage facilities for pesticides, insecticides, and chemicals.	1	Future
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	1	Future
Harden public buildings and utilities (structural retrofits).	1	Future
Identify, evaluate, and pursue funding for idled environmentally compromised properties, commonly called brownfields.	1	Future
Implement specialized ventilation systems and projects.	1	Future
Implement stream modifications/channel improvements and stream bank stabilization.	1	Future
Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens.	1	Future
Preserve open spaces in hazard areas.	1	Future

City of Nodaway Alternative Mitigation Measure Scores

City of Nodaway officials and staff, with the assistance of the countywide planning team, participated in the evaluation of a list of alternative mitigation measures. The following matrix shows the resulting scores and the identification of projects to be prioritized as a future mitigation measures, outlined in the next section. Items listed as “future” are those that are important but of such priority that they are not likely to be implemented within the next five years.

Figure 4.41: STAPLE-E Score and Relative Priority – City of Nodaway

Mitigation Action	STAPLE-E Score	Relative Priority
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	37	High
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	36	High
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	36	High
Harden public buildings and utilities (structural retrofits).	36	Medium
Install and/update anti-virus software and emergency communications technology.	36	High
Construct/integrate public safe rooms in or near existing and future community assets and parks.	35	Medium
Demolish abandoned properties.	35	High
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	34	High
Install quick-connect emergency generator hook-ups for facilities.	34	Medium
Promote to property owners the importance of tree and vegetation maintenance on private properties.	34	Medium
Purchase stand-by portable pumps and generators.	34	High
Implement a comprehensive multi-media public education campaign for multiple hazards.	33	Medium
Promote the value of installation of private in-home tornado safe rooms.	33	Medium
Purchase snow trucks, plows, sanders.	32	Medium
Purchase/install backup fixed power generators and pumps.	32	Medium

Mitigation Action	STAPLE-E Score	Relative Priority
Store digital and hard copies of public records in low-risk, offsite locations.	31	Medium
Create continuity of operations & succession plan for Nodaway.	30	Medium
Enforce nuisance regulations to rid the area of debris that could be a hazard.	30	Medium
Establish backup utilities and communications infrastructure; use the latest technology.	30	Low
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	30	Medium
Complete storm water drainage or watershed studies of known flood areas.	29	Low
Create and maintain a special needs/oxygen user registration program or inventory.	28	Low
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	28	Future
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	27	Low
Implement all aspects of the NFIP (National Flood Insurance Program).	27	Low
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	24	Future
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	24	Future

City of Prescott Alternative Mitigation Measure Scores

City of Prescott officials and staff, with the assistance of the countywide planning team, participated in the evaluation of a list of alternative mitigation measures. The following matrix shows the resulting scores and the identification of projects to be prioritized as a future mitigation measures, outlined in the next section. Items listed as “future” are those that are important but of such priority that they are not likely to be implemented within the next five years.

Figure 4.42: STAPLE-E Score and Relative Priority – City of Prescott

Mitigation Action	STAPLE-E Score	Relative Priority
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	38	High
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	35	High
Construct or repair dams; develop reservoirs and lakes (flood control, water source).	34	High
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	33	High
Construct/integrate public safe rooms in or near existing and future community assets and parks.	33	High
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	33	High
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	33	High
Promote to property owners the importance of tree and vegetation maintenance on private properties.	33	High
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	32	High
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	31	Medium
Fund weatherization programs to more low-income households.	31	Medium
Implement stream modifications/channel improvements and stream bank stabilization.	31	Medium
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	30	Medium
Encourage the implementation of water-saving measures, including soil and water conservation practices.	30	Medium
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	30	Medium
Promote good landscaping practices among property owners.	30	Medium
Promote the value of installation of private in-home tornado safe rooms.	30	Medium
Encourage property owners to own adequate property insurance.	29	Medium
Implement a comprehensive multi-media public education campaign for multiple hazards.	29	Medium
Purchase/install backup fixed power generators and pumps.	28	Low
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	28	Low
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	27	Low
Enforce nuisance regulations to rid the area of debris that could be a hazard.	27	Low

Mitigation Action	STAPLE-E Score	Relative Priority
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	27	Low
Adopt State fire codes.	26	Low
Bury exposed utility and communications infrastructure.	26	Future
Establish backup utilities and communications infrastructure; use the latest technology.	26	Low
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	26	Future
Prepare and practice a mass casualty plan.	26	Future
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	24	Future

Southwest Valley Community Schools Alternative Mitigation Measure Scores

Southwest Valley Community School District officials and staff, with the assistance of the countywide planning team, participated in the evaluation of a list of alternative mitigation measures that pertain to the Corning school assets. The following matrix shows the resulting scores and the identification of projects to be prioritized as a future mitigation measures, outlined in the next section.

Figure 4.43: STAPLE-E Score and Relative Priority – Southwest Valley (Corning) Schools

Mitigation Action	STAPLE-E Score	Relative Priority
Construct/integrate public safe rooms in or near existing and future community assets and parks.	49	High
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	47	High
Adopt a continuity of operations & succession plan for the jurisdiction.	47	High
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	47	High
Invest in the latest broadband infrastructure.	47	High
Designate emergency routes and add signage for emergency procedures for travelers.	46	High
Prepare and practice a mass casualty plan.	46	High
Help community leaders and businesses to improve local public health response readiness.	43	Medium
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	43	Medium
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	43	Medium
Increase community and individual engagement in disease prevention efforts.	43	Medium
Implement a comprehensive multi-media public education campaign for multiple hazards.	42	Medium
Implement stream modifications/channel improvements and stream bank stabilization.	41	Medium
Install sprinkler systems in public buildings.	41	Medium
Modernize infectious disease surveillance to drive public health actions.	41	Medium
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	40	Medium
Implement specialized ventilation systems and projects.	40	Low
Install quick-connect emergency generator hook-ups for facilities.	40	Low
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	40	Low
Purchase/install backup fixed power generators and pumps.	40	Low
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	39	Low
Purchase road closure barricades.	39	Low
Purchase stand-by portable pumps and generators.	39	Low
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	38	Low
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	37	Low

CHI Health Alternative Mitigation Measure Scores

CHI Health officials and staff, with the assistance of the countywide planning team, participated in the evaluation of a list of alternative mitigation measures that pertain to the Mercy Corning campus assets. The following matrix shows the resulting scores and the identification of projects to be prioritized as a future mitigation measures, outlined in the next section.

Figure 4.44: STAPLE-E Score and Relative Priority – CHI Health Mercy Corning

Mitigation Action	STAPLE-E Score	Relative Priority
Implement a comprehensive multi-media public education campaign for multiple hazards.	40	Medium
Prepare and practice a mass casualty plan.	37	High
Invest in the latest broadband infrastructure.	36	High
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	34	High
Purchase stand-by portable pumps and generators.	34	Medium
Purchase/install backup fixed power generators and pumps.	34	Medium
Construct/integrate public safe rooms in or near existing and future community assets and parks.	33	Medium
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	33	High
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	33	Medium
Adopt a continuity of operations & succession plan for the jurisdiction.	32	High
Help community leaders and businesses to improve local public health response readiness.	32	High
Increase community and individual engagement in disease prevention efforts.	32	High
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	31	Medium
Implement specialized ventilation systems and projects.	31	Medium
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	31	Low
Modernize infectious disease surveillance to drive public health actions.	31	Low
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.	30	Low
Install sprinkler systems in public buildings.	30	Low
Install quick-connect emergency generator hook-ups for facilities.	28	Low
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	28	Low
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	27	Future

The next few sections details the strategy for each jurisdiction for the implementation of this hazard mitigation plan.

4.8: Selection of Alternative Measures by Jurisdiction

As a means of implementing the goals and objectives, in this section, the alternative measures selected by jurisdiction are listed for further consideration later in the implementation strategy.

This part of the plan addresses the following Stafford Act requirement:

Section 201.6 (c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval of the plan.

This section addresses the selected mitigation actions, showing that multiple actions are selected for each jurisdiction.

Adams County Plan Update Actions Included in the Previous Plan

This section is almost identical to the previous plan. However, the list of actions to be included has changed notably as a result of the modified review process described throughout this chapter.

The following matrix shows the alphabetized list of mitigation actions that are included in at least one jurisdiction's strategy. The checkmarks indicate the jurisdictions that have selected the particular mitigation action as a new or carryover project for this plan. It lists those that the jurisdictions (local governments, schools, and other key stakeholder organizations in the county) seek to implement in the next five years from among the comprehensive list of alternatives provided.

Figure 4.45: Multi-jurisdictional List of Selected Mitigation Actions

Mitigation Action	Adams Co.	Corning	Nodaway	Prescott	SW Valley School	CHI Health
Acquire and demolish or relocate buildings/infrastructure in high-risk areas.				✓	✓	
Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	✓			✓		
Adopt a continuity of operations & succession plan for the jurisdiction.			✓		✓	✓
Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	✓	✓		✓		
Adopt State fire codes.		✓		✓		
Backup files and records - store in alternate locations.		✓				
Bury exposed utility and communications infrastructure.		✓				
Complete storm water drainage or watershed studies of known flood areas.		✓	✓			
Conduct intensive local and regional intelligence, drills, and scenarios.		✓				
Construct or repair dams; develop reservoirs and lakes (flood control, water source).				✓		
Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	✓		✓	✓		
Construct/integrate public safe rooms in or near existing and future community assets and parks.	✓	✓	✓	✓	✓	✓
Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.		✓			✓	✓
Create and maintain a special needs/oxygen user registration program or inventory.	✓		✓			
Demolish abandoned properties.			✓			
Designate emergency routes and add signage for emergency procedures for travelers.					✓	
Develop/maintain security at applicable critical assets.		✓				
Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.						✓
Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	✓	✓	✓	✓		
Employ construction measures that direct water away from structures.		✓				
Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	✓	✓	✓			
Encourage property owners to own adequate property insurance.				✓		
Encourage the implementation of water-saving measures, including soil and water conservation practices.		✓		✓		
Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	✓			✓		
Enforce multi-family housing extinguisher laws.		✓				
Enforce nuisance regulations to rid the area of debris that could be a hazard.		✓	✓	✓		
Establish alert systems and specific outreach efforts for vulnerable populations.	✓					
Establish backup utilities and communications infrastructure; use the latest technology.			✓	✓		
Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	✓	✓	✓	✓		
Flood proof critical assets in the community/construct flood protection around assets.	✓					
Fund weatherization programs to more low-income households.	✓	✓		✓		
Harden public buildings and utilities (structural retrofits).	✓		✓			
Help community leaders and businesses to improve local public health response readiness.		✓			✓	✓
Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	✓	✓	✓	✓	✓	✓
Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.					✓	
Implement a comprehensive multi-media public education campaign for multiple hazards.	✓	✓	✓	✓	✓	✓
Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	✓					
Implement all aspects of the NFIP (National Flood Insurance Program).	✓	✓	✓			
Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.					✓	✓
Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.		✓		✓		
Implement specialized ventilation systems and projects.					✓	✓
Implement storm water management regulations.		✓				

Mitigation Action	Adams Co.	Corning	Nodaway	Prescott	SW Valley School	CHI Health
Implement stream modifications/channel improvements and stream bank stabilization.				✓	✓	
Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	✓	✓	✓	✓	✓	
Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	✓	✓				
Increase community and individual engagement in disease prevention efforts.		✓			✓	✓
Increase production capacity; install redundant systems and looping (water, sewer, electric, gas).	✓	✓		✓		
Initiate community preparedness programs.	✓					
Install and/update anti-virus software and emergency communications technology.			✓			
Install flood walls and retaining walls around critical infrastructure.		✓				
Install quick-connect emergency generator hook-ups for facilities.	✓	✓	✓		✓	✓
Install sprinkler systems in public buildings.					✓	✓
Install warning siren(s).	✓					
Invest in the latest broadband infrastructure.		✓			✓	✓
Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	✓	✓			✓	✓
Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.					✓	✓
Modernize infectious disease surveillance to drive public health actions.					✓	✓
Participate in the FEMA Community Rating Service (CRS) program.	✓					
Prepare and practice a mass casualty plan.		✓			✓	✓
Promote good landscaping practices among property owners.				✓		
Promote the value of installation of private in-home tornado safe rooms.	✓	✓	✓	✓		
Promote to property owners the importance of tree and vegetation maintenance on private properties.		✓	✓	✓		
Purchase road closure barricades.					✓	
Purchase snow trucks, plows, sanders.				✓		
Purchase stand-by portable pumps and generators.	✓		✓		✓	✓
Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems.	✓					
Purchase/install backup fixed power generators and pumps.	✓		✓	✓	✓	✓
Replace, expand, or improve water and sewer lines.	✓					
Routinely inspect fire hydrants.	✓					
Store digital and hard copies of public records in low-risk, offsite locations.			✓			
Strengthen exposed utility and communications infrastructure and systems (emergency and general).	✓	✓		✓	✓	✓

4.9: Implementation Strategy by Jurisdiction

The most vital section of this entire plan is the strategy that each jurisdiction intends to carry out in order to mitigate hazards.

This part of the plan addresses the following Stafford Act requirements:

Section 201.6 (c)(3)(iii): The mitigation strategy shall include an action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost-benefit review of the proposed projects and associated costs.

Section 201.6 (c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

The mitigation strategy is a description of the proposed mitigation actions by jurisdiction that details the timeline, leadership, and funding for the action. The following tables provide the proposed implementation strategies for each jurisdiction. This process was reviewed and discussed during the third planning meeting.

The following mitigation strategy is prioritized for each jurisdiction based on a benefit-cost review that includes the STAPLE-E criteria outlined in Section 4.7 and the feasibility of implementing viable projects in the timeframe of this plan with consideration of current conditions and capabilities. The benefit-cost review considers the feasibility of the project and whether the benefits exceed the costs. Such considerations help form the priority level and timeline for the mitigation actions in the following tables. However, other factors help prioritize the actions in the existing timeline for each jurisdiction. These factors include outside influences, such as multijurisdictional actions that involve multiple partners and their timeframes.

The following mitigation strategy is today’s best estimate of when projects should be initiated and completed, the cost for each activity, who or which organization(s) should lead the effort, and possible funding sources (some of these data points are in the next section). Because funding is so complex and varies so much from year to year and changes after a major Presidential declaration, this plan includes only a generic list of sources. Local organizations, such as SICO, can be consulted to assist with the funding for a specific project. The planning team and each jurisdiction should keep in mind, however, that outside funding is limited and almost all projects and programs require some local funding and/or in-kind involvement (often called a “match”) to make the state, federal, private, or foundation support possible.

Note: for local governments, the listing “City” or “County” means the governing body and staff directly under the command of the governing body in most cases. As an example, actions that say “City Council” means that the council makes the decision, but staff members often carry it out. The “EMA” is the Emergency Management Agency. “BOS” is the County Board of Supervisors. NGOs are non-government organizations. If any town decides to dis-incorporate in the next five years, the rural county’s mitigation strategy, as much as is relevant to the effected jurisdiction, should prevail. If a school or the hospital closes, the city in which the assets are located covers mitigation in those areas.

Please note that when each jurisdiction adopts the plan the jurisdiction indicates willingness to implement the projects that are discussed in this section, more or less as proposed. Also note that some mitigation actions taken in one jurisdiction may affect hazard mitigation efforts in other jurisdictions even if such actions are not mentioned as part of the approved strategy for those other jurisdictions.

Adams County Plan Update Actions Included in the Previous Plan

This section is almost identical to Section 9.4.3 of the previous plan. However, the jurisdictions have changed somewhat and the list of actions to be included has changed notably as a result of the modified review process described throughout this chapter. Also, the way the data is organized is improved and more readable.

For the purposes of this strategy, each project is divided into short-, mid-, and long-term strategies, with timeframes mentioned. The following is a description of each:

- Short-term projects (2022 or 2023) – mainly high priority projects, projects that are initiated by other jurisdictions, or those that are essential planning steps.
- Mid-term projects (2024-2025) – most are moderate priority projects and those that other jurisdictions are likely to consider during the five years but are not scheduled yet.
- Long-term projects (2026 and beyond) – mostly low priority projects or are otherwise not yet scheduled because to some degree they are very aggressive or expensive projects.

Rural Adams County Hazard Mitigation Strategy

This mitigation strategy is what is adopted by the jurisdiction for implementation over the next five years. Knowing that events occur that change priorities and leadership, the jurisdiction commits to make a good faith effort. Each project is listed by timeframe/duration.

Figure 4.46: Five-year Mitigation Strategy – Rural Adams County

Initiation	Action *	Likely Leadership	Duration
Short-term projects (2022 or 2023)	Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	BOS, Department heads, EMA	2022-2023
	Initiate community preparedness programs. *	BOS, EMA, Public Health	2022-2023
	Establish alert systems and specific outreach efforts for vulnerable populations.	BOS, EMA, NGOs	2022-2023
	Implement a GIS mapping system and utilize digital hazard maps for various kinds of hazards; keep data updated.	BOS, GIS provider, SICO, EMA	2022-2023
	Fund weatherization programs to more low-income households.	BOS, regional providers	2022-2024
	Install quick-connect emergency generator hook-ups for facilities.	BOS, Engineer, Conservation, EMA	2022-2024
	Purchase stand-by portable pumps and generators.	BOS, Engineer, Conservation, EMA	2022-2024
	Install warning siren(s).	BOS, Conservation, EMA	2022-2024
	Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	BOS, Engineer	2022-2026
	Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems.	BOS, EMA, Sheriff, NGOs	2023-2024
	Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	BOS, Conservation, regional providers, USDA	2023-2025
	Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	BOS, Engineer, regional providers	2023-2025
	Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets – including Lake Icaria dam pumphouse project. *	BOS, Engineer, CMU, SIRWA, regional providers	2023-2026
	Implement all aspects of the NFIP (National Flood Insurance Program). *	BOS, EMA, IDNR	2023-2026
	Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	BOS, EMA, Dept heads	Annually
	Routinely inspect fire hydrants.	Fire departments, Engineer	Annually
	Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program. *	Fire departments, EMA	Continuous
	Promote the value of installation of private in-home tornado safe rooms.	EMA, State/FEMA, possibly housing leaders and other NGOs	Continuous
	Implement a comprehensive multi-media public education campaign for multiple hazards.	EMA, State/FEMA	Continuous
	Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.). *	EMA, NGOs	Continuous
Mid-term projects (2024-2025)	Flood proof critical assets in the community/construct flood protection around assets.	BOS, Engineer, EMA, Conservation, other local govts	2024-2026
	Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	BOS, Department heads, EMA, State	2024-2026
	Purchase/install backup fixed power generators and pumps.	BOS, Engineer, Conservation, EMA	2024-2026
	Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	BOS, Engineer, EMA, IDNR	2024-2026
	Construct/integrate public safe rooms in or near existing and future community assets and parks.	BOS, Engineer, Conservation, EMA	2024-2026
	Harden public buildings and utilities (structural retrofits).	BOS, Department heads	2024-2026
	Special needs/oxygen user registration. *	Fire departments, Sheriff, NGOs	2025-2026
Long-term projects (2026 and beyond)	Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards. *	BOS, EMA, IDNR, possible other County and regional entities	2026-beyond
	Increase production capacity; install redundant systems and looping (water, sewer, electric, gas). *	BOS, NGOs and service providers	2026-beyond
	Participate in the FEMA Community Rating Service (CRS) program. *	BOS, EMA, IDNR	2026-beyond
	Replace, expand, or improve water and sewer lines.	SIRWA, NGOs	2026-beyond
	Strengthen exposed utility and communications infrastructure and systems (emergency and general). *	Energy suppliers, NGOs	2026-beyond

* This action is generally multi-jurisdictional – another jurisdiction in will have an influence on the timeframe and scope.

Corning Hazard Mitigation Strategy

This mitigation strategy is what is adopted by the jurisdiction for implementation over the next five years. Knowing that events occur that change priorities and leadership, the jurisdiction commits to make a good faith effort. Each project is listed by timeframe/duration.

Figure 4.47: Five-year Mitigation Strategy – Corning

Initiation	Action *	Likely Leadership	Duration
Short-term projects (2022 or 2023)	Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	City council and admin, EMA, State, regional agencies	2022-2023
	Adopt State fire codes. *	City council and admin, EMA, State, fire department	2022-2023
	Backup files and records - store in alternate locations.	City council and admin	2022-2023
	Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion. *	City council and admin, EMA, Public Health, State	2022-2023
	Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.). *	City council and admin, EMA, NGOs	Annually
	Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	City council and admin, EMA	Annually
	Enforce nuisance regulations to rid the area of debris that could be a hazard.	City council and admin	Annually
	Conduct intensive local and regional intelligence, drills, and scenarios. *	City council and admin, EMA, Public Health, response agencies, State	Annually
	Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program.	City council and admin, fire department	Annually
	Enforce multi-family housing extinguisher laws.	City council and admin, fire department	Continuous
	Implement a comprehensive multi-media public education campaign for multiple hazards. *	City council and admin, EMA, State, regional agencies	Continuous
	Promote the value of installation of private in-home tornado safe rooms. *	City council and admin, EMA, State, regional agencies	Continuous
	Promote to property owners the importance of tree and vegetation maintenance on private properties.	City council and admin, EMA, insurance providers, CMU	Continuous
	Prepare and practice a mass casualty plan. *	City council and admin, EMA, State, regional agencies	2023
	Complete storm water drainage or watershed studies of known flood areas.	City council and admin, conservation agencies, State	2023-2024
	Develop/maintain security at applicable critical assets.	City council and admin, Sheriff, possible State	2023-2024
	Implement all aspects of the NFIP (National Flood Insurance Program). *	City council and admin, IDNR, EMA	2023-2024
	Employ construction measures that direct water away from structures.	City council and admin, CMU, NGOs, State, public works	2023-2025
	Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	City council and admin, public works	2023-2026
	Increase production capacity; install redundant systems and looping (water, sewer, electric, gas) – including the CMU electrical looping project. *	City council and admin, utility providers, CMU	2023-2006
	Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	City council and admin	Continuous
Mid-term projects (2024-2025)	Implement storm water management regulations.	City council and admin, State, conservation entities	2024-2025
	Encourage the implementation of water-saving measures, including soil and water conservation practices.	City council and admin, State, conservation entities	2024-2025
	Construct/integrate public safe rooms in or near existing and future community assets and parks.	City council and admin, State, FEMA, EMA, regional agencies	2024-2026
	Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	City council and admin, public works, CMU	2024-2026
	Incorporate stand-alone elements for hazard mitigation into the local comprehensive plan, CIP, strategic plan, or other planning mechanisms.	City council and admin, regional entities, department heads, EMA	2025-2026
	Invest in the latest broadband infrastructure. *	City council and admin, IT providers, department heads	2025-2027

Initiation	Action *	Likely Leadership	Duration
Long-term projects (2026 and beyond)	Strengthen exposed utility and communications infrastructure and systems (emergency and general). *	City council and admin, IT providers, CMU, utility providers	2025-2027
	Bury exposed utility and communications infrastructure. *	City council and admin, IT providers, CMU, utility providers	2025-2027
	Install flood walls and retaining walls around critical infrastructure.	City council and admin, CMU, department heads, public works	2026-beyond
	Install quick-connect emergency generator hook-ups for facilities.	City council and admin, CMU, department heads, public works	2026-beyond
	Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	City council and admin, CMU, department heads, public works	2026-beyond
	Fund weatherization programs to more low-income households. *	City council and admin, regional agencies	2026-beyond
	Help community leaders and businesses to improve local public health response readiness. *	City council and admin, public health, EMA, State	Annually
	Increase community and individual engagement in disease prevention efforts. *	City council and admin, public health, EMA, State	Continuous

* This action is generally multi-jurisdictional – another jurisdiction in will have an influence on the timeframe and scope.

Nodaway Hazard Mitigation Strategy

This mitigation strategy is what is adopted by the jurisdiction for implementation over the next five years. Knowing that events occur that change priorities and leadership, the jurisdiction commits to make a good faith effort. Each project is listed by timeframe/duration.

Figure 4.48: Five-year Mitigation Strategy – Nodaway

Initiation	Action *	Likely Leadership	Duration
Short-term projects (2022 or 2023)	Create continuity of operations & succession plan for Nodaway. *	City council and admin, public works, EMA, State	2022-2023
	Install and/update anti-virus software and emergency communications technology. *	City council and admin, IT provider, possibly EMA	2022-2023
	Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	City council and admin, EMA, possibly SICO	Annually
	Implement a comprehensive multi-media public education campaign for multiple hazards. *	City council and admin, EMA, possibly State	Continuous
	Store digital and hard copies of public records in low-risk, offsite locations.	City council and admin, IT provider	2023-2024
	Demolish abandoned properties.	City council and admin	2023-2026
	Create and maintain a special needs/oxygen user registration program or inventory. *	City council and admin, fire department, utility provider	2023-2026
	Encourage citizen purchase/use of smoke detectors and fire extinguishers with an incentive program. *	City council and admin, fire department	Annually
	Purchase stand-by portable pumps and generators.	City council and admin, public works	2023-2025
	Purchase snow trucks, plows, sanders.	City council and admin, public works	2023-2024
	Implement all aspects of the NFIP (National Flood Insurance Program). *	City council and admin, IDNR, EMA	2023-2025
	Promote the value of installation of private in-home tornado safe rooms. *	City council and admin, EMA, State, regional agencies	Continuous
	Promote to property owners the importance of tree and vegetation maintenance on private properties.	City council and admin, EMA, insurance providers, public works	Continuous
Mid-term projects (2024-2025)	Enforce nuisance regulations to rid the area of debris that could be a hazard.	City council and admin, regional agencies	2024-2025
	Establish backup utilities and communications infrastructure; use the latest technology.	City council and admin, IT and utility providers	2024-2025
	Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	City council and admin, regional agencies	2024-2025
	Complete storm water drainage or watershed studies of known flood areas.	City council and admin, conservation professionals, NGOs	2025
	Construct/integrate public safe rooms in or near existing and future community assets and parks.	City council and admin, EMA, SICO, State	2025-2026
	Harden public buildings and utilities (structural retrofits).	City council and admin, EMA, State, regional agencies	2025-2026

Initiation	Action *	Likely Leadership	Duration
	Install quick-connect emergency generator hook-ups for facilities.	City council and admin, EMA, public works, utility provider	2025-2026
Long-term projects (2026 and beyond)	Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	City council and admin, public works, utility provider	2026-beyond
	Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	City council and admin, public works, utility provider	2026-beyond
	Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	City council and admin, public works, utility provider	2026-beyond
	Purchase/install backup fixed power generators and pumps.	City council and admin, public works, utility provider	2026-beyond

* This action is generally multi-jurisdictional – another jurisdiction in will have an influence on the timeframe and scope.

Prescott Hazard Mitigation Strategy

This mitigation strategy is what is adopted by the jurisdiction for implementation over the next five years. Knowing that events occur that change priorities and leadership, the jurisdiction commits to make a good faith effort. Each project is listed by timeframe/duration.

Figure 4.49: Five-year Mitigation Strategy – Prescott

Initiation	Action *	Likely Leadership	Duration
Short-term projects (2022 or 2023)	Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	City council and admin, EMA, regional agencies, State	2022-2023
	Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.). *	City council and admin, EMA, NGOs	Annually
	Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	City council and admin, EMA, possibly SICO	Annually
	Implement a comprehensive multi-media public education campaign for multiple hazards. *	City council and admin, EMA, possibly State	Continuous
	Construct or repair dams; develop reservoirs and lakes (flood control, water source).	City council and admin, EMA, regional agencies, State, IDNR	2022-2025
	Adopt State fire codes. *	City council and admin, EMA, State, fire department	2023-2024
	Construct traditional storm water drainage (underground, culverts, curb & gutter, etc.); improve capacity of existing systems.	City council and admin, public works, utility provider	2023-2025
	Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	City council and admin, public works, utility provider	2023-2025
	Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	City council and admin, public works, utility provider, State	2023-2025
	Implement stream modifications/channel improvements and stream bank stabilization.	City council and admin, EMA, conservation professionals, State, IDNR	2023-2025
	Promote good landscaping practices among property owners.	City council and admin, building experts, NGOs	Continuous
	Promote the value of installation of private in-home tornado safe rooms. *	City council and admin, EMA, State, regional agencies	Continuous
	Promote to property owners the importance of tree and vegetation maintenance on private properties.	City council and admin, EMA, insurance providers, public works	Continuous
Mid-term projects (2024-2025)	Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.	City council and admin, regional agencies	2024-2025
	Enforce nuisance regulations to rid the area of debris that could be a hazard.	City council and admin, regional agencies	2024-2025
	Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	City council and admin, EMA, public works, regional agencies, IDNR possibly	2024-2026
	Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	City council and admin, EMA, public works, regional agencies, IDNR possibly	2024-2026
	Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.	City council and admin, public works, CMU	2024-2026

Initiation	Action *	Likely Leadership	Duration
Long-term projects (2026 and beyond)	Construct/integrate public safe rooms in or near existing and future community assets and parks.	City council and admin, EMA, SICO, State	2025-2026
	Encourage property owners to own adequate property insurance.	City council and admin, EMA, insurance providers	Continuous
	Encourage the implementation of water-saving measures, including soil and water conservation practices.	City council and admin, EMA, conservation professionals	Continuous
	Fund weatherization programs to more low-income households. *	City council and admin, regional agencies	2026-beyond
	Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	City council and admin, public works, utility provider	2026-beyond
	Increase production capacity; install redundant systems and looping (water, sewer, electric, gas). *	City council and admin, public works, utility providers, SIRWA	2026-beyond
	Purchase/install backup fixed power generators and pumps.	City council and admin, public works, utility provider	2026-beyond
	Strengthen exposed utility and communications infrastructure and systems (emergency and general). *	City council and admin, public works, utility provider	2026-beyond

* This action is generally multi-jurisdictional – another jurisdiction in will have an influence on the timeframe and scope.

Southwest Valley Community Schools (Corning campus) Hazard Mitigation Strategy

This mitigation strategy is what is adopted by the jurisdiction for implementation over the next five years. Knowing that events occur that change priorities and leadership, the jurisdiction commits to make a good faith effort. Each project is listed by timeframe/duration.

Figure 4.50: Five-year Mitigation Strategy – Southwest Valley Community Schools (Corning campus)

Initiation	Action *	Likely Leadership	Duration
Short-term projects (2022 or 2023)	Adopt a continuity of operations & succession plan for the jurisdiction. *	School board and admin, EMA, State, regional agencies	2022-2023
	Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion. *	School board and admin, EMA, State, public health	2022-2023
	Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.).	School board and admin, EMA, NGOs	Annually
	Designate emergency routes and add signage for emergency procedures for travelers. *	School board and admin, transportation department, EMA, county engineer	Annually
	Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	School board and admin, EMA, possibly SICO	Annually
	Implement a comprehensive multi-media public education campaign for multiple hazards. *	School board and admin, EMA, possibly State	Continuous
	Prepare and practice a mass casualty plan. *	School board and admin, EMA, State, regional agencies	2023-2024
	Help community leaders and businesses to improve local public health response readiness.	School board and admin, hospital, State, public health	2023-2025
	Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	School board and admin, NGOs, State agencies, advocacy groups	2023-2025
	Increase community and individual engagement in disease prevention efforts.	School board and admin, NGOs, State agencies, advocacy groups	Continuous
Mid-term projects (2024-2025)	Construct/integrate school safe rooms.	School board and admin, EMA, SICO, facilities dept, State	2024-2026
	Implement specialized ventilation systems and projects.	School board and admin, EMA, facilities dept, State	2024-2025
	Install quick-connect emergency generator hook-ups for facilities.	School board and admin, facilities director, utility provider	2024-2025
	Invest in the latest broadband infrastructure. *	School board and admin, facilities director, utility provider, State	2024-2026
	Modernize infectious disease surveillance to drive public health actions. *	School board and admin, public health, hospital, State, CDC	2024-2026
	Purchase road closure barricades.	School board and admin, facilities director	2025-2026
	Purchase stand-by portable pumps and generators.	School board and admin, facilities director	2025-2026

Initiation	Action *	Likely Leadership	Duration
	Purchase/install backup fixed power generators and pumps.	School board and admin, facilities director, utility provider	2025-2026
Long-term projects (2026 and beyond)	Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	School board and admin, EMA, facilities dept, IDNR possibly	2026-beyond
	Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.	School board and admin, EMA, public health, State, CDC	2026-beyond
	Implement stream modifications/channel improvements and stream bank stabilization. *	School board and admin, EMA, conservation professionals, State, IDNR	2026-beyond
	Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.), and replace deteriorated infrastructure.	School board and admin, facilities director, utility provider	2026-beyond
	Install sprinkler systems in public buildings.	School board and admin, facilities director, fire department	2026-beyond
	Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	School board and admin, facilities director, State	2026-beyond
	Strengthen exposed utility and communications infrastructure and systems (emergency and general). *	School board and admin, public works, utility provider	2026-beyond

* This action is generally multi-jurisdictional – another jurisdiction in will have an influence on the timeframe and scope.

CHI Health – Mercy Corning Hazard Mitigation Strategy

This mitigation strategy is what is adopted by the jurisdiction for implementation over the next five years. Knowing that events occur that change priorities and leadership, the jurisdiction commits to make a good faith effort. Each project is listed by timeframe/duration.

Figure 4.51: Five-year Mitigation Strategy – CHI Health-Mercy Corning

Initiation	Action *	Likely Leadership	Duration
Short-term projects (2022 or 2023)	Adopt a continuity of operations & succession plan for the jurisdiction. *	Hospital board and admin, EMA, State, regional agencies	2022-2023
	Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion. *	Hospital board and admin, EMA, State, public health	2022-2023
	Involve more groups in hazard mitigation (churches, chambers of commerce, civic/service clubs, city/school employees, etc.). *	Hospital board and admin, EMA, NGOs	Annually
	Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.	Hospital board and admin, EMA, possibly SICOG	Annually
	Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health. *	Hospital board and admin, EMA, State, public health	Continuous
	Implement a comprehensive multi-media public education campaign for multiple hazards. *	Hospital board and admin, EMA, possibly State	Continuous
	Prepare and practice a mass casualty plan. *	Hospital board and admin, EMA, State, regional agencies	2023-2024
	Help community leaders and businesses to improve local public health response readiness. *	Hospital board and admin, NGOs, State, public health	2023-2025
	Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.	Hospital board and admin, NGOs, State, IT department	2023-2025
	Increase community and individual engagement in disease prevention efforts. *	Hospital board and admin, NGOs, State agencies, advocacy groups	Continuous
Mid-term projects (2024-2025)	Implement specialized ventilation systems and projects.	Hospital board and admin, EMA, facilities dept, State	2024-2025
	Install quick-connect emergency generator hook-ups for facilities.	Hospital board and admin, facilities director, utility provider	2024-2025
	Invest in the latest broadband infrastructure.	Hospital board and admin, State, facilities director, utility provider	2024-2026
	Modernize infectious disease surveillance to drive public health actions. *	Hospital board and admin, public health, State, CDC	2024-2026
	Purchase stand-by portable pumps and generators.	Hospital board and admin, facilities director, utility provider	2025-2026
Long-term projects (2026 and beyond)	Construct/integrate public safe rooms in or near existing and future community assets and parks.	Hospital board and admin, EMA, SICOG, State	2026-beyond
	Install sprinkler systems in public buildings.	Hospital board and admin, facilities director, fire department	2026-beyond

Initiation	Action *	Likely Leadership	Duration
	Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	Hospital board and admin, facilities director, State	2026-beyond
	Purchase/install backup fixed power generators and pumps.	Hospital board and admin, facilities director, utility provider	2026-beyond
	Strengthen exposed utility and communications infrastructure and systems (emergency and general). *	Hospital board and admin, facilities director, utility provider	2026-beyond

* This action is generally multi-jurisdictional – another jurisdiction in will have an influence on the timeframe and scope.

4.10: Mitigation Action Summaries

The following tables show details about the selected mitigation actions, organized alphabetically, that may provide further guidance for each jurisdiction in hazard mitigation plan implementation.

Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	
Primary hazard affected	Flood, River
Secondary hazard affected	Grass/wildland fire
Other key hazards affected	Some other hazards
Jurisdictions implementing	Prescott, SW Valley School
Issue/plan for implementation	This action requires more detailed analysis of what specific areas should be targeted, with area-specific hazards, such as flooding, being the key.
Goals addressed	1, 2, 4
Potential partners	FEMA, IHSEMD, County EMA
Estimated total cost	\$10,000 to \$100,000
Potential key funding sources	Local, State, FEMA, possible other public agencies
Benefits (losses avoided)	Prevention of future property losses and possible fatalities

Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	
Primary hazard affected	Flood, River
Secondary hazard affected	Flood, Flash
Other key hazards affected	
Jurisdictions implementing	Adams County, Prescott
Issue/plan for implementation	This action requires more detailed analysis to determine where the issues are the worst.
Goals addressed	1, 2, 4
Potential partners	FEMA, IHSEMD, County EMA
Estimated total cost	\$10,000 to \$250,000
Potential key funding sources	Local, State, FEMA, possible other public agencies
Benefits (losses avoided)	Prevention of future property losses and possible fatalities

Adopt a continuity of operations & succession plan for the jurisdiction.	
Primary hazard affected	Tornado
Secondary hazard affected	Human disease
Other key hazards affected	Most other hazards
Jurisdictions implementing	Nodaway, SW Valley School, CHI Health
Issue/plan for implementation	Work with other jurisdictions in the county and State/FEMA officials to prepare a written document and adopt it locally.
Goals addressed	3, 4
Potential partners	County EMA, State/FEMA and insurance entities providing technical assistance
Estimated total cost	\$5,000
Potential key funding sources	Local, State, FEMA, possible other public agencies
Benefits (losses avoided)	Prevention of the loss of government function; continuity of government

Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	
Primary hazard affected	All hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Adams County, Corning, Prescott
Issue/plan for implementation	While this may require concentrated work, taking ideas and strategies from this plan and including them in public policy updates is essential.
Goals addressed	3, 4
Potential partners	Local governments, property owners and facility managers.
Estimated total cost	\$5,000, mostly in the form of staff and elected official time; more if consultants required.
Potential key funding sources	Local, possible county/state/federal in-kind assistance.

Benefits (losses avoided)	Maintain government compliance; improved efficiency
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Adopt State fire codes.	
Primary hazard affected	Structural fire
Secondary hazard affected	Grass and wildland fire
Other key hazards affected	Hazardous Materials
Jurisdictions implementing	Corning, Prescott
Issue/plan for implementation	The State may require these codes in all areas; larger towns have the resources to carry out administratively.
Goals addressed	1
Potential partners	Local governments, property owners, Iowa Fire Marshal, local fire departments
Estimated total cost	Generally, less than \$10,000 upfront and \$5,000 per year to enforce/administer
Potential key funding sources	Local
Benefits (losses avoided)	Prevention of property loss; life safety

Backup files and records – store in alternate locations.	
Primary hazard affected	Cyber terrorism
Secondary hazard affected	Most hazards that can damage property
Other key hazards affected	
Jurisdictions implementing	Corning
Issue/plan for implementation	A significant problem for small towns, because they lack resources to manage data and files in multiple systems; requires long-term resource commitment and oversight.
Goals addressed	2, 3, 4
Potential partners	Local governments, State/FEMA, Iowa Dept. of Management
Estimated total cost	\$1,000 initially and \$1,000 per year management and storage
Potential key funding sources	Local, State/FEMA in-kind time, possible community foundation grants
Benefits (losses avoided)	Prevention of property loss; continuity of government

Bury exposed utility and communications infrastructure.	
Primary hazard affected	Energy failure
Secondary hazard affected	Severe winter storm
Other key hazards affected	Windstorm; tornado; thunderstorm and lightning
Jurisdictions implementing	Corning
Issue/plan for implementation	Utilities are expensive to build and maintain; burial provides nearly permanent protection.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, utility providers, property owners
Estimated total cost	\$100,000 or more per jurisdiction
Potential key funding sources	Local, utility provider, possible USDA and FEMA grants, possible energy-based loans
Benefits (losses avoided)	Prevention of property loss; continuation of essential utilities; infrastructure preservation

Complete storm water drainage or watershed studies of known flood areas.	
Primary hazard affected	Flood, flash
Secondary hazard affected	Flood, river
Other key hazards affected	Transportation incidents
Jurisdictions implementing	Corning, Nodaway
Issue/plan for implementation	Consultants are required to fully analyze drainage patterns and recommend solutions for each situation.
Goals addressed	2, 3, 4
Potential partners	Local governments, property owners, consultants
Estimated total cost	\$10,000 per jurisdiction or project area
Potential key funding sources	USDA, Iowa SRF program, local
Benefits (losses avoided)	Continuation of essential utilities; infrastructure preservation

Conduct intensive local and regional intelligence, drills, and scenarios.	
Primary hazard affected	Terrorism
Secondary hazard affected	Almost all hazards
Other key hazards affected	
Jurisdictions implementing	Corning
Issue/plan for implementation	Requires organization and leadership as well as strong participation and State leadership/funding.
Goals addressed	3, 4
Potential partners	Local governments, EMA, all local response agencies, State response agencies
Estimated total cost	Varies but likely about \$10,000 total per year per entity
Potential key funding sources	Mostly local and State agency funding

Conduct intensive local and regional intelligence, drills, and scenarios.	
Benefits (losses avoided)	Continuation of local government; efficient use of funds; reduced risk of fatalities and injuries, especially among response agencies

Construct or repair dams; develop reservoirs and lakes (flood control, water source).	
Primary hazard affected	Dam and levee failure
Secondary hazard affected	Flood, flash
Other key hazards affected	Infrastructure failure; human disease, river flood, pipeline transportation incident
Jurisdictions implementing	Prescott
Issue/plan for implementation	This pertains mostly to the planned reservoir but also can include other projects that address flooding potential in areas where damage is considerable.
Goals addressed	1, 2, 4
Potential partners	Local governments, Iowa DNR
Estimated total cost	\$1,000 per year plus any repair costs identified
Potential key funding sources	Local, possible IDNR funding
Benefits (losses avoided)	Prevention of dam failure and loss to property, infrastructure, and life downstream

Construct storm water drainage (underground, culverts, curb & gutter, etc.) – improve capacity of existing systems.	
Primary hazard affected	Flood, flash
Secondary hazard affected	Transportation incidents
Other key hazards affected	Infrastructure failure
Jurisdictions implementing	Adams County, Nodaway, Prescott
Issue/plan for implementation	Storm water remains a problem as excessive rain events seem to be more common. Storm water flows over streets and into buildings. Hard infrastructure can be built in ROW areas.
Goals addressed	1, 2, 4
Potential partners	Local governments, property owners, consulting engineers
Estimated total cost	\$100,000 (varies by type and extent of SOW)
Potential key funding sources	FEMA/State, USDA, Iowa SRF program, CDBG
Benefits (losses avoided)	Infrastructure preservation; prevention of property loss

Construct/integrate public safe rooms in or near existing and future community assets and parks.	
Primary hazard affected	Tornado and windstorm
Secondary hazard affected	Thunderstorm, lightning, and hail
Other key hazards affected	Structural failure
Jurisdictions implementing	All jurisdictions
Issue/plan for implementation	This offers almost 100% protection to populations during tornadoes and other severe weather. FEMA and State funding is available for dual-use facilities in public areas and schools.
Goals addressed	1, 2, 4
Potential partners	Local governments, property owners, State/FEMA
Estimated total cost	\$500,000+ (varies by size)
Potential key funding sources	FEMA/State, local
Benefits (losses avoided)	Life safety

Create a pandemic readiness plan that outlines initial responses and policies to reduce confusion.	
Primary hazard affected	Pandemic human disease
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	Using COVID as the template, create draft policies and procedures that are adoptable for future incidents.
Goals addressed	1, 3, 4
Potential partners	Local governments, County and Iowa Dept. of Public Health, CDC, Statewide agencies
Estimated total cost	\$5,000
Potential key funding sources	Mostly local, potentially state/federal grants
Benefits (losses avoided)	Awareness; planning; potential reduction in fatalities and illnesses

Create and maintain a special needs/oxygen user registration program or inventory.	
Primary hazard affected	Infrastructure failure (structural fire and energy failure)
Secondary hazard affected	Glass and wildland fire
Other key hazards affected	Possibly other hazards
Jurisdictions implementing	Nodaway
Issue/plan for implementation	There is always an issue of privacy with this kind of action and it would have to be voluntary.
Goals addressed	1, 3
Potential partners	Local governments, regional response agencies, LEPC, fire departments, utility providers

Estimated total cost	\$1,000/year estimated
Potential key funding sources	Local, no outside sources likely needed or available
Benefits (losses avoided)	Jurisdictional efficiency and continuity; prevention of unnecessary loss of life or health

Demolish abandoned properties.

Primary hazard affected	Windstorm
Secondary hazard affected	Structural failure (structural fire)
Other key hazards affected	Tornado; wildland fire
Jurisdictions implementing	Nodaway
Issue/plan for implementation	As populations decline and shift to new areas and as buildings age, abandoned buildings will always be found. Annual budgeting for this purpose is vital in some jurisdictions.
Goals addressed	1
Potential partners	Local governments, property owners
Estimated total cost	\$15,000 per property, but varies by size and scope of work
Potential key funding sources	Local, possible grants from housing agencies
Benefits (losses avoided)	Maintained property valuation; life safety

Designate emergency routes and add signage for emergency procedures for travelers.

Primary hazard affected	Hazardous materials
Secondary hazard affected	Transportation incidents
Other key hazards affected	Infrastructure failure, some other natural hazards, such as tornado/windstorm and severe winter storm
Jurisdictions implementing	SW Valley School
Issue/plan for implementation	Requires strong coordination among entities to ensure routes remain viable.
Goals addressed	1, 3
Potential partners	Local governments, County Secondary Roads, Iowa DOT
Estimated total cost	Up to \$1,000 for planning and \$250 per sign
Potential key funding sources	Local, possible IDOT
Benefits (losses avoided)	Jurisdictional efficiency and continuity; prevention of unnecessary loss of life or health

Develop/maintain security at applicable critical assets.

Primary hazard affected	Terrorism
Secondary hazard affected	Pandemic human disease
Other key hazards affected	Infrastructure failure
Jurisdictions implementing	Corning
Issue/plan for implementation	This is a long-term investment in technology and monitoring.
Goals addressed	2, 3, 4
Potential partners	Local governments, law enforcement agencies
Estimated total cost	\$1,000 for the plan plus any enforcement costs, which could exceed \$25,000
Potential key funding sources	Local, possible grants from various agencies, IHSEMD
Benefits (losses avoided)	Jurisdictional efficiency and continuity; prevention of unnecessary loss of life or health; prevention of property damage

Educate the public about the interconnected efforts needed to prevent and control infectious diseases and their role in protecting health.

Primary hazard affected	Pandemic human disease
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	CHI Health
Issue/plan for implementation	Using COVID as the template, collaborate with other entities to provide sustained educational materials and programs
Goals addressed	1, 3, 4
Potential partners	Local governments, County and Iowa Dept. of Public Health, CDC, Statewide agencies
Estimated total cost	\$2,500 initially with sustained investments of lower amounts in future years
Potential key funding sources	Mostly local, potentially state/federal grants
Benefits (losses avoided)	Awareness; planning; continuity of government; potential reduction in fatalities and illnesses

Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure/critical assets.

Primary hazard affected	Transportation incidents
Secondary hazard affected	Flood, flash
Other key hazards affected	Flood, river; energy failure; pipeline transportation incident; hazardous materials
Jurisdictions implementing	Adams County, Corning, Nodaway, Prescott
Issue/plan for implementation	Infrastructure upgrades are a vital issue in rural Iowa, where a low-density population disperses resources to manage the durable infrastructure needed. This includes a plan to repair/replace a

	water pumphouse at Lake Icaria dam, which involves multiple entities. Significant planning is necessary.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, possible property owners who own adjacent land
Estimated total cost	\$100,000 to \$2 million, depending on type and SOW
Potential key funding sources	Local, FEMA/State, Iowa DOT, Federal transportation funding, USDA, Iowa SRF, CDBG
Benefits (losses avoided)	Infrastructure preservation; life safety; economic impact (fewer detours and delays)

Employ construction measures that direct water away from structures.

Primary hazard affected	Flood, flash
Secondary hazard affected	Flood, river
Other key hazards affected	Infrastructure failure
Jurisdictions implementing	Corning
Issue/plan for implementation	This action requires greater thought and planning about how buildings are designed and sites are prepared than typical construction.
Goals addressed	1, 2, 4
Potential partners	Local governments, IHSEMD, FEMA, IDNR, construction companies and advocates, architects and engineers
Estimated total cost	\$1,000 to \$10,000 for planning; costs for projects will vary widely
Potential key funding sources	Local, grants available for specific projects from agencies concerned with flood protection and building stability
Benefits (losses avoided)	Infrastructure preservation; life safety

Encourage citizen purchase/use of smoke detectors and fire extinguishers; incentive program.

Primary hazard affected	Infrastructure failure (structural fire)
Secondary hazard affected	Hazardous materials (pipeline transportation incident)
Other key hazards affected	
Jurisdictions implementing	Adams County, Corning, Nodaway
Issue/plan for implementation	It takes constant effort to keep people thinking about fire prevention in their homes and businesses. Programs are available for local fire department use.
Goals addressed	1
Potential partners	Local governments, EMA, fire departments
Estimated total cost	Up to \$10,000 annually (depending on scope and nature of incentives)
Potential key funding sources	Local, FEMA AFG grant, local foundations and private sources
Benefits (losses avoided)	Life safety; engagement of the public

Encourage property owners to own adequate property insurance.

Primary hazard affected	All hazards to some degree, except river flooding, which is Federally funded through the NFIP
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Prescott
Issue/plan for implementation	With partners, local governments can use various methods to promote the public purchasing adequate insurance to cover losses. Insurance companies, banks, and realtors can be engaged.
Goals addressed	1
Potential partners	Local governments, insurance companies, banks, real estate firms, property owners
Estimated total cost	\$500 annually
Potential key funding sources	Local, local insurance companies
Benefits (losses avoided)	Prevention of property loss; engagement of the public

Encourage the implementation of water-saving measures, including soil and water conservation practices.

Primary hazard affected	Drought
Secondary hazard affected	Flood, River
Other key hazards affected	Flood, Flash; structural failure, animal/plant/crop disease
Jurisdictions implementing	Corning and Prescott
Issue/plan for implementation	Because of the identified water shortage projections, constant efforts to encourage conservation are necessary.
Goals addressed	1, 4
Potential partners	Local governments, property owners, conservation organizations, NRCS, SWCD
Estimated total cost	\$500 annually
Potential key funding sources	Local, local conservation groups, State and Federal water quality cost share programs
Benefits (losses avoided)	Basic health; engagement of the public

Encourage/install sustainable storm water control and water quality practices.

Primary hazard affected	Flood, flash
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Secondary hazard affected	Structural failure
Other key hazards affected	Flood, river, human disease
Jurisdictions implementing	Adams County; Prescott
Issue/plan for implementation	Natural partners are already in place and sustainable practices, such as rain gardens, are becoming more popular; encouragement can be supplemented with cost-share programs.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, local SWDC/NRCS offices, Iowa Dept. of Agriculture, ISU Extension
Estimated total cost	\$5,000 per practice, may exceed \$100,000 annually countywide
Potential key funding sources	USDA, IA Dept. of Ag, ISU Extension, private foundations, CDBG program, Iowa SRF program
Benefits (losses avoided)	Quality of life, property protection, reliable water supplies

Enforce multi-family housing extinguisher laws.

Primary hazard affected	Structural fire
Secondary hazard affected	Hazardous materials
Other key hazards affected	
Jurisdictions implementing	Corning
Issue/plan for implementation	The County would pass an ordinance and provide a means to enforce it.
Goals addressed	1
Potential partners	Local governments, local law enforcement
Estimated total cost	\$500 annually
Potential key funding sources	Technical assistance from the State Fire Marshal as needed
Benefits (losses avoided)	Life safety, property protection, prevention

Enforce nuisance regulations to rid the area of debris that could be a hazard.

Primary hazard affected	Structural fire or infrastructure failure
Secondary hazard affected	Hazardous materials
Other key hazards affected	Most storm-related natural hazards
Jurisdictions implementing	Corning, Nodaway, Prescott
Issue/plan for implementation	The jurisdiction would pass an ordinance and provide a means to enforce it.
Goals addressed	1
Potential partners	Local governments, local law enforcement
Estimated total cost	\$2,500+ annually
Potential key funding sources	Technical assistance from SICO, city attorney, city/county league groups
Benefits (losses avoided)	Life safety, property protection, prevention

Establish alert systems and specific outreach efforts for vulnerable populations.

Primary hazard affected	Most hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Adams County
Issue/plan for implementation	This requires identification of populations to be served and why they are not served.
Goals addressed	1, 3
Potential partners	Local governments, EMA, possible State agencies, communications providers
Estimated total cost	\$1,000 or so, but could vary based on scope of effort
Potential key funding sources	Local, IHSEMD, possible other State agencies
Benefits (losses avoided)	Life safety; improved participation in mitigation planning and implementation of projects

Establish backup utilities and communications infrastructure; use the latest technology.

Primary hazard affected	Most hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Nodaway, Prescott
Issue/plan for implementation	Vital for local operations and emergency response; changing technology makes this difficult to implement.
Goals addressed	2, 3, 4
Potential partners	Local governments, EMA, utilities and providers, E911 board, possible State agencies
Estimated total cost	\$100,000 but varies by scope of work
Potential key funding sources	Local, State/FEMA, USDA, possible DHS and related agencies
Benefits (losses avoided)	Emergency response and local continuity of operations; life safety

Facilitate the cleanup of abandoned and nuisance properties, unused chemical storage, and other potential environmental hazards.

Primary hazard affected	Hazardous materials
Secondary hazard affected	Infrastructure failure (structure failure and fire)

Other key hazards affected	Human disease
Jurisdictions implementing	Adams County, Corning, Nodaway, Prescott
Issue/plan for implementation	Requires extensive legal work in some cases; can be expensive and time-consuming.
Goals addressed	1, 3
Potential partners	Local governments, EMA, fire departments, IDNR, EPA
Estimated total cost	\$10,000+ depending on scope of work and complexity of the problem
Potential key funding sources	Local, State agencies, IDNR, EPA, possible other federal agencies
Benefits (losses avoided)	Life safety and health; property protection; prevention of hazards

Flood proof critical assets in the community.

Primary hazard affected	Flood, river
Secondary hazard affected	Flood, flash
Other key hazards affected	Infrastructure failure, transportation failure
Jurisdictions implementing	Adams County
Issue/plan for implementation	Must identify what the flood risk for each building and structure.
Goals addressed	2, 3, 4
Potential partners	Local governments, EMA, facility owners
Estimated total cost	\$10,000 or more depending on scope of work
Potential key funding sources	Local, FEMA/State, local foundations, USDA, facility owners
Benefits (losses avoided)	Protection of property; local continuity of operations

Fund weatherization programs to more low-income households.

Primary hazard affected	Structural failure
Secondary hazard affected	Severe winter storm
Other key hazards affected	Tornado/windstorm; thunderstorm/lightning/hail, extreme heat, flash flood
Jurisdictions implementing	Adams County, Corning, Prescott
Issue/plan for implementation	This is a major quality of life issue and adds property value. The issue remains how to involve public dollars in this issue.
Goals addressed	1, 4
Potential partners	Local governments, property owners, SICO, SCICAP
Estimated total cost	Up to \$25,000 per unit
Potential key funding sources	SCICAP, USDA, CDBG, foundations and housing grants
Benefits (losses avoided)	Life safety; basic health; prevention of property loss, improved quality of life

Harden public buildings and utilities (structural retrofits).

Primary hazard affected	Tornado
Secondary hazard affected	Windstorm
Other key hazards affected	Thunderstorm/lightning/hail; severe winter storm; structural failure
Jurisdictions implementing	Adams County, Nodaway
Issue/plan for implementation	This lengthens the life of buildings even if no disasters occur that would otherwise cause damage. Standards should be implemented in any building improvements.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, State/FEMA
Estimated total cost	\$500,000, more or less depending on building size and SOW
Potential key funding sources	FEMA/State, local, CDBG, USDA, Iowa SRF program
Benefits (losses avoided)	Continuation of essential utilities; prevention of property loss; life saving

Help community leaders and businesses to improve local public health response readiness.

Primary hazard affected	Pandemic human disease
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	Using COVID as the template, collaborate with other entities to provide sustained educational materials and programs
Goals addressed	1, 3, 4
Potential partners	Local governments, County and Iowa Dept. of Public Health, CDC, Statewide agencies
Estimated total cost	\$2,500 initially with sustained investments of lower amounts in future years
Potential key funding sources	Mostly local, potentially state/federal grants
Benefits (losses avoided)	Awareness; planning; continuity of government; sustained economy

Hold annual meetings in each jurisdiction to review plan progress and prepare a strategy for the coming fiscal year.

Primary hazard affected	All hazards to some degree
Secondary hazard affected	
Other key hazards affected	

Jurisdictions implementing	All jurisdictions
Issue/plan for implementation	This is a standard action to implement this plan and meet State/FEMA requirements. Each year the jurisdiction will meet, discuss, and record comments related to the plan, including an evaluation of projects implemented in the past year and a budget for projects to be undertaken in the following year. Formal amendments will be requested to the State/FEMA, as needed.
Goals addressed	3, 4
Potential partners	Local governments, EMA, possible SICO and State/FEMA
Estimated total cost	No outside funding; simply part of meeting and budget process
Potential key funding sources	Local only
Benefits (losses avoided)	Plan implementation; engagement of the public

Identify and cordon off isolation places on the property to maintain social distancing when potential cases are identified.

Primary hazard affected	Pandemic human disease
Secondary hazard affected	Terrorism (Biological mainly)
Other key hazards affected	
Jurisdictions implementing	Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	Using COVID as the template, create policies preemptively to address future incidents and purchase materials to implement this activity
Goals addressed	2, 3,4
Potential partners	Local governments, County and Iowa Dept. of Public Health, CDC, Statewide agencies
Estimated total cost	\$5,000+ initial investment likely
Potential key funding sources	Mostly local, potentially state/federal grants
Benefits (losses avoided)	Prevention of illnesses and fatalities; continuity of government

Implement a comprehensive multi-media public education campaign for multiple hazards.

Primary hazard affected	All hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	All jurisdictions
Issue/plan for implementation	Print materials provide a visual reminder to the public of hazard risks. They should be attractive and address specific hazard issues and be available in a variety of locations; social media and other platforms should also be used to keep this issue fresh to the public.
Goals addressed	1
Potential partners	Local governments, EMA, civic groups
Estimated total cost	\$2,500 initially and \$500 annually thereafter
Potential key funding sources	EMA, FEMA/State, volunteer groups, engaged general public
Benefits (losses avoided)	Life safety; basic health; property protection; engagement of the public

Implement GIS mapping system and utilize digital hazard maps.

Primary hazard affected	Infrastructure failure
Secondary hazard affected	Flood, River
Other key hazards affected	Other hazards that can have relevant mapping data
Jurisdictions implementing	Adams County
Issue/plan for implementation	Mapping data is useful if locally managed and local officials understand how to use the data; common to map past disaster event and loss histories and manage infrastructure/facilities.
Goals addressed	2, 3, 4
Potential partners	Local governments, service providers, GIS vendor, possible SICO
Estimated total cost	\$10,000 to map hazard mitigation data, \$5,000/yr to manage hazard mitigation data
Potential key funding sources	Local, foundations and possible state/federal grants
Benefits (losses avoided)	Continuity of operations; engagement of the public; local government efficiency

Implement all aspects of the NFIP.

Primary hazard affected	Flood, river
Secondary hazard affected	Structural failure
Other key hazards affected	Human disease incident, flood, flash
Jurisdictions implementing	Adams County, Corning, Nodaway
Issue/plan for implementation	The NFIP is the only way of insuring against flooding. Participation is a necessary local requirement where FHAs exist. The IDNR can manage or delegate authority.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, FEMA, IDNR, local flood manager(s)
Estimated total cost	\$1,000 startup cost
Potential key funding sources	Local, FEMA, IDNR
Benefits (losses avoided)	Prevention of property loss; maintain government compliance

Implement measures, including the addition of technology, to ensure a reasonably smooth transition to work, learn, and seek health consultation at home.

Primary hazard affected	Pandemic human disease
Secondary hazard affected	Many storm-related natural hazards; cyber terrorism
Other key hazards affected	
Jurisdictions implementing	SW Valley Schools, CHI Health
Issue/plan for implementation	Process can be very expensive and constantly involve investments and monitoring in multiple locations.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, statewide agencies, IT professionals, insurance companies
Estimated total cost	\$10,000+ initial investment, lesser amount of continued investment
Potential key funding sources	Mostly local, potentially state/federal grants
Benefits (losses avoided)	Continuity of government; economic sustainability

Implement sanitary sewer system inflow and infiltration projects, including new mains and impervious manhole covers.

Primary hazard affected	Flood, flash
Secondary hazard affected	Infrastructural failure
Other key hazards affected	Human disease incident, transportation incident, hazardous materials incident
Jurisdictions implementing	Corning, Prescott
Issue/plan for implementation	Required as part of water quality compliance where inflow is occurring to the sewer system; requires engineering and can be very expensive
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, IDNR, EPA, IFA
Estimated total cost	\$25,000+ per project or over \$1 million for major sewer reconstruction
Potential key funding sources	Local, IEDA CDBG program, USDA, Iowa SRF program, other federal funds
Benefits (losses avoided)	Continuation of essential utilities and infrastructure; prevention of property loss; lifesaving.

Implement specialized ventilation systems and projects.

Primary hazard affected	Pandemic human disease
Secondary hazard affected	Many storm-related natural hazards; terrorism
Other key hazards affected	
Jurisdictions implementing	SW Valley Schools, CHI Health
Issue/plan for implementation	May require research in types of designs best prevent spread of airborne germs and diseases.
Goals addressed	2, 3, 4
Potential partners	Local governments, statewide agencies, local and state Departments of Public Health, CDC
Estimated total cost	\$25,000+ initial investment
Potential key funding sources	Mostly local, potentially state/federal grants
Benefits (losses avoided)	Continuity of government; prevention of fatalities and illnesses

Implement storm water management regulations.

Primary hazard affected	Flood, flash
Secondary hazard affected	Structural failure
Other key hazards affected	Possibly other hazards
Jurisdictions implementing	Corning
Issue/plan for implementation	Along with a storm water utility created to intake funds for projects, regulations can ensure building projects consider impact on water flow to surrounding properties.
Goals addressed	1, 2, 3
Potential partners	Local governments, FEMA, IDNR, local flood manager(s), planning agencies such as SICOG
Estimated total cost	\$2,500 startup costs
Potential key funding sources	Local, FEMA, IDNR, IFA
Benefits (losses avoided)	Prevention of property loss; preservation of infrastructure

Implement stream modifications/channel improvements and stream bank stabilization.

Primary hazard affected	Flood, river
Secondary hazard affected	Flood, flash
Other key hazards affected	Transportation incidents, infrastructure failure; structural failure
Jurisdictions implementing	Prescott, SW Valley School
Issue/plan for implementation	Is consistent with the Iowa Water Quality Initiative, which has some funding tied to it; requires study and partnerships with water quality agencies; requires engagement with landowners.
Goals addressed	1, 2
Potential partners	Local governments, property owners, State agencies (IDALS and IDNR), FEMA, EMA, local S&WCDs, USDA/NRCS
Estimated total cost	Costs vary widely depending on scope of work
Potential key funding sources	Local, possible FEMA, USDA, IDALS, IDNR, CDBG program, SRF program

Benefits (losses avoided)	Prevention of property loss; infrastructure preservation; pollution prevention/water quality
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Improve transportation infrastructure (resurface, pave, widen roads, increase bridge capacity, etc.).	
Primary hazard affected	Transportation incident
Secondary hazard affected	Flash flood
Other key hazards affected	Structural failure
Jurisdictions implementing	Adams County, Corning, Nodaway, Prescott, SW Valley Schools
Issue/plan for implementation	Infrastructure upgrades are a vital issue in rural Iowa, where a low-density population disperses resources to manage the durable infrastructure needed. Significant planning is necessary.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, possible property owners adjacent to transportation routes
Estimated total cost	\$100,000 to \$2 million
Potential key funding sources	Local, RUTF, Iowa DOT, Federal highway funding, bonding, TIF, and special assessments
Benefits (losses avoided)	Infrastructure preservation; life safety; local government efficiency/continuity

Incorporate stand-alone elements for hazard mitigation into the local comprehensive (land use) plan and other local plans.	
Primary hazard affected	Most hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Adams County, Corning
Issue/plan for implementation	A comprehensive plan addresses the long-term trends and needs of a jurisdiction. Incorporating ideas and strategies from this plan into a jurisdiction's general plan ensures implementation. Associated with this is the imposition of zoning.
Goals addressed	3, 4
Potential partners	Local governments, a planning agency or consultant such as SICOG, EMA
Estimated total cost	\$2,500 unless it is entire plan re-write, which will be at least \$10,000
Potential key funding sources	Local, possible FEMA/State, private foundations
Benefits (losses avoided)	Improved data sharing; improved efficiency; maintain government compliance; reduce structural losses; prevent some hazards.

Increase community and individual engagement in disease prevention efforts.	
Primary hazard affected	Human disease
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	This is part of a national strategy. The goal is to get the population involved in this effort.
Goals addressed	1
Potential partners	Local governments, engaged general public, Adams Co. PH, IDPH, CDC, EMA
Estimated total cost	\$1,000
Potential key funding sources	Local, possible FEMA/State, associated agencies and foundation grants
Benefits (losses avoided)	Life safety; a more engaged public

Increase production capacity - redundant systems and looping (water, sewer, electric, gas) – including Corning Electrical Looping Project	
Primary hazard affected	Most hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Adams County, Corning, Prescott
Issue/plan for implementation	Water and electrical needs are great in various areas. During the third planning meeting, a need to increase electrical looping and capacity was described.
Goals addressed	1, 2, 3
Potential partners	Local governments, SIRWA, possibly SICOG and the EMA
Estimated total cost	Likely \$1 million or more
Potential key funding sources	Local, possible FEMA/State, CDBG and USDA grants; private foundations
Benefits (losses avoided)	Property losses avoided; possible lives saved; improved local quality of life; better response coordination.

Initiate community preparedness programs.	
Primary hazard affected	All hazards to some degree
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Adams County
Issue/plan for implementation	This is similar to the implementation of an education campaign but is more focused on assisting businesses and organizations directly.

Goals addressed	1, 2, 3, 4
Potential partners	Local governments, FEMA/State, insurance providers
Estimated total cost	Likely \$5,000 or less per year, depending on scope and number of organizations involved.
Potential key funding sources	Local, possible state and federal grants, possible donated technical assistance
Benefits (losses avoided)	Life safety; basic health; continuity of operations

Install and/or update anti-virus software and emergency communications technology.

Primary hazard affected	Terrorism
Secondary hazard affected	Infrastructure failure
Other key hazards affected	Human disease, hazardous materials, possibly other hazards
Jurisdictions implementing	Nodaway
Issue/plan for implementation	Requires purchase, monitoring, and maintenance; requires vigilance to remain in forefront of threats and changes in technology
Goals addressed	2, 3
Potential partners	Local governments, FEMA, IHSEMD, IT professionals
Estimated total cost	Likely modest and mostly local cost
Potential key funding sources	Mostly local, possible grants from State
Benefits (losses avoided)	Continuity of operations; sustainability of infrastructure; possible human health

Install flood walls and retaining walls around critical infrastructure.

Primary hazard affected	Flood, River
Secondary hazard affected	Flood, Flash
Other key hazards affected	Infrastructure failure
Jurisdictions implementing	Corning
Issue/plan for implementation	Detailed study of the scope, size, and location would be necessary as part of design and funding package.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, county flood manager, IDNR, property owners
Estimated total cost	Likely over \$100,000
Potential key funding sources	Local, State, FEMA, possible other federal grants
Benefits (losses avoided)	Protection of public property; continuity of government; prevention of illnesses; economic sustainability

Install quick-connect emergency generator hook-ups for facilities.

Primary hazard affected	Tornado and windstorm
Secondary hazard affected	Thunderstorm/lightning/hail
Other key hazards affected	Hazardous materials; severe winter storm; flash flood
Jurisdictions implementing	Adams County, Corning, Nodaway, SW Valley Schools, CHI Health
Issue/plan for implementation	Is a great activity for an entity that has on hand or has access to an emergency generator but not the resources or justification for a larger fixed generator
Goals addressed	2, 3, 4
Potential partners	Local governments, EMA, service providers, possibly IHSEMD, utility providers
Estimated total cost	Likely up to \$50,000
Potential key funding sources	Local, FEMA, IHSEMD, possibly other state and federal funds
Benefits (losses avoided)	Life safety; possible protection of public buildings exposed to the weather.

Install sprinkler systems in public buildings.

Primary hazard affected	Infrastructure failure (primarily structural fire)
Secondary hazard affected	Hazardous materials incident
Other key hazards affected	
Jurisdictions implementing	SW Valley Schools, CHI Health
Issue/plan for implementation	Can be very expensive, so usually they are not installed except where required by law.
Goals addressed	1, 2, 3
Potential partners	Local governments, fire departments, Iowa State Fire Marshal, state agencies affected
Estimated total cost	\$100,000 or more depending on scope of work
Potential key funding sources	Building owners; possible State/Federal grants, local private foundation grants
Benefits (losses avoided)	Life safety; property protection

Install warning sirens.

Primary hazard affected	Tornado and windstorm
Secondary hazard affected	Thunderstorm/lightning/hail
Other key hazards affected	Possible other incidents as programmed into the system
Jurisdictions implementing	Adams County

Install warning sirens.	
Issue/plan for implementation	Sirens must be purchased, installed, tested, and connected to some kind of trigger system; addressed because existing sirens may not meet needs in five years.
Goals addressed	1
Potential partners	Local governments, fire department, county E911
Estimated total cost	Likely up to \$30,000
Potential key funding sources	Local, USDA, possible community foundation grants, property owners, occasionally FEMA
Benefits (losses avoided)	Life safety

Invest in the latest broadband infrastructure.	
Primary hazard affected	Infrastructure failure
Secondary hazard affected	Most other hazards to some degree
Other key hazards affected	
Jurisdictions implementing	Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	Gaining the economies of scale to deploy this infrastructure evenly is a continual challenge, especially as technology continues to evolve.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, statewide agencies, IT professionals, internet service providers
Estimated total cost	\$100,000+ depending on scope of investment and number of connections
Potential key funding sources	Local, providers, State and Federal grants from various agencies
Benefits (losses avoided)	Continuity of government; economic sustainability; ability to alert the public and call for emergency services

Involve more groups in hazard mitigation.	
Primary hazard affected	Nearly all hazards
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	Adams County, Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	This action really is just to increase the number of groups within and assisting said jurisdictions targeted and sustained by continual projects that engage them.
Goals addressed	2, 3, 4
Potential partners	Local governments, EMA, possible FEMA/State, other interest groups, business groups
Estimated total cost	\$500 annually
Potential key funding sources	Local
Benefits (losses avoided)	Engagement of the public; increase in efficiency and effectiveness

Make taller and exposed buildings, towers, and communications infrastructure lightning-proof.	
Primary hazard affected	Thunderstorm/lightning/hail
Secondary hazard affected	Infrastructure failure (structural fire and energy failure)
Other key hazards affected	
Jurisdictions implementing	SW Valley Schools, CHI Health
Issue/plan for implementation	Study would determine the best means to provide protection for any targeted structure.
Goals addressed	2, 3, 4
Potential partners	Local governments, building owners, utility providers
Estimated total cost	\$25,000 to \$100,000 in most cases
Potential key funding sources	Local, possible state or FEMA grants, USDA
Benefits (losses avoided)	Property protection, infrastructure preservation, continuity of operations, life safety

Modernize infectious disease surveillance to drive public health actions.	
Primary hazard affected	Human disease
Secondary hazard affected	Terrorism
Other key hazards affected	
Jurisdictions implementing	SW Valley Schools, CHI Health
Issue/plan for implementation	This is part of a national strategy. The goal is to formalize and keep current with the effort locally and engage local leaders.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, engaged general public, Ringgold Co. PH, IDPH, CDC, EMA, FEMA/State
Estimated total cost	\$1,000 to \$5,000
Potential key funding sources	Local, possible FEMA/State, CDC, IDPH
Benefits (losses avoided)	Life safety

Participate in the FEMA Community Rating Service (CRS) Program.	
Primary hazard affected	Flood, river
Secondary hazard affected	Structural failure

Other key hazards affected	Human disease incident, flood, flash
Jurisdictions implementing	Adams County
Issue/plan for implementation	The CRS is under consideration as a way to reduce costs, when enough people join to justify.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, FEMA, IDNR, local flood manager(s)
Estimated total cost	\$1,000 startup cost
Potential key funding sources	Local, FEMA, IDNR
Benefits (losses avoided)	Prevention of property loss; improve effectiveness of program and reduce costs to residents

Prepare and practice a mass casualty plan.

Primary hazard affected	Human disease
Secondary hazard affected	Terrorism
Other key hazards affected	Any other hazard that could cause mass casualties (tornado, structural failure, fire, transportation incident, etc.)
Jurisdictions implementing	Corning, SW Valley Schools, CHI Health
Issue/plan for implementation	This is part of a national strategy. Templates and example plans are available for local use and adoption.
Goals addressed	2, 3, 4
Potential partners	Local governments, engaged general public, Adams Co. PH, EMA, FEMA/State, regional homeland security agencies, law enforcement community
Estimated total cost	\$1,000 to \$5,000
Potential key funding sources	Local, possible FEMA/State, DHS
Benefits (losses avoided)	Life safety; property protection; continuity of government

Promote good landscaping practices among property owners.

Primary hazard affected	Tornado and windstorm
Secondary hazard affected	Thunderstorm/lightning/hail
Other key hazards affected	Severe winter storms, flash flood, and structural failure
Jurisdictions implementing	Prescott
Issue/plan for implementation	Focus should be on property maintenance, including soil quality, drainage, etc.; entities should assist property owners as needed.
Goals addressed	1, 2
Potential partners	Local governments, property owners, insurance companies, conservation and preservation organizations at all levels, possibly State agencies, electric utility providers
Estimated total cost	\$500 (plus additional funding if incentives are offered)
Potential key funding sources	Local, FEMA/State, conservation-oriented grants, engaged property owners
Benefits (losses avoided)	Life safety; prevention of property loss; possible continuity of government

Promote the value of installation of private in-home tornado safe rooms.

Primary hazard affected	Tornado and windstorm
Secondary hazard affected	Thunderstorm/lightning/hail
Other key hazards affected	Possibly severe winter storms and structural failure
Jurisdictions implementing	Adams County, Corning, Nodaway, Prescott
Issue/plan for implementation	These are becoming more affordable and increasingly available on an individual basis. Promotion of these facilities through local partners can increase use; are manufactured in the region.
Goals addressed	1
Potential partners	Local governments, EMA, property owners
Estimated total cost	\$500 (plus additional funding if incentives to purchase them are offered)
Potential key funding sources	EMA, FEMA/State, local, engaged property owners
Benefits (losses avoided)	Life safety; prevention of property loss

Promote to property owners the importance of tree and vegetation maintenance on private properties.

Primary hazard affected	Grass and wildland fire
Secondary hazard affected	Windstorm
Other key hazards affected	Tornado, drought, plant disease, severe winter storm, infrastructure failure
Jurisdictions implementing	Corning, Nodaway, Prescott
Issue/plan for implementation	Overgrowth of vegetation can result in hazards and exacerbate others. Costs to manage vegetation grow exponentially as vegetation grows. Can be accomplished by encouragement methods and code enforcement.
Goals addressed	1, 2
Potential partners	Local governments, property owners, conservation groups
Estimated total cost	\$500 or less per year (plus enforcement costs if code enforcement is involved)
Potential key funding sources	Local, property owners (fees), possible grants for beautification projects
Benefits (losses avoided)	Prevention of property loss

Purchase road closure barricades.

Primary hazard affected	Transportation incidents
Secondary hazard affected	
Other key hazards affected	
Jurisdictions implementing	SW Valley Schools
Issue/plan for implementation	Requires storage and ability to move them to the site.
Goals addressed	1, 2
Potential partners	Local governments; county engineer
Estimated total cost	\$5,000
Potential key funding sources	Local, possibly IDOT
Benefits (losses avoided)	Prevention of property loss and injuries and possibly death

Purchase snow trucks, plows, and sanders.

Primary hazard affected	Transportation incident
Secondary hazard affected	Severe winter storm
Other key hazards affected	Hazardous materials
Jurisdictions implementing	Prescott
Issue/plan for implementation	Requires purchase and proactive maintenance.
Goals addressed	1, 2
Potential partners	Local governments
Estimated total cost	\$50,000+
Potential key funding sources	Local, USDA, possibly other federal grants
Benefits (losses avoided)	Life safety; continuation of local government

Purchase stand-by portable pumps and generators.

Primary hazard affected	Infrastructure failure
Secondary hazard affected	Flash flood
Other key hazards affected	Hazardous materials, severe winter storm, tornado/windstorm, thunderstorm/lightning/hail
Jurisdictions implementing	Adams County, Nodaway, SW Valley Schools, CHI Health
Issue/plan for implementation	Portability is important but they must be maintained, stored, and easily transported and fueled. Sizing and management priorities should be established.
Goals addressed	1, 3
Potential partners	Local governments, utility providers and infrastructure managers
Estimated total cost	\$5,000 each
Potential key funding sources	Local, USDA, private and foundation grants, utility partners
Benefits (losses avoided)	Life safety; continuation of essential utilities; prevention of property loss

Purchase, modernize, and/or harden existing mobile and personal first response communications equipment and systems.

Primary hazard affected	Infrastructure failure
Secondary hazard affected	Most other hazards indirectly
Other key hazards affected	
Jurisdictions implementing	Adams County
Issue/plan for implementation	Communications upgrades is a major issue countywide right now; integration into the county's pending P25 compliant systems is behind schedule
Goals addressed	1, 2, 3, 4
Potential partners	County, State of Iowa. E911 leaders, possibly federal entities
Estimated total cost	\$25,000+ for each jurisdiction
Potential key funding sources	Local, USDA, FEMA, private and foundation grants
Benefits (losses avoided)	Life safety; continuation of essential utilities; prevention of property loss

Purchase/install backup fixed power generators and pumps.

Primary hazard affected	Energy failure
Secondary hazard affected	Thunderstorm/lightning/hail
Other key hazards affected	Tornado/windstorm; severe winter storm
Jurisdictions implementing	Adams County, Nodaway, Prescott, SW Valley Schools, CHI Health
Issue/plan for implementation	Fixed generators make a building useful for public protection and housing during and after a hazard event. Prioritizes should relate to building use and shelter status.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, facility owners, EMA
Estimated total cost	\$25,000 to \$100,000
Potential key funding sources	Local, FEMA/State, USDA, CDBG, Iowa SRF program, foundation grants, property owners
Benefits (losses avoided)	Life safety; basic health; continuation of essential utilities

Replace, expand, or improve water and sewer lines.	
Primary hazard affected	Infrastructure failure
Secondary hazard affected	Flood, flash
Other key hazards affected	Drought
Jurisdictions implementing	Adams County
Issue/plan for implementation	Due to rural water implementation in the rural areas, special investments are needed to expand water mains or add sewer mains.
Goals addressed	1, 2, 3
Potential partners	County, SIRWA, other rural water providers, regulatory agencies at county and state levels
Estimated total cost	\$100,000+
Potential key funding sources	Local, State, USDA, FEMA, CDBG
Benefits (losses avoided)	Life safety; basic health; continuation of essential utilities; economic sustainability

Routinely inspect fire hydrants.	
Primary hazard affected	Infrastructure failure (fire)
Secondary hazard affected	Grass and wildland fire
Other key hazards affected	
Jurisdictions implementing	Adams County
Issue/plan for implementation	Collaboration with fire departments, IDNR, property owners, and rural water providers is necessary.
Goals addressed	1, 2, 3
Potential partners	County, SIRWA, other rural water providers, fire departments, SIRWA
Estimated total cost	\$20,000+
Potential key funding sources	Local, State, possibly federal grants
Benefits (losses avoided)	Prevention of fatalities and property losses

Store digital and hard copies of public records in low-risk, offsite locations.	
Primary hazard affected	Cyber terrorism
Secondary hazard affected	Most hazards that can damage property
Other key hazards affected	
Jurisdictions implementing	Nodaway
Issue/plan for implementation	A significant problem for small towns, because they lack resources to manage data and files in multiple systems; requires long-term resource commitment and oversight.
Goals addressed	2, 3, 4
Potential partners	Local governments, State/FEMA, Iowa Dept. of Management
Estimated total cost	\$1,000 initially and \$1,000 per year management and storage
Potential key funding sources	Local, State/FEMA in-kind time, possible community foundation grants
Benefits (losses avoided)	Prevention of property loss; continuity of government

Strengthen exposed utility and communications infrastructure.	
Primary hazard affected	Infrastructure failure (energy)
Secondary hazard affected	Severe winter storm
Other key hazards affected	Thunderstorm/lightning/hail; grass and wildland fire; tornado/windstorm
Jurisdictions implementing	Adams County, Corning, Prescott, SW Valley Schools, CHI Health
Issue/plan for implementation	Priorities are needed based on supply, population served, voltage, and location. Retrofitting lines is usually less expensive than burial; some high-voltage lines cannot be buried.
Goals addressed	1, 2, 3, 4
Potential partners	Local governments, utility providers, Iowa Utilities Board
Estimated total cost	\$1 million (depending on SOW)
Potential key funding sources	FEMA/State, local, utility providers, affected property owners, possible USDA
Benefits (losses avoided)	Infrastructure preservation; continuation of essential utilities; life safety

4.11: Implementation of the National Flood Insurance Program (NFIP)

In addition to the strategies outlined in the previous section, the local jurisdictions that are affected by flooding, either identified as Special Flood Hazard Areas (SFHAs) now or in the future, adopts this section as a strategy to address flooding and meet FEMA mitigation planning requirements.

This part of the plan addresses the following Stafford Act requirements:

Section 201.6 (c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

Adams County Plan Update Changes to the Flood Mitigation

Section 201.6(d)(3) requires that the jurisdictions in the plan review and revise the plan to reflect progress in local mitigation efforts and changes in priorities. Accordingly, this section describes NFIP participation and actions to maintain continued compliance with the NFIP. Section 9.4 in the previous plan addressed this topic but does not call out the NFIP very specifically.

A primer on floodplain management in Iowa offers insight into how flooding is now mitigated both inside and outside of SFHAs. As part of an effort to stem the increase in flood damages sustained after a number of devastating flood events in the 1940s, the Iowa General Assembly created the Iowa Natural Resources Council in 1949. Originally, the Council's power over floodplain activities was advisory in nature. Its regulatory functions were established by 1957 and 1965 amendments. After a number of state reorganizations, Iowa's floodplain regulatory authority now resides with the Water Resource Section of the Iowa Department of Natural Resources (IDNR). Iowa's floodplain program is different from most states in that its authority extends to virtually all floodplain construction within the state and is not limited to FEMA regulatory floodplains. Regulatory thresholds of rural development in watersheds draining ten square miles or more, and urban developments in watersheds draining two square miles or more require a permit from the IDNR. Other developments below these thresholds have relatively minor impacts and are not considered. Iowa law allows IDNR to delegate the State's floodplain regulatory functions to a local government that has a flood study identifying the regulatory floodway and floodway fringe along the 100-year flood profile and a floodplain management ordinance meeting certain minimum requirements. The state allows communities with delegated floodplain management authority to issue floodplain development permits in lieu of the IDNR. The state has delegated floodplain authority to approximately 140 NFIP participating communities. As part of the delegation process, the state retains the right to concur or deny with the granting of any variance from the community's floodplain management regulations. Although the State of Iowa's criteria for new floodplain development is similar to the minimum NFIP criteria in most respects, there are some important differences, for example:

- The lowest floor of new structures must be elevated an additional 1.0 foot above the 100-year (base) flood.
- Iowa does not allow new residential structures in the floodway.
- Residential structures must have wheeled vehicular access during the 100-year flood.
- The substantial improvement threshold is reached with an additional 25% or more of floor area.
- All post-Firm (Flood Insurance Rate Map) additions are considered cumulative improvements in the determination of increase in flood area.

(Source: FEMA Region VII and IDNR)

Iowa Legislative Code 455B.262A is a law that was enacted in the spring of 2009. The law ties a community's eligibility for certain post-disaster state assistance to participation in the National Flood Insurance Program. Following a presidentially declared disaster, FEMA makes Public Assistance grants available to local governments. The grants may be used for cleanup and repairs (e.g., assistance for debris removal, infrastructure repair, etc.). These grants usually provide only 75% of the cost of any post-disaster project. The state of Iowa typically contributes another 10% towards the required 25% non-federal match for public assistance grants. Effective July 1, 2011, the State of Iowa made its contribution towards this non-federal match for Public Assistance grants associated with flood-related disaster declarations contingent upon the community being in good standing with the NFIP. This code chapter only affects those communities that have an existing Flood Insurance Rate Map (FIRM) published by FEMA that identifies areas within the community that are subject to inundation by flood waters during a 1%-chance flood event (also known as the 100-year flood). If a community is newly identified as having areas that are subject to inundation during a 1%-chance flood event, it will have two years from the effective date of the FIRM to join the NFIP before the community loses eligibility for state matching funds.

In Chapter 3's river flood profile is data about local participation and insurance policies. Only the Cities of Corning and Prescott are participating at this time. Adams County, Carbon, and Nodaway are not participating. One significant development in the past five years is that flood maps have been prepared through the IDNR, Iowa Flood Center, and FEMA's Risk MAP program. These maps are now regulatory. Appendix E contains the current maps. All jurisdictions in the planning area, except the hospital, have SFHAs impacting a portion of their properties.

Where SFHAs exist and where public demand and interest exists to purchase flood insurance, the jurisdiction(s) will join or continue active participating in the NFIP. As part of the compliance and a proactive mitigation strategy, each jurisdiction will also:

- Adopt and enforce floodplain management requirements, including regulating all and substantially improved construction in Special Flood Hazard Areas (SFHAs).
- Appoint and engage a floodplain manager and readily share information with other jurisdictions.
- Create and enforce the floodplain ordinance. This includes monitoring development in the floodplain and ensuring all development is permitted by the community and the State and ensuring permit applicants have received the required State permit prior to issuing a local permit.
- Continue to review and update the floodplain ordinance. To avoid being sanctioned, the community must amend the ordinance whenever minimum State or NFIP standards are revised and when revised maps are issued.
- Expand public information/education initiatives related to flooding. This includes educating the community about floodplain ordinance requirements, mandatory purchase requirements, and insurance availability. Educating the public about the ordinance requirements and the benefits of complying with those requirements (protecting people and property and making insurance available) helps make certain they are aware of and comply with the ordinance and facilitates enforcement efforts.
- Undertake floodplain identification and mapping, including any local requests for map updates, if needed.
- Coordinate and report insurance claims and loss information.

Mitigation activities in this plan directed toward continued compliance are summarized alphabetically in the following table.

Figure 4.52: Actions that Address NFIP Compliance and Related Flood Issues

Jurisdictions	Measure/Action	Contribution to Continued Compliance
Prescott, SW Valley Schools	Acquire and demolish or relocate buildings/infrastructure in high-risk areas.	Now that maps are official, efforts to acquire land where structures are likely or already exist may curb future losses.
Adams County, Prescott	Acquire flood prone buildings and convert to open space/green space or elevate to or above base flood elevation or above flash flood reach.	Like first measure above, but this is focused more specifically to flood hazards.
Adams County, Corning, Prescott	Adopt and/or update a full range of local codes and policies to address a range of hazard mitigation issues.	This action can help the jurisdictions identify and codify policy changes that might relate to flooding and the NFIP throughout all codes, policy statements, and ordinances.
Corning, Nodaway	Complete a storm water drainage study for known problem areas.	This data can supplement the FIRM data as well as help with engineering of improvements in those areas. It can also provide information useful to property owners to help them avoid development in hazard areas.
Prescott	Construct or repair dams; develop reservoirs and lakes (flood control, water source).	Can prevent dam failure, which impacts down-stream flooding.
Adams County, Nodaway, Prescott	Construct storm water drainage (underground, culverts, curb &	The control and management of storm water in developed areas can prevent downstream flooding.

Jurisdictions	Measure/Action	Contribution to Continued Compliance
	gutter, etc.); improve capacity of existing systems.	
Adams County, Corning, Nodaway, Prescott	Elevate, raise grade, or relocate roads, bridges, sewer lift stations, water pumps, and other infrastructure and critical assets.	This project has an indirect impact by reducing the amount of critical infrastructure, necessarily located in the SFHA, subject to river flooding.
Corning	Employ construction measures that direct water away from structures.	This is not directly related to NFIP compliance but is an associated action that can reduce flood and especially flash flood damages.
Adams County, Prescott	Encourage/install sustainable storm water control and water quality practices such as buffer strips, bioswales, rain gardens, porous pavement, vegetative buffers, and parking area islands.	This project reduces uphill flash flooding but holding and treating water closer to where it falls, thereby reduces down-stream flooding.
Adams County	Flood proof critical assets in the community.	This project has an indirect impact by protecting buildings and infrastructure necessarily located in the SFHA and subject to river flooding.
Adams County, Corning, Nodaway	Implement all aspects of the NFIP.	Joining the NFIP makes the jurisdiction compliant for all FEMA funds. Preparing a valid local floodplain ordinance, continuing to enforce the ordinance for all development in the SFHA, and ensuring applicants for a local permit have received the required state permit, ensure that the community remains compliant and flood insurance is available. At a minimum the ordinance must be amended whenever State or NFIP standards are revised and/or when FEMA issues revised maps. This alternative ensures the community's floodplain ordinance meets minimum NFIP and state requirements.
Corning	Implement storm water management regulations.	This more directly impacts flash flooding but is a factor in downstream river flooding and can help implement the NFIP to reducing losses.
Prescott, SW Valley Schools	Implement stream modifications, channel improvements and stream bank stabilization.	Not directly an NFIP activity but can prevent flood losses and reduce the extent of flooding in the area of the modifications and downstream.
Corning	Install flood walls and retaining walls around critical infrastructure.	Not directly an NFIP activity but can prevent flood losses and reduce the extent of flooding in the area of the modifications and downstream.
Prescott	Promote good landscaping practices among property owners.	Not directly an NFIP activity but can prevent flood losses and reduce the extent of flooding in the area of the modifications and downstream.

Flood mitigation is complicated and involves significant funding and planning to be successful. The jurisdictions in the county would be well served to remember that projects, investments, and actions in one area can exacerbate flooding in that area or downhill/downstream from that area, so community project evaluation and policy-making should consider the unintended consequences to flood risk.

4.12: Implementation of Climate Change Resilience Actions

Several mitigation actions in this plan address climate change indirectly, such as improving infrastructure capacity, building retrofits, etc. This section looks at more sustained activities directly related to this issue.

Adams County Plan Update New Section

In accordance with FEMA Administrator Policy 2011-OPPA-01, where possible, this plan update includes statements on possible mitigation alternatives related to climate change.

The following statements come from the EPA's "Iowa Climate Change Adaption & Resilience Report, 2011" (p. 19-20). These statements relate to a strategy to address climate change at the local level.

Opportunities for Incorporating Climate Science into Local Planning

Integrating consideration of climate impacts into hazard mitigation and community planning is a relatively new area with no established best practices. The process for considering the impacts of current and future climate changes on hazard mitigation and land planning efforts will vary by community.

Options for using climate change information and related estimates of future hazards include:

- **Using information on current and future climate changes in developing risk assessments for**

hazard mitigation plans. For example, the city of Ames supplemented its existing Flood Insurance Rate Maps (FIRMs), developed by FEMA, with locally available information to develop improved assessments of flood risk for its hazard mitigation plans. The city conducted an additional floodplain study to accurately determine the boundaries of its 100-year floodplain. Ames’ approach could be taken even further if climate scientists and hydrologists could develop methods for a floodplain study to determine a 100-year floodplain boundary under changed climate conditions.

- **Developing smart planning solutions that reduce risks and enhance community resilience based on an improved understanding of future hazards:** Such solutions might include the development of a greenway to provide flood protection and storage capacity, as well as recreational opportunities; the concentration and/or relocation of existing development out of harm’s way; the identification of safe places to build, which can also be infill areas ripe for reinvestment; and the use of green infrastructure to help manage heavier precipitation. For example, the city of Cedar Falls recently passed legislation that includes a new floodplain ordinance that expands zoning restrictions from the 100-year floodplain to the 500-year floodplain, since this expanded floodplain zone better reflects the flood risks experienced by the city during the 2008 floods. This will help to lessen the damage brought on by future flooding in the community and also discourages further use of fill material in the floodplain, which forces water into areas outside the floodplain.
- **Integrating smart planning solutions into existing planning frameworks:** These solutions can be integrated into existing comprehensive and other land use plans, zoning and building codes and other municipal ordinances, flood maps, and incentives for development and conservation such as the purchase or transfer of development rights, conservation easements, and the establishment of community land trusts.

In the same planning document (p. 34):

“Dr. Kamyar Enshayan, a Cedar Falls, Iowa, city council member and director of the Center for Energy and Environmental Education at the University of Northern Iowa, asserts that whether adaptation is accomplished through hazard mitigation plans or other means, consideration of future changes in climate must become an operational part of local governments, not just a plan that is developed and is disassociated from all other local decisions.”

According to the “*APA Policy Guide on Planning and Climate Change*:”

“Changes in climate due to global warming ultimately will be local in their effects. Changes can occur in the availability of arable land, length of the growing season, amounts of rainfall, temperature changes, levels of disruptive weather, and ecological balance, just to name a few. In addition to research about the implications of climate change for communities and urban areas in general, research is needed that will enable specific places to develop appropriate plans for action to mitigate and adapt to climate change.”

For this reason, the local planning team recognizes that, at this time, creating a full mitigation plan specifically for climate change resiliency is not possible, but the issue will be studied and considered more in future mitigation plan updates.