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Annexes

1.6-A Loss Avoidance Studies

1. Monitoring, Evaluating, and Updating the Plan

44 CFR 201.4(c)(5)(i): [The Standard State Plan Maintenance Process must include an] stabled method and schedule for monitoring, evaluation, and updating the plan.

Provisions for monitoring, evaluating, and updating the plan are located in the Code of Federal Regulations (44 CFR) and in the Iowa Code. The 44 CFR regulations require that the state “must review and revise its plan to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities, and resubmit it for approval to the appropriate Regional Director every three (3) years.” The Iowa Code requires the Administrator of the Iowa Department Homeland Security and Emergency Management (HSEMD) to “prepare a comprehensive plan and emergency management program for homeland security, disaster preparedness, response, mitigation, emergency operation, and emergency resource management of this state”.

The HSEMD serves as the lead agency for preparation of the State 322 Plan and serves as lead agency for monitoring, evaluating, and updating the plan. The State Hazard Mitigation Officer (SHMO) is responsible for coordinating plan updates and maintenance. This position is located with HSEMD and is the lead coordinator with the State Hazard Mitigation Team (SHMT). Significant input into all phases of the planning process is derived from the SHMT. As mentioned in the Planning Process section of this plan, the SHMT serves due to the requirements of the Governor’s Executive Order Number 62.

For the most part the plan maintenance and update process remained consistent with the last update. On the following chart the only change in activity timelines is the Review and update of the Hazard Analysis and Risk Assessment now occurs more frequently. This step used to take place every three years during the update, but new FEMA rules requiring

annual submission of the THIRA have made it prudent for the SHMT to review the HARA on an annual basis to make certain the HARA and the THIRA are in agreement for the State of Iowa.

Projecting into the future, the SHMT will be regularly involved in monitoring, evaluating, and updating of the plan over the next three years to begin the first quarter and each quarter following approval of this plan as indicated in the table below. Triggers for plan updates include, but are not limited to:

- If a disaster requires HSEMD to reassess its goals and objectives
- If a reassessment indicates that some adjustments are needed on goals and objectives, the SHMT will be involved in that process
- If changes in federal or state laws require revisions, the SHMT will be consulted for advice on how to conform to new legislation

Monitoring, Evaluating, and Updating Activity	Responsibility	Quarterly	Annual	3-Years
Review and update the Hazard Analysis and Risk Assessment	HSEMD, SHMT		•	
Evaluate progress on mitigation actions and projects	SHMT		•	
Agency Report to SHMT	State Agencies	•		
Identification of implementation issues	HSEMD, SHMT	•		
Evaluate participation by stakeholders in mitigation planning	HSEMD		•	
Provide briefings on updates	SHMT	•		
State Capability Assessment Updates	SHMT		•	
Plan review and approval	SHMT, Exec Council			•
Plan Adoption by Iowa Administrative Code	HSEMD			•
Plan Approval by FEMA	HSEMD, FEMA			•

Part of the monitoring, evaluating and updating evaluation component will be to use the following criteria:

- Do the goals and objectives still address current and expected conditions?
- What were the nature and the magnitude of problems encountered and changes that have occurred?
- Were the current resources appropriate for implementing the plan?
- What implementation problems occurred, as technical, political, legal, or coordination issues?
- Were the outcomes as expected?
- Did the agencies participate as originally proposed?

This process will require SHMT participation in updating all parts of the plan. Approval of the plan will be required from the SHMT and the Iowa Executive Council (which consists of the Governor, Secretary of State, State Auditor, State Treasurer, and Secretary of Agriculture).

Multiple activities will be addressed differently for future monitoring, evaluating, and updating efforts for the state mitigation plan. More frequent (quarterly) review of implementation issues, stakeholder participation, and the capability assessment will assist Iowa in keeping its mitigation planning on track and ensure measures and capabilities are in-line with needs. Reviews of the HARA will be conducted annually through the THIRA. The THIRA is related to, but not the same as the HARA for the State Mitigation Plan. Monitoring associated mitigation actions and projects will also keep Iowa's efforts on track. Addressing the above items in a regular and consistent manner will allow for enhanced adaptability to new federal and state guidance and plan adoption.

For the next update the update process will be evaluated for any areas that would allow for a more efficient process for the

collection and update of hazard specific information, local data integration, and agency specific capabilities and mitigation measures.

2. Monitoring Progress of Mitigation Activities

44 CFR 201.4(c)(5)(ii): [The Standard State Plan Maintenance Process must include a] system for monitoring implementation of mitigation measures and project closeouts.
44 CFR 201.4(c)(5)(iii): [The Standard State Plan Maintenance Process must include a] system for reviewing progress on achieving goals as well as activities and projects in the Mitigation Strategy.

After reviewing and revising the goals and objectives, the SHMT evaluated and updated the mitigation measures (actions) that were originally developed from local plans submitted to the Iowa Department of Homeland Security and Emergency Management (HSEMD). Local Data Collection Worksheets are used as a method of validating the State's existing hazard assessment, vulnerability assessment, goals, objectives, proposed and completed mitigation measures, and local plan integration. For future updates the existing and future local data collection worksheets will be consolidated and analyzed to determine statewide trends of hazard mitigation planning and activities. Information required for FEMA approval of a local hazard mitigation plan is incorporated within the Data Collection Sheet which includes: proposed mitigation measures; completed or in progress mitigation measures; local capabilities summary; vulnerability assessment; critical facilities assessment; and hazard ranking evaluated and selected by local jurisdictions for their local plan. HSEMD requires the submittal of the Data Collection Worksheet established in a grant agreement for entities awarded planning grants starting with PDM 2007, and still continues today.

In an effort to simplify and guide local plan mitigation measures, the SHMT further refined and consolidated the previous measures into statewide general categories as well as incorporating data included with the Mitigation Data Collection

Worksheets. The list of mitigation measures was reviewed and similar actions were revised and combined, each revision was also reviewed to ensure no measures were inadvertently eliminated. The process remains the same for tracking measures. The SHMT was involved in capturing implemented mitigation measures quarterly and throughout the planning cycle. Due to the nature of the planning update most of the collection occurs leading up to and after the data cutoff for the plan update.

Review of mitigation measures (action activities) is an on-going process. Generally, mitigation measures (actions) will be monitored as described in the monitoring, evaluating, and updating action activity table. Iowa's leading efforts in mitigation using Federal Emergency Management Agency (FEMA) programs include the acquisition, relocation, and elevation of residential and commercial structures from flood areas and protection of critical public facilities. Annex 1.4-A represents the results from a tool provided to SHMT members to report on mitigation measures (action activities) accomplishments from 2007 to present date (not all agencies reported).

HSEMD and the SHMT work jointly for efforts in monitoring and coordinating mitigation activities. Each state agency member of the SHMT monitor grant and program activities through their unique systems of grants and program management related to the specific authorities, rules, and regulations associated with those programs. The SHMT functions as an interagency group that lends advice and assistance to each agency within the group in order to maximize the effectiveness of monitoring activities. Monitoring the progress of these and the other programs and activities included in the comprehensive capabilities of the State 322 Plan continues to be a major function of the SHMT. HSEMD acts as the grantee for federal funding under the Hazard Mitigation Grant Program (HMGP), Flood Mitigation

Assistance (FMA) Program, and the Pre-Disaster Mitigation (PDM) Program. HSEMD implements a record keeping and financial system for each grant awarded based on the approved scope of work and budget. Sub-grantees are required to maintain financial records and receipts necessary to document all their expenditures relative to their projects.

Approved sub-grantees for HSEMD specific hazard mitigation programs are accountable to HSEMD and FEMA for the use of these grant funds.

HSEMD administered grants are audited by independent auditors in accordance with generally accepted government auditing standards covering financial audits. Either the auditor examines the entire operations of the government or those departments or agencies that received, expended, or administered federal funds.

Quarterly reports are submitted to HSEMD that provide information necessary for effective monitoring activities. These reports describe the programs that the agency administers, the mitigation or mitigation related projects that are approved and funded by the agency for those programs, how mitigation projects are implemented, the grant administration process, reports of independent auditors, how projects are closed out, and any other information that may be especially applicable in determining the status of projects. HSEMD conveys information on the status of mitigation activities to the SHMT at meetings of the group.

3. Assessment of Mitigation Actions

Requirement 201.5(b)(2)(iv):[The Enhanced Plan must document the] system and strategy by which the State will conduct an assessment of the completed mitigation actions and include a record of the effectiveness (actual cost avoidance) of each mitigation action.

Assessment of mitigation actions in Iowa is an on-going process. Assessment is necessarily linked to the multi-hazard approach taken by the state. This approach involved the creation of a permanent framework for interagency cooperation known as the State Hazard Mitigation Team (SHMT). The SHMT priority, and the focus of hazard mitigation grant programs, in Iowa has focused on immediate hazard mitigation needs related to numerous flood disaster events since 1993. The SHMT framework supports this process by providing a mechanism for long-term approaches to specific hazard mitigation initiatives. Iowa HSEMD participates as the primary manager of Federal Emergency Management Agency (FEMA) hazard mitigation programs.

Iowa records and monitors mitigation actions or measures identified through the agencies and reporting of the SHMT, through grant applications received for hazard mitigation grant programs administered by HSEMD and through review of Local Hazard Mitigation Plans. The plan monitoring process is outlined in the table found earlier in the Monitoring, Evaluating, and Updating the Plan part of this Plan Maintenance Section 1.6.

In order to collect and analyze local mitigation planning data, each local plan must complete the *Local Hazard Mitigation Plan-Data Collection Worksheet*. This tool is used to organize data and information that is required for the local mitigation plan and provides an electronic format for data collection at the local level.

The Local Data Collection Worksheets are used as a method of validating the State's existing risk assessment, vulnerability assessment, goals, objectives, proposed and completed mitigation measures, and local plan integration. Local Data Collection Worksheets are based on planning grant performance periods for local hazard mitigation plans. The information available for consolidation is dynamic. As local hazard mitigation plans are reviewed, data will be collected on an ongoing basis.

Iowa's strategy is to conduct analysis to determine actual avoided damages following disaster events where possible by using information from the Local Hazard Mitigation Plan – Data Collection Worksheets and data from the new disaster to estimate and calculate avoided damage. During this update of the State Hazard Mitigation Plan, the SHMT captured examples of mitigation activities by their respective departments or by local and state partners within their areas of influence. Mitigation Strategy and Annex 1.4-A document mitigation actions from the goals and objectives initiated and/or accomplished from 2010 to the present update.

Examples of some mitigation actions completed during the update 2010-2013 and closed include:

- The acquisition and demolition of substantially damaged or destroyed properties in multiple communities. These properties were located in a Special Flood Hazard Area. Although the respective project subgrants have not all closed, the State has acquired 933 properties and demolished 922 properties through HMGP 1763 funding in 33 communities. Of those 933 acquired properties, 85 repetitive loss properties were acquired in 19 communities. In subsequent disasters 1880, 1930, and 1998 acquisition of 107 properties with 94 converted to open space has been completed with 10 of those properties being repetitive loss in 5 communities.
- 2 tornado safe rooms
- 125 local hazard mitigation plans
- 22 emergency back-up generator projects and 1 siren under the 5% initiative
- Many electrical retrofit projects
- 5 Infrastructure projects including elevation of wellhouse and controls, protective floodwalls for critical facilities, and other drainage projects.

Mitigation actions in progress during the time period of this update will be completed and discussed in future plans.

In Iowa's implemented strategy to document the benefits of hazard mitigation, HSEMD mitigation staff members utilize some or all of the following methods depending on the particular disaster event; conduct site visits, contact local and county officials and research flood stage data in a deliberate and honest attempt to evaluate whether mitigated properties or critical facilities would have been damaged by the event. This process is conducted as close to the actual disaster event as possible with timelines influenced by the circumstances of the given disaster event. As an example, during the flood event occurring in May of 2004 (DR-1518-IA), analysis determined that 511 properties that were acquired or relocated, would have sustained damages from the recent flood. The actual

dollar amounts of avoided damages are determined by applying the actual flood depth data from the disaster event to the actual BCA files (aggregate BCA by project) that were used to determine eligibility during the application process of the respective mitigation grant.

In May of 2008, the State of Iowa experienced catastrophic flooding receiving Presidential Disaster Declaration 1763. Due to the magnitude and severity of the flooding, new disaster information was available in determining losses avoided due to past mitigation measures specifically associated to the conversion of property to open space.

The HSEMD Mitigation staff conducted a loss avoidance study, *2008 Iowa Mitigation Success Story – Avoided Losses through Property Acquisition and Relocation for Open Space* (1.6 Annex-A). The study focused on 12 Iowa communities with evaluation of 703 properties that were acquired from past flood events and would have sustained damages again due to the magnitude and severity of the 2008 floods. A total of \$98,707,041 in losses were avoided due to past mitigation measures that converted property to open space/green space.

Communities that were included in this study are those that have had a significant number of acquisitions from past events and experienced at least a 100+ year flood event in 2008. The reasonable assumption is that properties which were mitigated during past disaster declarations would have been impacted again in the 2008 disaster due to the magnitude of this event. The result being that the 703 properties included would have sustained substantial damage and/or been destroyed. Significant losses were avoided because the properties had previously been acquired and converted to green space.

The study calculates the net present value of past projects to determine losses avoided by acquiring the properties. This value is used as the cost figure in the final Benefit-Cost ratio

and was necessary so that current costs could be compared to current benefits. The total 2008 losses avoided are the benefits in the final Benefit-Cost ratio. This figure is comprised of avoided costs for replacement value, contents, and displacement. The results of the final analysis are included within tables providing the actual loss estimates for various properties and estimates leading to the overall benefit of the mitigation projects.

An average of \$104,408 in present day costs was avoided for each property that was converted to open space. Comparing the total net present value (or present day costs to acquire past properties) which equals \$45,016,192, to the total losses avoided (which are considered to be our benefits in this study) results in a positive benefit cost ratio of 2.19. Please refer to the 2008 Iowa Mitigation Success Story (Annex 2-C) that where appropriate, provides the best information available to date on the methodology for the loss avoidance study, costs, benefits, and community summaries of additional losses avoided.

The goal of this study was to evaluate the losses avoided due to mitigation measures completed in Iowa prior to the catastrophic flooding event that occurred in 2008. These measures removed structures in special flood hazard areas and returned the property to open space through acquisition and then either demolition or relocation. This study illustrates the losses avoided due to past mitigation efforts and the importance of continuing to implement mitigation measures in the State of Iowa. Funding sources from these acquisition projects include the Hazard Mitigation Grant Program, Flood Mitigation Assistance, Repetitive Flood Claims, Pre-Disaster Mitigation program, Community Development Block Grants, and State and Local funds.

Iowa HSEMD conducted another loss avoidance study after flooding occurred in the summer of 2010. During the summer of 2010, Iowa experienced another extended period of heavy

rainfall which resulted in severe flooding during the months of June and August. Several Iowa communities experienced flood levels exceeding the 500 year interval, and flood elevations in others exceeded historic records. Those communities which had previously completed HMGP projects and were affected by 2010 flooding are included in this study. The Study demonstrates the effectiveness of mitigation by calculating losses avoided as follows amid a single flood event in 2010:

▪ Iowa State University	
- Project Cost (present value)	\$1,867,472
- Losses Avoided	\$5,555,469
- Losses Avoided to Cost Ratio	2.95
- Return on Investment	1.98
▪ City of Des Moines	
- Project Cost (present value)	\$7,215,325
- Losses Avoided	\$9,741,638
- Losses Avoided to Cost Ratio	1.35
- Return on Investment	.35
▪ City of Cherokee	
- Project Cost (present value)	\$11,516,748
- Losses Avoided	\$8,167,831
- Losses Avoided to Cost Ratio (after only 1 flood event)	.71
- Return on Investment	-.29
▪ City of Ames	
- Project Cost (present value)	\$2,051,686
- Losses Avoided	\$1,460,244
- Losses Avoided to Cost Ratio (after only 1 flood event)	.71
- Return on Investment	-.29

In 2010 FEMA partnered with the State of Iowa to conduct a loss avoidance study of flood mitigation projects that had been implemented in the State of Iowa. At the time of data cutoff for the last submission the studies were not complete. URS was contracted by FEMA to document losses avoided through two studies. One study is the benefits and costs avoided for flood control measures. The other study is the benefits and costs avoided for acquisitions.

The Loss Avoidance Study – Iowa, Flood Reduction Projects was completed in May of 2010. For the seven selected projects included in the study a total project cost of \$2,590,042 paled in comparison with losses avoided of \$52,863,381 resulting in a return on investment of over 2,000 percent.

The Loss Avoidance Study – Iowa, Building Modification Projects was recently completed in April of 2010. This loss avoidance study evaluated 74 flood mitigation projects completed between 1994 and 2008. The aggregate losses for 379 buildings in the study were valued at \$24.3 million while project investment was \$23.8 million (both values in 2010 dollars). Resulting return on investment equaled 102 percent.

The vast majority of projects implemented through FEMA's mitigation grants programs have been to reduce the effects of flooding. Likewise, the majority of declared disasters in Iowa have been from flood events. As a result, flood hazards have been the focus of Iowa's assessment of completed mitigation actions. Still Iowa has worked to advance loss avoidance calculation to project types beyond flood related studies. These efforts have produced loss avoidance studies for tornado safe rooms and the retrofit of electrical lines.

In the *Loss Avoidance Study: SWCC Safe Rooms* a total of \$16,108,000 in losses were avoided due to past mitigation measures through the construction of two tornado safe rooms for protection of the at risk population at Southwestern

Community College (SWCC). Comparing the cost of constructing these safe rooms which was an estimated total of \$242,700, to the total losses avoided (\$ 16,108,000) results in a Loss Avoidance Ratio of 66.37.

In *Electrical Retrofit – A Loss Avoidance Study* two different approaches were examined to capture losses avoided through retrofit of electric lines. The first piece of the Study captures the results from an actual HMGP electrical retrofit project withstanding a winter storm. In February of 2011 Hawkeye Rural Electric Cooperative experienced an ice storm that resulted in losses avoided equal to \$137,015. When compared with a project cost of \$474,375 the return on investment is equal to 0.28 or just over one quarter of the project cost. While this may not seem overly impressive it is important to consider this return is over the first three months of the 50 year expected project lifetime. The second approach in the loss avoidance study attempts to capture what could have been avoided as specific line segments identified for mitigation were damaged before construction, and thus the lines were eligible for Public Assistance. The study was able to use actual Public Assistance damage data in addition to other failure calculation. Results of this analysis show \$14,638,850 in actual damages. If the mitigation retrofit had been in place estimated damages to the same lines was \$93,504 which, when added to construction cost of \$9,798,982, would have resulted in a return on investment of 1.49 for the project.

For more detail the discussed loss avoidance studies can be found in Section 1.6 Annex-A.

In assessing mitigation actions or projects executed in Iowa through FEMA programs, the HMGP is the most critical program for Iowa, based primarily on the amount of grant funding made available. The HMGP is the driving grant source behind local government interest in hazard mitigation programs and projects. However, it is also true that annually

funded programs like the Pre Disaster Mitigation Program and Flood Mitigation Assistance Program provide the means to sustain the program long-term.

Evaluations of the past accomplished mitigation actions and relative benefits has provided the knowledge to develop improved methods of future data collection for easier, more accurate and more consistent evaluation of future mitigation projects. In an effort to capture mitigation data from other hazards and from completed mitigation actions not funded through FEMA's mitigation programs HSEMD has implemented a mitigation data collection tool. The "Mitigation Data Worksheet" is an Excel-based tool that local jurisdictions use in the mitigation plan development and update process.

Information collected includes the following:

1. Mitigation goals, objectives, and measures
2. Completed or in progress mitigation actions, loss avoidance, effectiveness assessment
3. Local capabilities summary
4. Vulnerability assessment
5. Critical facilities assessment
6. Hazard ranking

All mitigation planning grants starting with the PDM 2007 include language in the State/Local grant agreement that requires the completion of the Mitigation Data Worksheet as a condition of the grant. The mitigation section of HSEMD will review the local data after each mitigation plan is approved by FEMA. This provides the SHMT with additional local data to conduct assessments of completed mitigation actions. This tool will be continually evaluated for effectiveness and will be modified, if required, to best meet our assessment needs. The following evaluations of past mitigation planning and actions assisted in the development of this data collection tool.

In 2000, HSEMD initiated the Hazard Mitigation Benefits Report – the Iowa Success Story. This report documents a 10-year history of cost avoidance focused on hazard mitigation grant projects and initiatives, managed or administered through HSEMD. FEMA grant programs in Iowa resulted in funds totaling more than \$70 million in the decade from 1990-2000. The areas of hazard mitigation specifically supported by FEMA grant programs in Iowa during that time include funding to:

- Acquire, relocate, or elevate structures located in flood hazard areas;
- Protect critical public facilities and important commercial and business areas;
- Enhance statewide National Oceanic and Atmospheric Administration (NOAA) Weather Radio transmitter coverage and better provide "all hazard" early warning capability;
- Construct tornado safe rooms in public facilities and homes;
- Support the development and adoption of Local Hazard Mitigation Plans and enhance the capability of communities for effective hazard analysis and risk assessment; and
- Educate and market hazard mitigation to Iowa citizens and to promote safer homes and safer more disaster resistant communities.

Iowa's grant priorities have consistently targeted locally identified projects that would remove residential and commercial structures from flood hazard areas. Careful attention has been paid to ensure that all funded projects are evaluated to determine the likely economic benefit through the use of Benefit Cost Analysis (BCA). Iowa's criteria for grant funding ensures that the greatest number of flooded homeowners are provided with assistance, and also prioritizes

funding to ensure the greatest benefit in future avoided damage.

An additional benefit of acquiring and removing residential structures is the enhanced cost effectiveness of contributing effectively to the larger disaster recovery process. In Iowa it has been realized that quick and efficient delivery of community home acquisition and relocation projects under the HMGP within flood impacted areas, nearly eliminates needs associated with short term replacement housing, Individual Assistance, Flood Insurance, or home rehabilitation.

Protection of critical public facilities is also one of Iowa's leading types of mitigation measures. Protecting critical public facilities has particular advantages for many communities in Iowa. A natural hazard event which disrupts or shuts down wastewater treatment systems, electrical generation facilities, and water treatment plants serves to magnify the effects of a disaster event and encompass citizens and areas otherwise not directly impacted. Great benefit can be achieved by ensuring that critical public facilities are sufficiently protected from hazards and risks, often times ensuring that the impacts of natural hazards do not become a "disaster event."

4. Commitment to a Comprehensive Mitigation Program

Requirement 201.5(b)(4)(i-vi): [The Enhanced Plan must demonstrate] that the State is committed to a comprehensive state mitigation program, which might include any of the following:

- A commitment to support local mitigation planning by providing workshops and training, State planning grants, or coordinated capability development of local officials, including Emergency Management and Floodplain Management certification.
- A Statewide program of hazard mitigation through the development of legislative initiatives, mitigation councils, formation of public/private partnerships, and/or other executive actions that promote hazard mitigation.
- The State provides a portion of the non-Federal match for HMGP and/or other mitigation projects.
- To the extent allowed by State Law, the State requires or encourages local governments to use a current version of a nationally applicable model building code or standard that addresses natural hazards as a basis for design and construction of State sponsored mitigation projects.
- A comprehensive, multi-year plan to mitigate the risks posed to the existing buildings that have been identified as a necessary for post-disaster response and recovery operations.
- A comprehensive description of how the State integrates mitigation into its post-disaster recovery operations.

The State of Iowa has demonstrated that it is, and has been, committed for years to the establishment, updating, and monitoring of a comprehensive hazard mitigation program as prescribed in Chapter 44 of the Code of Federal Regulations (44 CFR), Section 201.5(b)(4) (i-vi). A review and summary of this plan shows the activities the State has been involved in that fulfill each of the requirements of these provisions in 44 CFR.

Section 201.5(b)(4)(i) calls for a "commitment to support local mitigation planning by providing workshops and training, State planning grants, or coordinated capability development of local officials, including Emergency Management and Floodplain Management certifications."

Documentation of the Planning Process in section 1.2 describes that HSEMD was working with communities and counties prior to the enactment of the Disaster Mitigation Act

of 2000 to encourage the development of local hazard mitigation planning. Workshops were held to assist in the development of those plans. It was also noted that immediately after the publication of the Interim Final Rule in the Federal Register the HSEMD notified the SHMT of its substance and a few months later conducted a workshop for local governments using FEMA produced manuals. The production and dissemination of planning guides and sample plans as tools for county emergency management coordinators to use was mentioned in section 1.2 under Integration with Other Planning Efforts. Training and certification for local officials, including floodplain managers is listed as a hazard mitigation goal and measure in the Mitigation Strategy section.

Iowa is committed to comprehensive mitigation programs. The commencement of the Local Hazard Mitigation Planning Initiative, illustrates the proactive nature of Iowa's commitment to support of local mitigation planning. In addition, local planning committees were often assisted by a professional planner from either a Regional Planning Agency or Council of Governments. Prior to the Planning Guidance under the Disaster Mitigation Act of 2000 "How to Guides" Iowa developed the Model Local Hazard Mitigation Planning Guidance Handbook to assist local jurisdictions through their planning process for natural hazard risk reduction. An analysis of the approved mitigation grants applications since 2000 reveal that the majority were for local planning grants.

Section 201.5(b)(4)(ii) states that evidence of commitment to a comprehensive state mitigation program can also be demonstrated by "A Statewide program of hazard mitigation through the development of legislative initiatives, mitigation councils, formation of public/private partnerships, and/or other executive actions that promote hazard mitigation." Section 201.5(b)(4)(iii) states that if "The State provides a portion of the non-Federal match for HMGP and/or other mitigation projects" it is confirming its commitment to a

comprehensive mitigation program. The State of Iowa has demonstrated a substantial financial commitment to hazard mitigation. Since DR-1688 was declared in 2007, the state has contributed over \$12.5 million for HMGP activities.

Section 201.5(b)(4)(iv) asserts that commitment can also be demonstrated when "To the extent allowed by State Law, the State requires or encourages local governments to use a current version of a nationally applicable model building code or standard that addresses natural hazards as a basis for design and construction of State sponsored mitigation projects." While the State of Iowa has no mandatory statewide building code, it has encouraged local jurisdictions to adopt one.

Iowa Code section 103A.8C, which was enacted as part of 2009 Iowa Acts, Chapter 142, authorizes the Building Code Commissioner to adopt standards for the design and construction of safe rooms and storm shelters. The rules in this chapter do not require the construction of a weather safe room or rooms for any construction project but establish standards for design and construction of weather safe rooms when their construction is required by another provision of law or is incorporated voluntarily in a construction project.

Section 201.5(b)(4)(v) affirms that "A comprehensive, multi-year plan to mitigate the risks posed to the existing buildings that have been identified as necessary for post-disaster response and recovery operations" also substantiates commitment to a comprehensive program. The administrative plan of HSEMD for the HMGP effectively addresses how mitigation follows post-disaster response and recovery operations.

Finally, Section 201.5(b)(4)(vi) establishes a commitment to a comprehensive program by requiring "A comprehensive description of how the State integrates mitigation into its post-disaster recovery operations." That description can be found in

section 1.4 Mitigation Strategy. It outlines the steps that the SHMO takes following a federally declared disaster. These steps essentially involve a preliminary damage assessment, consultations with FEMA, notification of potential applicants, and briefings on the Public Assistance program, application process and regulations for the complete process.

In addition, in the post disaster recovery environment, hazard mitigation briefings are performed concurrent with other disaster assistance briefings such as Public Assistance, Individual Assistance (IA), and Small Business Administration (SBA) or Farm Service Agency (FSA) programs. Hazard mitigation program staff is directly involved in the disaster assessment and damage assessment process related to the Governor's Emergency Proclamation process as well as the Joint Preliminary Damage Assessment (PDA) process related to a Federal Disaster Declaration. In addition, the State Hazard Mitigation Officer (SHMO) coordinates directly with the State Public Assistance (PA) Officer on the implementation of PA Mitigation (406 Mitigation) conducting joint project reviews and joint Benefit Cost Analysis (BCA).

The Iowa hazard mitigation program tracks potential hazard mitigation projects from local Notice of Interest (NOI) and from various types of local plans that include hazard mitigation measures. In the post-disaster environment, hazard mitigation projects are prioritized with the intent of providing for both the most cost effective mitigation as well as for the long-term recovery. This is done specifically by prioritizing available mitigation funds to address long-term housing recovery needs when disaster programs are unable to meet those needs because of uninsured or underinsured structures or the inability of property owners to service replacement housing loans on structures that are substantially damaged or destroyed because of flooding.

The comprehensive tracking of mitigation projects also allows the Iowa mitigation staff to determine Unmet Needs trends related to disasters and to share those needs with the representatives of mitigation programs from other agencies of the SHMT involved in the larger recovery effort.

Finally, Iowa tracks all approved projects to determine actual avoided damages that result from mitigation projects that have been completed where damages that would have occurred are avoided. This long term effort along with the data that is collected is utilized to support legislative initiatives, promote ongoing state matching funds to support hazard mitigation, encourage adoption of mitigation related codes and standards.