

State of Iowa

Iowa Comprehensive Emergency Plan

Part B: Iowa Hazard Mitigation Plan

September 2023



State of Iowa Hazard Mitigation Plan
Chapter 6: Monitoring, Review and Maintenance Process

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6. Monitoring, Review and Maintenance Process

Plan Monitoring and Evaluation

The Iowa Department of Homeland Security and Emergency Management (HSEMD) serves as the lead agency for administration, maintenance, update, and distribution of the *Iowa Hazard Mitigation Plan*. The state hazard mitigation officer (SHMO) is responsible for the coordination of plan updates and maintenance. This position, located within HSEMD, also serves as the lead coordinator for the State Hazard Mitigation Team (SHMT). The SHMT, created through Governor's Executive Order Number 62, provides significant input during the planning process and provides assistance with the implementation of the plan's mitigation actions.

In 2017, the SHMT and the Iowa Flood Risk Management Team, also known as Silver Jackets, agreed to coordinate efforts, especially related to the review and update of the *Iowa Hazard Mitigation Plan*. As described in Section 2, the State Hazard Mitigation Team has largely delegated flood mitigation interagency coordination to the Silver Jackets, which will monitor this plan's actions related to flood mitigation. The Silver Jackets meet several times each year, and in each of these meetings progress on the implementation of one or more of the flood-related mitigation actions will be reported. The chart located in 6.3 (end of this section) indicates the actions that will be reported to the Silver Jackets and for which progress will be reviewed over the course of a year. The Silver Jackets and its partners will also consider how effective these actions are at least once in the next five years. Metrics for assessing effectiveness are indicated in the chart in 6.3

The effectiveness of a mitigation action is assessed based upon a metric or measure gathered before an action is begun and compared to the metric after the action has been implemented. For example, before a project is awarded hazard mitigation funding from FEMA, a project officer will perform a benefit cost analysis (BCA, as prescribed by FEMA methods). This BCA provides a baseline for measuring effectiveness. A loss avoidance study can be performed to measure avoided damage after one or more disaster events. All effectiveness metrics are identified in the chart in 6.3 with the applicable mitigation actions. As mentioned above, the Silver Jackets will assess the effectiveness of flood-related mitigation actions.

The SHMT will monitor this plan's actions that are not solely related to flood mitigation. The team will meet together at least once a year, and in each of these meetings implementation progress will be reported on the mitigation actions. Over the course of each year, different SHMT member agencies will meet individually with HSEMD to review progress on several actions in more detail, depending on which ones that the particular agency has responsibility for. HSEMD will meet annually, and individually, with: IEDA, DNR, IDALS, IHHS, IDOT.

Information related to the implementation of actions is gathered through the grant applications to the Hazard Mitigation Assistance programs, from local mitigation plans' data collection sheets, and through State and federal agency reports. Other programs that facilitate the implementation of mitigation actions are included in the hazard mitigation strategy section of this plan.

For many of the completed mitigation projects, Iowa HSEMD will collect information about the losses avoided following hazard event occurrences that affect the area surrounding completed mitigation projects. This information is used to provide analysis to determine how well the hazard mitigation

strategy's goals and objectives are being met. The most recent loss avoidance analysis can be found in Chapter 4.

Plan Maintenance and Update

HSEMD ensures the content of the plan remains current and reflects changes to the statewide mitigation program. If either the SHMT or the Silver Jackets determines at any time after assessment that a particular mitigation action is not very effective, or needs to be altered in any way, they can recommend changing it or dropping implementation if the benefit does not justify the effort and/or expense. HSEMD staff will document these recommendations and plan changes. These items may be included in this plan's annexes so that at the time of the next update they can be considered for more thorough integration into the plan.

In addition to the review and evaluation of the hazard mitigation strategy and actions, HSEMD staff will consider all elements of the plan whenever any of the following occurs and document any proposals for change:

- The annual review of the *Threat and Hazard Identification and Risk Assessment (THIRA)*
- If a disaster event requires HSEMD to update the plan's hazard risk profiles
- If a re-assessment of risk data indicates that some adjustments are required, triggering a meeting of the SHMT to provide guidance on the goals and objectives of the plan
- If changes to federal or State laws require revisions, the SHMT will be engaged to provide guidance on how to meet the legislative requirements

The intent is the *Iowa Hazard Mitigation Plan* will not remain static, but as changes occur in the next five years, the plan and strategy will be re-evaluated. With the engagement of the partner agencies in both the SHMT and Silver Jackets, the various partners will not only be able to evaluate progress and effectiveness, but will also be able to adjust efforts in order to maximize benefits with available resources. By doing so, together we can prudently direct public and other resources to reduce or eliminate long-term risk to people and property from hazards and their effects.

Activity	Responsible Entity	Timeframe
Review of the hazard analysis and risk assessment	HSEMD	Annually
Plan monitoring (tracking implementation progress on mitigation actions and other plan elements)	SHMT and the Iowa Silver Jackets Flood Risk Management Team	Silver Jackets meets quarterly and reviews progress on 6-7 actions at each of these meetings SHMT meets annually and reviews progress on the non-flood-related actions. HSEMD will also meet individually with several state agencies once a year to go over specific mitigation actions which relate to the particular agencies
Assess effectiveness of mitigation actions	Silver Jackets assesses flood-related mitigation actions, SHMT assesses actions not solely flood-related	Each action assessed at least once in the next five years
Plan review & approval	SHMT, HSEMD	Five years or as required by code
Plan approval by FEMA	HSEMD/FEMA	Five years

6.3. Methods of Monitoring Progress & Assessing Effectiveness of Mitigation Actions		Programs or agencies with staff who can assist with action and progress reporting	<i>If in italics, SHMT reviews progress and effectiveness; Iowa Flood Risk Mngmnt Team (Silver Jackets or SJs) reviews progress & effectiveness of actions having <u>light blue background</u></i>	
#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
1.1	Provide training, funding, or outreach encouraging adoption and implementation of codes, regulations or incentives for building and retrofitting structures in a manner that improves resilience against natural hazards. Target such training and outreach to jurisdictions in accordance with the hazards with which they are particularly vulnerable (e.g. discuss methods for making structures earthquake resistant just with cities having greatest vulnerability to earthquakes).	DNR Flood Plain Management, Building Code Bureau, HSEMD	<i>Annually report to SHMT # of trainings conducted, # of funding awards given, and # of jurisdictions reached out to with info on building codes or methods.</i>	<i>Using NCEI data, compare losses (in\$) per disaster event for the county before and after adoption (should decrease)</i>
1.2	Provide information and facilitate communities in the process of joining Community Rating System (CRS).	DNR Flood Plain Management	Annually report to SJs # of CRS participants	Effectiveness shown in study at http://www.floods.org/Files/Conf2015_ppts/B3_Highfield.pdf
1.3	Maintain at least 700 communities in NFIP.	DNR Flood Plain Management	Annually report to SJs # of NFIP participants	Effectiveness shown in study at http://www.floods.org/Files/Conf2015_ppts/B3_Highfield.pdf
1.4	Create guide with options and methods for communities to manage deed-restricted flood buyout properties so they become assets instead of liabilities.	USACE, DNR, HSEMD, & rest of Silver Jackets / BRIC or FMA	Publish handbook and report how many distributed each year to SJs	Effective if (1) communities that never did buyouts do buyouts, or (2) communities who did buyouts do additional buyouts
1.5	Alert communities prone to location-specific hazards (e.g., landslides, earthquakes, wildfires, floods, levee/dam failure, sinkholes, and expansive soils) and encourage land-use planning and regulation that reduces risk from such hazards by providing training, funding, and/or outreach on appropriate codes, ordinances, site assessments, and enforcement measures.	HSEMD / BRIC, FMA, HHPD	<i>Report to both SJ and SHMT on # of jurisdictions contacted with such info/resources</i>	<i>Using NCEI data, compare losses (in\$) per disaster event for the county before and after adoption (should decrease)</i>
1.6	Advocate for flood mitigation in watershed plans by having city officials and county emergency management participate in development and implementation of such plans.	HSEMD / BRIC, EMPG	Annually report to SJs on # of city officials and EM coordinators invited to participate in WMAs (for flood issues) and watershed planning.	Effective if projects listed in watershed plans are initiated with HMA funds (because HMA only available to projects listed in local HM Plans)

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
1.7	Develop a comprehensive, statewide flood mitigation strategy that considers flood buy-outs, watershed approach flood mitigation, levees and other solutions and outlines where and under what conditions these different strategies are best applied.	HSEMD, USACE, DNR Floodplain Sect. / BRIC, USACE	Report to SJs on status of development of Strategy, or if complete.	Strategy completed and distributed to all SJ agencies.
1.8	Have 100 percent of high hazard potential dams with emergency action plans (EAPs).	DNR Dam Safety / HHPD	Each year report to SJs the # or % of HHP dams with EAPs	Increase in # or % of dams with EAPs
1.9	Develop GIS database for sinkholes, and facilitate having communities and agencies input locations of sinkholes in the database.	DNR GIS Section	<i>Designate an agency to keep such database; create such database; report who contacted to inform about adding known events/locations to such database; report # of sinkholes in database annually to SHMT.</i>	
1.10	Identify public buildings that are in the special flood hazard area (SFHA), notify their owners, and tell owners that to be eligible for grant opportunities for retrofitting such buildings they need to include such a mitigation action in their local hazard mitigation plan.	HSEMD, RiskMAP / BRIC, FMA	Annually report to SJs the # of counties where (a) public buildings in 100-yr flood zone have been identified; then (b)# of local jurisdictions that have been notified of such buildings and the grant opportunities to mitigate such buildings and requirements to be able to apply for grants; then (c) # of grant applications received to do such mitigation.	Effective if such projects are initiated with HMA funds (because HMA only available to projects listed in local HM Plans)
1.11	Jurisdictions acquire software or other tools to help with implementing codes or regulations that mitigate hazards.	BRIC	<i>Report annually to SHMT # of jurisdictions provided funding for software or tools.</i>	<i>BCEGS scores go up in communities that acquire software or other tools.</i>
1.12	Work with IDNR and IDALS to ensure, as Section 319 and other watershed plans are developed in conjunction with their staff, that flood impact data is shared and local emergency management personnel in subject watershed areas are informed of watershed planning initiatives.	HSEMD, DNR, IDALS / EPA 319	Report on what 319 and other watershed planning efforts reached out to local emergency management and other local officials to get their input on flood concerns in the subject watershed(s).	Effective if projects in watersheds with plans are initiated with HMA funds (because HMA is for flood mitigation, whereas other funds are not).

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
1.13	By 2028 develop at least 3 watershed plans, hydrologic and hydraulic studies, or studies of issues related to groundwater or erosion that analyze hazard mitigation options.	USACE, DNR Watershed Improvement, SWCDs, WMAs	Report # of plans/studies complete, or report on status on their development.	At least 3 such plans or studies completed.
1.14	Develop a comprehensive, statewide electric resiliency strategy to prevent loss of service, especially to critical facilities. Measures to consider include: microgrids and grid islanding to take advantage of distributed electricity generation and storage; improved maintenance, portability and connectivity of portable generators; and developing a single application process for generator grants across state agencies. Explore creating a program for portable generators, managed by an entity or entities that will maintain, exercise, position, and deploy generators in cooperation with counties, municipalities, and electric generation and distribution systems.	IEDA (Energy), HSEMD, IUB, IAEC, IAMU / BRIC, HMGP	Report to SHMT on status of development of Strategy, or if complete.	Strategy completed and distributed to all SHMT agencies.
1.15	Encourage cities, counties, levee districts and others to participate in watershed management authorities or other coalitions to study and recommend mitigation solutions for levee and flood issues, as well as drought. Offer technical assistance or outreach to jurisdictions, including levee districts and soil and water conservation districts, about how to coordinate watershed-wide implementation of small projects for a greater cumulative effect (such as controlling tile drain flow rates to not only reduce flooding but also drought impacts).	HSEMD Levee Safety Office, WMAs, DNR, SWCDs, Levee or Drainage Districts / EMPG	Report annually # of communities or districts offered technical assistance about coordinating in watershed implementation.	Number of new jurisdictions that join WMAs
1.16	Develop, implement, and continually improve the Iowa Drought Plan's communication plan, with an official update in 2024 and another revision in 2028.	DNR, HSEMD, IDALS	<i>At WRCC & SHMT meetings, report on what actions Drought Coordinating Team took in past year.</i>	<i>Drought communication plan updated.</i>

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
1.17	Communities develop/update a Community Wildfire Protection Plan and/or become a Firewise community.	HSEMD, State Fire Marshal/BRIC	Will not track this lower-priority action as it is delayed (may do as opportunity appears, or locals may do with their own resources).	
1.18	By 2028 provide technical assistance (TA) to help 15 communities understand their flood issues to explore alternatives for mitigation.	HSEMD, USACE, DNR/ RiskMAP, BRIC, HMGP	Annually check how many communities provided TA through any "Silver Jackets" member agencies.	Communities provided such assistance apply for HMA grants.
2.1	Provide dry hydrants in wildland-urban interface areas with no water mains through projects that partner federal and state hazard mitigation resources with local jurisdictions.	HSEMD, DNR / BRIC	Will not track this lower-priority actions as it is delayed (may do as opportunity appears, or locals may do with their own resources)	
2.2	Connect drought-vulnerable water supply systems to other water supplies through projects that partner federal and state hazard mitigation resources with local jurisdictions.	SRF-DNR/IFA	<i>Report # of jurisdictions awarded HMA or SRF for providing redundant (i.e. back-up) water sources.</i>	<i>Jurisdictions awarded HMA or SRF for providing redundant (i.e. back-up) water sources.</i>
2.3	Elevate or protect wastewater lift stations, and/or complete other sanitary sewer hazard mitigation improvements, through 5 projects by 2028 that partner federal and state hazard mitigation resources with local jurisdictions.	HSEMD, DNR, IEDA / SRF, CDBG, BRIC, HMGP, PA-M	Annually report to SJs # of cities awarded HMA or PA-M for lift stations.	Effective if such projects are initiated with HMA funds. If possible, will track loss avoidance also.
2.4	Mitigate flooding of buildings by elevating buildings (to the 0.2% annual chance flood elevation or 2+ feet above BFE), flood-proofing, constructing non-levee embankments (e.g. berms) on the building property, or acquiring & removing buildings on flood-prone properties, with a goal to apply for funds to remove at least 10 buildings from list of repetitive loss properties.	HSEMD, IEDA, USACE / HMGP, BRIC, CDBG, PA-M	Annually report to SJs # of buildings that used HMA or PA-M for wet flood-proofing, elevating buildings or property acquisition. Indicate how many were RL.	Remove 10 or more from RL list.
2.5	Increase floodwater storage through floodplain or streambank restoration projects that partner federal and state hazard mitigation resources with local jurisdictions.	HSEMD, USACE, NRCS, DNR / BRIC, FMA, HMGP, PA-M	Annually report to SJs # of jurisdictions awarded HMA (or other funding) for floodplain or streambank restoration or	For HMA projects report actual loss avoidance where available, otherwise report calculated BCA benefit

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
			channel improvements that reduce peak flow.	
2.6	Put in impervious manholes, pumps, backflow prevention, or similar small-scale flood protection projects (not addressed elsewhere in this list of hazard mitigation actions) through projects that partner federal & state mitigation resources with local jurisdictions.	HSEMD / BRIC, FMA, HMGP, PA-M	Annually report to SJs # of cities awarded HMA or PA-M for small-scale flood protection projects	For HMA projects report actual loss avoidance where available, otherwise report calculated BCA benefit
2.7	Install and maintain protective measures for the physical safety and security of critical facilities through projects that partner federal and state hazard mitigation resources with local jurisdictions (including school districts).	HSEMD, DPS / HSGP, state Safe Schools	Will not track this lower-priority action as it is delayed (may do as opportunity appears, or locals may do with their own resources).	
2.8	Construct public safe rooms through projects that partner federal and state hazard mitigation resources with local jurisdictions or school districts.	HSEMD / HMGP, BRIC	<i>Annually report at SHMT mtg # of jurisdictions awarded HMA for safe rooms.</i>	Effective if public safe rooms are built in state.
2.9	Reduce damage from flooding and erosion through stream channel improvement projects that partner federal and state hazard mitigation resources with local jurisdictions.	HSEMD / BRIC, FMA, HMGP, PA-M	Report # of jurisdictions awarded HMA (or other \$) for stream channel improvements.	For HMA projects report actual loss avoidance where available, otherwise report calculated BCA benefit
2.10	Where professional assessments have deemed necessary, rehabilitate dams and levees of high hazard potential (where failure would likely cause loss of human life).	DNR / HHPD, BRIC, HMGP	Annually report to SJs # of jurisdictions awarded state, FEMA, NRCS or USACE funding for dams.	Some HMA projects tracked for loss avoidance. Also, compare next USACE inventory of levees to past inventory to see if improvement
2.11	Provide information to owners of underground storage tanks (USTs), & the officials of the jurisdictions in which they are located, about damages and consequences that could arise from flooding of UST sites, & how such damages & consequences could be prevented/mitigated.	DNR, HSEMD	<i>Report to SHMT on # of contacts made in which such info/resources were provided.</i>	Reports that those who were provided information acted upon it.

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
2.12	Implement green infrastructure (including permeable pavement, detention basins, and methods that increase infiltration or detention) in cities to mitigate flooding through at least 5 projects by 2028 that partner federal and/or state resources with local municipalities.	HSEMD, IDALS, NRCS, Cities, IEDA / CDBG, HMGP, BRIC, FMA	Annually report to SJs # of cities awarded funding through HSEMD, IEDA, DNR or IDALS for "green" or nature-based storm water infrastructure [but not detention as that would be tracked in other Action].	Based on study <i>Flood Loss Avoidance Benefits of Green Infrastructure for Stormwater Management</i> (2015), GI practices assumed to be effective (if done properly, like according to NRCS or ISWMM criteria). Still, loss avoidance will be tracked for HMA projects if there are future storms.
2.13	By participating in projects that partner federal and/or state resources with local municipalities or electric cooperatives, provide more resilient electric service through: robustness measures (including undergrounding power lines, system segmentation, and providing "design-failure" mode for lines), installation of ice resistant wire and other cold weather protection measures, extreme heat and drought resistance measures (e.g. dry cooling), flood protection measures (e.g. elevate equipment, such as substations, in flood-prone areas), or wind protection measures (e.g. stronger utility poles or more poles per mile) . (See Iowa REC Annex and section 8 of Iowa Energy Security Plan.)	IEDA (Energy), HSEMD, IUB, IAEC, IAMU / BRIC, HMGP, Energy funds through IEDA	<i>Report # of jurisdictions awarded funding through HSEMD or IEDA for providing more resilient electrical services.</i>	<i>After storms when IAEC receives mutual aid request(s), send survey to impacted cooperatives (and municipal electrics) to collect data to help assess effectiveness of hardening/retrofitting line (e.g. find out amount of damaged line, percentage of that line that is hardened, and/or amount of hardened line that withstood storm). SHMT to receive a report derived from such information that illustrates how much damage and service loss was avoided because of hardened or retrofitted lines in areas of storms.</i>
2.14	After a comprehensive planning approach that fully considers watershed approach or green infrastructure options, mitigate flood damage to structures or public facilities (including roads and parks) through projects that partner federal and state hazard mitigation resources with local jurisdictions to retrofit bridges, elevate roads, build or reconstruct levees (in accordance with standards of 44 CFR 65.10), or install culverts or other stormwater system improvements.	HSEMD, DOT / state Flood Recovery Fund (levee allocation), HMGP, BRIC, FMA	(1) Annually check how many jurisdictions assisted by any Silver Jackets agency in study or plan to mitigate road flooding that included consideration of non-structural and upstream measures. (2) Report # of jurisdictions were awarded HMA or PA-M funds to mitigate road flooding after considering all such options.	For HMA projects report actual loss avoidance where available, otherwise report calculated benefits.

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
2.15	Mitigate flooding with a watershed approach by putting in practices upstream of cities that detain water and/or increase infiltration (e.g. wetlands, terraces, oxbows, other basins, perennial cover, series of WASCOBs) through at least 5 projects by 2028 that partner federal and/or state resources with local jurisdictions.	IEDA, HSEMD, SWCDs / IDALS WQI, DNR&IFA SRF, BRIC, HMPG, FMA	Annually check how many jurisdictions awarded funding through HSEMD, IEDA, or NRCS with intent to reduce future flood losses by putting in watershed approach practices upstream of flood-impacted areas. (Do not track practices that were put in mostly for water quality - practices must result in monetary reduction of potential flood damages.)	For HMA projects report actual loss avoidance where available, otherwise report calculated benefits.
2.16	Initiate projects to reduce landslide damage and risk where landslides are most likely, through projects that partner federal and state resources with local jurisdictions.	HSEMD, DNR / HMGP, BRIC	Will not track this lower-priority action as it is delayed (may do as opportunity appears, or locals may do with their own resources).	
2.17	Reduce water losses through leak detection and/or distribution system renovation projects that partner federal and state hazard mitigation resources with local jurisdictions.	HSEMD, DNR / SRF, CDBG, BRIC, HMGP	<i>Track grants/loans provided for leak detection and repair (HMA, IEDA, CWSRF, STRLF). Create one-pager on cost-effectiveness.</i>	<i>A flyer created that explains cost-effectiveness.</i>
2.18	Encourage development of gray water infrastructure, recycling and reusing water at any scale whenever viable through projects that partner federal or state resources with local jurisdictions.	DNR, IDALS, HSEMD	<i>Check with DNR water supply section on number of grey water systems. Track grants/loans provided for installing grey water systems (HMA, IEDA, CWSRF, STRLF)</i>	<i>Number of new grey water systems.</i>
2.19	Develop additional water storage, especially floodwater diversion and storage options, through projects that partner federal and state resources with local jurisdictions.	HSEMD, DNR, IDALS / SRF, HMGP, BRIC	<i>Check with DNR water supply section on number of water storage systems. Track grants/loans provided for installing water storage systems (HMA, IEDA, CWSRF, STRLF)</i>	<i>Number of water storage systems</i>

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
2.20	Encourage the building of shelters (other than safe rooms) at parks and other outdoor areas where people congregate through projects that partner federal and state resources with local jurisdictions.	DNR, HSEMD / HMGP	<i>Report # of grants provided for building storm shelters and safe rooms</i>	<i>Number of grants provided for building storm shelters and safe rooms</i>
2.21	Encourage use of mitigation funds to equip public facilities, community centers and resilience hubs to act as cooling and warming centers during extreme temperature events, especially those frequented by older adults and children, such as libraries.	IHHS, HSEMD / HMGP	<i>Report # of grants provided for cooling/warming centers.</i>	<i>Number of grants provided for cooling/warming centers</i>
2.22	Install transfer switches, panels, and connections for easy or automatic use of microgrids or generators (including portable generators) to supply power, through projects that partner federal and state mitigation (including Public Assistance - Mitigation) resources with local jurisdictions and non-profit entities.	IEDA (Energy), HSEMD, IUB, IAEC, IAMU / BRIC, HMGP, Energy funds through IEDA	<i>Track 406 funding for such projects.</i>	<i>Number of grants provided for such projects.</i>
2.23	Encourage programs for residential properties (like Bee Branch Healthy Homes Resiliency Program) that implement on-site stormwater management practices (such as gutters, drains, concrete work, and landscaping that direct water away from homes).	HSEMD, IEDA / CDBG	Report and discuss annually with SJs what programs are known. Discuss where to get funding and how to establish.	Outreach material developed which provides information on how to create and implement such programs.
3.1	Improve awareness of hazard risks and ways to reduce their impacts through signage projects or awareness campaigns that partner local jurisdictions with federal and state resources.	DNR, HSEMD, & rest of Flood Risk Mgmt. Team (Silver Jackets) / USACE, HMGP	<i>Report # of jurisdictions awarded funding through HSEMD or assisted by a Silver Jackets member agency with signage or awareness campaigns (include BRIC projects that have funding in budget for such measures).</i>	<i>Using NCEI data, compare losses (in\$) per capita per disaster event for entire state before and after (should decrease)</i>
3.2	Before 2028 provide training or outreach to 5 communities with repetitive loss properties, including information about measures which may be used to reduce future damage.	DNR, HSEMD, USACE / USACE FRM, BRIC	Report # of communities with RLs that outreach was made to provide such information	Reduction in number of RL properties in the state.

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3.3	Discuss and consider the recommendations of the December 2022 "Iowa Statewide Levee Districts Study" (Study), including establishing a state levee safety program and consolidating levee districts at the USACE system level (described more in Appendix F of the Study). Work toward implementing the recommendations that garner support amongst stakeholders.	Silver Jackets agencies	Annual report from Levee Safety Office delivered to SJ members.	Number of recommendations from Levee Study implemented.
3.4	Provide example standards and guides, including the Iowa Stormwater Management Manual, to local jurisdictions that promote green infrastructure practices and measures that direct water away from structures.	SWCDs, DNR Watershed Improvement, IDALS & other Silver Jackets agencies	Report to SJ annually on # of jurisdictions contacted with info on such model standards and guides	# of communities that adopt standards
3.5	By 2028, develop coordinated, prompt, reliable, and accessible information for the whole community, actionable at every level of organization (i.e., state agencies, local government, industries, NGOs, individuals), concerning current and likely drought and water supply status, drought vulnerability, drought-time response actions, and continuous conservation measures. Provide status updates in DNR's monthly Water Summary Update newsletter and provide resources on drought.iowa.gov .	IDALS, DNR, HSEMD / BRIC	<i>At WRCC & SHMT meetings, report on what actions Drought Team members took in past year in regards to these measures.</i>	<i>Record of actionable drought information delivered to state agencies, local governments, industries, and others</i>
3.6	Maintain and expand monitoring network for stream flows, precipitation, soil moisture, evapotranspiration, and groundwater levels, in order to characterize Iowa's surface and groundwater resource availability, quality, use, and sustainability. Share the information in near-real time via a web-based data system.	IDALS, DNR, HSEMD / BRIC	<i>Report annually to SHMT on what IFC, USGS, DNR, IDALS Climatology have done in regards to this.</i>	<i>Network of stream flows, precipitation, soil moisture, evapotranspiration, and groundwater levels created and available on web</i>

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#	Mitigation Action		How Implementation Progress Tracked	How Effectiveness Assessed/Evaluated
3.7	Explore the creation of tools that can help communities understand mitigation measures that have been implemented or considered by other communities in Iowa (e.g., interactive map, flyers, etc.).	IDALS, DNR, HSEMD / BRIC	<i>Report each year to SHMT and SJ on progress on this.</i>	<i>Tool created (website or document) that helps communities understand mitigation measures that have been implemented or considered by other communities</i>
3.8	Annually provide training and/or outreach about mitigation opportunities, available resources, and application specifics with a special focus on smaller communities, underserved communities, EDRCs and those with higher socially vulnerable populations.	IDALS, DNR, HSEMD / BRIC, EMPG	<i>Report # of communities to whom outreach was made to provide such information</i>	<i>EDRCs or communities with high social vulnerability index receive grants.</i>
3.9	Discuss flood and drought mitigation opportunities with the Iowa Water Resources Coordination Council and Iowa Watershed Planning Advisory Council at least annually. Consider outreach to other stakeholders/groups that work in watershed management.	IDALS, DNR, HSEMD / BRIC, EMPG	<i>Report to SHMT annually if these discussions were held with WPAC and WRCC (and others).</i>	<i>Such discussions held at least annually with WRCC/WPAC</i>
3.10	Encourage water utilities to review their operating procedures to ensure availability of backup or secondary water systems	DNR, HSEMD	Will not track this lower-priority action as it is delayed (may do as opportunity appears, or locals may do with their own resources).	
4.1	Establish or improve warning and alert systems (e.g. sirens) through projects that partner local jurisdictions with federal and state resources.	HSEMD, USGS, NOAA / HMGP, BRIC	<i>HSEMD report # of jurisdictions awarded FEMA funding for warning or alert systems.</i>	<i>Number of river gauges, guage alert systems, sirens, or warning/siren systems installed</i>
4.2	Provide back-up power generation, storage, or other energy redundancy measures (described in Section 8 of the Iowa Energy Security Plan) to serve critical facilities or lifelines through projects that partner local jurisdictions with federal and state resources. (See Iowa REC Annex and section 8 of Iowa Energy Security Plan in appendices of this Plan.)	HSEMD / DNR & IFA SRF, BRIC, HMGP	<i>Report # of jurisdictions awarded funding through HSEMD or IEDA for back-up generation and redundancy.</i>	<i>Number of generators storage, or other energy redundancy measures provided.</i>

Annexes

- A. Plan Amendments and Recommendations for Consideration in Next Plan Update
- B. Iowa's Rural Electric Cooperatives' Annex to the State of Iowa Hazard Mitigation Plan 2023
- C. Section 8 of the Iowa Energy Security Plan

Annex A: Plan Amendments and Recommendations for Consideration in Next Plan Update

If and when the State Hazard Mitigation Team (including the Iowa Flood Risk Management Team) recommends an amendment to the 2023 Iowa Hazard Mitigation Plan, such recommendations will be documented and included here. Likewise, any amendments made through the rule change process will be documented and included here. When the Plan is updated in 2028 such amendments will be more fully integrated into the Plan and recommendations will be considered for full inclusion.

Annex B: Rural Electric Cooperatives' Annex to the Hazard Mitigation Plan