

CHAPTER 15

Mitigation Strategy

Mitigation Strategy

MITIGATION STRATEGY CONCEPT

The Mitigation Strategy is designed to guide the selection of activities to mitigate and reduce potential losses. It includes long-term goals and objectives, but also establishes short-term activities. The State Hazard Mitigation Planning Committee (SHMPC) has reviewed and developed goals, objectives, and action items specific to each hazard identified in the SHMP. Actions developed for each hazard are not all inclusive and the state reserves the right to modify actions, objectives, and goals as it sees fit to address mitigation needs as they arise. Future occurrences, new technology, or an unforeseen event could result in the modification of actions outlined in this plan. Even though a potential project may not be listed in this plan as a specific mitigation action, the State will still aid in completing the project as if it were a project listed in this state mitigation plan. State support will be applied to any mitigation action deemed cost effective, feasible, protects life and property, etc., and can be classified under any of the four FEMA approved mitigation categories:

- Local Planning and Regulations
- Structural and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Programs

Mitigation Strategy Process

The 2019 mitigation strategy is based on past mitigation plans, local mitigation plans, hazard risk assessment, state facility risk assessment, state capabilities assessment, and natural hazard expert opinions. The 2014 SHMP goals, objectives, and actions were reviewed by the SHMPC, SHMT, and other hazard experts from around the state.

At the beginning of the plan update process, members of the SHMPC were invited to review the 2014 SHMP and provide any comments or suggestions. All of the emergency managers were then invited to review the plan and provide comments and suggestions. Their comments were incorporated into the plan. The mitigation strategy process was discussed at SHMT meetings and copies of the goals, objectives, and actions were provided to SHMT members for review and comment based on their specific area of expertise. At the September 18, 2018 SHMPC meeting, the mitigation strategy was discussed and members were provided a matrix of the 2014 SHMP goals, objectives, and actions to fill out, review, and comment on.

In addition, the 2014 SHMP goals, objectives, and actions were sent out to various hazard experts and agencies around the state for review. They were asked to comment on whether past actions were completed or not and why. They were also asked whether the goals, objectives, and actions should be kept for the 2019 update and also to provide any new or revised mitigation actions. Some of the experts and agencies invited to review the past goals, objectives, and actions include:

- Local floodplain managers
- State floodplain coordinator
- Utah RiskMAP coordinator
- USACE
- NRCS – State conservation engineer
- Utah Forestry, Fire & State Lands
- Great Basin Coordination Center

- BLM Fire Prediction Bureau
- Utah State Office – BLM
- Unified Fire Authority
- Salt Lake National Weather Service
- Utah Geological Survey
- Utah Division of Water Resources
- Utah Division of Drinking Water
- Utah Department of Agriculture and Food
- Colorado River Basin Forecast Center
- Utah Water Users Association
- Bear River Water Conservancy District
- Central Iron Water Conservancy District
- Duchesne Water Conservancy District
- Kane County Water Conservancy District
- Utah Earthquake Program Manager
- United States Department of Agriculture
- Utah Avalanche Center

Utah Mitigation Program Goals

A set of broad goals was developed by the SHMPC that relate to mitigation programs, agencies involved in mitigation and planning, etc. as a guide to improve mitigation capabilities, vulnerabilities, gaps, needs, and initiatives in Utah:

- Improve the ability of different agencies dealing with hazard mitigation in Utah to work together.
- Work with local private and public sectors representatives to implement mitigation strategies identified in the plan.
- Increase staffing and funding for mitigation and recovery
- Develop a state funded mitigation program
- Track the progress of mitigation projects across the State of Utah.
- Improve mitigation mapping for the State of Utah
- Conduct post-disaster onsite review and documentation of loss avoidance of mitigation projects
- Promote hazard mitigation as an integrated public policy.
- Put an emphasis and prioritization of mitigation projects relating to repetitive loss (RL) and severe repetitive loss (SRL) properties.
- Build linkages among hazard mitigation, disaster preparedness and recovery programs.
- Continue to develop and update local hazard mitigation plans and improve on any deficiencies identified
- Ensure all Utah local mitigation plans comply with FEMA's latest requirements.
- Increase awareness of hazard mitigation through outreach and education
- Promote that all communities within Utah to have an updated, comprehensive plan with hazard mitigation a component of the plan.
- Develop natural hazard model ordinances.

Previous 2014 Mitigation Strategy Goals

- Protection of life before, during, and after the occurrence of a disaster
- Preventing loss of life and reducing the impact of damage where problems cannot be eliminated
- Protection of emergency response capabilities (critical infrastructure)
- Protection of communication and warning systems
- Protection of emergency medical services and medical facilities
- Protection of mobile resources
- Maintenance of government continuity

- Protection of developed property, homes and businesses, industry, education opportunities and the cultural fabric of a community by combining hazard loss reduction with the community’s environmental, social and economic needs
- Protection of natural resources and the environment when considering mitigation measures
- Promoting public awareness through education concerning community hazards and mitigation measures
- Preserving and/or restoring natural features that provide mitigation such as floodplains
- Minimize the impacts of natural hazards

2019 Mitigation Strategy Goals

The SHMPC reviewed the 2014 SHMP mitigation strategy goals and revised, updated, changed, and added new goals for the 2019 update. These goals in connection with the risk assessment and capabilities assessment form the basis for the development of the hazard mitigation strategies. Each mitigation action is tied to a mitigation objective that then falls into one or several of the following broader long-term goals:

1. Protection of life safety before, during, and after the event of a disaster
2. Protection of critical facilities, structures, and infrastructure
3. Eliminate and/or reduce property damage, especially to repetitive loss (RL)and severe repetitive loss (SRL) properties and properties in historic districts.
4. Advocate, support, and promote the use of state laws and local and tribal regulations and ordinances aimed to mitigate hazards
5. Assist and support state, local, and tribal planning efforts before, during, and after the effects from hazard events
6. Promote education and awareness programs, campaigns, and efforts designed to encourage citizens, private and public entities, and local, state, and tribal agencies to mitigate against hazards
7. Protection of communication and warning systems
8. Preserve, protect, and/or restore natural systems, natural resources, and other environmental conditions against hazard events
9. Combine hazard loss reduction efforts with other environmental, social, and economic needs of the state
10. Ensure government continuity
11. Avoid risk of exposure to natural and technological hazards
12. Provide a basis for prioritizing and funding mitigation projects, with a prioritization given to RL and SRL properties for flood mitigation projects and also for projects in historic districts.

Priorities

The SHMPC evaluated and prioritized each mitigation action to reduce vulnerabilities that were identified from the risk assessment, local mitigation plans, and the state facilities assessment. Each mitigation action was given a priority of High, Medium, or Low. The following table lists the mitigation action ranking criteria and the criteria description:

Mitigation Action Priority Criteria	Criteria Description
Life Safety	The action reduces vulnerability to loss of life
Property Protection	The action reduces vulnerability from property damage, with a higher priority on critical facilities and infrastructure
Cost Effective	The action has a high cost savings benefit that protects life and property.
Technically Feasible	The action can be delivered with available techniques, skills, and resources
Structural and Infrastructure Projects	The action focuses on structural and/or infrastructure projects around the state

Repetitive Loss (RL) and Severe Repetitive Loss (SRL) Properties	The action addresses RL and SRL properties.
Environmentally focused	The action addresses natural environmental systems and reduces vulnerability to those systems.
Effectiveness	The extent to which an action reduces the vulnerability of people and property.
Supports Local/Tribal Mitigation efforts	The action aligns with local/tribal mitigation actions and goals
Addresses High Risk Hazard	The action reduces vulnerability for people and property from a hazard(s) identified as high risk.

If an action fulfills the applicable criteria to a high degree than it received a High ranking and if to a low degree than a Low ranking. If the action fell somewhere in the middle than it received a Medium ranking. The rankings were determined based on hazard mitigation experience in the state, state capabilities, local planning efforts, program priorities, past mitigation projects, expert opinion, etc. The SHMPC went over each action and prioritized them.

Avalanche Mitigation Actions

1 - Avalanche				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,6,7	Objective A: To protect life safety and infrastructure from avalanches	1. Retrofit critical facilities and infrastructure to withstand avalanches.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local gov't, ski resorts, private owners Potential Funding Sources: state and local funds, private funds, resort revenue, FEMA	<ul style="list-style-type: none"> The UAC has numerous warning systems in place with an avalanche warning posted on the web and through their hotline each morning. Alta adopted a regulation requiring that an avalanche expert certify that any proposed structure will withstand the impact of an avalanche.
		2. Protect roads and transportation networks from avalanches.	Priority: High Timeframe: Ongoing Responsible Agencies: Ski resorts, UDOT, local gov'ts Potential Funding Sources: UDOT, agency budgets, resort revenue.	
		3. Promote more avalanche codes and regulations.	Priority: Medium Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts Potential Funding Sources: state and local funds	

2 - Avalanche				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,6,7	Objective A: Enhance avalanche knowledge and warning ability.	1. Continue support and funding of the Forecast Service Utah Avalanche Center (UAC).	Priority: High Timeframe: Ongoing Responsible Agencies: UAC, ski resorts Potential Funding Sources: UAC funds, Ski resorts, private donations	<ul style="list-style-type: none"> The UAC has numerous warning systems in place with an avalanche warning posted on the web and through their hotline each morning.
		2. Conduct training specific to snowmobilers, snowshoe and back country skiing communities.	Priority: High Timeframe: Ongoing Responsible Agencies: Ski resorts, UAC, Potential Funding Sources: UAC, resort budgets	
		3. Increase avalanche knowledge for city and county emergency managers.	Priority: Medium Timeframe: Ongoing Responsible Agencies: UAC, DEM Potential Funding Sources: UAC, operating budget	

Avalanche - State Facilities

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,11	Objective A: To protect life safety and property damage in state-owned facilities from avalanches	1. Retrofitting state owned facilities most at risk to earthquakes. (see appendix for a list of state facilities at risk to avalanches)	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	<ul style="list-style-type: none"> The SHMP update identified all state-owned facilities in dam inundation areas (see appendix).
		2. Ensure that critical state facilities are not built in avalanche zones.	Priority: Medium Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	

Dam Failure Mitigation Actions

1 - Dam Failure				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,4, 5, 6, 9,11,12	Objective A: To ensure that people, buildings, and infrastructure are safe from dam failure.	1. Complete the Dam Safety projects prioritized in the Dam Rehabilitation Priority Listing done by Dam Safety Section.	Priority: High Timeframe: Ongoing Responsible Agencies: Utah Dam Safety Potential Funding Sources: state budget, national dam safety funds	• Utah Dam Safety continues to conduct inspections of high hazard dams and publishes dam safety information.
		2. Bring deficient High Hazard dams up to current industry standards	Priority: High Timeframe: Ongoing Responsible Agencies: Utah Dam Safety Potential Funding Sources: state budget, national dam safety funds	
		3. Continue to support a dam safety program that will keep up with industry standards with support from the legislature, department, division, and governor.	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety Potential Funding Sources: state budget, national dam safety funds	
		4. Update dam emergency action plans (EAP).	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety, DEM Potential Funding Sources: state budget	
		5. Continue to secure state funding and federal funding through the National Dam Safety Rehabilitation Act.	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety, state representatives Potential Funding Sources: state budget	
		6. Install a dam monitoring system.	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety, Potential Funding Sources: state budget	
		7. Continue to produce and provide dam inundation maps.Dam	Priority: Low Timeframe: Ongoing Responsible Agencies: DEM Potential Funding Sources: DEM	

2 - Dam Failure				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2, 6,7,12	Objective B: Increase dam failure awareness and resiliency.	1. Encourage exercise of dam EAP.	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety, local gov'ts Potential Funding Sources: agency budgets	
		2. Promote National Dam Safety Awareness Day	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety, Local gov'ts Potential Funding Sources: agency budgets	
		3. Include DNR Dam Safety program in Risk MAP projects.	Priority: Medium Timeframe: Ongoing Responsible Agencies: Utah Dam Safety, Utah RiskMAP Potential Funding Sources: Utah Dam Safety, Utah RiskMAP	
		4. Identify areas of encroachment below high hazard dams	Priority: Low Timeframe: Ongoing Responsible Agencies: DEM, local gov'ts Potential Funding Sources: agency budgets	

Dam Failure - State Facilities				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,11	Objective A: Reduce the vulnerability to State-owned and critical facilities and populations located within the dam inundation zones.	1. Ensure new critical state-owned facilities are not built in dam inundation areas.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	<ul style="list-style-type: none"> The SHMP update identified all state-owned facilities in dam inundation areas (see appendix).
		2. Relocate state-owned facilities at high risk to dam failure (see appendix for list of state facilities in dam inundation areas)	Priority: Medium Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	

Drought Mitigation Actions

1 - Drought				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1, 6, 9	Objective A: To educate about water conservation and efficiency.	1. Hire personnel and/or create volunteer committees to coordinate efficiency efforts.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, Utah DWRe, water conservancy districts Potential Funding Sources: agency budgets	<ul style="list-style-type: none"> Utah State University currently offers conservation related courses and degrees. Print and broadcast materials published by Water Agencies, Slow the Flow, Localscapes, Center for Water Efficient Landscapes, Utah Water Conservation Forum and Water Sense. Expand education efforts from 4th grade to include 8th grade core curriculum and improve mechanisms for educating educators. Conservation coordinators, educators and industry experts continue to serve as guest speakers for civic and school groups. Workshops, classes and events are put on by Localscapes, Water Conservation Certification, Utah Water Conservation Forum Spring Conference, Demonstration Garden Fairs and Qualified Water Efficient Landscapers (QWEL). Websites, media and digital advertising, social media and community partners continue to advertise and promote drought mitigation information, water conservation information and demos on water saving technology and practices. The Slow The Flow budget is extremely low and could use additional funding.
		2. Fund conservation staff and efforts.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, Utah DWRe, water conservancy districts Potential Funding Sources: agency budgets	
		3. Provide higher education courses to develop water conservation professionals and services.	Priority: High Timeframe: Ongoing Responsible Agencies: Universities, colleges Potential Funding Sources: agency budgets	
		4. Provide related printed and broadcast material.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, Slow the Flow, universities, Utah DWRe, water conservancy districts, Center for Water Efficient Landscapes, Utah Water Conservation Forum, and Water Sense Potential Funding Sources: agency budgets	
		5. Provide teacher education for classroom use (especially for 4th grade to 8th grade curriculum).	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, Utah DWRe, water conservancy districts, schools, Potential Funding Sources: agency budgets	
		6. Provide speakers for civic groups and schools.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, schools, conservation coordinators Potential Funding Sources: agency budgets, donations	
		7. Provide workshops, classes and events.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, Utah DWRe, water conservancy districts, BRU conference Potential Funding Sources: agency budgets	

1 - Drought (continued)

	8. Advertise and promote drought mitigation and water conservancy practices.	<p>Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, Utah DWRe, water conservancy districts Potential Funding Sources: agency budgets, donations, free events</p>	
	9. Provide demonstrations of water saving technology and practices.	<p>Priority: Low Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities, Utah DWRe, water conservancy districts, conferences, schools Potential Funding Sources: agency budgets</p>	

2 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2, 8, 9, 11	Objective B: To implement water conservation practices.	1. Provide incentive based conservation programs	<p>Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, Utah DWRe, water conservancy districts, businesses Potential Funding Sources: agency budgets, state funding, conservancy district rebates, business revenue</p>	<ul style="list-style-type: none"> • Policy leaders and water agencies provide incentives to implement water efficiency practices like Utah Water Savers. In fiscal year 2018 the Utah legislature appropriated ongoing funds for statewide efficiency rebates. • Businesses and water agencies provide professional services like QWEL certified designers, landscapers and irrigation specialists, landscape auditors and sustainable developers. • Businesses and water agencies provide landscape and irrigation audits, water checks and landscape consultations. • DFCM- Landscapes may contain no more than 30% turf. Turf variety selected must use no more than 14" of irrigation annually. No turf on slopes greater than 8% grade and spaces less than 8' wide. Mature water-wise plant material must provide 50% cover. • DFCM with additional funding from legislature DFCM performed indoor retrofits at 16 facilities and outdoor retrofits at 24 facilities across the state. • DFCM converted six facilities to water-wise landscaping.
		2. Provide professional conservation services	<p>Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, Utah DWRe, water conservancy districts, private sector Potential Funding Sources: agency budgets</p>	
		3. Provide landscape and irrigation audits	<p>Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, universities (USU), Utah DWRe, water conservancy districts, private sector Potential Funding Sources: agency budgets, donated resources</p>	

3 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
6,8,9	Objective C: To conserve water within the agriculture sector.	1. Implement water conservation practices and technologies in agriculture.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, Utah Dept of Ag and Food., private sector Potential Funding Sources: agency budgets, USDA, private	<ul style="list-style-type: none"> Utah Department of Agriculture and Food need legislative and state engineer support and consent required to implement water conservation practices and technologies in agriculture, to promote the use of treated wastewater effluent where appropriate and developing water banking opportunities.
		2. Promote the use of treated wastewater effluent where appropriate.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, Utah DWRe, wastewater and reclamation districts, private sector Potential Funding Sources: agency budgets, state funding	
		3. Develop Water Banking opportunities.	Priority: Medium Timeframe: 3-5 years Responsible Agencies: State gov't, local gov'ts, water conservancy districts Potential Funding Sources: agency budgets, state funding	

4 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
4	Objective D: To facilitate and review and update codes, ordinances, statutes and policies that influences water efficiency and water source flexibility.	1. Educate policy leaders on water efficiency efforts, resources and agency needs.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, Utah Dept. of Ag., private sector Potential Funding Sources: agency budgets, USDA, private	<ul style="list-style-type: none"> Policy leaders should update and adopt ordinances dealing with landscape requirements, water efficiency plans, climate resiliency plans, water waste prohibition and water shortage plans. Policy leaders, water agencies and providers need to enforce education, incentives, warnings and fines.
		2. Modify existing building codes or adopt new ones where appropriate to mitigate against drought.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts Potential Funding Sources: state and local funds	
		3. Update and adopt ordinances.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts Potential Funding Sources: state and local funds	
		4. Enforce codes, ordinances, statutes, and laws that promote drought resiliency and water conservation practices.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts Potential Funding Sources: state and local funds	

5 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2,3,4,11	Objective E: To reduce the impact of new development on drought.	1. Require water-efficient landscaping.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts Potential Funding Sources: state, local, and tribal funds	<ul style="list-style-type: none"> Policy leaders should update and adopt ordinances dealing with landscape requirements, water efficiency plans, climate resiliency plans, water waste prohibition and water shortage plans.
		2. Require the use of water-efficient appliances and fixtures in new construction.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts Potential Funding Sources: state, local and tribal funds	

6 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2,3,4	Objective F: Improve public water infrastructure and management.	1. Meter water sources/usage.	Priority: Medium Timeframe: Ongoing Responsible Agencies: local gov'ts, water utility companies, water conservancy districts Potential Funding Sources: local funds, agency funds	<ul style="list-style-type: none"> Water providers, policy leaders, regularly read meters, calibrate, repair and replace all water sources and usage. Promote and support water system audits to increase reporting and planning accuracy. Water providers including water conservation personnel, programming and educational initiatives set water rates to cover the cost of all operations and maintenance and the Division of Water Resources is working on expanding to more public water systems with legislative support, program funding and coordination personnel.
		2. Accurately and consistently record and report water usage.	Priority: Medium Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, water utility companies, water conservancy districts Potential Funding Sources: local and tribal funds, agency funds	
		3. Bill for all water usage within the water system.	Priority: Medium Timeframe: Ongoing Responsible Agencies: local gov'ts, water utility companies, water conservancy districts Potential Funding Sources: local funds, agency funds	
		4. Set water rates to cover the cost of all operations and maintenance.		
		5. Set tiered water rates to provide strong incentives for water conservation.		
		6. Provide informative water bills.		
		7. Provide educational inserts with bills and newsletters.	Priority: Low Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, water utility companies, water conservancy districts Potential Funding Sources: local and tribal funds, agency funds	

7 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2,3	Objective G: To reduce water loss within public water infrastructure.	1. Implement adequate and timely, repair and replacement practices to prevent system failures, inefficiencies, and inaccurate reporting.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, tribes, water utility companies, water conservancy districts Potential Funding Sources: state funds, tribal funds, local funds, agency funds, grants	<ul style="list-style-type: none"> Water providers are performing water system audits to increase existing revenue streams and improve performance, implementing adequate and timely repair and replacement practices to prevent system failures, inefficiencies and inaccurate reporting, and identifying and correcting leakage from water supply networks. Water providers continue to perform items 2,3 and 4.
		2. Perform water system audits to increase existing revenue streams and improve performance.	Priority: Medium Timeframe: Ongoing Responsible Agencies: local gov'ts, tribes, water utility companies, water conservancy districts Potential Funding Sources: local funds, tribes, agency funds, grants	
		3. Promote and support water system audits to increase reporting and planning accuracy.	Priority: Medium Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, tribes, water utility companies, water conservancy districts Potential Funding Sources: state operating budget, local funds, tribal funds, agency funds, grants	

8 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
6,8,11	Objective H: To increase efficiency through shared system management.	1. Develop incentives for public water systems to conserve their resources through water banking	Priority: Medium Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, tribes, water utility companies, water conservancy districts Potential Funding Sources: state operating budget, local funds, agency funds, private sector, tribal funds, grants	

9 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2,8,9	Objective I: To expand and improve existing potable water systems.	1. Enhance the productivity and efficiency of existing raw water extraction methods.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts, water utility companies, water conservancy districts Potential Funding Sources: state funds, local and tribal funds, agency funds, private sector	<ul style="list-style-type: none"> • Graywater, largescale rain harvesting, ground water recharge and recovery, re-use, water banking. Protect water sources, such as wells, springs, watersheds, ect.
		2. Modify and update existing requirements to diversify and protect water sources.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts, water utility companies, water conservancy districts Potential Funding Sources: state funds, local and tribal funds, agency funds, private sector, grants	
		3. Create, protect or recharge underground aquifers/reservoirs	Priority: Medium Timeframe: 5-20 years Responsible Agencies: Water owners, State of Utah, water conservancy districts Potential Funding Sources: state funds, local funding, agency funds, private sector, water fees, federal funds	

10 - Drought

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5	Objective J: Support state and local drought planning efforts.	1. Support the Utah Department of Natural Resources, Division of Water Resources in developing and updating the Utah Drought Response Plan.	Priority: High Timeframe: Ongoing Responsible Agencies: DEM, state agencies, water utility companies, water conservancy districts Potential Funding Sources: state funds, local funds, agency funds	<ul style="list-style-type: none"> • DEM and state agencies have supported efforts and attended meetings to begin to update the plan and utilize the drought response plan.

Drought - State Facilities

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,4,6	Objective A: To promote strict water efficiency practices in all state managed properties.	1. All new facilities required to install water efficient landscaping with maintenance schedule.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	<ul style="list-style-type: none"> • DFCM- Landscapes may contain no more than 30% turf. Turf variety selected must use no more than 14" of irrigation annually. No turf on slopes greater than 8% grade and spaces less than 8' wide. Mature water-wise plant material must provide 50% cover. • DFCM with additional funding from legislature DFCM performed indoor retrofits at 16 facilities and outdoor retrofits at 24 facilities across the state. • DFCM converted six facilities to water-wise landscaping.
		2. All new facilities required to install the most up to date indoor water efficient devices.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	
		3. Retrofit existing facilities with water saving devices.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	
		4. Convert existing facilities to water wise landscaping.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	
		5. Educate employees about water conservation.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies, Be Ready Utah Potential Funding Sources: state funds	

Flood Mitigation Actions

1 - Flood					
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress	
1, 6, 9	Objective A: Protect property, infrastructure and/or environment from flooding.	1. Sustain and promote No Adverse Impact (NAI).	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, NFIP, USACE Potential Funding Sources: agency budgets, NFIP program, USACE	<ul style="list-style-type: none"> Encourage the elevation of houses to reduce impacts of flooding, where appropriate. Many flood projects have been completed since the last update through FEMA's Hazard Mitigation Assistance Program, NRCS, city governments. 	
		2. Place riprap in strategic locations.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, businesses, NRCS Potential Funding Sources: agency budgets, NRCS, private sector, PDM, HMPG, FMA		
		3. Increase the size of culverts and bridges.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts, NRCS, USACE, UDOT Potential Funding Sources: FEMA, FMA, NRCS, capital improvement budgets, bonds, state and local and tribal funds		
		4. Structurally retrofit and/or flood proof or acquire repetitive loss (RL) or (SRL) properties and properties in historic districts.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, NRCS, DEM Funding Sources: FEMA, FMA, capital improvement budgets, local funds		
		5. Property Acquisitions	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts Potential Funding Sources: FEMA, FMA, capital improvement budgets, local and tribal funds		
		6. River Restoration	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts Potential Funding Sources: FEMA, FMA, capital improvement budgets, local and tribal funds		Ogden City has lead the way in restoring a section of Ogden City and using FEMA grants to restore a section of the Weber river
		7. Watershed Restoration	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts Potential Funding Sources: FEMA, FMA, capital improvement budgets, local and tribal funds		These projects would apply to drought, wildfire and erosion. Would include projects that address watershed protection and restoration, such as beaver dams, reseeding, fuel reduction, ect.

2 - Flood

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1, 6, 9	Objective B: Provide maintenance, repairs, and improvements to roads, bridges and drainage structures.	1. Remove debris and vegetation from floodway and drainage structures through a systematic maintenance program.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't and agencies, local gov'ts, UDOT, canal districts Potential Funding Sources: capital improvement budgets, state and local funds	<ul style="list-style-type: none"> City governments, UDOT, NRCS continue to provide maintenance, repairs, or improvements to various infrastructure throughout the state.
		2. Improve flood resistance through enhancement of wing walls, flood barriers, foundations, etc. at likely flood impact points.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, UDOT Potential Funding Sources: FEMA, FMA, NRCS, capital improvement budgets, state and local funds	
		3. Construct debris basins, flood retention ponds, bioswales & energy flow dissipaters in an effort to control the flow and release of flood waters.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, NRCS, USACE, UDOT, canal districts Potential Funding Sources: FEMA, FMA, NRCS, capital improvement budgets, state and local funds, private sector	

3 - Flood

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
	Objective C: Obtain benefits of NFIP and CRS for all property owners.	1. Encourage legislation requiring all eligible jurisdictions to participate in NFIP.	Priority: High Timeframe: 5- 10 years Responsible Agencies: local gov'ts, state representatives, FEMA Potential Funding Sources: local funds, state funds	<ul style="list-style-type: none"> Work with local floodplain managers to promote participation in and ensure compliance with the NFIP to update community's FIRM. Promote community participation in the National Flood Insurance Program (NFIP) through a new nation-wide ad campaign. Provide state funding to build capacity in the NFIP program to hire staff and provide technical assistance to communities.
		2. Promote the benefits of NFIP participation to all jurisdictions.	Priority: High Timeframe: Ongoing Responsible Agencies: DEM - NFIP coordinator, local and tribal gov'ts, FEMA, insurance companies Potential Funding Sources: NFIP, local funds, state funds, tribal funds	
		3. Encourage eligible communities to participate in CRS.	Priority: Medium Timeframe: Ongoing Responsible Agencies: DEM - NFIP coordinator, local and tribal gov'ts, FEMA Potential Funding Sources: NFIP, local funds, state funds, tribal funds	

4 - Flood

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2,3,4	Objective D: Regulate the alteration of existing drainage patterns for new development.	1. Adopt and improve codes and ordinances that set reasonable limits on the alteration of drainage patterns due to new development.	Priority: High Timeframe: 10-15 years Responsible Agencies: local gov'ts, state representatives, state gov't Potential Funding Sources: local funds, state funds	<ul style="list-style-type: none"> The Skull Valley Band of Goshute tribe currently does not have any land use regulations or policies related to flooding.
		2. Encourage tribes to develop policies and land use regulations regarding flooding.	Priority: High Timeframe: Ongoing Responsible Agencies: Tribes, NFIP coordinator, FEMA, state agencies Potential Funding Sources: Tribal funds	
		2. Provide technical assistance for the development or modification of codes and ordinances related to this mitigation objective.	Priority: Medium Timeframe: Ongoing Responsible Agencies: DEM - NFIP coordinator, local gov'ts, FEMA, state agencies Potential Funding Sources: NFIP, local funds, state funds	

5 - Flood

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5,6,12	Objective E: Update and Improve floodplain/flood hazard areas mapping in the state	1. Develop digital flood insurance Rate Maps for all counties within the state.	Priority: High Timeframe: 5 - 8 years Responsible Agencies: RiskMAP, FEMA, local gov'ts Potential Funding Sources: local funds, RiskMAP	<ul style="list-style-type: none"> Increase the number of mapped stream miles within the state from 7,245.1 based on FEMA/CNMS. Working towards developing a state-wide active alluvial fan landform inventory. Develop flood hazard assessments of identified active alluvial fans In 2018, about 17,883 mi² of new LIDAR data are being collected, leaving about 61,421 mi² remaining to be acquired statewide. Since 2014, the Utah Risk MAP Program, through FEMA CTP grants, has provided approximately \$1,287,000 in LiDAR acquisition funding to acquire areas within the counties of: Salt Lake, Utah, Cache, Washington, Juab, Sanpete, Millard, Sevier, Piute, Garfield, Kane, Box Elder, and Weber. To accomplish the State's goal of 100% coverage, Risk MAP partners with the Utah Automated Geographic Reference Center (AGRC) and the Utah Geological Survey (UGS) to provide funding and acquisition areas.
		2. Develop, maintain, and update on an annual basis, a 5 Year Risk MAP Project Implementation Plan	Priority: High Timeframe: Ongoing Responsible Agencies: RiskMAP, FEMA, Potential Funding Sources: local funds, RiskMAP	
		3. Use lidar technology to map the entire State of Utah.	Priority: High Timeframe: Ongoing Responsible Agencies: RiskMAP, FEMA, UGS Potential Funding Sources: state agencies, UGS, RiskMAP	
		4. Develop a state-wide active alluvial fan landform inventory	Priority: High Timeframe: Ongoing Responsible Agencies: RiskMAP, FEMA, UGS Potential Funding Sources: local funds, RiskMAP, UGS	
		5. Develop flood hazard assessments of identified active alluvial fans.	Priority: Medium Timeframe: Ongoing Responsible Agencies: RiskMAP, FEMA, UGS Potential Funding Sources: local funds, RiskMAP, UGS	

5 - Flood (continued)

<p>6. Support implementation of mitigation measures to reduce alluvial fan flood risk return for the State of Utah.</p>	<p>Priority: Medium Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, RiskMAP, UGS, NFIP, NRCS Potential Funding Sources: state and local funds, UGS, FEMA, FMA, NRCS</p>	
<p>7. Develop a statewide geologic-based flood hazard map</p>	<p>Priority: Medium Timeframe: Ongoing Responsible Agencies: UGS Potential Funding Sources: state and local funds, FEMA, FMA, NRCS</p>	

6 - Flood

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5,6	Objective F: Ensure that information related to flood issues and programs are available in the state.	<p>1. Prepare and deliver flood related programs and materials for educational institutions.</p> <p>2. Provide flood-related information through print and broadcast media.</p>	<p>Priority: High Timeframe: Ongoing Responsible Agencies: NFIP, FEMA, RiskMAP, local gov'ts Potential Funding Sources: local funds, NFIP, FEMA RiskMAP, donated media time</p>	<ul style="list-style-type: none"> • Suggest a new action to initiate Base Level Engineering (BLE) on a prioritized basis to increase flood risk awareness in the State. • Floods, What You Should Know When Living in Utah publication is available. • Utilized a billboard campaign to promote flood awareness.

7 - Flood

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
8,12	Objective G: Mitigate against post-wildfire flooding	1. Identify areas where re-vegetation and rehabilitation is necessary and prioritize.	Priority: High Timeframe: Ongoing Responsible Agencies: Utah DNR, NRCS, RiskMAP, local gov'ts, state agencies Potential Funding Sources: local funds, Utah DNR, NRCS, RiskMAP	<ul style="list-style-type: none"> •Mitigation projects have been completed or are in pre-construction that have mitigate against post-wildfire flooding. • Efforts at SHMT meeting have begun talks to develop good practices for post wildfire mitigation.
		2. Commence re-vegetation and rehabilitation on a priority basis.	Priority: High Timeframe: Ongoing Responsible Agencies: Utah DNR, NRCS, RiskMAP, local and tribal gov'ts, state agencies Potential Funding Sources: local and tribal funds, Utah DNR, NRCS, RiskMAP, FMAG-HMGP	
		3. Construct temporary or permanent debris traps and other flood mitigating structures in wildfire-burned areas.	Priority: High Timeframe: Ongoing Responsible Agencies: Utah DNR, NRCS, RiskMAP, local and tribal gov'ts, state agencies Potential Funding Sources: local and tribal funds, Utah DNR, NRCS, RiskMAP, FMAG-HMGP	
		4. Identify good practices for Utah communities to prepare for flood after fire prior to fire occurrence and help support implementation.	Priority: High Timeframe: Ongoing Responsible Agencies: Utah DNR, NRCS, RiskMAP, local and tribal gov'ts, state agencies Potential Funding Sources: local and tribal funds, Utah DNR, NRCS, RiskMAP, FMAG-HMGP	
		5. Identify good practices for preparing for flood after fire once fire has occurred (ex. Technical good practices for H&H/ GIS spaces).	Priority: Low Timeframe: Ongoing Responsible Agencies: Utah DNR, DEM, NFIP, RiskMAP local and tribal gov'ts, state agencies, NRCS Potential Funding Sources: local and tribal funds, state funds, DEM, NFIP, FEMA, RiskMAP, NRCS	
		6. Purchase property to construct flood protection projects or move homes out of risk areas	Priority: Medium Timeframe: As Needed Responsible Agencies: Utah DNR, DEM, NFIP, local gov'ts, state agencies, NRCS Potential Funding Sources: local funds, state funds, DEM, FEMA, NRCS	
		7. Develop a post fire State Team to assess the damage and potential risks	Priority: High Timeframe: Summer of 2019 Responsible Agencies: Utah DNR, DEM, NFIP, local gov'ts, state agencies, NRCS & others Potential Funding Sources: local funds, state funds, DEM, FEMA, NRCS,	

8 - Flood				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
3,4,5,6,12	Objective A: Compliance with NFIP standards in Utah.	1. Facilitate NFIP trainings.	Priority: High Timeframe: Ongoing Responsible Agencies: DEM, NFIP, RiskMAP, FEMA Potential Funding Sources: state funds, NFIP, RiskMAP	•DEM conducts several NFIP and floodplain management and other flood trainings on a yearly basis.
		2. Get State agencies to follow NFIP regulations.		
		3. Promote proper floodplain permitting in communities, especially in communities with RL and SRL properties.		
		4. Encourage all federal and state agencies to get proper letter of map change with doing projects in the SFHA.		
		5. Provide a greater amount of State Funding to promote NFIP and increase capabilities		

9 - Flood				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5,6,12	Objective H: Develop a Utah levee management strategy.	1. Inventory, evaluate and repair Utah's existing levee system to compile existing subsurface data, collect new subsurface data and build a GIS-based platform containing all the relevant levee information.	Priority: Medium Timeframe: Ongoing Responsible Agencies: DEM, DWRe, RiskMAP, local gov'ts Potential Funding Sources: state funds, RiskMAP, local funds, DWRe	• Provo City and Salt Lake County have currently submitted mitigation grant proposals for federal funding to evaluate the structures of existing levees in their respective areas.
		2. Initiate development of a state-of-the-art levee database for the purpose of better understanding and mapping levees in Utah.	Priority: Medium Timeframe: Ongoing Responsible Agencies: DEM, DWRe, RiskMAP, FEMA Map Modernization Program, local gov'ts Potential Funding Sources: state funds, RiskMAP, local funds, DWRe	

9 - Flood (continued)

	3. Initiate an aerial levee survey project.	Priority: Low Timeframe: Ongoing Responsible Agencies: DEM, DWRe, RiskMAP, local gov'ts Potential Funding Sources: state funds, RiskMAP, local funds, DWRe	<ul style="list-style-type: none"> • Provo City and Salt Lake County have currently submitted mitigation grant proposals for federal funding to evaluate the structures of existing levees in their respective areas.
	4. Create levee flood protection zones with DWR and develop a web-viewer that will enable property owners to locate their properties	Priority: Low Timeframe: Ongoing Responsible Agencies: DEM, DWRe, RiskMAP, local gov'ts Potential Funding Sources: state funds, RiskMAP, local funds, DWRe	

Flood - State Facilities

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,8,11	Objective A: To retrofit, floodproof or mitigate state-owned facilities against flooding	1. All new facilities required to install water efficient landscaping with maintenance schedule.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	<ul style="list-style-type: none"> • DFCM- Landscapes may contain no more than 30% turf. Turf variety selected must use no more than 14" of irrigation annually. No turf on slopes greater than 8% grade and spaces less than 8' wide. Mature water-wise plant material must provide 50% cover. • DFCM with additional funding from legislature DFCM performed indoor retrofits at 16 facilities and outdoor retrofits at 24 facilities across the state. • DFCM converted six facilities to water-wise landscaping.
		2. All new facilities required to install the most up to date indoor water efficient devices.		
		3. Retrofit existing facilities with water saving devices.		
		4. Convert existing facilities to water wise landscaping.		
		5. Educate employees about water conservation.		
		6. All new state facilities required to get flood permits before building.		

Geologic Hazards Mitigation Actions

1 - Geologic Hazards				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,4, 11	Objective A: Protect lives and property from geologic hazards	1. Retrofit critical facilities and infrastructure to withstand earthquakes and other geologic hazards.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, owners of facilities, DFCM, UDOT Potential Funding Sources: state and local and tribal funds, FEMA, private sector, UDOT	<ul style="list-style-type: none"> • Salt Lake City has initiated the Fix the Bricks program • FEMA funded grants have retrofitted many buildings, infrastructure and critical facilities. • Completed at Springhill, NSL buyout and available as a mitigation solution as needed at other landslide areas.
		2. To retrofit businesses, residential structures, infrastructure, and public buildings (especially in historic districts) to withstand moderate earthquakes and other geologic hazards.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts Potential Funding Sources: state, local, and tribal funds, FEMA, private sector,	
		3. Better enforcement of the seismic standards in the International Building Code (IBC), which has been adopted statewide. Adopt IBC appendices L and M, and IRC appendix F statewide. Adopt more stringent seismic standards beyond the current IBC to increase resilience.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't for technical assistance, local gov'ts for code enforcement Potential Funding Sources: local gov't operating budget and state funds	
		4. Property acquisitions for properties in geologic hazard zones.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts, owners of properties Potential Funding Sources: FEMA, local and tribal funds, private sector	
		5. Using flexible piping when extending or replacing water, sewer, or natural gas service.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local and tribal gov'ts, utility companies Potential Funding Sources: FEMA, local and tribal funds, private sector, utility companies	
		6. Installing shutoff valves and emergency connector hoses where water mains cross fault lines.		
		7. Require secondary water meters and smart irrigation controllers to reduce excessive groundwater near known landslide areas.	Priority: High Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts, utility companies Potential Funding Sources: FEMA grants, local funds, private sector, utility companies	

2 - Geologic Hazards

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,5,6	Objective B: Increase the level of knowledge, maps, and educational materials related to geologic hazards in Utah	1. Educate the general public and disseminate information on geologic hazards (including at outreach events).	Priority: High Timeframe: Ongoing Responsible Agencies: UGS, DEM, USSC, universities, schools, conferences, Utah ShakeOut Potential Funding Sources: UGS, DEM, USSC, university funds	<ul style="list-style-type: none"> The UGS website is always being updated with new information. The UGS Circular -122 has landslide guidelines Landslide maps are needed to guide land-use planning; landslide mapping is ongoing in the state. Landslide hazard inventory is ongoing.
		2. Provide educational and training opportunities for city and county planners	Priority: High Timeframe: Ongoing Responsible Agencies: UGS, DEM, USSC, universities, schools, conferences Potential Funding Sources: UGS, DEM, USSC, university funds	
		3. Educate developers and real estate agents on geologic risk and hazards.	Priority: High Timeframe: Ongoing Responsible Agencies: UGS, DEM, USSC, Utah ShakeOut Potential Funding Sources: UGS, DEM, USSC, Utah ShakeOut	
		4. Prepare improved geologic hazard maps.	Priority: High Timeframe: Ongoing Responsible Agencies: UGS, DEM, USSC, universities, schools, Potential Funding Sources: UGS, DEM, USSC, university funds	
		5. Develop improved hazard landslide inventory.	Priority: Medium Timeframe: Ongoing Responsible Agencies: UGS Potential Funding Sources: UGS	

3 - Geologic Hazards

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,4,5	Objective C: Encourage jurisdictions to adopt geologic hazard ordinances	1. Encourage cities, towns, counties & tribes to develop ordinances for geological hazards. Adopt IBC appendices L and M, and IRC appendix F statewide.	Priority: High Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, UGS, USSC, universities Potential Funding Sources: state, local, and tribal funds, UGS, HMGP	<ul style="list-style-type: none"> UGS assists as needed.

4 - Geologic Hazards

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,5,7,11	Objective D: Monitor landslides in the state	1. Continue monitoring of landslide movement by the Utah Geological Survey.	Priority: High Timeframe: Ongoing Responsible Agencies: UGS Potential Funding Sources: UGS, state and local governments.	
		2. Continued field response to debris flows, landslides and rock falls by the Utah Geological Survey.	Priority: High Timeframe: Ongoing Responsible Agencies: UGS Potential Funding Sources: UGS, state and local governments.	

5 - Geologic Hazards

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5,6,12	Objective E: Conduct Inspection of Building Safety	1. Survey all state schools using the ATC-20 process to identify hazardous schools.	Priority: High Timeframe: Ongoing Responsible Agencies: USSC, UGS, DEM Potential Funding Sources: state funds, FEMA	<ul style="list-style-type: none"> • In 2013 Utah passed a law to aid in rapid visual screening of schools in Utah. • Utah Seismic Safety Commission working on this.

6 - Geologic Hazards

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,4	Objective F: Promote hazard mitigation through programs, incentives and rebates.	1. Develop a state-wide, county-wide or city-wide retrofitting program similar to Fix the Bricks	Priority: High Timeframe: Ongoing Responsible Agencies: State agencies, local governments Potential Funding Sources: state funds, FEMA	• Salt Lake City has developed a Fix the Bricks program to incentivize home owners to retrofit their homes against earthquakes.
		2. Tax credits for retrofitting available.	Priority: High Timeframe: Ongoing Responsible Agencies: State agencies, local governments Potential Funding Sources: state funds, local funds, private funds	
		3. Research other creative ways of building resilient communities across the state	Priority: Low Timeframe: Ongoing Responsible Agencies: State agencies, local governments Potential Funding Sources: state funds, local funds, private funds	

7 - Geologic Hazards

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5,6,12	Objective G: Protect, retrofit or find other solutions for utilities	1. Retrofit power, water and sewer infrastructure.	Priority: High Timeframe: Ongoing Responsible Agencies: USSC, UGS, DEM Potential Funding Sources: state funds, FEMA	<ul style="list-style-type: none"> In 2013 Utah passed a law to aid in rapid visual screening of schools in Utah. Utah Seismic Safety Commission working on this.
		2. Promote and provide renewable energy such as solar to provide power after an earthquake.	Priority: High Timeframe: Ongoing Responsible Agencies: State agencies, local governments, private citizens, businesses Potential Funding Sources: state funds, local funds, private funding, FEMA	Buildings that can produce their own power, store water and create and conserve heat will recovery quicker after a large earthquake.

Geologic Hazards - State Facilities

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,4,6	Objective A: To protect life safety and property damage in state-owned facilities	1. Conduct seismic retrofitting for state owned facilities most at risk to earthquakes. (see appendix for a list facilities based on risk assessment)	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds, federal funds, grants, private funds	<ul style="list-style-type: none"> The risk assessment for this plan update, identified the state owned facilities at different levels of risk to different geologic hazards, including earthquakes (near a fault, in a liquefaction zone).
		2. Retrofit or relocate state owned facilities at risk to landslides and other geologic hazards	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	
		3. Build new state facilities to meet higher code and net zero standards	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	

Severe Weather Mitigation Actions

1 - Severe Weather				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1. 6. 9	Objective A: Provide weather-related information through print, broadcast and social media.	1. Prepare and disseminate brochures, public service announcements, etc., related to severe weather.	Priority: High Timeframe: Ongoing Responsible Agencies: NWS, NOAA, media, State gov't, local gov'ts Potential Funding Sources: agency budgets, donated media time, DEM-PIO, Be Ready Utah outreach	<ul style="list-style-type: none"> • NWS holds Lightning Safety Awareness Week, Tornado and Severe, Weather Awareness Week, Winter Weather Awareness Week, etc. every year. • Be Ready Utah provides printed materials on severe weather, conducts presentations, promotes outreach, and hosts a yearly conference. • NWS runs the StormReady program.
		2. Utilize awareness weeks for, lightning, severe weather, winter weather, etc.	Priority: High Timeframe: Ongoing Responsible Agencies: NWS, NOAA, media, State gov't, local gov'ts Potential Funding Sources: agency budgets, donated media time, DEM-Be Ready Utah outreach	
		3. Provide severe weather information and programs to schools.	Priority: High Timeframe: Ongoing Responsible Agencies: NWS, Be Ready Utah, local gov'ts Potential Funding Sources: agency budgets, DEM-Be Ready Utah outreach	
		4. Organizing outreach to vulnerable populations, including establishing and promoting accessible heating centers in the community.	Priority: High Timeframe: Ongoing Responsible Agencies: NWS, Be Ready Utah Potential Funding Sources: agency budgets, DEM-Be Ready Utah outreach	

2 - Severe Weather

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2, 8, 9, 11	Objective B: Design public buildings, infrastructure, and private property to withstand the effects of severe weather.	1. Encourage all new construction to meet enhanced standards for wind-loading, snow-loading and other weather-related hazards.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, DFCM Potential Funding Sources: agency budgets, state funding, FEMA	
		2. Plan for and maintain adequate road and debris clearing capabilities	Priority: High Timeframe: Ongoing Responsible Agencies: Local gov'ts, UDOT Potential Funding Sources: agency budgets, UDOT	
		3. Ensure retrofits comply with new building codes.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts Potential Funding Sources: agency budgets	
		4. Ensure critical facilities, public buildings, and high occupancy buildings have back-up generators.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts Potential Funding Sources: agency budgets, FEMA	
		5. Discourage flat roofs in areas that experience heavy snows.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts Potential Funding Sources: agency budgets	

• Utah has adopted the International Building Code (IBC).

3 - Severe Weather

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
6,8,9	Objective C: To be able to warn people in severe weather-prone areas through appropriate severe weather warning systems.	1. Use Integrated Public Alert and warning Systems (IPAWS) and other available warning systems and resources to disseminate emergency messages.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, NWS, DEM Potential Funding Sources: agency budgets, NWS	• DEM uses several methods to disseminate emergency messages related to severe weather.
		2. Increase participation in the NWS StormReady program.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, NWS, DEM Potential Funding Sources: agency budgets, NWS	
		3. Promote Wireless Emergency Alerts (WEA).	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, NWS, DEM Potential Funding Sources: agency budgets, NWS	

Severe Weather - State Facilities

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,4,6	Objective A: Ensure state-owned facilities are resilient, code compliant, and protected from severe weather.	1. Retrofit state-owned facilities at risk to severe weather.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	
		2. Ensure critical state-owned facilities are equipped with back-up generators.	Priority: Medium Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	

Space Weather Mitigation Actions

1 - Space Weather				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
2,6,11	Objective A: Promote education material about space weather hazards	1. Promote and disseminate information on space weather hazards and events.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State and local and tribal gov'ts, NWS, DEM, NASA Potential Funding Sources: state, local, and tribal funds, NWS, NASA	<ul style="list-style-type: none"> The SHMP includes information on space weather. DEM will highlight space weather events in situation reports

Wildfire Mitigation Actions

1 - Wildfire				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1, 6, 9	Objective A: Reduce hazardous fuel loading.	1. Reduce fuel loads around critical facilities and infrastructure.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL Potential Funding Sources: agency budgets, FEMA, FMAG-HMGP	<ul style="list-style-type: none"> Fire Safe Councils 501(c)3 nonprofit orgs with citizens and corporate partners that do community outreach, education, hazardous fuel assessment, community wildfire preparedness planning and community chipping projects.
		2. Reduce fuel loading within communities located in the WUI.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL, private homeowners, HOAs Potential Funding Sources: agency budgets, private funds, HOA funds, FEMA, FMAG-HMGP	
		3. Support the Utah Prescribed Fire Council (which increases the use of prescribed fires on private and public lands)	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, FFSL, private homeowners Potential Funding Sources: agency budgets, state funding, private funds, federal grants	
		4. Reduce fuel loading in ds	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL, private owners Potential Funding Sources: agency budgets, private funds	
		5. Provide assistance with disposition of vegetative material removed from private land, as through chipping, burning or other methods.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL Potential Funding Sources: agency budgets, state funds	

2 - Wildfire

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,5,6,9,11,12	Objective B: To provide public information and education regarding wildfire hazards	1. Develop printed information, on defensible space and wildfire hazards.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL, DEM Potential Funding Sources: agency budgets, FEMA, FMAG-HMGP, Be Ready Utah	<ul style="list-style-type: none"> FFSL and DEM entered into a MOU to integrate local hazard mitigation planning with community wildfire preparedness plans.
		2. Provide information for community meeting and seminars on the subject of defensible space.	Priority: High Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, FFSL Potential Funding Sources: agency budgets, state funding, federal grants	

3 - Wildfire

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,4,5	Objective C: Promote local code enhancements that require utilization of defensible space tactics where appropriate.	1. Develop and promote appropriate wildfire code enhancements.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL, Potential Funding Sources: agency budgets, local funds	<ul style="list-style-type: none"> 2014 WUI code was adopted. Updated fire codes were developed to increase fire resistance in buildings and homes and address homes built in the wildland-urban interface to make them more fire resistant, like using asphalt and clay tile roofing to reduce ignition from windblown embers and increase a structure's survivability.
		2. Give the current WUI code more enforcement avenues	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, FFSL Potential Funding Sources: agency budgets, local funds	
		3. Mandate wildfire planning be incorporated into development and land use planning.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local and tribal gov'ts, FFSL Potential Funding Sources: agency budgets, local funds	

4 - Wildfire

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
5,6,12	Objective D: Support tools, maps, and information on WUI areas and wildfire hazards in Utah	1. Assist each county in getting WUI designation.	Priority: High Timeframe: Ongoing Responsible Agencies: FFSL, local gov'ts Potential Funding Sources: local funding	<ul style="list-style-type: none"> Utah DNR developed the new Utah Wildfire Risk Assessment Portal. The Assessment Portal is used by all land managers for strategic fuel reduction projects.
		2. Support and enhance Utah's Wildfire Risk Assessment Portal.	Priority: High Timeframe: Ongoing Responsible Agencies: FFSL, DEM, local gov'ts Potential Funding Sources: state and local funds, federal grants	
		3. Facilitate the sharing of all analyses and data collections across all ownerships for consistency in type and kind.	Priority: High Timeframe: Ongoing Responsible Agencies: FFSL, state gov't, local gov'ts Potential Funding Sources: state and local funds	
		4. Develop digital maps of critical facilities, infrastructure and future development areas in the WUI.	Priority: Medium Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts Potential Funding Sources: state and local funds	

5 - Wildfire

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,6	Objective E: Promote Firewise communities in Utah.	1. Increase the number of Firewise communities in Utah.	Priority: High Timeframe: Ongoing Responsible Agencies: FFSL, local gov'ts Potential Funding Sources: state and local funds	<ul style="list-style-type: none"> As of 2019 there are 28 Firewise communities in Utah

6 - Wildfire

Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,11	Objective F: Enhance existing or develop new fire-fighting programs and resources for wildfire suppression.	1. Enhance existing or develop new water sources in wild-fire-prone areas.	Priority: Medium Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, state gov't Potential Funding Sources: local funds, agency funds	
		2. Build and maintain water-filling areas for helicopters.	Priority: Low Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, state gov't Potential Funding Sources: local funds, agency funds	
		3. Establish dry water hydrants in high hazard fire areas.	Priority: Low Timeframe: Ongoing Responsible Agencies: local and tribal gov'ts, state gov't Potential Funding Sources: local funds, agency funds	

7 - Wildfire				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
6	Objective G: Support the rural addressing program	1. Complete the rural addressing program and stay current with it.	Priority: Medium Timeframe: Ongoing Responsible Agencies: state gov't, local gov'ts Potential Funding Sources: state funds, local funds	• Progress on completing the rural addressing the program is continuing.
1,5,6,9,11,12	Objective H: To provide public information and education regarding post wildfire hazards	1. Develop printed information, on defensible space and wildfire hazards.	Priority: High Timeframe: Ongoing Responsible Agencies: State gov't, local gov'ts, FFSL, DEM Potential Funding Sources: agency budgets, FEMA, FMAG-HMGP, Be Ready Utah	• FFSL and DEM entered into a MOU to integrate local hazard mitigation planning with community wildfire preparedness plans.
		2. Develop a post wildfire resource website.	Priority: High Timeframe: By the Summer of 2019 Responsible Agencies: DEM and FFSL Potential Funding Sources: HMGP Post Fire	DEM will lead the efforts with FFSL and other SHMT members using HMGP Post Fire and State funding.

Wildfire - State Facilities				
Goal	Objective	Actions	Priority, Timeframe, Responsible Agencies, Funding Sources	Comments, Efforts, Progress
1,2,3,10,11	Objective A: To protect life safety and property damage from wildfires for state facilities	1. Ensure that state-owned facilities utilize defensible space practices. (see appendix for state facilities at high risk to wildfire).	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds, federal grants	
		2. Limit or prevent building critical state-owned facilities in the WUI.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	
		3. Ensure newly constructed state-owned facilities are code compliant for wildfire hazards and promote the use of enhanced wildfire mitigation practices.	Priority: High Timeframe: Ongoing Responsible Agencies: DFCM, state agencies Potential Funding Sources: state funds	