



Part V. Mitigation Strategy





SECTION 9. PROGRESS ON PREVIOUS PLAN

2023 SHMP UPDATE CHANGES

- ❖ The State Hazard Mitigation Plan (SHMP) Steering Committee and the State Planning Team (SPT) have reviewed the actions that were included in the 2018 SHMP and provided an update on the status of implementation of those actions.
- ❖ The priority of actions that were carried over from the 2018 SHMP to the 2023 SHMP has been updated based on the prioritization methodology described in Section 11.

9.1 Status of Actions from 2018 State of West Virginia SHMP

The 2018 SHMP update identified 21 mitigation actions for implementation. These actions were reviewed for the 2023 SHMP update to determine whether the action had been completed, was in progress, or had not been started. Incomplete actions were reviewed to determine if they should be carried over to the 2023 SHMP update or removed due to changes in priorities, capabilities, or feasibility. Of the 21 actions from the 2018 SHMP, 1 has been completed and the other 20 are being carried over to the 2023 SHMP. Table 9-1 summarizes the status of actions from the 2018 SHMP.

Table 9-1: Status of Actions from the 2018 State of West Virginia SHMP

Action (2018)					
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision	Completion Date
<p>2018-WVDHSEM-FL-01 - Promote/Enhance RL/SRL Program: This Mitigation Action will focus on promoting and enhancing the Repetitive Loss (RL) Repetitive Loss (SRL) program. Specific activities to support this initiative include, but are not limited to:</p> <ul style="list-style-type: none"> 5.1. Promote HMA grant programs to mitigate listed SRL and RL properties. 5.2. Promote mitigation at no property owner cost through HMA grant programs. 5.3. Allocate designated SRL funds to at least three high risk SRL properties for acquisition and demolition projects in targeted communities. 5.4. Prioritize mitigation of SRL and Repetitive Loss properties through post-disaster mitigation strategy priorities and activities among with application scoring points for all HMA funding. 5.5. Provide local project sponsors that target RL and SRL property mitigation priority HMA funding. 5.6. Annually perform data synthesis and update the Bureau Net Database in coordination with FEMA Region III - provide RL and SRL data to local governments for use in their RL and SRL targeting efforts. 					
Homeland Security and Emergency Management, Division of	Flood	High	<p>In Progress – The process for communities to obtain RL/SRL information is a lengthy and complex; however, the State has sent instructions for the communities to follow to obtain their RL/SRL information.</p> <p>In collaboration with the State Mitigation Office, RL structures were geocoded by the West Virginia Geographic Information System Technical Center (WVU GISTC) in 2019 for the State. Of the 3,132 RL structures evaluated in 2019, only 73% could be geocoded because of unsuitable addresses.</p>	Included	
<p>2018-WVDHSEM-FL-02 - Promote/Enhance CRS Program: This Mitigation Action will focus on promoting and enhancing the Community Rating System (CRS) activities to support this initiative include, but are not limited to:</p> <ul style="list-style-type: none"> 1. Target and provide technical assistance to local communities. 2. Develop a CRS application to capture critical information. 3. Provide detailed directions to assist communities with the applicable process. 4. Identify communities which could benefit from CRS participation. 					
Homeland Security and Emergency Management, Division of	Flood	High	<p>Ongoing - Coordination of the NFIP was moved back to WVEMD starting July 1, 2022.</p> <p>From the statewide high-risk floodplain building inventory, the WVU GISTC periodically publishes the programming variables (bSF, aSFHA) needed for the initial/renewal certification of the 13 CRS communities in the State. It also performed an Open Space Preservation CRS credit analysis for select communities.</p>	Included	
<p>2018-WVDHSEM-FL-03 - Promote/Enhance NFIP: This Mitigation Action will focus on promoting and enhancing the National Flood Insurance Program (NFIP) support this initiative include, but are not limited to:</p> <ul style="list-style-type: none"> 1. Conduct an outreach campaign to property owners located in Special Flood Hazard Areas regarding flood insurance and mitigation. 2. Coordinate efforts to reduce Flood Insurance Premiums by focusing on Pre-FIRM and approximate A zone. 					

State of West Virginia

2023 | Hazard Mitigation Plan

Action (2018)				
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision
Homeland Security and Emergency Management, Division of	Flood	High	Ongoing - The State NFIP Coordinator will work with the WVU GISTC to obtain addresses for structures in the special flood hazard area (SFHA) and will send letters to property owners.	Included
<p>2018-WVUGISTC-FL-04 - Conduct Flood Mitigation Planning: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Create advisory flood heights for all Zone A (100-year floodplain) in state. 2. Develop prioritized list of state-owned or leased facilities at risk to flood and conduct detailed site assessment to develop site-specific mitigation measures. 				
Homeland Security and Emergency Management, Division of	Flood	High	<p>Complete - The WVU GISTC has completed a Hazus run and provided the data to the Regional Planning and Development Councils (RPDC) for use in local HMP (LHMP) updates.</p> <p>As of February 2023, 38 counties have Advisory Flood Heights (AFH), 3 counties (Randolph, Upshur, and Wetzel) are being mapped by contractor WSP through the State Cooperating Technical Partners (CTP) project, and in the future, the remaining 14 counties will be mapped by FEMA's Risk MAP program. This past year, the detailed AE Zones were updated by re-delineation mapping for all 55 counties using the new FEMA-purchased LiDAR elevation data. In addition, as part of CTP funding, new and more accurate statewide composite flood risk depth grids for flood loss estimate models were generated and published to the WV Flood Tool.</p>	No longer completed
<p>2018-Conservation-LS-01 - Soil Erosion Reduction Measures: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Work with logging operations to reduce soil erosion. 2. Develop and implementing programs to reduce erosion and run-off following logging. 3. Identify best practices and education programs for logging operations. 				
Conservation Agency, West Virginia	Erosion, Landslide, Subsidence	Medium	No Progress - Activities have not begun.	Included
<p>2018-Forestry-LS-02 - Understanding Landslide Risks: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Spatially track landslide occurrence along roadways. 2. Digitize WV landslide quadrangle maps to support. 3. Digitize information related to landslide prone areas. 4. Provide landslide information to support landslide risk analysis. 				
Forestry, Division of	Landslide, Subsidence	Medium	Ongoing - This is a WVU research project. The Total Exposure in Areas of Landslides (TEAL) project inventoried 159,247 landslide features from historical landslide data collections and LiDAR mapping. The	Included

State of West Virginia

2023 | Hazard Mitigation Plan

Action (2018)				
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision
			WVU GISTC created a Statewide landslide susceptibility map, 55 county-level maps, and landslide susceptibility reports in support of local and State hazard mitigation plans.	
<p>2018-Forestry-WF-01 - Develop Wildfire Prevention Measures: This Mitigation Action will focus on promoting and enhancing a variety of specific measures to take steps to reduce the risk that wildfires pose to state-owned and operated facilities, critical facilities, and private residences. Specific activities to include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Promote creation of defensible spaces between structures and potential wildfire fuel sources. 2. Assist communities with reduction of hazardous wildland fuels. 3. Identify potential wildfire hazards (i.e., burning coal seams) and take measures to mitigate that hazard fuel sources. 				
Forestry, Division of	Wildfire	High	In Progress/Ongoing - Fire Data was provided by the West Virginia Division of Forestry (WVDOF). The frequency of forest fires is decreasing; however, the size and intensity of fires is increasing. A lack of staff, training, and funding have impacted the State's capacity to respond.	Included
<p>2018-Forestry-WF-02 - Fund Community Wildfire Protection Plan Program: This Mitigation Action will focus on promoting and enhancing a variety of activities. Specific activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Provide potential financial and technical assistance for development of Community Wildfire Protection Plans. 				
Forestry, Division of	Wildfire	Medium	No Progress - Due to decreasing population in the State.	Included
<p>2018-WVDEP-DL-01 - Coordinate Dam and Levee Safety Issues: This Mitigation Action will focus on promoting and enhancing a variety of specific programs and initiatives related to dam and levee safety. Specific activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Coordinate activities among all stakeholders; 2. Explore remediation designs for coal dam impoundment structures to minimize inundation zone risks. 3. Develop methods to prioritize funding to mitigate risks associated with dams and levees. 4. Obtain funding for a dam safety revolving fund. 5. Explore other financial methods to fund safety programs. 				
Environmental Protection, Division of	Dam/Levee Failure, Flood	High	In progress - WVEMD has formed a working group. The Preparedness Section and the Hazard Mitigation Officer (HMO) are collaborating on creating a dam safety stakeholder team, updating the WV State Emergency Operations Plan (EOP), and targeting FEMA's High Hazard Potential Dam (HHPD) Grant Program to mitigate risk from HHPDs by funding maintenance programs. WVDEP Dam Safety (Non-Coal) has initiated efforts on a web-based application that will contain dam failure inundation areas and flood wave arrival times. This will serve to improve communication efforts between stakeholders. Additionally, dam owners are encouraged to conduct a tabletop exercise of their Emergency Action Plan (EAP) to determine effectiveness and ensure efficiency. WVDEP Dam Safety (Non-Coal) utilizes a Deficient Dam Rating Form to rank out-of-compliance dams based upon the condition of the structure and potential downstream hazards. This	Included

Action (2018)				
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision
			effort will aim to develop a priority list for enforcement action and available funding. As of 01/01/2023, no funds exist in the Dam Safety Revolving Fund.	
<p>2018-WVDHSEM-CF-01 - Complete Threat Assessments: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Build on current and existing assessment programs to conduct vulnerability assessments of critical facilities and evaluate for potential strategies. 2. Support integration of state vulnerability analysis local data into local plan updates for use in prioritizing mitigation projects to include demolition projects. 				
Homeland Security and Emergency Management, Division of	All	High	<p>In progress - The WVU GISTC has completed a Hazus run and provided the data to the RPDCs for use in LHMP updates.</p> <p>A riverine flood vulnerability analysis was performed for all essential facilities and community assets as part of the Statewide floodplain building inventory. Flood-prone significant structures are published on the Risk MAP View of the WV Flood Tool. Essential facilities, community assets, and other structures of significance are distinguished in the building-level flood risk inventory and made available as data and reports for inclusion in local and State hazard mitigation plans.</p>	Included
<p>2018-WVDHSEM-CF-02 - Utilize Risk Information in Planning: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Integrate information from a variety of sources to develop a more detail vulnerability assessment to all types of natural hazards; 2. Utilize risk assessments to identify critical facilities which need redundant power; 3. Provide support to critical facilities to obtain redundant power/utilities; 4. Integrate risk information from hazards to identify communities at risk; 5. Evaluate state-owned/-operate facilities for specific vulnerability and develop methods to mitigate highest risks; 6. Incorporate Dam and Levee Safety Action Classes into risk assessment programs; 7. Collect necessary information to generate require threat/hazard assessments; and 8. Utilize existing data from WVIFC and THIRA to help sustain life and property. 9. Support development of TIEF/TIEL to enhance mapping. 				
Homeland Security and Emergency Management, Division of	All	High	<p>Ongoing - WVU is leveraging the National Science Foundation's (NSF) Civic Innovation Challenge funding to develop data for Rainelle and Whitesulfur Springs. The objective is to continue mapping the State and provide updated community risk assessments for more areas to be used in mitigation planning.</p> <p>WVU GISTC created building-level flood risk assessments for 268 flood-prone communities (231 municipalities and 55 unincorporated areas), referred to as the Total Exposure in Floodplains (TEIF) project,</p>	Included

Action (2018)				
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision
			and generated landslide incident and susceptibility maps for 55 counties, referred to as the TEAL project.	
<p>2018-WVDHSEM-CF-03 - Build Relationships with Critical Facilities: This Mitigation Action will focus on promoting and enhancing a variety of specific activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Continue to build relations with private utilities and owners of critical facilities; 2. Provide information related to best practices, lessons-learned, and local hazard knowledge; 3. Provide information related to threats and hazards in local communities; 4. Develop facility assessment checklist to be used as part of a Continuity of Operations/Hazard Vulnerability Assessment. 5. Encourage facility involvement in local planning efforts. 				
Homeland Security and Emergency Management, Division of	All	High	In Progress - Tier II data is stored at WVEMD. The data managers have been made aware that parts of the data are Freedom of Information Act (FOIA) eligible, and they will distribute that data accordingly and in compliance with federal law.	Included
<p>2018-FireMarshal-CF-04 - Promote Building Codes: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Promote adoption and enforcement of State Building Codes; 2. Provide technical assistance to communities related to enforcing building codes; 3. Promote building code standards for all critical facilities; and 4. Promote importance of redundant systems and protection measures in building codes. 				
State Fire Marshal	All	High	In Progress – Specific actions to include are encouraging community awareness, developing legislation, and enhancing private sector support.	Included
<p>2018-WVDHSEM-PL-01 - Enhance Planning Process: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Interface with RPDCs to make recommendations to improve process for next planning cycle. 2. Collaborate with RPDCs and local jurisdictions for standardizations of hazard data and classification for assessment of hazards in local order to aid in future roll-up in the state hazard mitigation plan (i.e. standard GIS layers). 3. Identify opportunities to coordinate mitigation and CRS planning efforts. 4. Develop better methods and tools to determine effectiveness of strategies. 				
Homeland Security and Emergency Management, Division of	All	High	In Progress - WVEMD will mandate that LHMPs incorporate WVU's TEIF and TEAL data, data from the SHMP risk assessment, the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI), FEMA's National Risk Index, and U.S. Census data.	Included
<p>2018-WVDHSEM-PL-02 - Utilization of Benefit-Cost Analysis: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Create guidance on how to document losses due to high frequency, low impact events for use in developing Benefit-Cost Analyses. 2. Geospatially map current Benefit Cost Analysis data sets in order to facilitate geographic assessment of grant applications. 				

Action (2018)				
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision
3. Provide BCA information (to policy maker, property owners, etc) to promote use of mitigation measures.				
Homeland Security and Emergency Management, Division of	All	High	Ongoing - FEMA BCA training courses are and will be scheduled on an annual basis.	Included
2018-WVUGISTC-PL-03 - Integration of Climate/Land Use Change into Planning: This Mitigation Action will focus on promoting and enhancing a variety of mitigation activities. Specific activities to support this initiative include, but are not limited to: [Redacted]				
WVU GISTC	All	Medium	In progress - Data maintained by WVU will continue to be updated on an ongoing basis based on updated research.	Included
2018-WVDHSEM-TE-01 - Conduct Public Outreach: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:				
<ol style="list-style-type: none"> 1. Conduct presentations and outreach programs to homeowner associations, civic organizations, and other groups to recommend mitigation measures; 2. Disseminate information for communities at risk for specific hazards (i.e. communities near coal impoundments); 3. Produce multi-media information related to hazards to increase awareness; 4. Conduct an outreach campaign to engaging in hazard reduction programs (i.e. use of the FIREWISE program to promote measures to reduce risk); 5. Display information related to historical hazard occurrence to promote awareness (i.e. flood high water marks to increase flood awareness). 				
Homeland Security and Emergency Management, Division of	All	High	In Progress - The State continues to provide outreach statewide on flood awareness, making floodplain determinations, and promoting flood insurance and mitigation grant funding when available. Landslide and riverine flooding outreach materials, along with a 3D flood risk visualization tool, have been created. RPDCs have been targeted for outreach moving forward.	Included
2018-WVDHSEM-TE-02 - Improve Use of Media: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:				
<ol style="list-style-type: none"> 1. Develop preparedness presentations, videos, fliers, information packets, etc; 2. Develop education programs related to hazards, mitigation, and preparedness for schools; 3. Encourage all media to run stories about preparedness and mitigation activities; 4. Ensure that preparedness information is available for all media formats; 5. Promote the whole community approach for all-hazards. 6. Develop an interagency flood risk management team (i.e. Silver Jackets Program). 				
Homeland Security and Emergency Management, Division of	All	High	In Progress - The West Virginia Silver Jackets program will complete the K-12 Flood Outreach Project by mid-summer 2023. The WVEMD Public Information Officer (PIO) and Public Service Announcement (PSA) programs will move to updated social media platforms to enhance outreach and support agency partners in reaching the broadband access goals.	Included

Action (2018)				
Lead Agency	Hazard(s)	2018 HMP Priority	Review Notes	Decision
2018-Forestry-TE-03 - Conduct Wildfire Suppression Training: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:				
1. Provide training on wildfire suppression techniques to volunteer structure fire departments and wildland firefighters.				
Forestry, Division of	Wildfire	High	In progress - The WVEMD has networked with WVDOF and the National Park Service New River Gorge to provide firefighting instructors. More training events are planned and supported by the FEMA National Qualification System (NQS)/National Incident Management System (NIMS), and training is funded by WVEMD through the Emergency Management Performance Grant (EMPG).	Included
2018-SRO-GL-01 - Obtain Executive/Legislative Support: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:				
1. Develop directives forcing state agencies to address mitigation;				
2. Develop tax incentive structure that would encourage private sector investment in mitigation;				
3. Develop a review process for proposed tax-funded capital improvement projects to ensure that proper mitigation measures are being implemented;				
4. Develop legislation requiring threat/hazard information is available prior to property sales/purchases.				
State Resilience Office	All	High	No Progress - WVEMD and the WVSRO office have been working to increase executive/legislative awareness, with minimal effect. WVEMD and the WVSRO will devote more focus to this effort.	Included
2018-WVDHSEM-GL-02 - Explore Enhanced Funding Methods: This Mitigation Action will focus on promoting and enhancing a variety of specific mitigation activities to support this initiative include, but are not limited to:				
1. Identify stable and annual funding source for future regional hazard mitigation plans.				
2. Evaluate funding levels available through various grants.				
3. Explore alternative sources of funding to address mitigation efforts.				
4. Allocate portion of available state funds to address projects that do not meet FEMA eligibility requirements.				
Homeland Security and Emergency Management, Division of	All	High	In Progress - Identified funding streams include the Community Development Block Grant (CDBG)-Mitigation (Mit) program, other U.S. Department of Housing and Urban Development (US HUD) funding streams, the West Virginia Infrastructure and Jobs Development Council, FEMA's HHPD Grant Program, and the Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act.	Included



9.2 Updated Priority of Actions from 2018 State of West Virginia HMP

The methodology the State used to prioritize the 2023 SHMP’s mitigation actions is presented in Section 11.6. Table 9-2 shows the updated priority of the actions being carried over from the 2018 SHMP to the 2023 SHMP.

Table 9-2: Status of Actions from the 2018 SHMP

2018 Action	2018 Priority	2023 Priority
2018-WVDHSEM-FL-01	High	Medium
2018-WVDHSEM-FL-02	High	Medium
2018-WVDHSEM-FL-03	High	Medium
2018-WVUGISTC-FL-04	High	N/A - Completed
2018-Conservation-LS-01	Medium	Medium
2018-Forestry-LS-02	Medium	Low
2018-Forestry-WF-01	High	Medium
2018-Forestry-WF-02	Medium	Low
2018-WVDEP-DL-01	High	Low
2018-WVDHSEM-CF-01	High	Medium
2018-WVDHSEM-CF-02	High	Medium
2018-WVDHSEM-CF-03	High	High
2018-FireMarshal-CF-04	High	Medium
2018-WVDHSEM-PL-01	High	Low
2018-WVDHSEM-PL-02	High	Low
2018-WVUGISTC-PL-03	Medium	Medium
2018-WVDHSEM-TE-01	High	Medium
2018-WVDHSEM-TE-02	High	Medium
2018-Forestry-TE-03	High	Medium
2018-SRO-GL-01	High	Medium
2018-WVDHSEM-GL-02	High	Low



SECTION 10. GOALS FOR HAZARD MITIGATION

2023 SHMP UPDATE CHANGES

- ❖ The mitigation goals were reviewed and updated. Two of the 2018 State Hazard Mitigation Plan (SHMP) goals were maintained with enhancements, one goal was split into two separate goals, and another goal was incorporated as an objective under a newly developed goal.

10.1 Overview

The mitigation strategy sets the State of West Virginia's (the State) mitigation program priorities and helps guide the regions and counties as they update their plans. The mitigation strategy is composed of goals and actions that directly address the risks and vulnerabilities identified in the risk assessment as well as the findings of the capability assessment. This section outlines the State's mitigation goals. Section 11 reviews, evaluates, and updates the mitigation actions identified in the 2018 SHMP; identifies new actions; and prioritizes all actions for implementation over the performance period of the 2023 SHMP.

10.2 Mitigation Goals

44 C.F.R. §201.4(c)(3)(i): [The State Plan must include a] ...description of the State goals to guide the selection of activities to mitigate and reduce potential losses

Mitigation goals are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy. The goals represent what the State seeks to accomplish through mitigation plan implementation. As part of the 2023 SHMP update process, the 2018 SHMP goals (listed below) were reviewed and validated. This review was led by the SHMP Steering Committee and was conducted over the course of the planning process.

The following were the goals of the 2018 SHMP:

- **2018 Goal 1:** Identify and implement projects that will reduce or eliminate long-term risk, directly reduce impacts from hazards, and maintain critical societal functions. This includes reducing flood risk to repetitive loss and severe repetitive loss properties.
- **2018 Goal 2:** Incorporate mitigation concepts and objectives into existing and future policies, plans, regulations, and laws in the State.
- **2018 Goal 3:** Improve the quality and accessibility of data used in the hazard identification and risk assessment and analysis process in State and local hazard mitigation plans.
- **2018 Goal 4:** Promote and support a whole community approach to awareness of hazards, their risk, and potential mitigation actions in order to increase resiliency.



At the January 18, 2023, State Planning Team (SPT) meeting, the State and its partners discussed the results of the risk assessment and capabilities assessment and how they wanted to go about reducing the vulnerability of the State and communities across the State. The discussion addressed the following questions:

- Should additional regulations be mandated? On what topics? In what geographic areas?
- Can funding mechanisms for code enforcement be developed?
- How can capacity and capability of State and local staff be increased? Should there be minimum requirements for experience and/or continuing education for certain officials?
- What funding streams can be used to implement mitigation throughout the State?
- What coordination and integration among State and local programs should be enhanced?
- What can be done to protect State or local assets and infrastructure?
- How can the State support and strengthen local jurisdictions’ mitigation programs?
- What should the State do to reduce vulnerability to high hazard potential dams (HHPD), or to communities in dam failure inundation areas?

The SPT reviewed the 2018 SHMP goals with these questions and the resulting discussions in mind. Table 10-1 summarizes the evaluation of the 2018 SHMP’s goals and the modifications made.

Table 10-1: Evaluation of the 2018 SHMP Goals

2018 Goal	Evaluation
2018 Goal 1: Identify and implement projects that will reduce or eliminate long-term risk, directly reduce impacts from hazards, and maintain critical societal functions. This includes reducing flood risk to repetitive loss and severe repetitive loss properties.	Keep goal; update and enhance the wording. Objectives added, including to reflect strategic and/or proactive projects being implemented.
2018 Goal 2: Incorporate mitigation concepts and objectives into existing and future policies, plans, regulations, and laws in the State.	Keep goal; update and enhance wording. Objectives added. The WVSRO is coordinating efforts to align State programs.
2018 Goal 3: Improve the quality and accessibility of data used in the hazard identification and risk assessment and analysis process in State and regional hazard mitigation plans.	The 2023 SHMP should include a goal with the same intent as Goal 3 but reword it. Data is addressed in Objective 4.5 under 2023 Goal 4.
2018 Goal 4: Promote and support a whole community approach to awareness of hazards, their risk, and potential mitigation actions in order to increase resiliency.	Keep goal; update and enhance wording. Addressed in 2023 Goals 3 and 4.

For the 2023 SHMP update, the State decided to focus on stronger, expanded goals that reduce the impacts of hazards on infrastructure, align multiple overlapping State programs that reduce vulnerability to hazards, and educate the whole community on reducing vulnerability and strengthening local mitigation programs. The State also incorporated a set of objectives for each goal to help focus the State’s efforts in implementing the SHMP. The goals and objectives of the 2023 SHMP are listed below.

Goal 1: Reduce or eliminate the impact of hazards on infrastructure throughout the State.

- Objective 1.1 Remove the exemption of State facilities from compliance with any development regulations by 2027.
- Objective 1.2 Ensure that State facilities comply with the State Building Code and other development regulations by the end of 2032.



- Objective 1.3 Ensure that State operations are conducted at facilities that are located outside of hazard areas, particularly areas prone to flooding.
- Objective 1.4 Implement strategic, proactive projects to protect existing State facilities from hazard impacts.
- Objective 1.5 Protect high hazard potential dams and reduce vulnerability to dam failures downstream through inventorying, continual maintenance, inspection, rehabilitation, and awareness activities.

Goal 2: Align and integrate programs related to reducing long-term vulnerability to hazards.

- Objective 2.1 Analyze and identify opportunities for increased coordination of State programs.
- Objective 2.2 Align and integrate multiple State agencies’/departments’ programs related to reducing vulnerability to dam failure.
- Objective 2.3 Align and integrate multiple State agencies’/departments’ programs related to resilience from flooding.
- Objective 2.4 Align and integrate programs related to preparing for, responding to, recovering from, and mitigating the impacts of hazards within individual agencies/departments.
- Objective 2.5 Further integrate the regional planning and development councils into the State’s mitigation program.

Goal 3: Provide consistent, continual education of the whole community on reducing long-term vulnerability throughout the State of West Virginia.

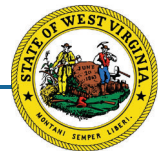
- Objective 3.1 Educate State and local officials, stakeholder groups, and the general public on hazards and reducing long-term vulnerability.
- Objective 3.2 Require initial and ongoing education of local officials with a role in regulating development and include topics on reducing long-term vulnerability in those requirements.
- Objective 3.3 Require initial and ongoing education of elected executive officials and include topics on reducing long-term vulnerability, including dam failures, in those requirements.

Goal 4: Enhance and support mitigation programs and activities at the local (regional and county) level to reduce long-term vulnerability with minimal negative impacts to community development efforts.

- Objective 4.1 Enact changes to existing State funding mechanisms to facilitate their use in reducing long-term vulnerability to hazards.
- Objective 4.2 Develop a State-level program to fund mitigation activities at the local level.
- Objective 4.3 Develop State-level standards for the contents of regional and county hazard mitigation plans.



- Objective 4.4 Provide technical assistance to regions, counties, and municipalities in developing their hazard mitigation programs and implementing projects.
- Objective 4.5 Develop, enhance, and advertise data that is available to support mitigation planning and implementation at the local level.
- Objective 4.6 Work with local stakeholders to protect structures and infrastructure from hazard impacts.



SECTION 11. MITIGATION ACTIONS

2023 SHMP UPDATE CHANGES

- ❖ The 2018 State Hazard Mitigation Plan (SHMP) mitigation actions, updated risk assessment, updated capability assessment, and local hazard mitigation plan (LHMP) actions were used to identify mitigation actions for the 2023 SHMP.
- ❖ All identified mitigation actions include implementation details, such as responsible agency, possible sources of funding, timeline, etc.
- ❖ All identified mitigation actions are prioritized using a standardized process for prioritization.
- ❖ High-priority county-led mitigation actions have been included in the 2023 SHMP to enhance the linkage between the State of West Virginia (the State) and regional/county mitigation strategies.

11.1 Overview

The mitigation strategy sets the State's mitigation program priorities and helps guide the counties as they update their plans. The mitigation strategy is composed of goals, objectives, and actions that directly address the risks and vulnerabilities identified in the risk assessment as well as the findings of the capability assessment. The review and evaluation of the mitigation actions described in the 2018 SHMP are provided in Section 9. The State's goals and objectives for the 2023 SHMP are described in Section 10. This section identifies and prioritizes actions for implementation over the performance period of the 2023 SHMP.

44 C.F.R. §201.4(c)(3)(iii): [The State Plan must include an] ...identification, evaluation, and prioritization of the cost-effective, environmentally sound, and technically feasible mitigation actions and activities the State is considering and an explanation of how each activity contributes to the overall mitigation strategy. This section should be linked to local plans, where specific local actions and projects are identified.

11.2 Identification of Actions

Mitigation actions for inclusion in the 2023 SHMP were identified through three primary sources:

- **2018 SHMP Mitigation Strategy** — Actions listed in the 2018 SHMP that were not completed during the 2018 SHMP's lifespan were reviewed and revised as described in Section 9 (Progress on Previous Plan).
- **Risk Assessment** — The results of the updated risk assessment, including problem statements, were reviewed with the State Planning Team (SPT). Mitigation actions were considered to address identified problems.
- **Capability Assessment** — Challenges and opportunities identified during the capability assessment were reviewed with the SPT. Mitigation actions were considered to address challenges and capture opportunities.



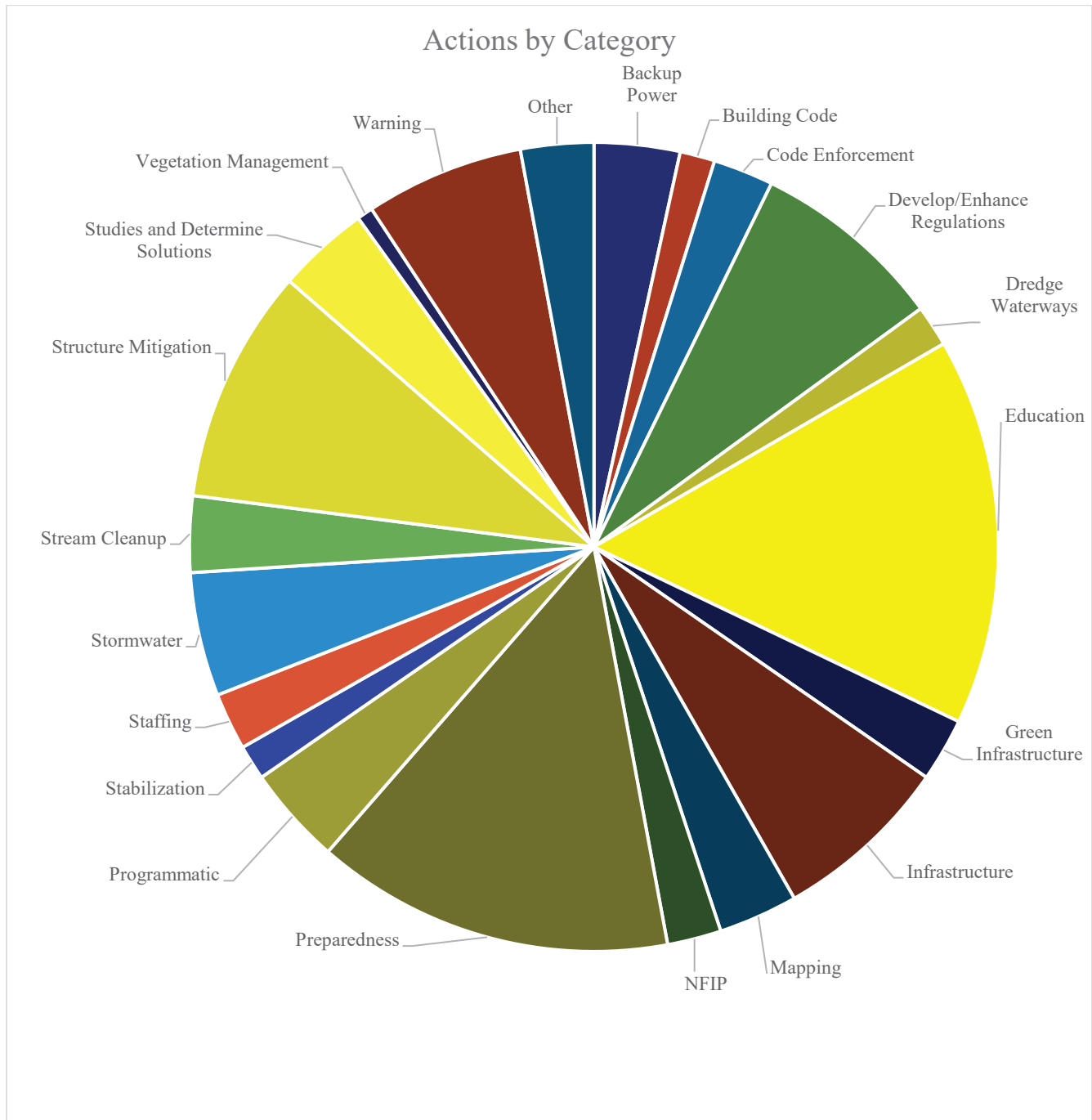
11.3 Actions in Local Hazard Mitigation Plans

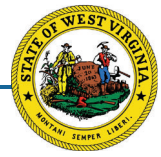
The State analyzed the nearly 800 high-priority actions included in the LHMPs throughout West Virginia. For the purpose of this analysis, high-priority actions are those that were prioritized by the regions/counties as “high” priority or were given first priority in the local ranking; prioritization of actions in LHMPs did not follow a consistent methodology across West Virginia. The State then organized those high-priority actions into the following categories:

- Backup Power – generators, etc.
- Building Code – adopting the State Building Code
- Code Enforcement – actions related to enforcing regulations that are already in place (e.g., building code, floodplain management ordinance, zoning, etc.)
- Develop/Enhance Regulations – actions related to developing new regulations, improving, or enhancing existing regulations
- Dredge Waterways – removing excess sediment from waterways
- Education – conducting public outreach, developing and disseminating educational materials, and training officials
- Green Infrastructure – installing and/or maintaining green infrastructure
- Infrastructure – installing, maintaining, and/or protecting “gray” infrastructure (e.g., water or wastewater systems), roadways, etc.
- Mapping – mapping hazard areas
- NFIP – actions related to participating in the NFIP
- Preparedness – actions related to emergency planning, training, and exercises; emergency facilities; response equipment, etc.
- Programmatic – actions related to participating in local, county, state, or federal programs; developing boards or commission
- Stabilization – streambank or soil stabilization activities
- Staffing – developing or expanding intergovernmental agreements to share staff
- Stormwater – constructing, maintaining, or upgrading stormwater management infrastructure
- Stream Cleanup – removing debris from waterways
- Structure Mitigation – acquiring, demolishing, elevating, or relocating hazard-prone structures, including repetitive loss properties
- Studies and Determine Solutions – analyzing problems and problem areas to determine the best course of action to reduce vulnerability
- Vegetation Management – trimming trees and other vegetation away from infrastructure
- Warning – developing and implementing systems related to warning the public of an imminent threat
- Other – actions that do not fit in the above categories



Figure 11-1. Actions in LHMPs by Category





11.4 2023 SHMP Action Plan

Implementable mitigation actions require more than just a statement of activity as actions are led by different departments and agencies, require various levels of effort, and have varied resource needs. The State's Mitigation Action Plan (see Table 11-1) includes information on implementation, including:

- Action number/designator
- Mitigation action description
- Department(s) or agency(ies) responsible for implementation, with lead department/agency listed first
- Type of action
 - **State and Local Plans and Regulations (SLPR)** — Include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.
 - **Structure and Infrastructure Projects (SIP)** — Involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.
 - **Natural Systems Protection (NSP)** — Minimize losses while also preserving or restoring the function of natural systems.
 - **Education and Awareness Programs (EAP)** — Include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.
- Relevant goal(s) and objective(s) – the goals and objectives from Section 10 to which the action relates
- Description of the contribution towards achieving goals (i.e., benefits)
- Estimated cost – expressed as “low,” “medium,” or “high” to indicate the cost of implementing the action
- Potential sources of funding – identifies the federal, state, and other funding streams that could be used to pay for implementing the action
- Anticipated timeline during which the action can be completed
 - Short-term: within 1–2 years
 - Long-term: within 5 years
 - Ongoing: continuously implemented over the period of performance

Table 11-1. State of West Virginia 2023 SHMP Mitigation Action Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
EMD-1: Develop and annually review State-level requirements for local mitigation plans and programs, including standardized hazard descriptions; coordinate LHMPS to meet the HHPD mitigation planning requirements; developing a standardized dam reporting template; completing templates for flooding, failure hazards; integrating the effects of changing future hazard conditions and changes in development; documented involvement of the municipal administrators in the plan development process.					
WVEMD	SLRP	4.3, 4.4	Stronger, consistent hazard mitigation programs and planning efforts across the State.	Low	FEMA HMA Management Costs, BRIC, HMTAP; Operating Budget
EMD-2: Continue and enhance integration of the WVEMD Mitigation program with the WVSRO.					
WVEMD, WVSRO	SLRP	2.1	Further integration of the State's mitigation and resilience programs.	Low	Operating Budget
EMD-3: Leverage excess management costs for HMA programs to fund local-level mitigation programs and regional technical assistance.					
WVEMD	SLRP	4.1	Lack of funding is a major deterrent to project implementation. The State providing financial resources can help overcome that barrier.	High	FEMA HMA Management Costs, BRIC, HMTAP; Operating Budget
EMD-4: Provide more technical assistance, including BCAs and guidance on conducting BCAs, to local communities on their mitigation projects.					
WVEMD	SLRP	2.5, 3.1, 4.3, 4.4, 4.5, 4.6	Builds local capabilities and increases the likelihood of local-level project implementation.	High	FEMA HMA Management Costs, BRIC, HMTAP; Operating Budget
EMD-5: Ensure at least 50 percent compliance of State-owned critical facilities to local floodplain management regulations in the next five years.					
WVEMD, Real Estate Office, BRIM	SIP	1.1, 1.2, 1.3, 1.4	Significant progress towards decreasing vulnerability to State-owned and -leased structures; less likelihood of a disruption to State operations due to hazard impacts.	High	FEMA HMA, EMPCG, SSSE; Operating Budget
EMD-6: Hire at least one engineer who could provide project design and other services to local communities.					
WVEMD	SLRP	4.4, 4.6	Lack of technical expertise, particularly in engineering solutions to problems caused by hazards, is a barrier to reducing vulnerability. The State providing technical assistance to develop engineering designs for mitigation projects would increase the likelihood of	Medium	FEMA HMA Management Cost, EMPG, CAP; Operating Budget

State of West Virginia

2023 | Hazard Mitigation Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
			implementation.		
EMD-7: Conduct FEMA-supported training workshops on a regional basis.					
WVEMD	EAP	3.1	Provides current information and best practices to stakeholders; minimizes time and financial cost on the State by bringing in FEMA personnel; builds local capabilities on relevant topics.	Medium	FEMA EMPG; Operating Budget
EMD-8: Develop and regularly conduct an abridged (less than one day long) floodplain management training session for local officials.					
WVEMD	EAP	3.1, 3.2, 3.3	Local officials will understand floodplain management requirements, be more likely to implement programs that support floodplain management and reducing flood losses, and be less likely to allow deviations from best practices and requirements.	Low	FEMA CAP-SSSE; Operating Budget
EMD-9: Conduct an annual education program for State Legislators on hazards and mitigation, perhaps during Flood Resiliency Week, at the State Capitol.					
WVEMD, WVSRO	EAP	3.1	Provides information to decision makers about the State's vulnerability to hazards and how risk can be reduced. Informs what future actions the legislature can take.	Low	FEMA EMPG, SH-SSSE; Operating Budget
EMD-10: Educate legislators of the cost of locating State facilities in identified hazards areas, and the benefits of locating facilities outside those areas.					
WVEMD, WVSRO, Real Estate Office	EAP	3.1	Provides information to decision makers about protecting State facilities and operations by not locating them in hazard areas.	Low	Operating Budget
EMD-11: Acquire, demolish, elevate, or relocate hazard-prone structures, including repetitive loss and severe repetitive loss properties, and educate on mitigation options, funding sources, and non-federal match requirements.					
WVEMD	SIP	3.1, 3.2, 3.3, 4.4, 4.6	Reduce or eliminate future flood loss suffered by properties that already have a history of repetitive flooding.	High	FEMA BRIC, FEMA CAP
EMD-12: Promote participation in the Community Rating System (CRS) Program.					
WVEMD	EAP	3.1, 3.2, 3.3	Secures discounts for policyholders in participating communities, which can increase the levels of flood insurance coverage throughout the community, resulting in greater	Medium	FEMA BRIC, CAP

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
			financial resources available to help recover from a flood event.		
EMD-13: Educate local elected and appointed officials on hazards, vulnerability, and mitigation, including related to dam failure.					
WVEMD, WVSRO, Regional Planning and Development Councils (RPDC)	EAP	3.1, 3.2, 3.3	Provides information to local decision makers about the hazards their communities face and what can be done to reduce vulnerability from those hazards.	Medium	FEMA EMPG, NDSSSE; Operating
EMD-14: Expand coordination of building code officials, the County Commissioners Association, the WV Municipal League, the Homebuilders Association regarding reducing vulnerability.					
WVEMD, WVSRO, State Fire Marshal, County Commissioners Association, WV Municipal League, Homebuilders Association, Realtors Association	SLRP	4.6	Integrates multiple stakeholder organizations and programs to reduce risk due to hazard impacts throughout the State.	Low	Operating Budget
EMD-15: Integrate WVEMD's preparedness programs (e.g., Critical Infrastructure/Key Resources [CI/KR] Protection, Threat/Hazard Identification and Analysis [THIRA], Emergency Operations Plan [EOP], Training and Exercise Plan [TEP]) with the Mitigation program, WVSRO, and Flood Protection Plan.					
WVEMD, WVSRO	SLRP	2.1, 2.4, 4.6	Increased coordination among several State programs that assess risk and capabilities, and implement measures to reduce vulnerability and increase resilience; increased efficiency of government programs.	Low	FEMA EMPG, SHHMA Management Operating Budget
EMD-16: Create and maintain a Mitigation Partner Focus Group or similar body.					
WVEMD, WVSRO	SLRP	2.1, 4.6	Brings additional perspectives into ongoing mitigation planning and coordination efforts at the State level.	Low	Operating Budget
EMD-17: Demonstrate the need to invest time and coordination with established agency partners to build the State's mitigation program.					
WVEMD, WVSRO, WVDEP	EAP	2.1	Overcome reluctance or resistance by key personnel and decision makers to integrate and coordinate multiple programs among multiple departments to implement a holistic State-level hazard mitigation program.	Low	Operating Budget

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
EMD-18: Establish a cadre of interdepartmental educators who would inform other departments about their capabilities and programs.					
WVEMD, WVSRO, WVDEP, WVDOT, RPDCs, Community and Development	EAP	3.2, 3.3	Shares information about programs managed by different agencies/departments to help identify possible synergies and partnerships to reduce vulnerability.	Medium	Operating Budget
EMD-19: Build Relationships with Critical Facilities: Promoting and enhance activities that include, but are not limited to, developing relationships with owners of critical facilities; providing information related to best practices, lessons learned, and local hazard knowledge; providing information related to hazards in local communities; developing a facility assessment checklist to be used as part of a Continuity of Operations/Hazard Vulnerability Assessment; and ensuring facility involvement in local planning efforts.					
WVEMD, WVSRO	EAP	4.6	Increases resilience of individual critical facilities and community lifelines.	Medium	FEMA EMPG, SHMP; HMEP; Operating Budget
EMD-20: Grow the WV Silver Jackets membership, program, and projects.					
WVEMD, USACE WV Silver Jackets	SLRP	2.3, 4.6	Encourages interagency support and coordination to develop and implement a unified floodplain management and mitigation program.	Medium	USACE; FEMA CAP-SSSE; EMPG
EMD-21: Implement a State requirement that development within the SFHA should have to be justified using a cost-benefit analysis or some other a					
WVEMD, Legislature	SLRP	1.1, 1.2, 1.3, 3.1, 4.4, 4.6	Guides development away from the SFHA while balancing community and economic development needs for communities that cannot avoid development in the SFHA.	High	FEMA CAP-SSSE; Operating Budget
EMD-22: Publicize the availability of grants.wv.gov and the WV Infrastructure Hub as resources for resilience, mitigation, and infrastructure efforts.					
WVEMD, WVSRO	EAP	4.5	Lack of funding is a major deterrent to project implementation. Better understanding of available financial resources can help overcome that barrier.	Low	Operating Budget
EMD-23: Enact a real estate disclosure law to require potential property buyers be informed of a property's history of flooding and other hazard impacts.					
WVEMD, WVSRO, Legislature	SLRP	3.1	Protects potential buyers from investing in property with a history of damage from hazard impacts. May deter potential buyers from residing or establishing a business in a hazardous area.	High	Operating Budget

State of West Virginia

2023 | Hazard Mitigation Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
EMD-24: Encourage individuals to secure and maintain flood insurance, particularly if their property is within the Special Flood Hazard Area (SFHA).					
WVEMD	EAP	3.1	Increases the levels of flood insurance coverage throughout the community, resulting in greater financial resources available to help recover from a flood event.	Medium	FEMA BRIC, CAP
EMD-25: Improve Use of Media: Promote and enhance public outreach programs throughout the State, including but not limited to developing outreach materials and presentations; encouraging media to publish stories about preparedness and mitigation efforts; ensuring information is available for all media outlets; and coordinating efforts with the WV Silver Jackets.					
WVEMD	EAP	3.1, 3.2, 3.3	Provides standardized, current content for distribution across the State by and to the whole community.	Medium	Operating Budget
EMD-26: Develop template marketing materials and programs for mitigation topics.					
WVEMD	EAP	3.1, 3.2, 3.3	Provides standardized, current content for distribution across the State by and to the whole community.	Low	Operating Budget
EMD-27: Consider adding cyber attack as a hazard of concern analyzed in the SHMP.					
WVEMD, WV Office of Technology, WV Fusion Center	SLRP	1.4, 2.4	Provides information on a cause of utility failure and lays the foundation to identify mitigation actions to protect IT systems.	Low	FEMA BRIC, HMA Management Co Operating Budget
EMD-28: Develop a state-level funding mechanism for implementing mitigation actions at the local level.					
WVEMD, Legislature	SLRP	4.2	Lack of funding is a major deterrent to project implementation. The State providing financial resources can help overcome that barrier.	High	FEMA STORM
SRO-1: Add relevant eligibility requirements to existing State funding programs or the State requirements for other funding programs administered to incentivize mitigation efforts.					
SRO, WVEMD, WVDEP, WVDOT, RPDCs, Community and Development, Economic Development	SLRP	4.1	Provides an incentive to build local capabilities and programs related to hazard mitigation, reducing vulnerability, and resilience.	Low	FEMA HMA Management Co Costs, EMPG; U.S. HUD CDBG; Operating Budget Administrative A
SRO-2: Conduct a one-day meeting to describe all available funding opportunities that can be leveraged to reduce long-term vulnerability.					
SRO, WVEMD, WVDEP, WVDOT, RPDCs,	EAP	3.1	Lack of funding is a major deterrent to project implementation. The State providing	Low	Operating Budget

State of West Virginia

2023 | Hazard Mitigation Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
Community and Development, Economic Development			information about available financial resources can help overcome that barrier.		
SRO-3: Require documented continuing education of local officials for the community to be eligible for grant funding.					
SRO, WVEMD, WVDEP, WVDOT, RPDCs, Community and Development, Economic Development	SLRP	4.1	Provides an incentive for local officials to maintain a working knowledge of mitigation and other topics.	Low	Operating Budget
SFM-1: Promote adoption of the State Building Code.					
State Fire Marshal	EAP	3.1, 3.2, 3.3	Structures that are constructed to meet or exceed building codes are more likely to withstand hazard impacts. The State maintains a State Building Code, but adoption of the code is optional. Promoting adoption would result in more communities adopting the State Building Code, in turn resulting in decreased structural damage during hazard events.	High	FEMA BRIC, HMA Management Co. Operating Budget
SFM-2: Update the State Code to state that State facilities “should” go through the local permitting process.					
State Fire Marshal, Legislature	SLRP	1.1, 1.2, 1.3, 1.4	Helps to protect State facilities by recommending they follow local development regulations; provides an incremental step towards requiring State facilities follow development regulations.	Medium	FEMA BRIC, HMA Management Co. Operating Budget
SFM-3: Explore making or allowing code enforcement to be a county or regional function to leverage economies of scale.					
State Fire Marshal, Legislature	SLRP	2.5	Provides economies of scale in code enforcement, which may result in communities that had not adopted codes (including the State Building Code) due to the cost of enforcement adopting them and reducing risk to structures.	Medium	FEMA BRIC; U.S. Operating Budget
SFM-4: Develop a State-level funding mechanism for local code enforcement efforts.					
State Fire Marshal, Legislature	SLRP	2.5, 4.1, 4.2	Lack of funding to pay for code enforcement is a major deterrent to adopting and enforcing	High	FEMA BRIC; U.S. Operating Budget

State of West Virginia

2023 | Hazard Mitigation Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
			the State Building Code. The State providing financial resources for code enforcement can help overcome that barrier.		
DEP-1: Conduct outreach to dam owners about the availability of funding through FEMA's Rehabilitation of High Hazard Potential Dams (HHPD) Grant with dam owners to secure funding to protect dams and reduce the threat that the dams pose to downstream communities.					
WVDEP	EAP	1.5, 2.2, 2.3	Assists dam owners with upgrading and maintaining high hazard potential dams, reducing the likelihood of catastrophic impacts were the dams to fail.	Medium	FEMA NDSF, HHPD, EMPG; Operating Budget
DEP-2: Provide more technical assistance to local communities on their dam failure mitigation projects.					
WVDEP	EAP	1.5, 2.2, 2.3	Assists local communities in reducing their risk from dam failures and to their dams from other hazard events.	Medium	FEMA NDSF; Operating Budget
DEP-3: Require dam failure Emergency Action Plans (EAP) to assess roadway inundation in evacuation planning.					
WVDEP, WVEMD	SLRP	1.5, 2.1, 4.6	Ensures that emergency evacuation plans are valid and implementable, rather than relying on roadways that may not be passable during a dam failure event.	Low	FEMA NDSF; Operating Budget
DEP-4: Expand coordination of the WVDEP's coal and non-coal dam safety programs, WVEMD, the USACE, local conservation districts, the Natural Resource Service (NRCS), WV Fish and Wildlife, WVDNR, and local watershed groups regarding decreasing vulnerability due to dam failures.					
WVDEP, WVEMD, WVDNR, USACE, U.S. Fish and Wildlife, RPDCs, local conservation districts, local watershed groups	SLRP	1.5, 2.1, 2.2, 2.3, 2.4, 4.6	Integrates multiple State departments and programs with federal and local stakeholders to reduce risk due to dam failures and to dams from other hazard impacts.	Low	Operating Budget
DEP-5: Identify inconsistencies in data maintained by WVDEP, WVEMD, the WV Conservation Agency, the WVU GISTC, and the USACE regarding dam data and develop a consistent and complete dataset of all dams in West Virginia.					
WVDEP, WVEMD, Conservation Agency, WVU GISTC, USACE	SLRP	1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 4.3, 4.4, 4.5, 4.6	Identifies complete set of data that can be used by federal, State, regional, local, and private stakeholders to reduce risk due to dam failures and to dams from other hazard impacts.	Low	Operating Budget
CAD-1: Fund and increase coordination and regional activities at the RPDCs.					
Community and	SLRP	2.5	Leverages the working relationship that RPDC	High	U.S. EDA

State of West Virginia

2023 | Hazard Mitigation Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
Development, RPDCs			staff have with their constituent communities to implement mitigation and other programs across the State. Providing funding to do so reduces the burden on the RPDCs and makes it more likely that they participate.		
CAD-2: Conduct train-the-trainer sessions for RPDC staff so that they can provide local training and education, and develop a funding mechanism to					
Community and Development, RPDCs	EAP	2.5	Leverages the working relationship that RPDC staff have with their constituent communities to provide training and education on mitigation and other programs across the State.	Medium	U.S. EDA
CAD-3: Leverage the RPDCs to conduct outreach on mitigation topics throughout the regions, including in-person local outreach efforts.					
Community and Development, RPDCs, WVEMD, WVSRO	EAP	2.5, 4.6	Leverages the working relationship that RPDC staff have with their constituent communities to provide training and education on mitigation and other programs across the State.	Low	U.S. EDA; FEMA HMA Management CAP-SSSE; Operating Budget
CAD-4: Develop a funding stream for the RPDCs to provide mitigation planning and technical assistance to local jurisdictions.					
Community and Development, RPDCs, WVEMD, WVSRO	SLRP	2.5, 4.1, 4.2	Providing funding to conduct planning and offer technical assistance makes it more likely that RPDCs will participate.	High	U.S. EDA
CAD-5: Provide additional funding to RPDCs to support their local mitigation objectives.					
Community and Development, WVEMD	SLRP	2.5	Providing funding to implement mitigation measures makes it more likely that RPDCs will lead the efforts.	Medium	U.S. EDA; FEMA HMGP, FMA, HM Management Co
Conservation-1: Soil Erosion Reduction Measures: Promote and enhance activities including, but not limited to, working with logging operations to develop and implementing programs to reduce erosion and run-off following logging, and identifying best practices and education programs for					
Conservation Agency	SLRP	2.3	Reduces risk from landslides and stormwater flooding following logging operations.	Medium	U.S. NRCS; U.S. LWCF; Operating
Forestry-1: Wildfire Prevention Measures: Promote and enhance activities to reduce the risk that wildfires pose to State-owned and operated facilities and private residences. Specific activities to support this initiative include, but are not limited to: promote creation of defensible spaces between structures and wildfire fuel sources; assist communities with reduction of hazardous wildland fuels; identify potential wildfire hazards (i.e., burning coal seams); and mitigate that hazard fuel sources.					
Division of Forestry (WVDOF)	NSP	1.3, 1.4, 3.1, 3.2, 3.3, 4.4, 4.6	Reduces risk to structures from wildfires.	Medium	U.S. NWCG; FEMA Operating Budget

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
Forestry-2: Fund Community Wildfire Protection Plan Program: Promote and enhance a variety of specific mitigation activities to include, but not limited to, potential financial and technical assistance for development of Community Wildfire Protection Plans.					
WVDOF	SLRP	4.2	Develops local strategies for reducing risk from wildfires.	Medium	U.S. NWCG; FEMA; Operating Budget
Forestry-3: Provide training on wildfire suppression techniques to volunteer structure fire departments and wildland firefighters.					
WVDOF	EAP	4.6	Increases the State's and local fire departments' ability to respond to wildfires before they grow too large, limiting the number of people and properties affected by a wildfire event.	Medium	U.S. NWCG; FEMA; Operating Budget
Forestry-4: Increase education of the public on the risk from wildfires and how to prevent them.					
WVDOF	EAP	3.1	Reduces risk of wildfire events and provides individuals with options for protecting themselves and their own property.	Low	Operating Budget
Forestry-5: Modernize the Division of Forestry's fire fighting capability					
WVDOF	SLRP	4.6	Increases the State's ability to respond to wildfires before they grow too large, limiting the number of people and properties affected by a wildfire event.	High	FEMA EMPG, Fire Prevention and Safety Grant Program, Assistance to Firefighters U.S. Forest Service Cooperative Forestry State Fire Assistance Capital Improvement Operating Budget
IJA-1: Integrate the Infrastructure Investment and Jobs Act (IIJA) Board and projects with the WVEMD Mitigation program and WVSRO.					
IJA Board, WVEMD, WVSRO	SLRP	2.3	Further integration of the State's mitigation and resilience programs with another major programmatic body	Medium	IJA Funding; Operating Budgets
IJA-2: Add WVEMD and the WVSRO officials to the IJA Board.					
IJA Board, WVEMD, WVSRO	SLRP	2.3	Further integration of the State's mitigation and resilience programs with another major programmatic body.	Low	Operating Budget

State of West Virginia

2023 | Hazard Mitigation Plan

Action Number and Description					
Responsible Department(s)/ Agency(ies)	Action Type	Goal/Objective	Contribution to Goals	Estimated Cost	Potential Source of Funding
Real Estate-1: Develop a long-term State Real Estate Plan to eventually ensure that all State buildings comply with development regulations. This covers existing structures, building new facilities, or finding new space for lease in buildings that comply with regulations. The plan will prioritize buildings that are critical facilities.					
Real Estate Office, WVEMD, BRIM, WVSRO, State Fire Marshal	SLRP	1.1, 1.2, 1.3, 1.4, 2.3	Decreased vulnerability to State-owned and -leased structures; less likelihood of a disruption to State operations due to hazard impacts.	Medium	Operating Budget
WVU-1: Maintain and enhance the TEAL system.					
WVU GISTC	SLRP	4.5	Provides data and information on the landslide hazard across the State, for use in State, regional, and county mitigation planning efforts.	High	FEMA BRIC, HMA Management Co Operating Budget
WVU-2: Develop tools similar to the TEIF and TEAL systems for wildfires, including a layer of historical fires and delineation of the wildland-urban interface.					
WVU GISTC	SLRP	4.5	Would provide data and information on the wildfire hazard across the State, for use in State, regional, and county mitigation planning efforts.	High	FEMA BRIC, HMA Management Co Operating Budget
WVU-3: Establish a Resiliency Center for Excellence to provide technical assistance, outreach, planning liaison, and other support throughout the State.					
WVU, WVEMD, RPDCs, FEMA	SLRP	4.6	Provides an additional source of assistance to the State, regions, and communities.	High	U.S. NIST; FEMA HMA Management Co Operating Budget



11.5 2023 Mitigation Actions by Hazard

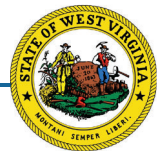
Table 11-2 summarizes the 2023 mitigation actions and the hazards of concern each addresses.

Table 11-2. State of West Virginia 2023 SHMP Mitigation Action Plan and Hazards of Concern Addressed

Action Number	Hazard(s) of Concern Addressed															
	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flood	Hazardous Materials	Landslide	Levee Failure	Pandemic	Radio logical Incidents	Radon Exposure	Severe Storms	Subsidence	Utility Failure	Wildfire	Winter Weather
EMD-1	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-2	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-3	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-4			◆		◆		◆					◆	◆	◆	◆	◆
EMD-5	◆				◆											
EMD-6			◆		◆		◆					◆	◆	◆	◆	◆
EMD-7	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-8					◆											
EMD-9	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-10	◆				◆	◆	◆	◆		◆	◆		◆		◆	
EMD-11					◆											
EMD-12					◆											
EMD-13	◆				◆											
EMD-14	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-15	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-16	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-17	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-18	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-19	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-20	◆				◆											
EMD-21					◆											
EMD-22	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-23	◆		◆		◆	◆	◆	◆		◆		◆	◆	◆	◆	◆
EMD-24	◆				◆											
EMD-25	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-26	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
EMD-27														◆		



Action Number	Hazard(s) of Concern Addressed															
	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flood	Hazardous Materials	Landslide	Levee Failure	Pandemic	Radiological Incidents	Radon Exposure	Severe Storms	Subsidence	Utility Failure	Wildfire	Winter Weather
EMD-28	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SRO-1	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SRO-2	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SRO-3	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SFM-1			◆		◆		◆				◆	◆	◆		◆	◆
SFM-2			◆		◆		◆				◆	◆	◆		◆	◆
SFM-3			◆		◆		◆				◆	◆	◆		◆	◆
SFM-4			◆		◆		◆				◆	◆	◆		◆	◆
DEP-1	◆				◆											
DEP-2	◆				◆											
DEP-3	◆				◆											
DEP-4	◆				◆											
DEP-5	◆				◆											
CAD-1	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
CAD-2	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
CAD-3	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
CAD-4	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
CAD-5	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Conservation-1					◆		◆									
Forestry-1															◆	
Forestry-2															◆	
Forestry-3															◆	
Forestry-4															◆	
Forestry-5															◆	
IJA-1	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
IJA-2	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Real Estate-1			◆		◆		◆			◆		◆	◆		◆	◆
WVU-1							◆									
WVU-2															◆	
WVU-3	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆



11.6 Action Plan Prioritization

All mitigation actions included in the 2023 SHMP must be prioritized based on the risk assessment, capabilities, and progress on previously identified actions. The following summarizes the prioritization schema for action implementation, including for actions related to HHPDs. Each action included in the 2023 SHMP was ranked numerically based on the following criteria:

- Will the action result in life safety?
- Will the action result in property protection?
- Will the action be cost-effective? (future benefits exceed cost)
- Is the action technically feasible?
- Is there political support?
- Does the State have the legal authority to implement?
- Is funding available for the action?
- Will the action have a positive impact on the natural environment?
- Is there community support?
- Does the State have the administrative capability to execute the action?
- Will the action reduce risk to more than one hazard?
- Can the action be completed in less than 5 years?
- Is there an agency/department local champion for the action?
- Will the action meet other objectives (such as capital improvements, economic development, environmental quality, or open space preservation?) Does it support the policies of other plans and programs?

Actions were given a score of 0 to 4 based on responses to these criteria and scores were added to assign a priority. The following outlines the 0 to 4 scale used; as well as the high, medium, and low priority action total scores.

- Numeric Scale for Each Criteria:
 - Definitely Yes = 4
 - Maybe Yes = 3
 - Unknown/Neutral = 2
 - Probably No = 1
 - Definitely No = 0
- Priority Categories Based on Total Score:
 - Low =<47 (up to the mean of all scores)
 - Medium = 47–51 (from the mean to plus one standard deviation)
 - High =>52 (over one standard deviation above the mean)

Table 11-3 indicates the evaluation and implementation priority for each action of the 2023 SHMP.

Table 11-3. State of West Virginia 2023 SHMP Mitigation Action Plan Prioritization

Action Number	Criteria														Total Score
	Life Safety	Property Protection	Cost-effective	Technically Feasible	Politically Acceptable	Legal Authority	Funding Available	Environmental Impact	Social	Administrative Capability	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	
EMD-1	3	3	4	4	3	4	3	2	4	3	4	4	4	4	49
EMD-2	2	2	4	4	4	4	4	2	4	4	4	4	4	4	50
EMD-3	4	4	4	4	4	4	3	2	4	3	4	3	3	4	50
EMD-4	3	3	4	4	4	4	3	2	4	4	4	4	4	4	51
EMD-5	4	4	4	4	3	4	2	3	3	2	4	3	4	4	48
EMD-6	2	3	2	4	4	4	3	2	4	4	4	4	3	3	46
EMD-7	2	2	2	4	4	4	3	2	4	4	4	4	4	3	46
EMD-8	3	2	3	4	4	4	3	2	3	4	0	4	4	4	44
EMD-9	3	2	3	4	4	4	3	2	2	4	4	4	4	4	47
EMD-10	3	2	3	4	4	4	4	2	3	4	4	4	4	4	49
EMD-11	4	4	4	4	4	4	3	4	4	3	0	4	4	4	50
EMD-12	3	3	4	4	4	4	4	3	4	4	0	4	4	4	49
EMD-13	3	3	4	4	4	4	4	2	4	4	4	4	4	4	52
EMD-14	3	4	3	4	4	4	4	2	4	4	4	4	3	3	50
EMD-15	2	4	4	4	4	4	4	2	4	3	4	4	3	4	50
EMD-16	2	2	3	4	4	4	4	2	4	4	4	4	4	4	49
EMD-17	2	3	3	4	4	4	4	2	4	4	4	4	4	4	50
EMD-18	2	2	2	4	4	4	4	2	4	3	4	4	2	3	44
EMD-19	4	4	3	4	4	4	3	2	4	4	4	4	4	4	52
EMD-20	3	3	4	4	4	4	4	4	4	4	4	4	4	4	54
EMD-21	4	4	4	4	1	4	2	4	1	2	0	3	2	4	39
EMD-22	2	3	3	4	4	4	4	2	4	4	4	4	3	4	49
EMD-23	4	2	3	4	1	4	4	2	1	3	4	3	4	3	42
EMD-24	2	4	4	4	4	4	4	2	3	4	4	4	4	3	50
EMD-25	2	3	3	4	4	4	4	2	4	4	4	4	4	4	50

Action Number	Criteria														Total Score
	Life Safety	Property Protection	Cost-effective	Technically Feasible	Politically Acceptable	Legal Authority	Funding Available	Environmental Impact	Social	Administrative Capability	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	
EMD-26	2	2	3	4	4	4	4	2	4	4	4	4	4	4	49
EMD-27	2	2	3	4	4	4	4	2	4	4	0	4	3	3	43
EMD-28	3	4	3	4	1	4	1	3	2	2	4	2	3	4	40
SRO-1	2	3	4	4	1	4	4	2	1	4	4	4	2	4	43
SRO-2	2	3	2	4	4	4	4	2	4	4	4	4	2	4	47
SRO-3	2	2	3	4	1	4	4	2	1	2	4	4	2	4	39
SFM-1	4	4	4	4	3	4	3	2	3	4	4	4	4	3	50
SFM-2	3	4	4	4	3	4	4	2	3	4	4	4	4	3	50
SFM-3	3	4	3	4	3	4	3	2	2	4	4	3	3	4	46
SFM-4	2	4	3	4	2	4	1	2	2	2	4	2	3	4	39
DEP-1	4	3	3	4	4	4	4	2	4	4	4	4	3	3	50
DEP-2	4	2	3	4	4	4	4	2	4	4	4	4	3	3	49
DEP-3	4	2	2	4	4	4	4	2	3	3	4	4	3	3	46
DEP-4	4	3	3	4	4	4	4	3	4	4	4	4	3	4	52
DEP-5	4	4	4	4	4	4	3	2	2	3	4	4	2	4	48
CAD-1	3	2	3	4	3	4	2	3	3	3	4	3	3	4	44
CAD-2	2	2	3	4	4	4	3	2	4	4	4	4	3	4	47
CAD-3	3	3	3	4	4	4	3	2	4	4	4	4	4	4	50
CAD-4	4	2	3	4	2	4	1	2	3	2	4	2	2	4	39
CAD-5	3	3	3	4	2	4	1	2	3	3	4	4	3	4	43
Conservation-1	3	3	3	4	4	4	3	4	2	4	4	4	3	3	48
Forestry-1	4	4	4	4	4	4	3	4	3	4	0	4	3	3	48
Forestry-2	3	3	3	4	4	4	2	3	3	4	0	4	3	3	43
Forestry-3	4	4	3	4	4	4	4	3	4	4	0	4	4	3	49
Forestry-4	4	4	3	4	4	4	4	3	4	4	0	4	3	3	48
Forestry-5	4	4	3	4	4	4	2	3	4	3	0	4	3	3	45

Action Number	Criteria														Total Score
	Life Safety	Property Protection	Cost-effective	Technically Feasible	Politically Acceptable	Legal Authority	Funding Available	Environmental Impact	Social	Administrative Capability	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	
IIJA-1	2	2	3	4	3	4	4	2	4	4	4	4	3	4	47
IIJA-2	2	2	3	4	3	4	4	2	4	4	4	4	3	4	47
Real Estate-1	3	4	3	4	4	4	4	2	3	3	4	4	2	4	48
WVU-1	3	2	2	4	4	4	3	2	3	4	0	4	3	3	41
WVU-2	3	2	2	4	4	4	2	2	3	3	0	3	3	3	38
WVU-3	2	2	2	4	4	4	2	3	3	3	4	3	3	4	43