

**State of West Virginia**

**Hazard Mitigation Planning Grant Application**

\*\* 2017-18 Local Mitigation Plans \*\*

**West Virginia Division of Homeland Security**

**& Emergency Management (WV DHSEM)**

**Regional Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Contact Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Position \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Communities Covered by This Application \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Phone Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**National Flood Insurance Program CID Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Applicant DUNS Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FIPS Code \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**WV House District # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ WV Senate District # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**U.S. Congressional District \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**INSTRUCTIONS: Complete Sections 1 through 5.** Please answer each question as fully as you can. Print or type your responses clearly. If you have questions about this application, please contact Brian Penix, State Hazard Mitigation Officer at (304) 558-5380. Attach additional pages if necessary. Please mail your applicationto:

 WV Department of Military Affairs and Public Safety

 Division of Homeland Security and Emergency Management

 1900 Kanawha Blvd East, Bldg 1, Room EB-80

 Charleston, WV 25305-0360

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| Section 1: Applicant Assurances |
| *If the project is funded, the applicant must adopt an ordinance or other policy that demonstrates the community shall comply with the following (applicant, not applicant preparer,* ***MUST*** *initial each item.* |
|  |
|  | *The applicant* ***MUST*** *designate an Authorized Agent for the Project.* |
|  |  |
|  | *The applicant* ***MUST*** *comply with* ***ALL*** *stipulations outlined in Title 44 of the Code of Federal Regulation and the current HMA Guidance.* |
|  |
|  | *A public meeting* ***MUST*** *be conducted to explain project policy and procedures.* |
|  |
|  | *The community* ***WILL*** *submit to WVDHSEM copies of their Single Audit Act Report for the year in which the grant was received, and for each subsequent year that the community receives funding under this grant.* |
|  |
|  | *In the event that applicant fails to expend or is over advanced Federal and / or State disaster funds in accordance with Federal or State disaster assistance laws or programs, the Governor's Authorized Representative reserves the right to recapture funds in accordance with Federal or State laws and requirements.* |
|  |
|  | *The applicant will not enter into a contract with a contractor who is on the debarred contractors list.* |
|  |
|  | *The applicant will prohibit any employee, governing body, contractor, subcontractor or organization from participating in or presenting the appearance of a conflict of interest or kickbacks.* |
|  |
|  | *Budgeted line items* ***MUST******NOT*** *be exceeded without prior written approval of the State* ***AND*** *FEMA. Any over-runs of budgeted items without authorization becomes the responsibility of the applicant. Failure to submit written requests for over-runs constitutes grounds for recapture of grant funds for non-performance.* |
|  |
|  | *Both the State and FEMA reserves the right to recapture funds for non-performance of the stipulations of the grant.* |
|  |
|  | *Any changes to the scope of this grant* ***MUST*** *have the written approval of both FEMA* ***AND*** *the State. This includes changes to the budget, the participant list and timeline. Failure to submit written requests for changes in scope constitutes grounds for recapture of funds for non-performance.* |

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| --- | --- | --- |
| **Authorized Agent Agreement** |  |  |
| Should our community be awarded FEMA funds to implement a mitigation project, we agree to the stipulations outlined above as conditions of receiving funds and implementing said project. |  |  |
|   |  |  |
|   |   |  |  |
| Authorized Agent's Signature | Date |  |  |
|   |   |  |  |
|   |   |  |  |
| Name (Printed or typed) | Title |  |  |
|   |  |  |
|   |  |  |

# Section 2: Scope of Work

Instructions: Black Text: Fixed text must remain part of application

 **Blue Text**: Text customized by applicant

 Yellow Highlighted Text: Inserted text or bulleted lists customized by applicant

|  |
| --- |
| **2.1 Identify the scope of your 5-year Multi-Hazard Mitigation Plan.** |
| **2.1.1 Overview and Extent**This application is for the required five-year update of the West Virginia Planning and Development Council Region \_\_\_ Multi-Hazard Mitigation Plan (MHMP). In YYYY, Region \_\_\_ completed a FEMA-approved multi-hazard mitigation plan (MHMP) at the request of the West Virginia Division of Homeland Security and Emergency Management (WVDHSEM). The MHMP will consist of an overview of community information and historical hazards, a basic risk assessment, and a section for mitigation strategies [applicant can expand on overview statement]. The State will coordinate with each region and county to create a building inventory for use for all hazards identification and risk assessment. In addition, the State will provide the applicant with a Flood Risk Analysis Report based on a Hazus Level 2 flood loss to be included as an addendum in the Mitigation Plan. **2.1.2 Responsibilities of Applicants**Applicants are responsible for writing the full mitigation plan along with providing and validating local Geographic Information Systems (GIS) data to support the mitigation plan. Counties will need to provide digital surface tax parcels to the State to generate building inventories. If the applicant hires an MHMP contractor to assist with the plan, then the contractor must work with the State on GIS data collection and validation efforts of the building inventory and critical facilities.* Develop and write entire Mitigation Plan
* Meet all the regulatory requirements of MHMP: Planning process, hazard identification and risk assessment, mitigation strategy, and plan review, evaluation, and implementation. See FEMA Local Plan Checklist in Section 7.
* Provide local GIS data to support building inventory and support plan
* Ensure hired contractors do not duplicate deliverables provided by the State WVDHSEM (see 2.1.3 and Section 8)

**2.1.3 Responsibilities of State WV DHSEM** - **Building Inventory and Flood Risk Analysis Report**While the applicant or their contractor will be responsible for a comprehensive, multi-hazard risk assessment, a specific Flood Risk Analysis will be performed by the State in conjunction with the building inventory update. This analysis will generate the number and cost (exposure) of buildings in the 1% annual floodplain and includes a GIS point overlay data analysis as well as Hazus-MH aggregate flood loss estimates. The Flood Risk Analysis Report is envisioned as an appendix to the MHMP.The State will provide a Flood Risk Analysis Report which will consist of the following:* A building inventory with replacement costs.
* Coordinating critical facilities, essential facilities, community assets, and other data sets of interest.
* A complete Flood Risk Analysis Report based on a Hazus Level 2 flood loss which includes more accurate local inventories of buildings, essential facilities and other infrastructure for each jurisdiction. The report will be provided before the plan due date and will be included as an addendum in the Mitigation Plan. Refer to Section 8 for the technical support services and more detailed information of deliverables and products associated with the building inventory and Flood Analysis Report. A sample report will be provided to applicants to better understand the content of Flood Risk Analysis study (Section 9).
* The regional flood risk analyses and data will be vertically integrated into the State Hazard Mitigation Plan due October 2018.

**2.1.4 Budget** Applicants will complete an estimated budget in Section 3.**2.1.5 Work Schedule, Timelines, Progress Reports** Applicants will complete the Work Schedule in Section 4. The schedule must adhere to the performance period set forth in the application. Applicants should follow the recommended timelines and descriptive milestones discussed in the meetings (Section 2.4) and major work tasks (Section 6) sections. Applicants are responsible to provide quarterly progress reports to the State. [The Region/County] will complete its five-year update within a 15-month period beginning [Month DD, YYYY.]  |
| **2.2 Describe the MHMP Content and Process.**  |
| **2.2.1 Regulations Checklist**The plan shall meet the minimum FEMA regulation guidelines set forth in Section 7.* Local Mitigation Plan Review Crosswalk Comparison Tool

<https://www.fema.gov/media-library/assets/documents/24118>**2.2.2 Contents**Identify and list the main elements of the plan. * Introduction
* Planning Process
* Asset Inventory Overview
* Hazard Identification, Risk Assessment, Vulnerability Analysis
* Mitigation Strategy
* Coordination with local and state hazard mitigation efforts
* Plan Monitoring, Maintenance, and Revision
* Appendix Flood Risk Analysis Report (from State)
* Other Appendices

**2.2.3 MHMP Development Guidelines**Refer to Section 6 for major work tasks and activities required to develop the plan, including public involvement, identification of hazards, development of a comprehensive risk/vulnerability assessment, identification of mitigation goals, and plan adoption. These major tasks should consist of the scheduled milestones submitted in the Work Schedule (Section 4) by the applicant. Ensure the hazard mitigation plan meets all the FEMA regulations in Section 7 including the (1) planning process, (2) hazards identification and risk assessment, (3) mitigation strategy, and (4) plan review, evaluation, and implementation.**2.2.3.A Planning Process*** Describe the planning process and who will be involved in the process. List the local stakeholders (businesses, non-profit organizations, academic institutions, GIS specialists) that will be invited to participate on the Committee that will develop the updated plan.
	+ (insert specific entity/name):
	+ Previous planning team/core group
	+ Communities which did not participate in the previous plan
	+ County Storm Water District
	+ County Soil and Water Conservation District
	+ County Planning and Zoning
	+ County Emergency Agencies
	+ County Flood Plain Managers
	+ Adjacent WV counties
	+ Border state counties
	+ Municipal Water Works
	+ Municipal Sewer District
	+ National Weather Service
	+ University Geographers/Geologists/Social Scientists
	+ WV GIS Technical Center
	+ WVDHSEM Flood Risk Analysis Report)
		- Provide Flood Risk Analysis Report addendum
		- Coordinate building inventories
	+ State and Local GIS Specialists
* In addition to those groups listed on the previous page, Region \_\_\_ will send letters to the following major employers inviting them to participate in the process.
	+ [List major employers in the region/county to invite]
* Describe how the public will be involved in the planning process during the drafting stage.
	+ SAMPLE RESPONSE: The public will be kept informed in accordance with West Virginia sunshine laws, and will be afforded the ability to comment on the plan. The current plan will be posted on the internet and made available at public libraries for public comment and input. As part of the update process, the planning team will hold a public meeting in which [they/the contractor] will present the draft plan including risk assessment and mitigation strategies. This meeting will allow time for public Q&A at the end. All public input will be documented in the meeting minutes. [The public meeting may be held at multiple locations to allow attendees the option to choose the location closest to them.]
	+ Once the MHMP update is completed, approved, and adopted, the [Region/County/Contractor(s)] will continue to engage the public in the maintenance of the plan. The public will be notified of periodic planning meetings through notices in the local newspaper, and copies of the updated plan will be maintained in the County EMA office and on the DHSEM website.

**2.2.3.B Hazards Identification and Risk Assessment (HIRA)*** The plan will address the following points:
	+ How the community(ies) will continue public participation in the plan maintenance process.
		- Once the MHMP update is completed, approved, and adopted, the [Region/County/Contractor(s)] will continue to engage the public in the maintenance of the plan. The public will be notified of periodic planning meetings through notices in the local newspaper, and copies of the updated plan will be maintained in the County EMS office and on the DHSEM website.
	+ Describe the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)
	+ Include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)?
	+ Include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction.
	+ Describe each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction.
* In [YYYY], [the PDC Region/County] identified the following hazards in its previous plan.
	+ Flooding
	+ Landslides
	+ Severe storms
	+ Tornados
	+ Earthquakes
	+ Droughts
	+ Dam/levee failure
	+ Hazardous materials release
	+ [Other]
* For the updated plan [the PDC Region/County] will identify the following hazards:  [List Hazards]
* Describe the process for reviewing and incorporating existing plans, studies, reports, and technical information. Note: Previous plans and resources are available on the WVDHSEM website: <http://www.dhsem.wv.gov/MitigationRecovery/Pages/Hazard-Mitigation-Planning.aspx>
* Describe mitigation plan implementation efforts since the approval of the last plan.
	+ PDC Region \_\_\_ has: [developed/purchased/implemented:]
	+ [List new technologies, equipment, plans and awareness strategies.]
* A Flood Risk Analysis Report will be provided by the State for the flood hazard. All other hazards are the responsibility of the applicant. Refer to Section 8.

**2.2.3.C Mitigation Strategy** * The plan will address the following points:
	+ Document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs.
	+ Address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate.
	+ Include goals to reduce/avoid long-term vulnerabilities to the identified hazards.
	+ Identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure.
	+ Contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction.
	+ Describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate.

**2.2.3.D Plan Review, Evaluation, and Implementation*** The plan will address the following points:
	+ Include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval.
	+ For multi-jurisdictional plans, each jurisdiction requesting approval of the plan documented formal plan adoption.
* Adoption Process:
	+ The plan adoption process must ensure sufficient time to complete the plan, as well as time for State (30 days) and FEMA (45 days) plan review. The plan adoption will allow time for the jurisdiction(s) to make any modifications required as part of the plan review process and allow sufficient time for jurisdictions to formally adopt the plan.
	+ Throughout the planning process, the jurisdictions in [Region/County] will have multiple opportunities to review draft portions of the plan. Upon completion of the MHMP update, the [Region/County/contractor(s)] will present the plan to the planning team for final revisions. The planning team (which will include at least one member of each participating jurisdiction) will review the plan in detail and notify the [Region/County/contractor(s)] of any and all revisions desired with the understanding that upon completion of these revisions, the communities of County will feel comfortable adopting the plan.
	+ Upon conditional approval from FEMA, each incorporated jurisdiction in the region and county will officially adopt the plan.
 |
| **2.3 MHMP Contractor. Will the applicant hire a contractor to help develop your local hazard mitigation plan update?** Note: Refer to Sections 2.1.2 (Responsibilities of State) to avoid duplication of efforts. |
| **Will you hire a contractor to help develop your local hazard mitigation plan update?** If yes, please list all the services they will perform such as hazard identification and risk assessment, write the plan, facilitate meetings, coordinate community input, GIS services, etc.). The State will provide coordination with building inventories based on input GIS data provided by your jurisdictions and a Flood Risk Analysis Report addendum. See Section 8 for State technical support services provided. |
| **2.4 MHMP Meetings.** |
| The Applicant will discuss in detail the type of meetings and how the meetings align with the performance objectives, timeline, and work schedule. **Meeting 1 [Initial Meeting]:** In the kickoff meeting, the applicant will meet with the planning team to describe the rationale behind the MHMP program and answer questions from county(?) participants. This meeting will also include a discussion of roles, responsibilities, decision-making processes, administrative procedures, and communication strategies. The [Region/County/contractor(s)] will present the county(ies) with a Memorandum of Understanding (MOU) for sharing data and information. At this meeting, the [Region/County/contractor(s)] will present (a) county map(s) with the Hazus-MH critical facilities plotted. This map will be used to elicit better local information from the planning team. The team will also prioritize the hazards it feels most affects the county and profile the hazards to model with Hazus-MH including earthquakes, floods, tornadoes, and hazardous materials spills. Jurisdictional Meetings: Here the applicant will meet with each individual jurisdiction covered by the plan to discuss mitigation strategies. The group will review the strategies developed in the previous version of the MHMP, and will discuss the following: 1) completed, successful strategies, 2) strategies that were not implemented and reasons for incompletion, 3) new strategies needed. At the end of the meeting, the group will prioritize its new strategies and develop goals and objectives to implement them. State Coordination: During the initial meetings WV DHSEM or its designee will meet with the various stakeholders to provide information about coordination of the (1) building inventory and (2) Flood Risk Analysis report.**Meeting 2 [Present Draft Plan]:** Meeting 2 is a public meeting. The applicant will present the draft plan with the results of the modeling and risk assessment analyses and the mitigation strategies developed by the jurisdictions. The planning team and the public will have the opportunity to ask questions. **Meeting 3 [Final Review and Revisions of Draft Plan]:** The planning team meets to review and revise the draft plan before submitting it to the State and FEMA.  |
| **2.5 Community Signed Statements.** FEMA application development guidance requires that each community that intends to participate in a multi-jurisdictional plan provide an individually signed statement on how the overall planning effort will be coordinated. The letter should also indicate if there will be additional costs associated with a particular community’s participation in the planning process. A sample letter of intent is included on the next page. The letter can and should be modified to describe how your multi-jurisdictional planning effort will be coordinated. Refer to Section 5 for a template for the signed letters of intent to this application. Please also list the communities that will participate in the planning effort in the space below. |
| All \_\_\_\_ communities, listed below, will be invited to participate in this multi-jurisdictional plan.[List communities] |

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| Section 3: Estimated Budget |
| **Special care needs to be taken when estimating the project budget to ensure that the community doesn't under-estimate. An under-estimated budget can lead to a cost over-run which could result in delays and even cancellation of the grant due to non-performance. If in doubt, estimate high.** |
| **NOTE: SUBMIT YOUR BUDGET WORKSHEET JOB AID WITH THIS APPLICATION!** |
| **33. Professional Services:** |
|  | A. Accounting and Auditing Fees |  | $0.00 |
| B. Advertising and Public Information Fees | $0.00 |
| C. Data Collection Fees | $0.00 |
| D.  | $0.00 |
| E.  | $0.00 |
| F.  | $0.00 |
|  | U. Travel Fees |  | $0.00 |
| V. Office Supplies / Equipment Fees | $0.00 |
| W. Phone Fees | $0.00 |
| X. Project Manager Fees | $0.00 |
| Y. Time and Attendance Fees | $0.00 |
| Z. Other Project Management Fees (Give Details) | $0.00 |
| **Sub-total** | $0.00 |
|  |
| **38. Other Project Expenses (Give Details):** |
|  | AA. |  |   |
| BB. |   |
| CC. |   |
| DD. |   |
| **Sub-total** | $0.00 |
| **GRAND TOTAL** | **$0.00** |
|  |
| **Part 9: Projected Source Funds:** |
| 38. Federal Share | **$0.00** | Percent |   | Source | FEMA |
| 39. Non-federal Share | **$0.00** | Percent |   | Source | STATE |
| 40. In Kind Service | **$0.00** | Percent |   | Source |   |
| 41.Other Source | **$0.00** | Percent |   | Source |   |
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| Section 4: Work Schedule |
| The work schedule sets the performance period for the project. The maximum time allowed for mitigation projects is 3 years (1095 Days). If the community under-estimates the project time, delays can occur while extension requests are processed. Furthermore, extensions can only be granted in 90 day increments a total of two times. Care should be taken when estimating times. Take into account time of year (weather factor) when estimating. The State will provide technical support services for the first three tasks. Refer to the MHMP major work tasks template for guidance in Section 6. |
|   |
| **Description** | **Time Frame (In Days)** |
|   |   |
| MHMP Grant Application Approved |   |
|   |   |
|  Task 1. Organize Resources, Profile Hazards, Determine GIS Analyses |   |
|   |   |
|  Task 2. Kick-off Meeting (meeting #1) |   |
|   |   |
|  Task 3. Risk Analysis |   |
|   |   |
|  Task 4. Update and Create New Mitigation Strategies |   |
|   |   |
|  Task 5. Prioritize Mitigation Actions |   |
|   |   |
|  Task 6. Public Involvement |   |
|   |   |
|  Task 7. Public MHMP Meeting (meeting #2) |   |
|   |   |
|  Task 8. MHMP Development |   |
|   |   |
|  Task 9. Distribute Draft Plan for Comment |   |
|   |   |
|  Task 10. Final MHMP Review (meeting #3) |   |
|   |   |
|  Task 11. Finalize and Publish MHMP |   |
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|   |   |
| **Total Number of Days** | **0** |
|   |

# Section 5: Community Signed Statement

**(SAMPLE) Statement of Interest in Multi-Hazard Mitigation Planning**

As a potential participant in the Hazard Mitigation Assistance Program, [PDC Region/County], West Virginia hereby states their interest in participating in the multi-jurisdictional [PDC Region/County] Natural Hazard Mitigation Plan.

After Federal Emergency Management Agency approval and during the implementation, the [PDC Region/County] agrees to actively participate in the hazard mitigation planning process.

As signed, we understand this is a voluntary program and our participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of natural hazards.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Authorized Community Representative Date

[PDC Region director/County Emergency Management Director]

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Title

# Section 6: MHMP Major Work Tasks Template

### Task 1. Organize Resources, Profile Hazards, Determine GIS Analyses

The applicant and MHMP contractor (if applicable) will work with participating stakeholders to review FEMA's regulation checklist (Section 7). The planning team will address comments and suggestions from the crosswalk in the updated plan. The [Region/County] will identify and organize a planning team to act as point of contact for the various interested groups and provide support in the mitigation planning process. The plan update will incorporate individual community MHMPs into the larger county MHMP for a more comprehensive picture of the county’s risks.

The planning team will consist of at least one representative from each of the county’s incorporated jurisdictions. Members may include local first responders and emergency personnel, as well as academic institutions and local businesses. The MHMP contractor will attend an organizational meeting with the team to collect and organize the GIS resources that the county will provide towards its match. To ensure that the best available data is used and available for an improved GIS risk assessments, the applicant should develop a Memorandum of Understanding (MOU) with the county(ies) for sharing of data for the mitigation plan.

The applicant and planning team will coordinate with the WV DHSEM or designee regarding the building inventory and Flood Risk Analysis report. It is important that applicant coordinates closely with the State to minimize duplicative efforts and to fully integrate regional plans into the State Mitigation Plan.

The applicant will identify hazards to include in its plan including additional hazards not listed in its previous plans.

**Rank hazards by overall risk**

In this step, the applicant will present the hazard rankings that the county developed in its first plan and lead the planning team through an exercise to determine if the rankings have changed. The exercise will consider significant hazard events that have occurred since [YYYY], changes in land use that may impact the county’s vulnerability to certain hazards, and additional relevant information from state and local experts.

**Profile hazard events**

The applicant will create new hazard event profiles using the best available GIS resources and historical information. The profiles will answer the question: What are the possible magnitudes and severities of each hazard event? The information gathered in this step will help determine the assets in the hazard areas that will be inventoried in the next task.

* Obtain and create a base map.

The applicant will identify and collect the best available base map information to show the areas that are subject to various hazards. The GIS basemap data from the community will be used in conjunction with regional and statewide data. *All GIS data collection efforts will be coordinated with the State to ensure consistent and comprehensive hazard databases are compiled in a consistent and efficient manner.*

* Obtain hazard event profile information.

Using the information obtained in the previous tasks, the applicant will determine the return frequency for each hazard. The hazard frequency will be based on the most commonly available information for a particular hazard. A more comprehensive hazard profile that considers all possible events, such as floods with different probabilities, may still be needed at some future date, but this simplified version will be adequate to help identify each community’s risks and narrow the focus for planning efforts. The State will provide a Flood Risk Analysis report of each county to be an addendum for the MHMP.

* Record hazard event profile information.

The applicant will record the research information for each hazard profile. The task will include documenting the source of the various maps such as the Flood Insurance Rate Maps (FIRMs) or other hazard event data.

**Task 2. Kick-off Meeting (meeting #1)**

In the kickoff meeting, the applicant will meet with the planning team to describe the rationale behind the MHMP program and answer questions from county participants. This meeting will also include a discussion of roles, responsibilities, decision-making processes, administrative procedures, and communication strategies. The applicant will present the county with a Memorandum of Understanding (MOU) for sharing data and information. At this meeting, the applicant with coordination with the State will present regional and county maps with the Hazus-MH critical facilities plotted. This map will be used to elicit better local information from the planning team. The team will also prioritize the hazards it feels most affects the county and profile the hazards to model with Hazus-MH including floods, tornadoes, earthquakes, and hazardous materials spills.

### Task 3. Risk Analysis

###  Inventory assets

The inventory subtask effort identifies the assets in the community that will be affected by the hazard event. The task includes conducting an inventory of the vulnerable assets. The updated MHMP will begin with a Hazus-MH inventory but will refine it using local available data. The effort includes incorporating critical facilities identified by the planning team, existing local GIS data, and available community property assessment information including property ownership and building replacement costs. The effort includes developing and mapping a general inventory of assets in the community. Using the basemap developed in the previous task, the applicant will identify the assets inside hazard areas, for example, using available floodplain maps to identify assets within the 100-year floodplain boundary. This subtask includes the following activities:

* The plan will run GIS risk analyses for flood, landslides, severe weather, tornado, etc.
* Using local resources including the community assessor’s data, aerial photography, local planning documents, census data, and Hazus-MH data, the applicant with support from the State will determine the total number and value of buildings. The information will be grouped by occupancy class, such as residential, commercial, or industrial. Hazus-MH, current census data, or local population figures will be used to estimate the current population.
* The applicant and State will use GIS techniques to estimate the total number of buildings, total value of buildings, and number of people in flood hazards while the applicant is responsible for other hazards. Throughout this process, applicant will engage community officials to identify areas of recent and future growth and note whether these areas lie within hazard boundaries.
* *All GIS data collection efforts will be coordinated with the State to ensure consistent and comprehensive hazard databases are compiled in a consistent and efficient manner*

**Estimate Losses**The next step in the loss estimation process determines how the community’s assets will be affected by the hazard event. Hazus-MH software and GIS tools will be used to estimate these losses. Some buildings, infrastructure, or functions will be damaged more than others in the same hazard event because they are more vulnerable due to their location or construction. The State will use Hazus-MH structure loss estimation tables to determine the estimated percent of damage from the various hazard events for flood hazards while the applicant is responsible for other hazards. The analysis reports will include estimated structure losses (use and function), content losses and human losses.

The applicant will prepare a draft risk assessment and present the report to the planning team, elected officials, and general public at an open meeting which will include the State Flood Risk Analysis report. In the presentation, the applicant will highlight significant changes in analysis results from the [YYYY] plan. This meeting will significantly inform the development of the mitigation section of the plan.

### Task 4. Update and Create New Mitigation Strategies

The applicant will update the mitigation section of its MHMP, developing a strategy to address the priorities including costs and timeframes. The goal of this task is to review the goals and objectives and mitigation strategies listed in the [YYYY] MHMP, assess which strategies were successful and how, discuss why certain strategies were not completed, and reprioritize/develop new strategies based on the results of the hazard profiles and loss estimation.

### Task 5. Prioritize Mitigation Actions

### The applicant will meet with each individual jurisdiction to discuss mitigation strategies. The group will review the strategies developed in the previous version of the MHMP, and will discuss the following: (1) completed, successful strategies, (2) strategies that were not implemented and reasons for incompletion, (3) new strategies needed. At the end of the meeting, the group will prioritize its new strategies and develop goals and objectives to implement them.

### Task 6. Public Involvement

Advertise and develop materials for public MHMP meeting.

**Task 7. Public MHMP Meeting (meeting #2)**Meeting 2 is a public meeting. Prior to the meeting, the applicant will publish the date, location, and time of the meeting in a local newspaper. At the meeting, the applicant will present the draft plan with the results of the modeling and risk assessment analyses and the mitigation strategies developed by the jurisdictions. The planning team and the public will have the opportunity to ask questions.

### Task 8. MHMP Development

The applicant will develop the final MHMP by compiling the results of each section of the planning process. This step is the culmination of a process that begins with Task 1 and continues throughout.

**Task 9. Distribute Draft Plan for Comment**Draft copies of the MHMP will be distributed to all jurisdictions ahead of the final review meeting.

**Task 10. Final MHMP Review (meeting #3)**The planning team will review the final product and have opportunity to revise it.

**Task 11. Finalize and Publish MHMP**After the planning team has approved the plan, the applicant will deliver it to WV DHSEM and FEMA for review and conditional approval. Upon FEMA’s conditional approval, each jurisdiction in the county will adopt the plan and send signed resolutions to FEMA for official approval.

# Section 7: FEMA Local Mitigation Plan Checklist

**PLANNING PROCESS**

* Does the Plan document the planning process, including how it was prepared and who was involved in the process
* Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process?
* Does the Plan document how the public was involved in the planning process during the drafting stage?

**HAZARD IDENTIFICATION AND RISK ASSESSMENT (HIRA)**
* Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information?
* Is there discussion of how the community(ies) will continue public participation in the plan maintenance process?
* Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)?
* Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)?
* Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction?
* Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction?
* Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods?

**MITIGATION STRATEGY**
* Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs?
* Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate?
* Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?
* Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?
* Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction?
* Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?

 **PLAN REVIEW, EVALUATION, AND IMPLEMENTATION**

* Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval?
* For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption?

Source: The Local Plan Review Crosswalk Comparison Tool provides a comparative analysis between the Local Mitigation Plan Review Crosswalk and Local Mitigation Plan Review Tool Regulation Checklist. See website: <https://www.fema.gov/media-library/assets/documents/2>

# Section 8: State Technical Support Services: Building Inventory & Flood Risk Analysis Report

The WV Regional Planning and Development Councils (PDC) will be allowed *flexibility* to construct their own mitigation plans unique to hazards identified by each PDC. However, all regional councils will implement a more *systematic approach* for the data collection, aggregation, and analysis of hazards. G*eospatial technologies* will be a major instrument to accomplish this new approach. In addition, building inventories and flood hazard models developed at the local and regional levels will be integrated and stored in *comprehensive* statewide hazard databases to *improve efficiencies* and to model hazards *seamlessly* across political boundaries. A *shared workflow* for the analysis of specific hazards will be implemented by the State and the PDCs to ensure *credible hazard studies* are produced. As a result, this *systematic approach* employed at the local and regional levels will in turn improve the State Mitigation Plan by allowing all the regional hazard identifications and risk assessments in West Virginia to be evaluated and ranked in a more coherent and suitable manner.

The WV State Hazard Mitigation Office (Brian Penix) will provide technical support services for coordination with the building inventory and Flood Risk Analysis Report. A schedule will be provided to the applicant regarding the estimated dates for completing the Flood Risk Analysis Report, although dependent on the applicant providing the necessary GIS data layers.

Principal reasons for the State providing technical support services:

* Coordinate critical facilities, essential facilities, community assets, and other data sets required for hazard risk plans in a consistent and effective manner.
* Generate a statewide building inventory with replacement costs determined from county assessment data. The building inventory must be generated by a customized Building Inventory Tool for West Virginia funded by FEMA and developed in collaboration with the WV GIS Technical Center, West Virginia University.
* Develop county Flood Risk Analysis Reports based on a Hazus Level 2 flood loss which includes more accurate local inventories of buildings, essential facilities and other infrastructure for each jurisdiction.
* Improve the integration of the county and regional flood risk analyses and data to the State Hazard Mitigation Plan due October 2018.
* Provide longevity and continuity measures for sustaining GIS data and risk analysis products that supports the local plans.
* Transfer knowledge, completed reports and data to regions and counties so they can use in future projects.
* Build capacity within regions and counties so they can depend less on outside contractors to complete local hazard mitigation plans.
* Incorporate results of county and regional into statewide flood risk planning tools such as the WV Flood Tool.

The following tables describe work that will be done by the State in support of PDC regions completing FEMA Hazard Mitigation Plans. This work targets all 55 counties and 11 PDC regions with a goal of completion in time for inclusion in the State Hazard Mitigation Plan which expires in October of 2018.

* Table 1: Tasks associated with compiling building inventory and completing Flood Risk Analysis Report.
* Table 2: Matrix of inputs and outputs intended to relate them to their respective tasks and processes.
* Table 3: Flood Risk Analysis Deliverables, by County/Community
* Table 4: Structure of Flood Risk Analysis Report

**Table 1. Major tasks associated with building inventory and Flood Risk Analysis Report**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  | **Per- CountyHours** |
| Task 1. | DATA ACQUISITION: Outreach to region, counties, and communities to acquire needed data for Flood Risk Analysis Report. | 16 |
|  | 1.1 | Review previous plans, determine needed data sets, and sources with MHMP plan team |  |
|  | 1.2 | Acquire *building inventory* data sets from state, region, county and local entities |  |
|  |  |  | Data Set | Federal / State Source | Local Source |
|  |  | 1.2.1 | Surface Parcels |  | Assessor |
|  |  | 1.2.2 | CAMA / Assessment tables | WV Tax Dept. | Assessor |
|  |  | 1.2.3 | E-911 Address Points | WV DHSEM | County OEM |
|  |  | 1.2.4 | Building Footprints |  | County GIS |
|  |  | 1.2.5 | Critical Facilities1  | WV DHSEM | County GIS |
|  |  | 1.2.6 | Essential Facilities2 (Hospitals, police stations, fire stations, schools, EOCs) 3  | WV DHSEM | County GIS |
|  |  | 1.2.7 | State government facilities | WV Admin. | County GIS |
|  | 1.3 | Acquire *other* data sets of interest from available sources |  |
|  |  | 1.3.1 | Elevation / Lidar | State web service | County sources |  |
|  |  | 1.3.2 | Aerial Imagery | State web service | County flights |  |
|  |  | 1.3.3 | Dams | USACE, NRCS, state agencies | County GIS |  |
|  |  | 1.3.4 | Bridges (public and private; local and state) | Multiple sources | County GIS |  |
|  |  | 1.3.5 | Buy-out properties | WV DHSEM | Flood Mgrs. |  |
|  |  |  |  |  |  |  |  |  |
| 1 | Critical facilities or assets are buildings deemed economically or socially vital to the community. Regional and county GIS coordinators will provide community asset data (in kind cost share). Spatial locations will be validated (centroid on buildings) by local GIS coordinators. Attribute information (building names; etc.) verification is the responsibility of the local GIS Coordinators.  |
| 2 | Essential Facilities are a Hazus priority subset of critical facilities and considered vital to the community during and following hazard events. Region and counties will provide technical staff to collect essential facilities and potentially eligible as part of the in kind match.  |
| 3 | Schools consist of public and private K-12 schools and colleges. Hospitals consist of public and private hospitals. Care facilities defined by WV DHSEM criteria.  |
|  |  |  |  |  |  |  |  |  |
| Task 2. | DATA ASSESSMENT AND FEEDBACK: Stakeholders meetings to review data development plan to include building inventory, data quality assessment, data recommendations, etc. Review timeline and deliverables to complete Flood Risk Analysis Report. | 4 |
|  | 2.1 | Present critical maps and essential facilities |  |
|  | 2.2 | Present county building inventories if data available and processed |  |
|  | 2.3 | Provide data quality assessment and feedback |  |
|  | 2.4 | Review Flood Risk Analysis report timeline and deliverables |  |
|  | 2.5 | Community feedback and data changes submitted within two weeks by local data stewards |  |
|  |  |  |  |  |  |  |  |  |
| Task 3. | FLOOD RISK ANALYSIS REPORT. Assess risks; GIS data collection and analysis | 80 |
|  | 3.1 | Pre-process data, parcels, CAMA, etc., for FME Building Inventory Tool |  |
|  | 3.2 | Run FME Tool to create updated Building Inventory (BI) |  |
|  | 3.3 | Compile dam locations, buyout properties, bridges affected by 1% flood and related overlay data in consultation with the SHMO |  |
|  | 3.4 | Analyze flood vulnerability - GIS overlay analysis |  |
|  |  | 3.4.1 | Number of buildings damaged by 1% flood |  |
|  |  | 3.4.2 | Cost of buildings damaged by 1% flood |  |
|  |  | 3.4.3 | Critical facilities in floodplain |  |
|  |  | 3.4.4 | Essential facilities in floodplain |  |
|  | 3.5 | Update Hazus-MH databases with BI, UDF |  |
|  | 3.6 | Run Hazus-MH for flood hazard, level 2, with updated BI, to generate loss estimates |  |
|  | 3.7 | Knowledge and data transfer |  |
|  |  | 3.7.1 | Prepare final Risk Analysis Report |  |
|  |  | 3.7.2 | Submit Risk Analysis Report to PDC Region, counties and OEM directors, as appropriate along with technical guide to aid in interpretation of results |  |
|  |  | 3.7.3 | Package GIS overlay data for transfer to county/region |  |
|  |  | 3.7.4 | Prepare formal metadata for submission with GIS data |  |
|  | 3.8 | Publish Loss Estimates on WV Flood Tool |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Total Time Billable Per County: | 100 |

**Table 2. Flood Risk Analysis Input-Output Matrix**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Inputs | Outputs |  |  |
| UpdatedBuilding Inventory | CAMA/IASParcelsFootprintsAddress points | Building Inventory (BI) - countywideGeneral Building Stock (GBS - Hazus-MH update)User Defined Facilities (UDF - Hazus-MH update) |
|
|
|
|  |  |  |  |  |
| EnhancedBuilding Inventory | Critical facilitiesEssential facilitiesGovt. facilities | MapsTablesHazus-MH database updates |
|  |  |  |  |  |
| Hazus / GISFlood Risk Analysis | GBSUDFDEMDFIRM | Buildings in floodplainCritical/Essential facilities in floodplainExposure maps, tablesDepth gridsDebris estimate gridShelter estimate grid |
|
|

**Table 3. Flood Risk Analysis Deliverables, by County/Community**

|  |  |  |
| --- | --- | --- |
|  |  | **County Deliverable Item** |
| Task 1. | 1.1 | Plan for data set acquisition |
| 1.2 | Data sets acquired |
|  |  |  |  |
| Task 2. | 2.1 | Maps of critical, essential facilities for review |
| 2.2 | Flood risk analysis process overview |
| 2.3 | Community feedback |
|  |  |  |  |
| Task 3. | 3.1 | FME Tool-ready data |
| 3.2 | Updated building inventory |
| 3.3 | Flood vulnerability analysis |
|  | 3.3.1 | Table: Number of buildings in 1% floodplain |
|  | 3.3.2 | Table: Cost of buildings damaged by 1% flood |
|  | 3.3.3 | Map: Critical facilities in 1% floodplain |
|  | 3.3.4 | Map: Essential facilities in 1% floodplain |
| 3.4 | Updated BI, UDF in Hazus-MH |
| 3.5 | Updated Hazus-MH Loss Estimates |
| 3.6 | Dam vulnerability analysis |
| 3.7 | Knowledge and data transfer |
|  | 3.7.1 | Risk analysis report |
|  | 3.7.2 | Technical guide for interpreting report, data |
|  | 3.7.3 | GIS overlay data |
|  | 3.7.4 | Metadata |
| 3.8 | WV Flood Tool updated with new loss estimates |

**Table 4. County Risk Analysis Report Structure**

|  |  |
| --- | --- |
| * Overview
 | * Map: riverine 1% flood debris
 |
| * Flood hazard definition & vulnerability analysis
 | * Table: County Dam Location Inventory
 |
| * Table: critical facilities
 | * Map: County Dams
 |
| * Table: essential facilities
 |  |
| * facility replacement costs
 |
| * Table: buildings affected by 1% flood
 |
| * Table: building exposure
 |
| * Map: 1% riverine flood
 |
| * Table: 1% riverine flood building losses
 |
| * Map: loss ratio percentage (optional)
 |
| * Map: buildings in 1% floodplain
 |
| * Map: unincorporated buildings in 1% floodplain
 |
| * Map(s): Community buildings in 1% floodplain
 |
| * Essential facility 1% riverine flood losses
 |
| * Map: essential facilities in 1% floodplain
 |
| * Critical facilities analysis
 |
| * Map: Critical facilities in 1% floodplain
 |
| * Map(s): Community critical facilities in 1% flood
 |
| * Mitigated Buyout Properties
 |
| * Map: County mitigated buyout properties
 |
| * Riverine 1% flood shelter requirements
 |
| * Map: riverine 1% flood shelter requirements
 |
| * Riverine 1% flood debris
 |

# Section 9: Sample Flood Risk Analysis Report – Berkeley County

Sample report is in progress and made available upon completion.