

Scope of Work Sponsor Floodplain Management Plan (FPMP)

As documented in the United States Army Corps of Engineers (USACE) Policy Guidance Letter (PGL) No. 52, Section 202 (c.) of the Water Resources Development Act of 1996 provides that before the construction of any project for local flood damage reduction or hurricane or storm damage reduction that involves assistance from the Secretary of the Army, the non-Federal interest must agree to participate in and comply with applicable Federal floodplain management and flood insurance programs. It also requires non-Federal interests to prepare a floodplain management plan designed to reduce the impacts of future flood events in the project area within one year of signing a project cooperation agreement and to implement the plan not later than one year after completion of construction of the project.

This Scope of Work will provide to the Sponsor a Floodplain Management Plan (FPMP) that considers the existing USACE flood damage reduction projects as well as assumes construction, operation and maintenance of proposed USACE flood damage reduction projects that are currently at a Feasibility Study level or greater. This FPMP will be subject to change should USACE projects change.

The process proposed to be used for developing the FPMP for (Insert Sponsor's Name) is directly based on the FEMA guidance for developing floodplain management plans found in 44 CFR (Sections 78.5 and 78.6) as well as the Community Rating System Coordinator's Manual (Activity 510, Floodplain Management Planning) and FEMA "how-to" guides for state and local mitigation planning (FEMA Publications 386-1 to 386-9). These "how-to" guides describe a straightforward, four-step process that is based on collaboration, consensus building, and detailed risk assessment that can also be applied to developing a floodplain management plan. For the purpose of developing the Sponsor FPMP, this four step process will be revised to take the following format:

Phase 1: Organize Resources

Addresses the initial step of identifying the resources available and necessary to complete the effort. Identify and analyze the history of floodplain development, growth, programs, projects, studies, and repetitive loss information to include locations, addresses, and damage estimates (structural and property). An inventory of available planning documents is performed and existing plans and documents are collected. During the data collection period, Sponsor staff and the A-E will coordinate to ensure that all relevant documents are collected and evaluated.

Phase 2: Flood Risk Assessment

Covers the identification of flood hazards that present risks to the planning area and the structures and infrastructure that are vulnerable to the flood hazard. Create a prioritized list of mitigation actions for the Sponsor to reduce flooding and target critical areas and repetitive loss structures.

Phase 3: Developing the Floodplain Management Plan

Involves the development of the actual floodplain management plan document for the Sponsor. The development of a floodplain management plan should build on existing plans and incorporate elements that will advance the Sponsor's flood mitigation and protection efforts. This phase will create a prioritized list of floodplain management activities for the Sponsor to pursue.

Phase 4: Adoption and Implementation

Follows the FPMP through the adoption and implementation stages. Once the plan has been written, the focus shifts to adoption by appropriate officials and the implementation of its objectives. Even the best plans are often not fully implemented unless they are aligned with the Sponsor's comprehensive plan. Equally important is establishing procedures, timelines and mechanisms for maintaining and updating the plan to keep it relevant.

Phase 1: Organize Resources

The first step in the floodplain management planning process is to organize resources and develop a strategic plan for the process ahead. This means identifying resources and gathering relevant information for review and incorporation into the planning process.

IDENTIFY AND ASSEMBLE EXISTING INFORMATION

The A-E will coordinate with Sponsor officials to identify and assemble all of the relevant information that should be reviewed and incorporated into the floodplain management planning process. This information includes past flood studies and mapping efforts, NFIP/CRS reports, floodplain management plans, repetitive loss updates and any available data on historical flood events and associated property damages. This information should also include thorough descriptions of previously implemented flood hazard mitigation projects as well as any local plans or studies that describe the Sponsor's land use and future development trends so that anticipated changes in flood hazard conditions may be addressed in the planning process. Key documents are inventoried in a geospatial database and linked to an index map for use throughout the project.

PROJECT INITIATION MEETING

Immediately following the issuance of a notice to proceed, the A-E will arrange for a project initiation meeting with USACE, Sponsor and appropriate State agencies such as the State Department of Emergency Management (DEM) or possibly State Department of Natural Resources (DNR). The purpose of the meeting will be to review all proposed project tasks and to clarify the individual roles and responsibilities of the consultant A-E. It will also be a time to establish an effective communication process with the Sponsor's project manager. The proposed project schedule will also be discussed, along with strategies for achieving the timely completion of the project.

The project initiation meeting will also serve as an opportunity for the A-E to begin initial data collection efforts in support of the FPMP planning process. The A-E will require relevant background data that may include copies of existing policies, plans, repetitive loss information, historical flood data and Geographic Information Systems (GIS) and AutoCAD data files in order to begin the asset inventory. Ideally much of this information will be assembled in advance of the project initiation meeting, at which point it can become transferred to the A-E. For each activity listed in the project approach, the A-E will list the potential CRS points available under Section 510 and the 10-step planning process. The A-E will conduct many of these activities during the plan development and the Sponsor will assume the responsibility of applying for credit. Some of the CRS activities will be appropriately led by the Sponsor (e.g., formally creating or recognizing the planning process, adopting the completed protection project plan, etc.).

PUBLIC OUTREACH AND INVOLVEMENT STRATEGY

The A-E will coordinate with the Sponsor on the development of a public outreach and involvement strategy. The strategy will include a two-way communication plan for residents, businesses, property owners and tenants in identified flood hazard areas as well as other stakeholders in the community such as business leaders, civic groups, academia, non-profit organizations, and major employers. Methods for public outreach and involvement may include but not be limited to public meetings, survey questionnaires, and interactive websites. Strategies for additional outreach to agencies or organizations outside of the Sponsor's jurisdiction should also be developed (i.e., methods to involve neighboring jurisdictions, state and federal agencies, Insurance Services Office, etc. in the planning process). The initial public meetings should take place the same week as the project initiation meeting to maintain efficiencies. To economize this proposal, we are recommending that the final public meeting be conducted by Sponsor staff. The A-E will prepare a PowerPoint slideshow for this meeting. For outreach activities in Steps 2 and 3, the A-E will prepare letters describing the process and soliciting input. It has

been determined that the most efficient and effective outreach will be through organizations representing neighborhoods or relevant constituents rather than individuals.

Phase 2: Flood Risk Assessment

The second phase in floodplain management planning process is the completion of a detailed flood risk assessment for the Sponsor. The three key components for the risk assessment include (1) data collection, (2) hazard identification and analysis, and (3) vulnerability assessment. Upon completion, the risk assessment provides the background information and key technical data necessary to establish meaningful goals, objectives and actions for the floodplain management plan.

DATA COLLECTION

The collection and analysis of the best available local data is crucial to the success of this project. Analyses conducted by the A-E will rely heavily on the Sponsor to help assemble and provide the best available local data (as described under Phase 1) including but not limited to existing flood hazard studies, flood zones, repetitive loss areas, recent floodplain development, flood mitigation measures as well as any available data on historical flood occurrences such as flood depths and damage estimates. Additional data to be collected includes information on current and projected land uses, development regulations, zoning ordinances, comprehensive plans, emergency operations plans, and all relevant local GIS data layers and attribute information. Information on all current floodplain management activities including and beyond those credited under the CRS should be submitted to the A-E. Additionally the A-E will utilize any existing information and data stored or created for the FEMA's HAZUS-MH loss estimation methodology. This may include, but is not limited to, hydrology, hazard areas, historic hazard event locations, general building stock, critical facilities, lifelines and infrastructure. This information will be supplemented with additional flood hazard data made available through state and federal agencies including but not limited to the State's DEM, DNR, FEMA, National Weather Service (NWS), and U.S. Army Corps of Engineers (USACE).

It is important to note that the first step in the data collection process will be to coordinate with the Sponsor staff to determine the accuracy and quality of local data, and how it compares with other data made available at the state or federal level. Our team will also gather community input through proposed public meetings and field work to verify and supplement existing data. For all data collected and included in the floodplain management plan, our team will provide sufficient references to the data sources used so that the Sponsor will be able to verify, locate, and easily reuse the information during future plan updates.

All data collected, developed or used for this plan will be non-proprietary. If necessary, the A-E will protect any data considered confidential or sensitive. This includes maintaining the confidentiality of any personal identifiers associated with repetitive loss properties as provided by the Sponsor, State DEM and DNR, and FEMA in accordance with the federal Privacy Act of 1974 (5 U.S.C. 552a).

HAZARD IDENTIFICATION AND ANALYSIS

Using the data collected and reviewed under Phase 2, the A-E will prepare a flood hazard identification and analysis for the Sponsor. This section will include a narrative description of known flood hazards, including (1) the nature and cause of flood problems (source of water, as well as depth of flooding, velocities and warning time if readily available); (2) a description of historical flood events; and (3) the location and spatial extent of special flood hazard areas. Narrative descriptions will be accompanied by tabular data as well as a variety of maps and a geodatabase to illustrate and describe the extent of the flood hazards. This section will also describe any unique flooding issues for the Sponsor as well as identifying specific problem areas susceptible to flooding events including those that may not be accurately delineated or classified on currently adopted and/or official FEMA Flood Insurance Rate Maps.

While the specific location of repetitive loss addresses will not be identified within the plan document, general repetitive loss areas or neighborhoods with common flood hazards will be identified and mapped. This will allow prioritization of potential flood hazard mitigation measures that would benefit multiple properties through broader flood protection strategies. For isolated repetitive loss properties or those identified on FEMA's severe repetitive loss target list, the A-E may use FEMA's NT (National Flood Mitigation Data Collection Tool) to gather limited field data on flood risks and to identify potential mitigation measures. The history and value of past flood insurance claims will be imported into the NT for all repetitive loss properties for which FEMA records are currently available.

The hazard identification and analysis will also include an evaluation of the Sponsor's growth and development patterns during the past ten years and the resultant implications for floodplain management. Future land use and development trends and their relationship to the probability and extent of future flood hazards in the Sponsor project area will also be described for the floodplain management plan. Lastly, the hazard identification and analysis section will include general descriptions of areas that provide natural and beneficial functions such as wetlands, sensitive areas, and habitats for rare or endangered species.

VULNERABILITY ASSESSMENT

The A-E will conduct a GIS-based vulnerability assessment to estimate the types and numbers of structures at risk to flooding. Flood hazard vulnerability in the Sponsor project area will be described in terms of the number and dollar value exposure of at-risk structures based on an asset inventory that includes residential, commercial, industrial, government, educational and other buildings, as well as potential damage and disruption to key infrastructure and critical facilities. The impact of flood hazards on historic and cultural resources as well as the community's overall economy and tax base will also be an integral component in conducting the flood hazard vulnerability assessment.

The vulnerability assessment will be documented and described in a stand-alone section of the plan. In addition to including data on the results of the GIS-based flood hazard analysis, this section will include information on the societal, economic and environmental impacts of flooding on the community. This includes a description on the number of people at risk to flooding as well as any considerations that should be made in terms of public health and safety, including those that address non-residents and those persons with special needs. The determination of societal vulnerability will assist the Sponsor in evaluating and updating its ongoing public education and awareness activities as well as identifying proposed mitigation measures that relate to flood warning systems and evacuation procedures. The assessment of potential economic and environmental impacts caused by flood hazards will help the Sponsor to quantify the general cost-effectiveness of recommended flood mitigation measures, as well as demonstrating their long-term benefits to the health of its natural resources.

Phase 3: Developing the Floodplain Management Plan

The third phase in the floodplain management planning process is developing the plan and writing the plan document. The plan goals and actions will flow from the hazard identification and vulnerability assessment study completed in Phase 2 and will be consistent with other goals and objectives of the community. If possible, the FPMP should eventually be incorporated into the Sponsor's portion of a larger agency (e.g., County, Parish, State) Hazard Mitigation Plan to help ensure intergovernmental coordination on flood mitigation efforts as well as to reduce the costs of implementing individual activities. The purpose of the FPMP is to lay out the proposed prioritized mitigation actions and to establish their appropriateness and expected utility. An approach will be to advance the Sponsor's existing efforts (e.g., pursuit of mitigation grants, NFIP involvement, capital funding of drainage improvements) to the next level. Once the plan is complete, it will be ready for adoption and implementation by appropriate institutional representatives.

DEVELOP FLOODPLAIN MANAGEMENT GOALS

The A-E will lead a “mitigation strategy workshop” to discuss and select mitigation goals. These goals shall be based on the vulnerability assessment and will focus on guiding the Sponsor in defining appropriate mitigation actions. Mitigation actions are designed to attain the established goals and are tied to performance-based targets that remain measurable over time. Mitigation goals should be compatible with other established community goals and serve to help achieve multiple community objectives, such as preserving open space or enhancing parks and recreational opportunities.

PREPARE MITIGATION STRATEGY

The mitigation strategy will articulate the objectives to achieve the project’s established mitigation goals and lessen the threat of flood damage in the Sponsor project area. Among the expected areas of concentration are continued compliance and enhancement of the NFIP and suggested ways to improve the Sponsor’s CRS rating class should they choose to join. The Sponsor may have already taken many mitigation actions including acquisition of flood prone areas, storm water relief systems, and other types of drainage improvements. The A-E will highlight any mitigation actions taken to date that were needed for critical facilities and Severe Repetitive Loss (SRL) properties. Where prior and proposed actions are tied to specifically mapped hazards, they will be included in a GIS map layer that will help to visualize, prioritize and ultimately track progress implementing these mitigation strategies.

DETERMINE AND EVALUATE FLOOD MITIGATION ACTIONS

Once the goals and objectives have been determined, the A-E will recommend appropriate flood mitigation actions to protect the Sponsor’s people, buildings, and infrastructure. These actions can range from simple and relatively inexpensive, such as flood-proofing public or commercial buildings, to complex and expensive, such as large-scale drainage improvements or stormwater relief systems. Examples of common actions that may be taken to reduce the damage from future flooding include:

- Acquisition of flood prone structures
- Elevation or flood proofing of buildings
- Drainage improvements and structural works
- Moving critical uses (communications, library and other collections, offices) to higher locations
- Water control structures
- Elevation of vulnerable equipment in critical facilities and infrastructure, etc.

The A-E will research appropriate mitigation alternatives, identify their advantages and disadvantages, and develop a range of mitigation actions with a list of criteria by which to evaluate the measures.

Land uses and development trends within the Sponsor project area will also be examined so that mitigation options can be considered in future land use decisions. Post-disaster policies shall also be considered in terms of identifying those areas likely to be worst hit by a major flood event and determining possible preconceived strategies for rebuilding in a manner that is consistent with the goals and objectives of the Floodplain Management Plan. This information will allow the Sponsor to select and prioritize the appropriate mitigation measures through consideration of the following general approaches:

- Preventive measures
- Property protection
- Emergency services
- Structural projects
- Natural resource protection
- Public information

PRIORITIZE MITIGATION ACTIONS

The mitigation actions listed above are but a few of the actions that can be taken. There will likely be a large number of potential mitigation actions, many of which will require substantial commitments of time and funding by the Sponsor. It is unrealistic to assume that the Sponsor will have the time and resources to pursue all potential activities. To focus the energies of the Sponsor, the A-E will present for review an evaluation of actions, including social, technical, administrative, political, legal, economic, and environmental criteria with emphasis on cost/benefit review.

The team will draw upon its considerable collective experience in operating FEMA's Benefit-Cost Analysis (BCA) modules to evaluate baseline indicators of cost-effectiveness for the projects. Using the evaluation prepared by the A-E, the Sponsor would be able to use to prioritize the mitigation actions and to develop an implementation strategy.

NFIP / CRS PROGRAM ENHANCEMENT

The A-E will also examine the Sponsor's current participation in the NFIP and make recommendations for the Sponsor to join the CRS. Many of our team members have acquired their Certified Floodplain Manager (CFM) certifications. The team will make recommendations on how to continue and enhance its NFIP compliance and improve its CRS rating should the Sponsor choose to join the program. In addition, the team will examine the Flood Insurance Reform Act of 2004 and tailor recommendations to ensure that the Sponsor remains in compliance and benefits from additional actions.

PREPARE AN IMPLEMENTATION STRATEGY

In collaboration with the Sponsor, the A-E will determine how mitigation actions will be administered and funded, the timeline for accomplishment, and who is responsible for the implementation. This mitigation strategy will provide the Sponsor with a blueprint for reducing the potential losses identified in the flood risk assessment.

ASSEMBLE THE PLAN

Once the priorities have been established and the appropriate mitigation actions determined, the plan will be assembled. The floodplain management plan documents the ways in which the Sponsor will reduce its vulnerability to flooding events. The plan will detail the purpose of the planning effort, the process that was followed, and the actions that need to be taken. The plan will also include a tabular "crosswalk" to identify the location of the regulatory-required and/or CRS program (Activity 510) elements of the plan.

INPUT FROM OTHER AGENCIES AND ORGANIZATIONS

Once the plan has been prepared, we will provide it to the Sponsor for review. Other agencies and organizations identified as stakeholders during Phase 1 are important to plan adoption and implementation. A copy of the draft plan will be delivered to these stakeholders or posted on the Sponsor web site for review by interested parties.

This step reaffirms that the Sponsor, surrounding communities, and other interested parties are inextricably linked when it comes to flood mitigation. Several specific groups, as identified by the Sponsor will be invited to review and comment on the plan.

FINALIZE THE PLAN

Once all comments on the draft plan are received by the A-E, we will finalize the floodplain management. The next step will be to get the plan reviewed by the appropriate State agency (e.g., DEM and/or DNR) and FEMA, and then adopted and implemented by the Sponsor. Implementation refers to the ongoing effort to perform the mitigation actions, tracking their progress, and measuring their impact.

PROJECT DELIVERABLES

The A-E will provide the Sponsor with a final report of the Plan that includes all collected data, electronic drawings, maps, geodatabases, and written materials in standard formats.

Phase 4: Adoption and Implementation

The final phase in the floodplain management planning process is the adoption and implementation of the plan. Adoption and implementation go hand in hand. They may happen simultaneously, but they are discussed separately here to emphasize the unique aspects of both steps. Adoption is a relatively short-term and straightforward process. Implementation, on the other hand, is a long-term and complex process that requires the consistent review, coordination, and completion of flood mitigation actions.

ADOPTION

After the Sponsor receives a notification from FEMA and the appropriate State agency that the plan meets all the statutory requirements, the Floodplain Management Plan will then be formally adopted by the Sponsor. The final draft of the plan will include a copy of the resolution adopting the plan.

MONITORING, EVALUATION AND UPDATING

The final step in implementing the plan is to establish a process for regularly monitoring and evaluating the Sponsor's progress on the floodplain management plan. Evaluating and updating is required to ensure that the risk assessment reflects changes in the Sponsor's vulnerability, and that the goals and actions identified in the plan are still appropriate for the Sponsor.

The Floodplain Management Plan should undergo a thorough annual review. The A-E will include procedures for evaluating and updating the plan within a five-year cycle. Evaluation procedures will include specific indicators for measuring the plan's effectiveness and progress over time, including the analysis and documentation of losses avoided.

Over time, mitigation actions will be completed, or the Sponsor may experience an overall vulnerability change to the flood hazards. Changes in organizational structure may necessitate different implementation strategies. Revisions and updates to the Plan may become necessary due to implementation barriers, changes in local conditions, or to modifications in City, County, State, and/or federal regulations. A disaster that presents new challenges to the Sponsor may occur. Furthermore, new stakeholders may be identified. Regular updates to the Plan will ensure that it is timely and that the data is current. The A-E can identify ways for the Sponsor to evaluate the performance of implemented measures.

IMPLEMENTATION

Once the plan has been written and adopted, plan implementation becomes the next task. Plan implementation is a critical process and requires attention to coordinating and integrating the effort, identifying funding streams, and monitoring progress over the long term.

Several of the mitigation actions can be completed with existing resources. However, the Sponsor leadership needs to work to identify sources of alternate funding for projects if existing resources are insufficient. Those working to secure funding should think creatively, regardless of the size of the project. Potential funding sources include:

- **City and County Government:** Funding for mitigation actions may be available at the local level; especially in the capital improvements budgetary process. The Sponsor may leverage funds for other types of infrastructure improvements (e.g., roads) to improve flood reduction capacity. (i.e., during periodic road repairs and replacements upgrade adjacent stormwater relief systems).

- **State Government:** State agencies can be an important source of mitigation funding. State agencies such as DEM and/or DNR are generally the conduit through which most FEMA funds flow, including mitigation program funding, and they set the priorities for allocating those funds.

- **Federal Government:** Pre-Disaster Mitigation (PDM) Grants are provided to eligible local governments as sub-applicants through the FEMA PDM Program. The Hazard Mitigation Grant Program (HMGP) is a source of funds that becomes available to local governments following a Presidentially Declared Disaster. In addition, funds from the Flood Mitigation Assistance program are available on an annual basis.

- **Private Organizations:** The private sector stakeholders involved in planning process may support or be aware of others that would support some of the flood mitigation priorities. To the extent that mitigation in the Sponsor project area minimizes interruptions from disasters that impede commerce (e.g., power failure, damage to roads); private organizations may be willing to provide some funding to implement portions of the plan.

- **Private Foundations:** Private foundations of all sizes represent a potential source of mitigation funding. Foundations that encourage multi-objective planning and projects (i.e., a project that both reduces flooding and improves water quality) are especially important. These foundations are excellent resources in efforts to identify funding sources for flood mitigation projects.

Concept of Operations

Overall, to operate at maximum efficiency, the A-E will conduct two site visits to the Sponsor project area and will organize as many activities as possible during each site visit. One will occur at the beginning of the project and the second will occur about halfway through the project. Below is a description of the activities in each site visit:

Site Visit 1:

- Project initiation meeting
- Data collection and review
- Initial public meeting
- Windshield survey of repetitive loss areas and other high-risk flood areas

Site Visit 2:

- Review findings from Hazard Identification and Vulnerability Assessment with the Sponsor project area
- Conduct goals, strategies, and actions workshop
- Follow-up technical visits to repetitive loss areas if necessary
- Meet with other organizations to discuss Plan, if necessary