Soil Stabilization: Instructions

**The following information is intended for guidance only and is not a request for information. The following template is only intended to help the reader understand the FEMA Hazard Mitigation Grant Program (HMGP) application process.*

This document provides instructions on how to complete the application for a soil stabilization project under FEMA's Hazard Mitigation Grant Program (HMGP). This application can be used for soil stabilization project applications.

The user can provide the requested information by adding text or comments to the form, or by including the information in a separate document with their subapplication.

Additional technical guidance is provided in the attached Soil Stabilization Technical Review Job Aid (Technical Job Aid) and the Environmental Planning and Historic Preservation (EHP) Soil Stabilization: Information Required for Environmental Review Job Aid (EHP Job Aid), which are referenced throughout these instructions.

Phased Projects: In general, sufficient technical information is provided by the applicant or subapplicant to allow FEMA to make an eligibility determination on a subapplication. The costs to obtain this information are generally eligible as pre-award costs. However, in rare circumstances, it is beyond the subapplicant's technical and financial resources to provide the complete technical information required for a full eligibility or EHP review of a complex project. The applicant and FEMA may provide technical assistance to the subapplicant to develop this complete body of technical data by approving a subapplication to complete a Phase I design, engineering, EHP, or feasibility study. The use of a Phase I study should be limited to complex projects that require technical or EHP data beyond the scope of that generally required for a typical HMGP project. See Hazard Mitigation Assistance Guidance Part VIII, A.13 for additional information. Subapplicants interested in a phased project should contact their State Hazard Mitigation Officer as soon as possible.

A. Applicant/Subapplicant Information

1. **Applicant/Subapplicant Legal Name:** Enter your organization's legal name.
2. **Organizational Unit:** Enter the name of the department or agency within your organization that is pursuing the grant.
3. **Project Title:** Enter the name of the project title. The title should be short but descriptive (e.g., Everytown Bank Stabilization Project).
4. **Applicant/Subapplicant Type:** Enter the type of applicant or subapplicant; refer to Hazard Mitigation Assistance (HMA) Guidance (Part III, Sections A and B) for information on Eligible Applicants and Subapplicants.
5. **Proposed Project Total Cost:** Enter the total cost of the project in the first field provided. In the fields beneath that, indicate the percentage and dollar amount of both the federal and nonfederal shares for the project.
6. **Certifications:** Read the statement provided and enter the requested information to certify the Applicant/Subapplicant reviewed and concurred with the HMA program requirements.

7. **Mitigation Plan:** Mark the appropriate box—Yes or No. If Yes was marked, provide the specified information for the Local and State/Territorial/Tribal Mitigation Plan. Refer to HMA Guidance (Part III, Section E.5) for information on hazard mitigation plan requirements.
8. **National Flood Insurance Program:** Mark the appropriate box—Yes or No. HMGP mitigation project subapplications for projects sites within the Special Flood Hazard Area are eligible only if the jurisdiction in which the project is located is participating in the program.
9. Enter the **Tax ID Number**, five-digit Federal Information Processing Standards (**FIPS**) code, six-digit **Community Identification Number**, and Data Universal Numbering System (**DUNS**) number for the Applicant/Subapplicant.
10. Enter the **U.S. Congressional District** for your jurisdiction, if applicable.
11. Enter the **State Legislative District** for your jurisdiction, if applicable.
12. **Primary Point of Contact:** Enter the contact information for the person coordinating the implementation of this grant throughout the application process.
13. **Alternate Point of Contact:** Enter the name and contact information for the alternate point of contact who can coordinate the implementation of this grant when the primary point of contact is not available.
14. **Authorized Applicant/Subapplicant Agent:** Enter the name and contact information for the authorized agent for your organization. The Authorized Applicant/Subapplicant Agent MUST be the chief executive officer, mayor, or person of comparable status who is authorized to sign contracts, authorize funding allocations or payments, etc.

B. Project Narrative and Scope of Work

Mitigation projects funded by HMA must be both technically feasible and effective at mitigating the risks of the hazard(s) for which the project was designed. Effective mitigation measures funded with an HMA grant provide a long-term or permanent solution to a risk from a natural hazard.

1. Provide a detailed description of the project purpose and risk being mitigated. Describe the need for the project and how the project will reduce/eliminate the risk of future damage and protect individuals, structures and/or infrastructure. Describe past landslide events that have affected the proposed properties. Please include information on past damages and the federal disaster declaration number, if applicable. See **Step 1** of the **Technical Job Aid**.
2. Provide a project narrative clearly describing the existing conditions of the project site, the proposed mitigation activity and the mechanism(s) to stabilize the slope. Include the following information (See **Step 1** of the **Technical Job Aid**):
   - Provide the location of the proposed soil stabilization project: address and latitude/longitude in decimal format to four decimal places.
   - Describe the existing conditions at the site specifically defining the problem and the extent of the erosion/instability. Describe why the project is needed.
   - Describe the structure(s) and/or infrastructure that are at risk and will benefit from the project.
   - Describe the proposed mitigation activity and the mechanism to stabilize the slope (installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles,

stabilizing with riprap and other means of slope anchoring, reseeding and planting ground cover, mulching with straw and/or chips, planting grass to prevent noxious weeds).

3. Provide a detailed scope of work. Clearly explain the proposed mitigation activity, identify the tasks required to complete the proposed activity and define the tasks to be accomplished in clear, concise and meaningful terms. See **Step 1** of the **Technical Job Aid** and **Step 1** and **Step 2** of the **EHP Job Aid** for additional guidance. The scope of work should include the following:
   - Describe the extents of the bank stabilization project and the locations.
   - Describe the tasks required to complete the proposed activity, and define the tasks to be accomplished in clear, concise and meaningful terms.
   - Describe construction activities.
   - Describe permitting requirements.
   - Provide the design criteria with which the project will comply including relevant code(s) and standard(s). Clearly define the level of protection the project will provide.
4. Describe how the scope of work solves a problem independently or is a functional portion of a solution where there is verification that the overall project is being completed. Provide supporting documentation, if needed.
5. A complete application should include technical data to support the scope of work. Briefly describe the supporting documentation included in the application package. See **Step 2** of the **Technical Job Aid** for more information on what technical information is required.
   - Describe any engineering analyses, drawings or plans included in the project documentation.
   - Define the codes and standards the mitigation measure will adhere to.
   - Define the factor of safety that was/will be used to design the slope stability.
   - Refer to local codes and standards or United States Army Corps of Engineers (USACE) EM-1110-02-1902.
   - Specify if signed/stamped design drawings match the project scope and level of protection provided, or are conceptual designs (to be finalized later) provided?
   - Describe and provide copies of technical data to support the proposed level of protection.
   - List all documentation that will be attached to this application that will support the technical feasibility of this project, such as engineering reports, project plans, project maps, etc.
6. Describe if there will be upstream or downstream impacts due to the project being implements. Both adverse and beneficial impacts should be included. For projects impacting the floodplain, a hydraulic and hydrologic analysis or engineer's statement regarding upstream and downstream impacts must be accounted for in the benefit-cost analysis (BCA). This may be a Phase 1 Deliverable (see Phasing section) if the project is phased.

C. Alternatives Considered

Mitigation project alternatives are required as part of application development. Indicate at least three alternative actions that were considered in the planning process:

1. No Action Alternative and its consequences.

2. Alternative that was considered but not selected, and why.
3. Additional alternative actions considered but not selected (not required).
4. The Proposed Action alternative is the project you are proposing in the application; explain why it is the most practical, effective and environmentally sound alternative.

See **Step 1** of the **Technical Job Aid** and **Step 1** of the **EHP Job Aid** for additional guidance.

D. Environmental Planning and Historic Preservation Considerations

FEMA recommends incorporating bioengineering techniques into soil stabilization projects (i.e., use of vegetation or a combination of vegetation and construction materials; the use of living and non-living plant materials in combination with natural and synthetic support materials).

Incorporation of bioengineering has implications for FEMA's determination of appropriate level of review under the National Environmental Policy Act (NEPA). The below information would be required to conduct the environmental and historic review of the project to ensure the project is compliant with all EHP laws, regulations and Executive Orders. See **Step 2** and **Step 3** of the **EHP Job Aid** for more information and examples of:

1. Add the distance (in linear feet) of the work area and explain if there are multiple segments of improvement. (See **Step 2A** of the **EHP Job Aid**)
2. Add the acreage of the proposed ground disturbance and the approximate maximum depth of disturbance for the proposed project in the boxes provided. Describe the existing condition of the proposed ground disturbance area. Provide this information of a GIS file, map and/or aerial. (See **Step 2A** of the **EHP Job Aid**)
3. If there are any structures located in the project vicinity, list them in the box provided and indicate the type of structure and the estimated date of construction. Add the number of feet away from the area of ground disturbance the structure is located (e.g., a culver that is 15 years old and 10 feet from the work area). (See **Step 2B** of the **EHP Job Aid**)

   Indicate if the project is part of an upgrade to an existing system or new construction. Any pre-existing conditions should be described in the box provided at the end of the section.
4. Indicate whether the project site has been previously disturbed or improved by selecting 'Yes' or 'No' and explain the disturbance in the box provided.
5. Describe the vehicles and equipment that would be used to implement the project. Describe any local restrictions on equipment use (seasonal or daily restrictions, work hours, local noise ordinances).
6. Describe how the project area would be accessed. Show the boundaries of the access routes or points on a map or plan view of the project area and describe the surface type (asphalt, dirt gravel). If any new access routes would need to be created for the work to be completed, show where the routes would be located on a map or plan view of the project area.
7. Describe where materials and equipment would be stored and staged during construction. Show the boundaries of the staging areas on a map or plan view of the project area and describe the existing surface type (asphalt, dirt, gravel).

8. Has the public been notified or provided input? If so, provide dates and method of outreach. If not, describe any planned public engagement activities for the project. (See **Step 3A** of the **EHP Job Aid**)
9. Describe and coordination and permits obtained for the project. Include copies of these documents. (See **Step 3B** of the **EHP Job Aid**)
10. Provide any environmental or historic studies that have been conducted for the project. These could include biological surveys, wetland delineations, Phase I/II ESA survey's, archaeological site survey. (See **Step 3C** of the **EHP Job Aid**)
11. Describe the project activities in the floodplain, if applicable. Show where project activities would overlap with floodplains on a map. (See **Step 3D** of the **EHP Job Aid**)
12. Describe any surface waters in or near the project area (ponds, lakes, rivers, streams, wetlands, other waterbodies). Describe any measures that would be used to avoid waterbodies or avoid impacting water (setbacks, cofferdams, silt fence). Show where project activities would overlap with wetlands or other waterbodies on a map. (See **Step 3H** of the **EHP Job Aid**)
13. What are the soil and topographic conditions in the project area? Describe any erosion conditions in the project area or conditions that may lead to erosion or slope failure. (See **Step 3F** of the **EHP Job Aid**)
14. Describe any known hazardous or contaminated materials at the project site. If the project requires the use of hazardous materials, describe their use and best management practices to minimize environmental exposure. (See **Step 3G** of the **EHP Job Aid**)
15. Select if the project will involve the placement of fill. If yes, describe the type and source of the fill material. (See **Step 3H** of the **EHP Job Aid**)
16. If the project would remove vegetation for any reason, describe the type and amount or area of vegetation (two oak trees, one-quarter acre of turf grass). Describe how vegetation would be removed, if applicable (root ball removal, flush cut, dug up, chemical weed killer). If using herbicides, describe best management practices for their use. (See **Step 3I** of the **EHP Job Aid**)
17. List any best management practices that would be used during project construction. (See **Step 3J** of the **EHP Job Aid**)

E. Estimated Work Schedule

Specify the duration of each process component required to complete the project. Although the components' occurrences are not necessarily sequential and activities may be carried out concurrently, the total project timeline cannot exceed the period of performance for HMGP, which is 36 months. For additional guidance, see **Step 3** of the **Technical Job Aid**. Common milestones may include:

- Signing Grant Agreement
- Bidding and Procurement
- Appraisals, Surveys and Title Searches
- Mitigation Offers, Closings and Deed Recordings
- Asbestos Inspection and Abatement

- Structural Demolitions within 90 days of closing
- Site Stabilization – grading and seeding
- Closing Grant

F. Budget Estimating

1. **Costing Methodology**: Indicate which method(s) were used to determine the project costs. Choose whether the estimates were obtained from construction contractors and similar vendors, historical data from previous projects/activities (with an inflation factor, as needed), public works personnel or other qualified staff from local jurisdiction, or other national cost estimating reference. If none of these were used, please choose "Other" and describe the methodology used to develop the cost estimate. For additional guidance, see **Step 4** of the **Technical Job Aid**.

   Populate the table, or attach additional sheets, as needed, to indicate the project costs. If the subapplicant has or will be incurring eligible pre-award costs, these must be included as separate line items in the project budget and labeled as pre-award costs.

   Management Costs (administrative fees and project management fees) according to Section 1215 of the Disaster Recovery Reform Act should be provided as separate line items on the Subrecipient Management Costs attachment to this application. These management costs can be no more than 5% of the total cost.

   Include all cost categories with quantities, units of measure, cost per unit, and total cost by line item. All costs should be detailed and not contain any lump sums. The cost estimate includes a line-item breakdown of costs associated with all elements described in the SOW and budget narrative. Personnel hours should be detailed by position titles, estimated number of hours to the project, and estimated cost per hour for that position.

2. **Cost Estimate**: Enter the costs associated with all tasks/activities to complete the project, as applicable. Ensure all tasks/activities match the information included in all other documentation provided with the application. All costs should be detailed and not contain any lump sums. The cost estimate should include a line-item breakdown of costs consistent with all elements described in the Project Narrative and Scope of Work and Budget Estimating sections of this application. For additional guidance, see **Step 4** of the **Technical Job Aid**. Common cost categories may include:
   - Pre-Award Costs – costs must have occurred after the declaration date of the relevant disaster
   - Advertisement/bids
   - Contract Labor
   - Purchase or donation of land
   - Design fees and other architectural and engineering services
   - Environmental Planning and Historic Preservation compliance
   - Survey/mapping
   - Hydrologic and hydraulic analysis
   - Soil testing

- Materials
- Construction components
- Construction oversight
- Green Infrastructure components
- Supplies
- Permitting
- Travel
- Contingency (no more than 5% of total project cost)
- Site preparation
- Construction costs (for the soil stabilization project itself)
- Inspection costs
- Material/debris disposal costs
- Grant Management and/or Grant Administration Costs (limited to 5% of total costs)

3. **Budget Narrative:** Provide a budget narrative with explanations, justifications, and line-item details of the project costs. If needed, indicate in the box that the narrative is in an attachment to the application and provide with application submittal. Itemize by Pre-Award, Phase 1 and Phase 2, as appropriate. Itemize by how many of X at Y price for each category checked above.

   The budget narrative should explain how costs were derived, including any details not in the line items. For additional guidance, see **Step 4** of the **Technical Job Aid**.

4. **Contingency Costs:** Describe the items included in the contingency cost. Contingency costs are often included in the cost estimate; however, they can be no more than 5 percent of the total project costs. A contingency cost should be included as a line item in the budget section of a project application. As with other line items in the budget, the subapplicant should justify the contingency estimate based on the nature of the proposed project. For more information about contingency costs, see Part VI. D.3.4 of the HMA Guidance.

G. Nonfederal Funding Share (25% of Total Planning Grant Costs)

List all sources and amounts used in the nonfederal share, including all in-kind services. In-kind services may not exceed the 25% nonfederal share. For each source, indicate the name of the source agency, describe the type of funding, and the amount.

Attach letters of funding commitment for each source.

H. Operations and Maintenance

1. Indicate who (department or position type) will be responsible for maintaining the bank stabilization after the project has ended. Describe what actions hey will perform and how often.
2. Provide an estimated cost for annual maintenance of the project. Describe how costs were estimated and attach relevant documentation.

I. Cost-Effectiveness

The BCA should be developed in accordance with **Step 9** of the **Technical Job Aid**. The Technical Job Aid will provide additional guidance for development of the BCA and required supporting documentation for the BCA. This section of the job aid describes how to develop the BCA, as well as documentation that will be needed in support of the BCA.

The BCA software can be found at https://www.fema.gov/benefit-cost-analysis, including explanations of how to use the tool. It is a best practice to provide a BCA narrative as supporting documentation. The BCA narrative should describe the methodology, assumptions, and justifications for all inputs to the subapplication documentation.

1. Provide the project's benefit-cost ratio. Describe the BCA methodology and list the documents attached to the application that support the BCA.
2. Indicate the Project Useful Life (PUL), for the mitigation project. Provide documentation if the standard PUL from the BCA information tab is not used. The PUL value cannot be higher than the highest acceptable limits as indicated in the PUL table in the BCA Toolkit Help Menu.
3. Maintenance costs for the project must be included in the BCA. Attach an assurance letter from the signature authority that states how much annual maintenance costs will be, what position or department will be responsible for maintenance, and how often it will be performed. The maintenance cost should cover the necessary maintenance for the stabilization project to remain functional for the entire PUL.

J. Required Documentation Attached

Indicate all attachments to be included with this form. Please also indicate any additional documentation in the box below.

- Site photos
- Figure of site layout
- Property Site Maps: Provide map(s) showing the project location(s). If the project includes multiple structures, show the project boundaries. See **Step 5** of the **Technical Job Aid**.
- FIRMette with property locations clearly marked. FIRMetts can be accessed in the FEMA Flood Map Service Center (https://msc.fema.gov/portal/home).
- Appropriate BCA documentation, including an export of the BCA Tool and .pdf of the BCA Report from the toolkit (if applicable) and all supporting documentation
- Engineering studies and project drawings, if available
- Detailed budget with additional budget narrative if box provided is not sufficient
- Schedule
- Consultation documentation
    - State Historic Preservation Officers Consultation, required if any of the following applies:
        - Structure is 45 years or older at the time of FEMA review
        - New ground is being disturbed

  - Project is located in a Historic District

- Fund commitment letter, which lists the sources and amounts used in the nonfederal share requirement, including all in-kind services. Fund commitment letters are also required from nonapplicant sources
- Assurances (FEMA Form 112-0-3C or 20-16c (Certifications Regarding Lobbying; Debarment, Suspension and Other Responsibility Matters; and Drug-Free Workplace Requirements), and SF-LLL (Disclosure of Lobbying Programs) if applicable)
- Completed SF-424 (Application for Federal Assistance), signed by the authorized representative of the jurisdiction
- Completed SF-424d (Construction Programs) and SF-424c (Budget Information for Construction Programs)
- Designated Authorized Agent documentation designating authority for the signatory to sign contracts, authorize funding allocations or payments, or apply for grant funding that is signed by the ruling body of the applicant
- Public Notice documentation, if working in the floodplain (date and media outlet)
- If there will be additional items not listed, please indicate those items in the comment box below this section.