

WORK ORDER FLOODPLAIN PLANNING AND MANAGEMENT SERVICES
CONTRACT #P00044P08
WORK ORDER #5 – HAZARD MITIGATION PLAN
MAY 29, 2009

Work Order Summary and Overview

To be eligible for funding under the Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Programs as a “stand alone “ local government, the King County Flood Control District (*District*) must have developed and adopted a Local Hazard Mitigation Plan pursuant to the requirements specified under section 201.6 44CFR. This plan would need to be approved for section 201.6 compliance by Washington Military Department, Emergency Management Division (WMD/EMD) and FEMA in order to achieve full compliance under FEMA’s mitigation grant programs. Under this work order, CONSULTANT will provide to King County (the service provider acting on behalf of the District) in the development of a local hazard mitigation plan pursuant to FEMA requirements. The tasks identified in this work order are consistent with the scope of work established under Task 700, 900 and Task 1000 of contract # P00044P08.

This work order will be separated into four (4) phases that will consist of the following elements:

- Organize resources
- Risk Assessment
- Develop a Mitigation Plan
- Implementation and Plan Maintenance

The CONSULTANT will follow guidelines for deliverables outlined in the contact agreement and will incorporate comments from King County (the service provider for the District) in the preparation of all final deliverables.

Scope of Work

The 4 proposed phases for this scope of work for this work order will include the following specific work tasks.

Phase 1: Organize Resources

Under this phase King County (County) will organize a planning team that will be responsible for implementing the planning process. This team will consist primarily of contract personnel as well as key personnel from the County. The planning team may interact with the Basin Technical Committees to seek their guidance on issues identified by the planning process as integral to the prioritization and implementation of actions. The planning team will be responsible for all specified deliverables under each of the phases, and will be lead by a lead project planner. Tasks to be completed under this phase include:

Task 1A: Organize a planning team- Under this task; the CONSULTANT will assemble, in consultation with the County, a planning team that will be responsible for completion

and oversight of all phases of the plan development. This team shall be principally made up of contract personnel, County personnel and may include other stakeholders at the County's discretion. This team will meet periodically to coordinate timeline and deliverables under all phases of the plan's development. Key positions on this team shall include:

- Lead Project Planner
- Planning Process Facilitator
- GIS/ HAZUS Lead
- GIS Support
- Public Involvement Coordinator
- County Programs/Policies lead
- Technical/format editor

Task 1A Deliverables: The deliverables under this task will be meeting agenda's and minutes for all meetings held by the planning team. It is anticipated that the planning team will assemble to meet at least once per month to coordinate plan development milestones.

Task 1A Due Date: This task will proceed throughout all phases of the plan's development. The due date for this task shall coincide with the due date for final plan submittal to FEMA.

Task 1B: Coordination with other agencies- Under this task, the planning team will coordinate the plan development process with other agencies that have a stake in hazard mitigation within King County. For the purposes of this task, "coordinate" means to inform these agencies that this plan development process is going on and that they will be given an opportunity to comment on the draft plan prior to adoption. At a minimum, the following agencies will be coordinated with under this task:

- Washington Military Department, Emergency Management Division
- Washington Department of Ecology
- King County Emergency Management
- FEMA Region X
- All incorporated Cities within King County
- Pierce County
- Snohomish County
- King County Departments

Task 1B Deliverables: Email list for all agencies identified for Coordination. These agencies will be notified via e-mail of all public meetings and all planning team meetings. The Lead Project Manager for the District will be cc'd on all emails.

Task 1B Due Date: This task will proceed throughout all phases of the plan's development. The due date for this task shall coincide with the due date for final plan submittal to FEMA.

Task 1C- Review of existing programs- Under this task, the planning team will perform a comprehensive review of existing federal, state and local programs that are in effect within the planning area that can directly support or impact hazard mitigation within the planning area. It should be noted that these programs will be reviewed within the context of the capabilities and authority of the District. This review shall be formatted such that it can be directly imported in the final plan document to meet section 201.6(c) (4) (ii) requirements.

Task 1C Deliverables: The deliverable for this task will be a technical memorandum from the CONSULTANT to the planning team summarizing those programs identified. This technical memorandum will become the basis for the narrative of the plan that addresses this requirement

Task 1C Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be August 15, 2009.

Task 1D: Develop and implement public involvement strategy- Under this task, the planning team will develop and implement a public involvement strategy with the principal objective of meeting the minimum requirements specified by FEMA under section 201.6, 44CFR. It is assumed that this strategy will focus on utilizing the County's website, a minimum of 2 press releases and no more than 2 public meetings. This strategy will be deployed throughout all phases of the plan's development.

Task 1D Deliverables: The specified deliverable for this task will be copies of any and all public outreach media developed to implement this task. These media will be approved by the Lead project planner and Planning team via the process described under task 1A.

Task 1D Due Date: This task will proceed throughout all phases of the plan's development. The due date for this task shall coincide with the due date for final plan submittal to FEMA.

Task 1E: Capability assessment- Under this task, the planning team will assess the capabilities of the District to implement the hazard mitigation actions of the plan. This capability assessment will focus on the regulatory, technical and financial capabilities of the District. A capability matrix will be completed for incorporation into the final plan.

Task 1E Deliverables: The specified deliverable for this task will be a completed capability matrix that will be incorporated into the plan text.

Task 1E Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be August 31, 2009.

Phase 2: Risk Assessment

Under this phase, the planning team will identify the characteristics and potential consequences of hazards. First the planning team will identify the hazards of concern as they pertain to District facilities. Once these hazards have been identified, they will be profiled and assessed to determine the vulnerability of District facilities to these hazards. FEMA's risk assessment tool, HAZUS, will be utilized to assess risk for the flood, earthquake and Dam Failure hazards. HAZUS methodology will be utilized in assessing the risk of the non-HAZUS hazards (Landslide, Severe Weather, Volcano and Wild land Fire). All risk assessment outputs will model those generated by the HAZUS model. The final step under this phase will be to rank the risk of the hazards of concern to help the District prioritize its actions. It should be noted, that the risk assessment for the flood hazard is basically complete and contained in the 2006 River and Floodplain management plan. However, that plan did not run a HAZUS model to assess the vulnerability to floods, nor does it include updated flood hazard maps completed since 2006. Tasks to be completed under this phase include:

Task 2A: Hazard identification and profiling- Under this task, the planning team will identify the hazards of concern to be addressed by the plan, and then profile those hazards for their impacts on District facilities. The Washington State Hazard Mitigation Plan will provide the basis for the identification of the hazards of concern. These profiles will map the extent and location of each hazard and identify those District facilities impacted by those hazards. The profiles will establish probability of occurrence by reviewing past occurrences, and provide a discussion of causes and potential impacts of each hazard. Profiles will be created in a narrative format for inclusion into the final plan. It should be noted, that since this plan will cover the Flood Control District sphere of influence only, these profiles will focus on District facilities only, and not include general building stock, with one exception. Since the District has the authority to implement flood mitigation projects on private property for floodplain management purposes, the flood profile will address general building stock county-wide. This has basically already been done in the 2006 King County River and Floodplain Management Plan.

Task 2A Deliverables: A complete hazard profile for Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, and Wild Land Fire.

Task 2A Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be September 30, 2009

Task 2B: Identify critical facilities- Under this task; the planning team will define "critical/essential facilities" to be addressed by the plan. This will be a facilitated exercise starting with the FEMA standard definition as the base line. The objective of this task will be to establish a definition that will include all facilities that are vital to District operations, and can directly support emergency management within King County. The planning team will also establish an inventory of these facilities to be incorporated in the vulnerability assessment under task 2C.

Task 2B Deliverables: A digital inventory of all facilities that meet the definition of “critical facilities” as defined by the planning team.

Task 2B Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be September 30, 2009

Task 2C: Vulnerability assessment- Under this task, the planning team will assess the vulnerability of identified critical facilities to all hazards of concern, and the general building stock within King County to the flood hazard. This additional assessment for the flood hazard will be performed because it will be an identified capability of the District to implement mitigation projects that target the general building stock of the County, for the flood hazard only. The principal tool to be utilized under this task will be FEMA’s HAZUS risk assessment tool. A county-wide base model will be established utilizing HAZUS level-2 methodology, and assessments will be run for the Dam Failure, Earthquake and flood hazards. HAZUS outputs will be modeled using GIS applications for the other, non-HAZUS hazards (landslide, severe weather, volcano and wild land fire).

Task 2C Deliverables: A completed HAZUS-MH model including all outputs for dam failure, earthquake and flood will be provided to the District upon completion of this task. Data outputs for the non-HAZUS hazards will also be provided to the District upon completion of this task. A specified deliverable under this task will include training of appropriate District personnel on how to utilize the HAZUS model for future mitigation projects of the district.

Task 2C Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be October 31, 2009

Task 2D: Repetitive Loss Area Analysis- To meet section 201.6(c) (2) (ii) requirements, the planning team will perform a repetitive loss area analysis that includes:

- A map of all repetitive loss areas within the County. A repetitive loss area is an area that is delineated based on the presence of properties identified by FEMA as “repetitive loss” properties. A repetitive loss property is any property that has received 2 or more flood insurance claims during any rolling 10-year period since 1978. A repetitive loss area includes identified repetitive loss properties as well as properties not identified as such due to the lack of flood insurance, that are subject to the same causes of flooding
- The methodology used to map each repetitive loss area will include: mapping those properties on the FEMA RL list, determining the cause of repetitive flooding, plotting the probabilistic extent and location of the identified event (i.e.: 25-year flood event or 100-year flood event), then identifying those additional properties within each delineated RL area. This will be predominately a GIS exercise utilizing maps and assessor data provided by the County.
- A description of the causes for the repetitive flooding in all areas.
- An inventory of the number and types of structures in the repetitive loss areas

- An estimate of the potential dollar loss to those repetitive loss properties.
- A description of the land use and development trends in the repetitive loss areas.

Task 2D Deliverables: Building count and address list of all structures identified in each repetitive loss area. A map will be generated of each repetitive loss area as well as a narrative description of the extent and location and cause of flooding for each repetitive loss area. These deliverables will provide the basis for the discussion of this subject matter in the plan as required under section 201.6(c) (2) (ii), 44CFR.

Task 2D Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be October 31, 2009.

Phase 3: Develop a Mitigation Plan

Once phases 1 and 2 are complete, the planning team will assemble a mitigation plan that reviews alternatives, identifies actions, and prioritizes those actions with an emphasis on cost effectiveness of the action. A key component of this prioritization will be the capability of the District to carry out an action. This plan will be assembled such that the plan can easily be reviewed for DMA compliance. A key component of this phase will be to establish a link to the 2006 King County River and Floodplain Management plan which has already completed these elements for the flood hazard. Since the plan must identify actions, prioritize those actions and describe how these actions will be carried out, the plan will include discussion under the District capability assessment portion of the plan on the flood plan 10-year Action Plan and the adopted CIP. It should be noted the structure of this plan will be such that future updates to the Flood Plan will be able to incorporate this plan as an “all-hazards” annex to the flood plan. Therefore the flood Plan would become the official plan of record for the District for DMA compliance.

Tasks to be completed under this phase include:

Task 3A: Goal setting- Under this task, the planning team will identify goals and objectives for the plan. These goals and corresponding objectives shall be measurable, thus enabling the District to measure and monitor the performance of the plan. It is anticipated that the goals and objectives will mirror those identified for the 2006 King County Flood Hazard Management Plan, since that plan will eventually be integrated with the hazard mitigation plan. However, the planning team will need to assure that the stated goals and objectives can be applied to all hazards addressed by the plan.

Task 3A Deliverables: A list of goals and objectives for the plan.

Task 3A Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be September 30, 2009.

Task 3B: Alternatives review analysis- Under this task, the planning team will initiate a comprehensive review of alternatives to mitigate the impacts of all hazards addressed by the plan. This analysis will attempt to identify all feasible alternatives that are within the capabilities of the District. The alternatives review analysis for the flood hazard has already been completed in the 2006 King County Flood Hazard Management Plan. So this task will focus on all of the non-flood hazards of concern. It is anticipated that the

alternatives review methodology of the Flood Hazard Management Plan will be brought over to this process and applied to the other hazards. It should be noted that the final plan text must clearly identify and define this methodology for section 201.6 44 CFR compliance.

Task 3B Deliverables: A list of alternatives considered for each hazard that includes discussion on why or why not the action was appropriate to mitigate the impacts of the Hazard.

Task 3B Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be October 31, 2009.

Task 3C: Action plan development- Once task 3B is complete, the planning team will need to identify and prioritize an action plan. This action plan shall identify at least one measurable action for each of the hazards of concern. It is anticipated that the action plan identified in the 2006 King County Flood Hazard Management Plan will be included for the flood hazard. To meet section 201.6 44CR requirements, this action plan must be prioritized with an emphasis on the cost-effectiveness of the project. The planning team will create an action plan matrix for inclusion into the plan that will clearly identified all required elements for section 201.6 44CFR compliance.

Task 3C Deliverables: A completed action plan matrix that will illustrate all actions identified by the plan including: a brief description of the action, mitigation action type, whether the action addresses new or existing structures or both, source of funding, time-line for completion, and priority.

Task 3C Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be October 31, 2009.

Task 3D: Preparation of the draft plan- Under this task, the planning team will prepare a draft plan in accordance with state and federal requirements. To meet this objective, the planning team will prepare a plan that will include the following parameters:

- A description of the planning process.
- A description of the public involvement process.
- A capability assessment that includes: an inventory of the planning areas missions, programs and policies and an analysis of the capability to carry them out.
- Illustrate goals of the plan.
- A review of all possible mitigation activities for each hazard including those not recommended by the plan.
- Include an action plan that will target agencies and departments for implementation, targeted time frame for completion and potential funding.
- A summary of how the plan's progress will be monitored and establish a timeline for progress reports and updates.

- Include “linkage” procedures to be followed by “non-participating” local governments within the planning area that wish to “dock” to this plan after its completion.
- Identification of the process for incorporating the plans requirements into other planning mechanisms with the planning area.

Task 3D Deliverables: A copy of the draft plan to be reviewed by the planning team. This draft will be in digital format and will be provided to the Lead Project Planner format specified by the Lead Project planner and planning team.

Task 3D Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be November 30, 2009.

Task 3E: Work with Basin Technical Committees- Once the draft plan is assembled, the planning team will present the plan to the Basin Technical Committees for their review and comment. This will occur prior to the final phase of the public involvement strategy, which will be to provide the public an opportunity to comment on the draft plan.

Task 3E Deliverables: Agenda and Power point presentation to be prepared by CONSULTANT for presentation to the Basin Technical Committee.

Task 3E Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be December 15, 2009.

Task 3F: Technical editing and formatting- Once all public comments have been received, as well as all input from the Basin Technical Committees, the final draft plan will be prepared via a comprehensive technical review and format edit. This task will be performed by the technical/format edit lead on the planning team. The proposed layout and content for this plan will mirror the content of the FEMA Local Hazard Mitigation Plan Crosswalk, to facilitate a streamlined review process for the plan upon its completion.

Task 3F Deliverables: The Deliverable for this task will be the final draft plan that will be presented to WAEMD and FEMA for review and approval.

Task 3F Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be December 31, 2009.

Phase 4: Implementation and Plan Maintenance

This phase will focus on bringing the plan to life and establishing a plan maintenance protocol that will assure that the plan remains dynamic and that it can integrate into the hazard mitigation program of the District. Key milestones to be completed under this phase include:

Task 4A: Development of a plan maintenance strategy- Under this task, the planning team will identify a plan maintenance strategy that will meet the requirements of section 201.6(c) (4) (i), 44CFR. The key component to this task will be to identify an integration strategy between the Hazard Mitigation Plan and the 2006 King County Flood Hazard Management Plan.

Task 4A Deliverables: The completed section of the draft plan that outlines the plan maintenance strategy will be the specified deliverable for this task. This strategy will be approved by the planning team prior to inclusion in the plan text.

Task 4A Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be December 31, 2009.

Task 4B: Completion of the FEMA plan review crosswalk- Under this task, the planning team will complete the FEMA Local Hazard Mitigation Plan Review Crosswalk, and prepare the draft plan for its pre-adoption review by WMDEMD and FEMA Region X. Per state and FEMA regional guidance, this plan will be submitted for review, prior to plan adoption by the District. This assures that any deficiencies identified by the plan review process can be addressed prior to adoption. This task will include the actual submission of the draft plan to WMDEMD with a formal request for pre-adoption review.

Task 4B Deliverables: A completed FEMA plan review crosswalk and copy of transmittal documentation to WMDEMD.

Task 4B Due Date: Assuming project can be initiated by July 1, 2009, the due date for this deliverable would be October 31, 2009.

Task 4C: Plan adoption- Once pre-adoption approval has been granted by both WMDEMD and FEMA Region X, the planning team will initiate District adoption procedures. It should be noted that pre-adoption approval by FEMA does not constitute DMA compliance. The plan must be formally adopted by the local government, and documentation of that adoption must be provided to FEMA before full compliance can be granted.

Task 4C Deliverables: There is no specified deliverable for this task. Once pre-adoption approval is granted, the District will invoke its standard adoption procedures. CONSULTANT is available to support District personnel under this task on an "as needed basis" as determined by the lead project planner.

Task 4C Due Date: There is no specified due date for this task in that the completion of this task is contingent upon WMDEMD and FEMA Region X approval. Time-lines for review cycles by both agencies are subject change, outside the control of both the District and CONSULTANT.

Phase 5: Project Management

Provide overall project management for this work order, including but not limited to project coordination, work scheduling, product review and certification, budget and expenditure management, invoicing and issue resolution. This task is consistent with Task 100 of the SOW in contract # P00044P08. It is anticipated that up to 14 hours will be dedicated to this task during the reporting period.

Preliminary Schedule

The preliminary schedule for this work is to complete by February 1, 2009.