

## **Memorandum**

**To:** County-wide Floodplain Scoping Ad-Hoc Consultant Selection Subcommittee  
**From:** Paul Woodward, Water Resources Engineer  
**Date:** January 31, 2007  
**Re:** Contract for Engineering Services with HDR Engineering, Inc.

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On January 4, 2007, the Subcommittee interviewed and selected HDR Engineering, Inc. (HDR) with which to negotiate a professional services contract to conduct County-wide Floodplain Scoping for Dakota, Douglas, Sarpy and Washington Counties. Since that time, District staff and representatives from HDR have worked together to prepare the attached agreement, detailed scope, and time and cost estimate for this project.

In summary, HDR will be responsible for providing project management, project communication and documentation, conducting meetings with cities and counties, data collection, engineering assessments, and identifying potential mapping projects. Following final meetings with cities, counties, and FEMA, HDR along with the NRD will select a final mapping project for potential FEMA funding. According to the schedule, also attached, this final project and proposed activity statement will be ready by the end of September 2007. The total fee for this work was negotiated at \$164,900, and is broken down between different tasks in the attached agreement and scope.

In conclusion, services provided by HDR for this floodplain scoping project would cost a total of \$164,900 and be completed by September 30, 2007. A FEMA grant in the amount of \$140,000 has been secured for this project.

**Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute a professional services contract with HDR Engineering, Inc. for the County-wide Floodplain Scoping for a maximum fee of \$164,900, subject to changes deemed necessary by the General Manager and approval as to form by District legal counsel.**

**To Conduct Countywide Scoping for  
Dakota, Washington, Douglas and Sarpy Counties, NE**



**ENGINEERING PROPOSAL**

**BACKGROUND AND BASIS OF PROPOSAL**



The objective of the effort is to conduct countywide scope for the use of planning future Digital Flood Insurance Rate Maps and Flood Insurance Study updates within Douglas, Sarpy, Washington, and Dakota Counties in Nebraska. Pre-scoping, scoping, and post-scoping activities are to be conducted. The end result of the Project will produce a Mapping Project which outlines the mapping needs along with a Final Mapping Activity Statement (MAS). The Project's building blocks for this assessment include input from communities, data collection and preparation, population of WISE scoping tool, assessment of existing flood data and engineering analysis, conceptual mapping project, scoping meeting, mapping needs list prioritization, and a final MAS. These steps support the FEMA's primary objectives of the DFIRM Scoping Process: to achieve a "best value" for completing a Mapping Project by prioritizing and addressing a community's flood mapping needs and distributing the work based on strength and capabilities of all available resources.

**SCOPE OF SERVICES – DFIRM SCOPING**

The scope of work is segmented into eight task series:

- Task Series 100 – Project Management
- Task Series 200 – Initial Community Contact (AS Activity 1)
- Task Series 300 – Data Collection and Preparation (AS Activity 2 & 8)
- Task Series 400 – Setup and Population of WISE Scoping Tool Project (AS Activity 3)
- Task Series 500 – Assessment of Existing Flood Data and Engineering Analysis (AS Activity 4)
- Task Series 600 – Conceptual Mapping Project (AS Activity 5)
- Task Series 700 – Scoping Meeting (AS Activity 6 & 7)
- Task Series 800 – Mapping Needs List & Draft Mapping Activity Statement (AS Activity 10 & 11)

The HDR Team proposes to provide the following professional services over an anticipated seven (7) – month project period from the time of contract authorization:

**TASK SERIES 100 – PROJECT MANAGEMENT**

**Task Objective:** Confirm that Project elements are being completed and coordinate with P-MRNRD, FEMA, and Regional Mapping Center (RMC).

**HDR Activities:** **Task 110 Project Management.** Conduct general project management tasks. Includes development of project initiation forms including the development of a project guide, monthly invoicing, monthly progress report, project close out activities and other administration project activities.

**Task 120 Coordination Meetings.** Coordination meetings will be conducted with the P-MRNRD and FEMA/RMC during the project. An agenda will be prepared prior to the meeting and meeting minutes prepared after the meeting.

**Subtask 120.1 Conduct Kick-Off Meeting.** Conduct an initial meeting to discuss project details with P-MRNRD, FEMA, RMC and Nebraska DNR. Review project guide and scope of work. Prepare meeting agenda and minutes.

**Subtask 120.2 Coordinate with FEMA and RMC.** Conduct coordination calls on a monthly basis with P-MRNRD, FEMA and RMC. Prepare meeting agenda, facilitate meeting and prepare meeting minutes. A total of 2 coordination calls are assumed.

**Subtask 120.3 Coordinate with P-MRNRD.** Conduct coordination meetings with P-MRNRD. Prepare meeting agenda and minutes. A total of 2 coordination meetings are assumed.

**Task Deliverables:**

- Project guide
- Monthly invoices and progress reports
- Meetings agenda and minutes

**Key Understandings:**

- The duration of the project is 7 months.
- Meetings will be held at the offices of the P-MRNRD and attended by 2 HDR professionals.
- P-MRNRD will coordinate with NDNR on Approximate “A” Zone mapping.
- A Technical Support Data Notebook (TSDN) will not be generated.
- Scoping templates noted in Appendix I of the Guidelines and Specifications will be used for information purposes and are not required to be submitted.
- It is assumed that importing data to the MIP (Mapping Information Protocol) is fully operational and problems do not exist with connections or the Citrix system.

**Data Provided by Others:**

- Copy of pertinent procedure memorandum (by FEMA)

**TASK SERIES 200 – INITIAL COMMUNITY CONTACT – AS ACTIVITY 1**

**Task Objective:**

- To define the communities’ participation in the project by:
- Clearly defining the objectives of the study, including scope and schedule
  - Obtain the community’s perception of its mapping needs
  - Ascertain availability of topographic data and GIS capabilities

**HDR Activities:**

**Task 210 Project Management Team and Plan.** A Project Management Team will be created consisting of P-MRNRD, FEMA, RMC, HDR Team and a representative from each county. This Team will provide guidance and input during the development of the Scoping Project. Information prepared for the Project Guide will be used to create the preliminary Project Management Plan using the template in Appendix I, Subsection I.1.3 of the Guidelines and updated as the Scoping Project progresses.

**Task 220 Initial Community Contact Scoping Participation Letter.** Prepare an initial contact letter. The initial community contact letter will inform the communities that FEMA will be working with them to develop a project scope. NDNR to provide community official contact names and addresses each community located within the counties. The following topics will be summarized in the letter:

- Purpose of the DFIRM project
- Purpose of the Flood Map Projects (i.e., the update needs that have prompted the map update);
- The need for the community to identify and prioritize its mapping needs;

- The need for the community to identify its engineering, planning, and Geographic Information System (GIS) capabilities and available data;
- The need for the community to identify available orthophotography and elevation data;
- Possibility of the community participating as a CTP; and
- Target schedule for completing the Project Scoping including the Initial Project Team Meeting and Scoping Meeting

A release form may be necessary to obtain some community data.

**Task 230 Inventory Existing Flood Data.** An inventory of the FEMA library for effective FIRM panels, FIS Reports, and other flood hazard data or existing data to be collected by P-MRNRD will be prepared. P-MRNRD to obtain any existing Map Need Assessment (MNAs) completed by the community, data from Map Needs Update Support System Report and data from Flood Map Status Information System. HDR will inventory the existing flood data.

**Task 240 Contiguous Community Agreement Checks.** Review the existing panel layouts and look for missing coverage or inconsistencies. Review the floodway profiles for mismatched profiles between communities.

**Task 250 Initial Project Meeting.** HDR will coordinate with P-MRNRD and FEMA to arrange the initial project meeting that will include the Project Management Team members and the appropriate community representative. A total of four project meetings will be made and include the communities within the county's boundary. The primary purpose of the meeting will be to provide additional information or clarification regarding the topics covered in the initial contact letter, as well as to discuss the purpose and necessary preparation activities to maximize the productivity of the upcoming scoping meeting. A map will be created to aid in the discussion of flood hazard areas and mapping needs. HDR to upload a summary of the initial community contacts to the MIP.

**Deliverables:**

- Project Management Plan
- Initial Community Contact Scoping Participation Letter
- Initial Project meeting agenda and minutes for each county

**Key Understandings:**

- NDNR to provide community official contact names and addresses for each community located within the counties. NDNR to assist in telephone contacts with community officials.
- Scoping meetings will be conducted on a per county basis and attended by the community officials from each community at their respective county seat. The meetings for Dakota and Washington Counties will be held in conjunction with the NDNR's Approximate Zone A Study and on the same day. Meeting will be conducted at the following locations:
  - Dakota County. P-MRNRD office located in Dakota City.
  - Washington County. P-MRNRD office located in Blair.
  - Douglas County. P-MRNRD headquarters office located at Chalco Hills.
  - Sarpy County. P-MRNRD headquarters office located at Chalco Hills.
- Scoping meetings will be attended by 2 HDR professionals
- P-MRNRD will be responsible for arranging the logistics for the meetings and mailing all correspondence with the communities. HDR to provide "copy ready" text.
- To expedite the study, P-MRNRD to request all FEMA data including effective FIRM panels, FIS Reports, and other flood hazard data or existing

data from the FEMA library. This includes mapping and modeling data. This effort is estimated to take approximately 6 weeks to receive.

- P-MRNRD and FEMA to provide any existing Map Need Assessment completed by the community, data from Map Needs Update Support System Report and data from Flood Map Status Information System.
- Partnership Agreements or Inter-Local Agreements will be prepared by P-MRNRD.

**Data Provided by Others**

- General Outline for Community Participation (by FEMA)
- Partnership Agreement or Inter-Local Agreement (by P-MRNRD)

**TASK SERIES 300 – DATA COLLECTION AND PREPARATION (AS ACTIVITY 2 & 8)**

**Task Objective:** To collect and format data to support the Scoping Project.

**HDR Activities:**

**Task 310 Data Collection.** Collect data including, but not limited to:

- Effective FIRMs, FIS reports, LOMCs, effective FIRM Panel layout, and any other applicable information. (by P-MRNRD)
- Collect, organize, and evaluate the GIS related data in vector shapefile format.
- GIS data includes political boundaries, transportation, and stream centerline vector data and Q3 data.
- Collect schedule and time estimates from other Scoping projects from FEMA.

**Task 320 NDEP/NDOP Research and Population.** Elevation or orthophotography data collected that will be used for the project will be documented in accordance with the NDEP/NDOP Project Tracking System Guidance Document. The following information will be collected:

- Identification Information
- Project Information
- Project Location
- Spatial Reference Information

**Task 330 GIS Data Preparation.** Prepare and deliver data in the Nebraska State Plane Coordinate System (NAD83). Use GIS functions to clip all data to the extent of the county boundary. Attribute the spatial data. Provide all data in the proper format for the WISE Scoping Project.

**Task 340 FIRM Panel Index.** Collect the Effective FIRM Panel Index and create the Proposed FIRM Panel Index in accordance with the Guidelines. The March 2004 Flood Map Modernization Business Plan for Nebraska prepared by NDNR defined a preliminary Panel Index for the entire state.

**Task 350 Effective Map and Report Summary and Available Data Inventory.** Document the Effective FIRM Maps and Available Data Inventoried. Use the template in Appendix I, Subsection I.1.5 and I.1.6 of the Guidelines, for guidance.

**Deliverables:**

- Properly formatted data for WISE Scoping Project for each county
- Proposed DFIRM Panel Index for Dakota and Washington Counties. It is assumed that the DFIRMs panel layout for Douglas and Sarpy will not be revised.

**Key Understandings:**

- Effective flood hazard data to be collected by P-MRNRD.

**Data Provided by Others:**

- Time and cost estimate data (by FEMA)
- Copy of NDEP/NDOP Project Tracking System Guidance Document (by RMC)

**TASK SERIES 400 – SETUP AND POPULATION OF WISE SCOPING TOOL PROJECT (AS ACTIVITY 3)**

**Task Objective:** Create a WISE Scoping Tool Project for each county.

**HDR Activities:** **Task 410 Project Creation.** Create a project and set source data.

**Task 420 Shapefile Creation.** Create GIS shapefiles for all stream reaches, existing data study, levees and significant areas for consideration. Capture effective reaches and determine mileage.

**Task 430 Community Information.** Populate Community Information fields – General Community Information, GIS Data Availability, and Community Contacts.

**Task 440 WISE Scoping Project Update.** Document the data collected and created using the WISE Scoping Tool.

**Task 450 Quality Control.** Provide quality control review of database by an independent reviewer.

**Deliverables:**

- WISE Scoping Project for each county

**Key Understandings:**

- P-MRNRD to coordinate with FEMA on WISE training and securing a copy of the WISE program.

**Data Provided by Others:**

- Provisional accredited levees (by FEMA)
- Database quality control review requirements (by FEMA)

**TASK SERIES 500 – ASSESSMENT OF EXISTING FLOOD DATA AND ENGINEERING ANALYSIS (AS ACTIVITY 4)**

**Task Objective:** Assess the existing flood data and engineering methodologies for anomalies.

**HDR Activities:** **Task 510 Data Assessment.** Research the existing FIS and determine if the existing data is adequate and reasonable for each stream reach evaluated. Assess existing flood data and engineering methodologies for anomalies. Determine if this assessment supports the community's perception of mapping needs.

**Task 520 Potential Obstacles to Project Completion Checklist.** Document the Potential Obstacles to Project Completion. Use the template in Appendix I,

Subsection I.1.7 of the Guidelines, for guidance.

**Task 530 WISE Scoping Project Update.** Document the evaluation and assessment of the existing flood data and engineering analysis in the WISE Scoping Tool.

**Deliverables:**

- Updates to WISE Scoping Project for each county

**Key Understandings:**

- Hydrologic and hydraulic modeling will not be conducted.
- Data assessment will be limited to the hours shown in the fee estimate.
- Validation effort will be based upon community responses and readily available information. If further analysis is required, it will be recommended under FEMA guidance. GIS tools will not be used to assess the existing flood data.
- It is assumed that the Floodplain Boundary Standard - Procedure Memorandum 38 does not apply for this project.
- FEMA background data not be reviewed in any detail.

**TASK SERIES 600 – CONCEPTUAL MAPPING PROJECT (AS ACTIVITY 5)**

**Task Objective:** Develop a conceptual mapping project for each county.

**HDR Activities:** **Task 610 Preliminary Conceptual Mapping Project.** The Preliminary Conceptual Mapping Project will be based on the results of Tasks 200 and 500. The scope will reflect the following information to the extent known. The project will consider:

- Levee information provided by FEMA
- Risk Class Assessment provided by FEMA
- Effective stream mileage by Zone Type
- Assessment of existing flood hazard data
- Data from Map Needs Update Support System Report
- Data from Flood Map Status Information System
- Base Map of Pre-Scoping Data
- Effective FIRM Panel Layout with Maps
- Proposed FIRM Panel Layout with Maps

The Scope of Project form in Appendix I, Subsection I.1.8 of the Guidelines, as amended, will be used to a guide to document the Conceptual Mapping Project.

The development of the Conceptual Mapping Project will include the following subtasks.

**Subtask 610.1 Background Research and Community Information.** Review and incorporate background research and community outreach information.

**Subtask 610.2 Effective FIS Data Salvaged.** Determine what effective FIS data can be used and/or transferred into new flood map project.

**Subtask 610.3 Data Gap Identification.** Identify other data needed to complete the Flood Map Project and sources of those data (e.g., base map, topography, cross sections).

**Subtask 610.4 Prioritization.** Establish priority levels for flooding sources to be analyzed and mapped.

**Subtask 610.5 DFIRM Formats.** Make DFIRM format decisions.

**Subtask 610.6 Conceptual Schedule and Cost Estimates.** Develop conceptual schedule and cost estimates. Include explanation of estimates and the component of the flood map project. A template for preparing time and cost estimates is provided in Appendix I, Subsection I.3.2 of the Guidelines, will be used as a guide.

**Task 620 Preliminary Conceptual Mapping Project Conference Call.** Conduct a conference call with the Project Management Team to review the Preliminary Conceptual Mapping Project. This call may include appropriate community representatives. The purpose of these conference calls is to balance the community's needs with available FEMA funding. A total of 4 conference calls are proposed. HDR will use the Draft Scope of Project Conference Call template located in Appendix I, Subsection I.1.9 of the Guidelines, as a guide.

**Task 630 Revised Conceptual Mapping Project.** Revise Preliminary Conceptual Mapping Project based upon comments received during the conference call.

**Deliverables:**

- Conference call agendas and minutes
- Preliminary and Revised Conceptual Mapping Project for each county

**Key Understandings:**

- P-MRNRD to coordinate Conceptual Mapping Project Conference Call.
- Separate conference calls will be made for each county with appropriate community representatives. No separate calls with each community will be conducted by HDR. P-MRNRD to follow-up with communities.
- HDR along with FEMA will prepare schedule and cost estimates for the 15 tasks identified in the MAS. Independent QA/QC tasks and Tasks 11-15 will be provided by FEMA.

**Data Provided by Others:**

- Levee information provided (by FEMA)
- Risk Class Assessment provided (by FEMA)

**TASK SERIES 700 – SCOPING MEETING (AS ACTIVITY 6 & 7)**

**Task Objective:** The purpose of this task is to inform communities on Scoping Project progress

**HDR Activities:** **Task 710 Meeting Preparation and Distribution.** HDR to prepare materials for Scoping Meeting including a letter invitation and an agenda. P-MRNRD to distribute copy of Revised Conceptual Mapping Project to communities before the Scoping Meeting. HDR to upload to the invitation letter, agenda and Revised Conceptual Mapping Project to the MIP. P-MRNRD to furnish a hardcopy of each invitation letter and agenda to the FEMA Project Officer for inclusion in the Docket File for each community.

**Task 720 Scoping Meetings.** HDR will work with P-MRNRD to finalize the approach and structure for the scoping meetings. It is anticipated that four separate county-wide meeting will be conducted. Prepare PowerPoint presentation of the results of the initial community contacts, assessment of the



engineering assessment, the conceptual project, community participation and the proposed schedule.

HDR will use the Scoping Meeting Agenda/Minutes template to document the topics to be discussed during the meeting. HDR will complete the checklist, attendance sheet, and agenda/minutes form, as appropriate. It is not anticipated that the WISE scoping tool will be used interactively at these meetings. It will be available to show the results of the pre-scoping efforts.

**Task 730 Post Meeting Activities.** HDR will document the meeting using the Scoping Meeting Agenda/Minutes template and P-MRNRD to distribute the meeting minutes. HDR to update the WISE Scoping Tools and upload attendance sheet and minutes to the MIP.

**Deliverables:**

- Invitation Letter
- Scoping Meeting Agenda/Minutes and Meeting Materials

**Key Understandings:**

- Scoping meetings will be conducted on a per county basis and attended by the community officials from each community at their respective county seat. Meeting will be conducted at the following locations:
  - Dakota County. P-MRNRD office located in Dakota City.
  - Washington County. P-MRNRD office located in Blair.
  - Douglas County. P-MRNRD headquarters office located at Chalco Hills.
  - Sarpy County. P-MRNRD headquarters office located at Chalco Hills.
- Scoping meetings will be attended by 2 HDR professionals.
- P-MRNRD will be responsible for arranging the logistics for the meetings and mailing all correspondence with the communities. HDR to provide “copy ready” text.

**TASK SERIES 800 – MAPPING NEEDS LIST AND DRAFT MAPPING ACTIVITY STATEMENT  
(AS ACTIVITY 9 & 10)**

**Task Objective:** Prioritize and finalize mapping needs and develop draft Mapping Activity Statement.

**HDR Activities:** **Task 810 Preliminary Mapping Needs List.** HDR will prepare a initial mapping needs list, present an overview of the initial research findings, and make initial selection of proposed methods for obtaining/producing flood data. Additions or changes to the needs list will be discussed. The listed needs will also be ranked in priority using the WISE Scoping Tool. The scoping maps (i.e., maps that define the scope, such as effective FIRM or USGS maps) prepared during the pre-Scoping Meeting activities may be used to assist in discussing and ranking these needs. In general, highest priority will be given to the following:

- Areas of high risk classification;
- Areas that have gone through the engineering data assessment process;
- Area of dense existing or anticipated development, including area where new road crossings have been constructed over the subject stream(s);
- Areas affected by flood-control structures and/or channelization;
- Areas where natural physical changes in the floodplain have been significant;

- Areas that were studied by approximate methods and unmapped areas, especially those with development pressure;
- Areas where the community has experienced flooding outside mapped floodplains, with severe damage to buildings and/or infrastructure;
- Areas where mapped flood hazards do not match those shown on contiguous FIRMs (unless those FIRMs are not considered to be accurate); and
- Areas where flood data (BFEs, floodplains, and regulatory floodways) are likely to be changed the most by a restudy.

**Task 820 Preliminary Mapping Needs List Conference Call.** Conduct a conference call with the Project Management Team to review the Preliminary Mapping Needs List. A total of four conference calls will be made.

**Task 830 Final Mapping Needs List.** Revise Preliminary Mapping Needs List based upon the Project Management Team comments. The WISE project file will distinguish the map needs that will be funded at this time and those needs deferred until a later date. HDR to upload to MIP.

**Task 840 Preliminary Mapping Activity Statements.** Use the MAS template and create a single Preliminary MAS for Dakota County and a single Preliminary MAS for Washington, Douglas, and Sarpy Counties. A template MAS is provided in Appendix I, Subsection I.3.1 of the FEMA's Guidelines. The Preliminary MASs will be submitted to FEMA for review.

**Task 850 Final Mapping Activity Statements.** Revise Preliminary Mapping Activity Statements based upon the Project Management Team comments.

**Task 860 Finalize Project Scope.** HDR to complete the "Finalize Project Scope" screen in the Manage Scoping Module in the MIP. P-MRNRD to draft letter notifying each community in writing of the final project scope and to distribute.

**Task 870 Time and Cost Estimate Preparation.** Based on the MAS, revise time and cost estimate prepared in Task 610. An explanation of how the estimated were derived will be documented in a report. A template for preparing time and cost estimates is provided in Appendix I, Subsection I.3.2 of the Guidelines, as amended.

**Deliverables:**

- Preliminary and Final Mapping Needs List for each county
- Preliminary and Final Mapping Activity Statement for Dakota County
- Preliminary and Final Mapping Activity Statement for Washington, Douglas, and Sarpy Counties
- Time and Cost Estimate for each county
- WISE Updates

**Key Understandings:**

- P-MRNRD to arrange conference calls.
- P-MRNRD to prepare and submit a community letter on the Final Project Scope to each community.
- HDR along with FEMA will prepare schedule and cost estimates for the 15 tasks identified in the MAS. Independent QA/QC tasks and Tasks 11-15 will be provided by FEMA.

**ATTACHMENT "A"**  
**PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT**  
**DPIRM COUNTY-WIDE SCOPING - DAKOTA, WASHINGTON, DOUGLAS, AND SAPPY COUNTIES**  
**FEE ESTIMATE - JANUARY 31, 2007**

TASKS	HDR Engineering, Inc. Estimated Hours/Costs										Expenses				Sub-Consultant Estimated		Est. Total Cost
	Project Principal	Project Manager	Sr. Eng/ Technical	Mid-Level Engineer	Tech Support	Chemical	Total Hours	Total Labor Cost	Tech. Fee	Printing	Travel	Misc.	Total Expenses [1]	Total HDR	GIS Workshop	Est. Total	
<b>TASK SERIES 100 - PROJECT MANAGEMENT</b>																	
Task 110		46	0	0	0	18	80	\$9,894	\$238	\$100		\$100	\$848	\$10,442	\$850	\$10,362	
Task 120																	
Subtask 120.1		0	2	0	0	4	22	\$2,542	\$90	\$18		\$181	\$2,738	\$2,703		\$2,703	
Subtask 120.2		0	4	0	0	4	12	\$1,248	\$49			\$106	\$1,297	\$1,297		\$1,297	
Subtask 120.3		0	0	0	0	0	0	\$0	\$0	\$29		\$106	\$135	\$135		\$135	
Estimated Task Hours Subtotal	0	64	0	0	0	20	112	\$12,688	\$547	\$160		\$394	\$13,189	\$850	\$12,339		
Estimated Task Cost Subtotal	0	\$4,210	\$1,270	\$2,200	\$0	\$2,010	\$12,688	\$18,853	\$847	\$160		\$394	\$19,454	\$850	\$18,604		
<b>TASK SERIES 200 - INITIAL COMMUNITY CONTACT (AS ACTIVITY 1)</b>																	
Task 210		4	0	0	0	2	0	\$710	\$28			\$28	\$738			\$738	
Task 220		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 230		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 240		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 250		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Hours Subtotal	0	4	0	0	0	2	0	\$710	\$28			\$28	\$738			\$738	
Estimated Task Cost Subtotal	0	\$4,049	\$1,812	\$4,849	\$3,344	\$847	\$18,853	\$18,853	\$847	\$160		\$394	\$19,454	\$850	\$18,604		
<b>TASK SERIES 300 - DATA COLLECTION AND PREPARATION (AS ACTIVITY 2 &amp; 3)</b>																	
Task 310		0	0	0	0	0	12	\$945	\$49			\$100	\$1,094	\$1,077		\$1,077	
Task 320		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 330		0	0	0	0	0	24	\$1,869	\$98			\$13,200	\$15,194	\$15,194		\$15,194	
Task 340		0	0	0	0	0	36	\$2,332	\$148			\$1,448	\$3,460	\$3,460		\$3,460	
Task 350		0	0	0	0	0	36	\$2,016	\$148			\$1,448	\$3,164	\$3,164		\$3,164	
Estimated Task Hours Subtotal	0	0	0	0	0	0	108	\$5,066	\$443			\$1,600	\$5,509	\$5,509		\$5,509	
Estimated Task Cost Subtotal	0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,066	\$443	\$0	\$0	\$1,600	\$6,669	\$1,600	\$5,069	\$8,274	
<b>TASK SERIES 400 - SETUP AND POPULATION OF WISE SCOPING TOOL PROJECT (AS ACTIVITY 3)</b>																	
Task 410		2	0	0	0	12	14	\$1,500	\$57			\$0	\$1,557	\$1,557		\$1,557	
Task 420		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 430		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 440		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 450		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Hours Subtotal	0	2	0	0	0	12	14	\$1,500	\$57			\$0	\$1,557	\$1,557		\$1,557	
Estimated Task Cost Subtotal	0	\$268	\$1,238	\$2,128	\$3,128	\$0	\$4	\$7,400	\$344	\$0	\$0	\$0	\$7,744	\$4,400	\$3,344	\$11,244	
<b>TASK SERIES 500 - ASSESSMENT OF EXISTING FLOOD DATA AND ENGINEERING ANALYSIS - (AS ACTIVITY 4)</b>																	
Task 510		4	16	120	40	180	180	\$17,628	\$738			\$238	\$18,604	\$18,604		\$18,604	
Task 520		4	4	16	4	24	32	\$3,360	\$131			\$131	\$3,491	\$3,491		\$3,491	
Task 530		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Hours Subtotal	0	8	20	140	44	228	228	\$22,000	\$835	\$0	\$0	\$338	\$23,443	\$0	\$23,443		
Estimated Task Cost Subtotal	0	\$7,792	\$5,140	\$14,740	\$3,808	\$348	\$28	\$22,000	\$835	\$0	\$0	\$338	\$23,443	\$0	\$23,443		
<b>TASK SERIES 600 - CONCEPTUAL MAPPING PROJECT (AS ACTIVITY 5)</b>																	
Task 610		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Subtask 610.1		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Subtask 610.2		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Subtask 610.3		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Subtask 610.4		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Subtask 610.5		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Subtask 610.6		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 620		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 630		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Hours Subtotal	0	0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Cost Subtotal	0	\$1,188	\$1,864	\$10,798	\$4,576	\$348	\$18	\$30,832	\$1,268	\$0	\$0	\$0	\$12,368	\$0	\$11,100	\$31,468	
<b>TASK SERIES 700 - SCOPING MEETING (AS ACTIVITY 6 &amp; 7)</b>																	
Task 710		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 720		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 730		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Hours Subtotal	0	0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Cost Subtotal	0	\$5,184	\$0	\$4,484	\$2,372	\$1,407	\$185	\$18,387	\$438	\$0	\$0	\$0	\$19,825	\$0	\$19,825	\$19,825	
<b>TASK SERIES 800 - MAPPING NEEDS LIST AND DRAFT MAPS (AS ACTIVITY 8 &amp; 9)</b>																	
Task 810		2	4	32	16	54	54	\$5,236	\$221			\$221	\$5,457	\$5,457		\$5,457	
Task 820		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 830		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 840		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 850		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 860		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Task 870		0	0	0	0	0	0	\$0	\$0			\$0	\$0			\$0	
Estimated Task Hours Subtotal	0	22	4	32	16	54	54	\$5,236	\$221			\$221	\$5,457	\$5,457		\$5,457	
Estimated Task Cost Subtotal	0	\$3,168	\$1,824	\$11,512	\$4,327	\$1,072	\$21	\$17,718	\$427	\$0	\$0	\$0	\$18,145	\$0	\$18,145	\$18,145	
<b>TOTAL COST (ROUNDED)</b>																	
		\$0	\$11,800	\$11,800	\$61,800	\$24,800	\$7,900	\$18,300	\$4,800	\$0	\$0	\$0	\$7,400	\$0	\$7,400	\$148,700	

[1] includes administrative fee for sub-consultants and expenses @ excludes technology fee

