Morrow County & City of Heppner, Oregon
Cooperating Technical Partners
Mapping Activity Statement

Mapping Activity Statement No. 1–Digital Flood Insurance Rate Map Production and Development of Updated Flood Hazard Data

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreements between the Federal Emergency Management Agency (FEMA and the Morrow County Planning Department (hereinafter referred to as Morrow County), dated April 28, 2004, and the City of Heppner, dated March 8, 2004, Mapping Activity Statement (MAS) No. 1 is as summarized below.

Section 1—Objective and Scope

The objective of the Flood Map Project documented in this MAS is to develop a new or updated Digital Flood Insurance Rate Map (DFIRM) and Flood Insurance Study (FIS) report for the cities of Heppner, Lexington and Ione and Morrow County. The DFIRM and FIS report shall be produced in the FEMA Countywide Format.

Existing GIS data and study needs for the community will be researched, obtained, organized and uploaded to the Management Information Portal (MIP). Scoping may be necessary to determine the final scope of work for this project. In addition, the Mapping Partners involved in this project will develop new and/or updated flood hazard data, as summarized in the table below

Table 1-1 Flooding Sources Studied for Flood map Project

Flooding Source	Reach Limits	Reach Length (Miles)	Study Type
Willow Creek	From 2.3 miles downstream of the corporate limits of Heppner upstream to Willow Creek Dam	4.0	Detailed
Balm Fork	Mouth to river mile 0.4 near Heppner	0.4	Detailed
Shobe Creek	Mouth to river mile 1.3 near Heppner	1.3	Detailed
Hinton Creek	Mouth to river mile 1.5 near Heppner	1.5	Detailed
Little Blackhorse Canyon	Mouth to river mile 1.2 near Heppner	1.2	Detailed

RECEIVED
OCT 25 20
FEMA - REG

Flooding Source	Reach Limits	Reach Length (Miles)	Study Type
Willow Creek	From 580' downstream of the corporate limits of Lexington to 460' upstream of the corporate limits	1.0	Detailed
Unnamed Canyon	Within corporate limits of Lexington	0.2	Detailed
Blackhorse Canyon	Within corporate limits of Lexington	0.6	Detailed
Willow Creek	Within corporate limits of Ione	1.1	Detailed
Rietman Creek	Within corporate limits of Ione	0.1	Detailed
Lorraine Canyon	Within corporate limits of Ione	0.2	Detailed

Within 30 days of this agreement, the CTP and the FEMA Study Contractor (SC), in coordination with the National Service Provider (NSP), shall input the scope of work into the FEMA Scoping tool. This includes information concerning community ordinance data, local GIS data availability and the flood reach data for existing and proposed conditions. The FEMA Scoping tool documentation can be found at: www.fema.gov/fhm/dl_mmfsg.shtmwebsite.com.

The CTP/SC shall notify FEMA and the NSP by e-mail of all meetings with community officials at least one week prior to the meeting. FEMA and/or the NSP may or may not attend the community meetings.

The following Mapping Partners shall complete this Flood Map Project:

- Cities of Heppner, Lexington and Ione;
- Morrow County;
- Michael Baker Jr., Inc., FEMA's National Service Provider; and
- WEST Consultants, Inc., the FEMA Study Contractor (SC) for this Flood Map Project.

The activities for this Flood Map Project, including required Quality Control (QC) reviews, and the Mapping Partners that will complete them are summarized in Table 1-2. In Table 1-2, Morrow County and the City of Heppner are identified as "CTP." All activities that are to be accomplished by Morrow County and the City of Heppner or their contractors, including contractors that may be selected after the project startup, are included in the "CTP" column. The sections of this MAS that follow Table 1-2 describe the specific activities, responsible Mapping Partner(s), FEMA standards that must be met, and resultant component(s).

Table 1-2. Planned Mapping Activities and Project Team Assignments

Activity	CTP	FEMA (NSP)	FEMA (SC)
Activity 1 – Pre-Scoping	X	X	
Activity 2 - Scoping	X	X	X
Activity 3 – Field Surveys and Reconnaissance			X
Activity 4 – Topographic Data Development			X
Activity 5 – QC Review of Topographic Data	X	X	
Activity 6 – Hydrologic Analyses			X
Activity 7 – QC Review of Hydrologic Analyses	X	X	
Activity 8 – Hydraulic Analyses			X
Activity 9 – QC Review of Hydraulic Analyses	X	X	
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)			X
Activity 11 – QC Review of Floodplain Mapping (Revised Areas)	X	X	
Activity 12 – Base Map Acquisition	X		X
Activity 13 – DFIRM Production (Non-Revised Areas)		X	
Activity 14 – DFIRM Production (Merging Revised and Non-Revised Information)		X	
Activity 14A – DFIRM Production (Application of FEMA Graphics and Database Specifications)		X	
Activity 15 – Preliminary DFIRM and FIS Report Distribution		X	
Activity 16 – Post-Preliminary Processing	X	X	X
Activity 17 – Outreach	X	X	X

FEMA has developed tools to assist in the development of the flood hazard data studies and the Digital Flood Insurance Rate Maps (DFIRMs). FEMA will, through the NSP, provide all CTPs and SCs access to and training in these tools. The tools available at this time include WISE software and the DFIRM production tools. The use of these tools will improve the Map Modernization and efficiency of all mapping partners.

If the SC chooses not to use these production tools, then the SC will be required to submit intermediate project data at major milestones in each Mapping Project in accordance with intermediate data specifications. Submitting data in these standards will aid in more efficient quality control reviews, data storage, archiving, and for future study updates.

The Intermediate Data Specifications submittals will be required at the following study milestones:

- Project Scoping (as specified)
- Terrain Data Processing Completed
- Field Survey Completed
- Hydrology Completed (draft and final)
- Hydraulics Completed (draft and final)
- Coastal Analysis Completed (draft and final)
- DFIRM Mapping (draft and preliminary)

Although the scoping activity is not specifically included in this table, CTPs performing scoping activities will be required to submit scoping related data in accordance with the intermediate data standards.

QC review activities will be performed by the NSP at the discretion of FEMA. Please note the NSP will also be performing periodic audits and overall study/project management to ensure study quality.

FEMA will be providing download/upload capability for intermediate data submittals through the MIP. Data submittals uploaded via the MIP, will include the same data required prior to the existence of the MIP.

Activity 1 – Pre-Scoping

Responsible Mapping Partner: NSP

Scope: Pre-Scoping or Mapping Needs Assessment forms the building block for the Scoping Phase. This task involves collecting data from a variety of sources including community surveys, other Federal and State Agencies, NFIP State Coordinators, Community Assistance Visits (CAV's) and FEMA archives. The NSP will evaluate the effective FIS report and FIRM maps to see if it needs to be updated. Lists of mapping needs will be obtained from the MNUSS database, community surveys and CAV's if available.

Data collection will include obtaining the best available base map materials (corporate limits, roads, orthophotos, etc) along with stream centerline files. The acquired data will be imported into the scoping tool and used during the Scoping Task. In the Scoping Tool all streams should have unique names, the limits of the effective FEMA studies should be identified, LOMC areas should be identified, and community requests should be identified. This task also includes populating the streamlines with existing pipeline and scoped studies currently underway.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The NSP shall make the following products available to FEMA:

- Copies of all digital files obtained and lists of files that may be available at a later date;
- Summary of the Community's needs
- Scoping Tool project files.

Information on the Scoping Tool can be downloaded from Information on the Scoping Tool can be downloaded from www.fema.gov/fhm/dl_mmfsg.shtmwebsite.com.

Activity 2 – Scoping
(Scoping activities have already been completed for this project)

Task 2-1 Project Management Team Participation

Responsible Mapping Partner: FEMA, CTP, NSP & SC

Scope: In cooperation with the FEMA Region, a Project Management Team will be established consisting of the FEMA SC, FEMA's regional engineer, Morrow County, the Cities of Heppner, Ione and Lexington, and other appropriate officials. The Project Management Team will be responsible for coordinating the activities of this project and completing all tasks identified in this Statement of Work.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables:

- A document listing the project management team along with their full contact information.
- Update of the Scoping Tool files to include the project management team and contact information.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-2 Initial Community Contact

Responsible Mapping Partner: FEMA, NSP & SC

Scope: Coordinate with the FEMA Regional Project Officer to contact Morrow County and the Cities of Heppner, Ione and Lexington and notify them that FEMA has selected them for a map update, and that they will be working with the communities to develop the project scope. Topics to be reviewed with the communities include:

- Purpose of the Flood Map Project (i.e., the update needs that have prompted the map update);
- The community's perception of its mapping needs;
- Target schedule for completing the project;
- Possibility of the community participating as a CTP (if it isn't already); and
- The community's engineering, planning, and Geographic Information System (GIS) capabilities.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A digital document reporting the results of the contact

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-3 Project Team Formation

Responsible Partner: FEMA, CTP, NSP & SC

Scope: The composition of the Project Team will be based on the needs of the project. The selected Project Team members will consist of the Project Management Team plus other mapping partners and NFIP stakeholders whose collective capabilities will provide all the necessary resources to successfully complete the Flood Map Project.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A document listing the project team along with their full contact information. Update of the Scoping Tool files to include the project team and contact information.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2–4 Preliminary Research Activities

Responsible Partner: NSP

Scope: Preliminary Research Activities can be separated into two categories—researching effective information and researching available data for the Flood Map Project. The following tasks shall be completed to research effective information: conduct a thorough Mapping Needs Assessment (unless one has already been conducted) as described in Task A; inventory the FEMA archives for effective FIRM panels, FBFW panels, FIS reports, and other flood hazard data or existing study data; summarize the information in the MNUSS database; summarize contiguous community agreement checks; review CAV and CAC files; and develop a "scoping map" and an overview of the results of the research.

The following tasks shall be completed to research available data for Flood Map Project: identify available base map information; identify available topographic data; identify available flood hazard data; and identify other available hydrologic and hydraulic information and data.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS. An Available Data Inventory template is provided in Appendix I, Subsection I.1.6 of the "Guidelines and Specifications for Flood Hazard Mapping Partners".

Deliverables: An Available Data Inventory digital document.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-5 Potential Obstacles

Responsible Partner: FEMA, NSP & SC

Scope: The Project Management Team shall identify potential obstacles in an effort to learn of any issues that could delay or prohibit the Flood Map Project. Some examples of potential obstacles to completing

the project in a timely fashion are the following: inability to address mapping needs adequately with available funding; difficulty coordinating community funding with FEMA funding; lack of an available base map meeting FEMA minimum specifications (described in Appendix K of the "Guidelines and Specifications for Flood Hazard Mapping Partners"); hydrologic and/or hydraulic issues; community concerns; reliance on other studies or data (e.g., topographic mapping) that will not be available within the project's scheduling constraints; needs not having as high a priority as originally identified; and other considerations (Federal/State/non-governmental organizations, programmatic, disaster-related, legal).

The Project Management Team shall explore potential issues on an ongoing basis. If potential obstacles are identified that could halt or significantly hinder the completion of the project, the Project Management Team shall evaluate all possible alternatives and develop an appropriate course of action as soon as practicable. This checklist is a "living" document that should be updated as necessary throughout the lifecycle of the project.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS. A Potential Obstacle to Project Completion Checklist template is provided in Appendix I, Subsection I.1.7 of the "Guidelines and Specifications for Flood Hazard Mapping Partners".

Deliverables: A Potential Obstacle to Project Completion Checklist in digital form.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-6 Scoping Meeting Activities

Responsible Partner: FEMA, NSP & SC

Scope: FEMA's regional engineer will co-ordinate, set-up, and hold the Scoping Meeting. This includes identifying a time, place, and all participants. The purpose of this meeting is to present the draft Scope of Project to the local officials (state, county and municipal) and coordinate on prioritization of identified study areas. FEMA, the NSP and the SC shall be responsible for compiling the necessary information for the meeting as contained on the Scoping Meeting Item Checklist. These items may include: FIS and FIRM for affected communities; USGS quads for the study area; best available community base map(s); effective FIRM summary; Available Data Inventory; Scoping Map; Draft Scope of Project; Scoping Meeting Agenda/Minutes form; Aerial photos/topographic mapping if available; existing drainage studies or other H&H data; Community master plan(s)/Drainage Master Plan(s); Zoning Maps; Street Maps; As-built plans; and Floodplain Ordinance(s).

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A completed Scoping Meeting Package with all necessary forms will be submitted to the FEMA Regional Project Officer, and the NSP one week after the Scoping Meeting.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-7 Mapping Needs List Prioritization and Finalization

Responsible Partner: FEMA, CTP, NSP & SC

Scope: The project management team shall review the initial mapping needs list, review the research findings, and make selections of proposed methods for obtaining/producing flood data. Any additions or

changes to the needs list shall be discussed with all members. All needs shall also be prioritized. In general, highest priority shall be given to the following areas: areas of dense existing or anticipated development, including areas where new road crossings have been constructed over stream(s); areas affected by flood-control structures and/or channelization; areas where natural physical changes in the floodplain have been significant (due to subsidence or extreme erosion, for example); 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.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The final mapping needs list along with priorities

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-8 Refinement of Draft Scope of Project

Responsible Partner: SC

Scope: Based on the discussion of mapping needs, the SC and FEMA Project Officer will finalize the areas to be included in the project (based on recommendations provided by the Project Team). Areas to be studied by detailed and approximate methods shall be identified. The following issues will be discussed and refined:

Review and Refinement of Flood Hazard Identification Methodologies:
The Project Team shall discuss the extent of riverine or coastal modeling required for the project. The research completed during the pre-Scoping Meeting phase shall be reviewed to determine the extent and applicability of previous modeling. Issues to be discussed include the following: models to be used from FEMA's approved models list; requirements for tie-ins to adjacent NFIP maps; areas where complex models might be required; coordination on Coastal Issues

Review of Proposed Paneling Scheme:

The scoping map shall be used to review the proposed paneling and scale scheme.

Review and Refinement of Base and Topographic Map Sources:
FEMA's base map specifications will be discussed. The discussion shall include the following topics: Base map source (i.e., locally developed data or DOQs meeting FEMA's minimum specifications) to be used for the project; Topographic and planimetric data sources; Coordination of countywide issues, if necessary; Horizontal and vertical datums; and acquisition of the base map, if digital files are not available.

Finalization of Map Production and Database Options:
The proposed DFIRM format and optional features and data for the enhanced DFIRM Database (e.g., GIS data for watershed boundaries, stream reach hydrologic network structure, land use data, soil data, digital

elevation certificates, photographs of structures) from the draft Scope of Project shall be reviewed, refined, and finalized.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A digital Draft Scope of Project document and update of the Scoping Tool files

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-9 Assignment of Project Team Member Tasks

Responsible Partner: FEMA, NSP & SC

Scope: The objective is for each Project Team member to have a clear understanding of his or her roles and responsibilities for the project. The Task Assignment and Scheduling Worksheet in *Guidelines and Specifications for Flood Hazard Mapping* Partners, Appendix I, Subsection I.2.5 can be used to make assignments and develop a schedule for the project. The Flood Mapping Project Process Flowchart, which is included in Appendix I, Subsection I.2.6 may also be useful.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A report documenting the assignments of the Project Team members in accordance with the delivery dates specified in task orders.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-10 Community Partnership Agreements

Responsible Partner: FEMA & CTP

Scope: Cities of Heppner, Ione and Lexington will be contacted and given the opportunity to sign a Memorandum of Agreement (MOA). MOA's will be obtained from as many affected communities as possible, within the Period of Performance of this Task Order. MOA's document the good faith efforts to collaboratively assess the community's needs, develop an appropriate Scope of Project, and develop and publish the resulting maps.

If these agreements cannot be signed at the Scoping meeting (for example, if they require city council approval), they are to be processed as soon as possible after the Scoping Meeting. MOA templates are provided in Appendix I, Subsections I.2.7 and I.2.8.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Signed Community Partner MOAs.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-11 Scoping Meeting Documentation

Responsible Partner: SC

Scope: The SC shall prepare and distribute the meeting minutes, which shall include a list of all the participants and their respective assignments for the project, as well as the overall schedule for the project as discussed at the Scoping Meeting. The overall project schedule shall establish the basis for each Project Team member's assignment(s). Project Team members shall review their task assignments and provide feedback or comments. All changes to the proposed scope, schedule, and task assignments shall be coordinated with the SC and the other team members

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A report documenting the Scoping Meeting including attendees sign-in list, scoping meeting minutes, project schedule summarizing prioritized needs within the community. Needs are prioritized so that areas of greatest need can be addressed with the available funding. Backup or supplemental information used in writing this report.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-12 Statement of Work or Mapping Activity Statement Revision

Responsible Partner: FEMA & NSP

Scope: FEMA and the NSP shall work closely with the Morrow County and the Cities of Heppner, Ione and Lexington to develop or revise the Mapping Activity Statement (MAS) based on task assignments made during the Scoping Meeting and any subsequent changes. FEMA Regional Project Officer, FEMA Regional Contracting Officer, and FEMA HQ Program Manager shall review and approve the SOW or MAS before it is distributed to the Project Team members. The MAS shall follow the template provided in Appendix I, Subsection I.3.1 of these Guidelines and Specifications for Flood Hazard Mapping Partners.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The deliverable shall be the revised Mapping Activity Statement

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-13 Time and Cost Estimate Preparation

Responsible Partner: SC

Scope: The SC shall be responsible for preparing time and cost estimates for all assigned tasks as well as coordinating and compiling time and cost estimates from other mapping partners. Based on the SOW or MAS, each mapping partner participating in the flood map project shall develop a time and cost estimate

for assigned tasks. As part of these estimates, Project Team members also shall establish a schedule for their portion of the work within the schedule from the Scoping Meeting.

The time and cost estimates shall be prepared in accordance with the template for preparing time and cost estimates is provided in Appendix I, Subsection I.3.2 of the ***Guidelines and Specifications for Flood Hazard Mapping Partners.***

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A report containing time and cost estimates for all tasks. Any backup or supplemental information used in writing this report will also be included.

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Task 2-14 Outreach, Coordination & Consultation

Responsible Partner: CTP

Scope: By proactively reaching out to all key stakeholders as early in the Flood Map Project as possible, the maps can be used to their full potential. The likelihood of appeals may also be reduced or eliminated. The CTP shall develop on Outreach plan by determining the best way to accomplish the following: establishing two-way communication to address the needs of, inform and obtain feedback from, the stakeholders; ensuring compliance with due process requirements; interacting with technical representatives to ensure production of accurate and up-to-date maps; enhancing ownership by communities; tracking, monitoring, and evaluating outreach activities and adjusting efforts according to ongoing feedback and evolving project needs.

The CTP shall also assist FEMA's Consultation Coordination Officer (CCO) in consultation and coordination efforts to address outreach activities to educate stakeholders about this Flood Map Project.

The CTP shall also assist FEMA in the coordination and outreach with local officials by helping them contact the local officials and the State NFIP Coordinator and inform them that their community has been selected for a possible study. They shall also work with FEMA and local officials to inform the community and request information through meetings and other consultation activities.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: An Outreach plan document along with documentation of Outreach, Consultation and Coordination activities that have already occurred

Appendix I may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsai.pdf.

Activity 3 - Field Surveys and Reconnaissance

Responsible Mapping Partner: SC

Scope: To supplement any field reconnaissance conducted during the Project Scoping phase of this Flood Map Project, the SC shall conduct a detailed field reconnaissance of the specified study areas. The purpose of this reconnaissance is to determine conditions along the floodplain(s), types and numbers of hydraulic and/or flood-control structures, apparent maintenance status of existing hydraulic structures, locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses. In addition to the initial field reconnaissance, the SC shall conduct field surveys of Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek and Lorraine Canyon, obtaining channel and floodplain cross sections, identifying or establishing Temporary Bench Marks, and obtaining the physical dimensions of hydraulic and flood-control structures. The SC also shall coordinate with the Mapping Partners that are collecting topographic data under Activity 4.

Standards: All work under Activity 3 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the SC shall make the following products available to FEMA:

- A report summarizing the findings of the field reconnaissance;
- Maps and drawings that provide the detailed survey results;
- A survey notebook containing cross-sections and structural data; and
- NSP Format Survey Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Intermediate Data Specifications can be downloaded from http://www.fema.gov/fhm/gs_main.shtm . As of the date of this MAS, the Intermediate Data Specifications are dated April 2004 (Preliminary Draft).

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 4 - Topographic Data Development

Responsible Mapping Partner: SC

Scope: To supplement the field surveys conducted under Activity 1, the SC shall obtain additional topographic data of the overbank areas of flooding sources to delineate floodplain boundaries. Specifically, the SC shall generate new topographic data for all of the flooding sources listed in Table 1-1 using new analytical photogrammetry. Contour interval and/or accuracy for the topographic data shall be selected based on the current FEMA requirements as documented in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

For this activity, the SC also shall develop topographic maps and/or Digital Elevation Models (DEMs) for the subject flooding sources using the data collected under Activity 3. Unless directed to do otherwise by FEMA, all new topographic data must be developed and submitted in digital format. Upon completion of topographic data collection and processing for all of the flooding sources listed in Table 1-1, the SC shall submit these data to the NSP for an QC review under Activity 5. The SC shall address all concerns or questions regarding Activity 4 that are raised by the NSP during the QC review under Activity 5.

Standards: All work under Activity 4 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the SC shall make the following products available to FEMA:

- Hardcopy topographic maps;
- Report summarizing methodology and results;
- Mass points and breaklines data on CD-ROM;
- Digital work map with contours;
- Checkpoint analyses to assess the accuracy of data including Root Mean Square Error (RMSE) calculations to support vertical accuracy;
- Identification of remote-sensing data voids and methods used to supplement data voids;
- National Geodetic Survey (NGS) data sheets for Network Control Points used to control remote sensing and ground surveys;
- Metadata compliant with Federal Geographic Data Committee standards; and
- NSP Format Terrain Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 5 - QC Review of Topographic Data

Responsible Mapping Partner: CTP & NSP

Scope: The NSP and CTP shall review the mapping data generated by the SC under Activity 4 to ensure that these data are consistent with FEMA standards as well as standard engineering practice and are sufficient to prepare or revise the FIRM.

Standards: All work under Activity 5 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QC review; and
- Recommendations to resolve any problems that arise as a result of the QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 6 – Hydrologic Analyses

Responsible Mapping Partner: SC

Scope: The SC shall evaluate and update the hydrologic analysis conducted for the previous FIS. More recent streamflow data will be used to adjust the plotting positions of winter and thunderstorm events. The HEC-HMS models developed by the SC for the Portland District, Corps of Engineers, to study basin hydrology upstream of Heppner, will be used to simulate thunderstorm runoff (validated using the 1903 event in Balm Fork) to add information for Shobe Creek and Hinton Creek. The most recent regression equations for the area will be used in combination with the existing HMS models to develop flood peaks for each stream. The regression equations and the HMS model may be modified to reflect more up to date information obtained by the SC or provided by the CTP. If another hydrologic approach is chosen by the SC, the alternative approach must be reviewed and approved by FEMA, the NSP, the City of Heppner and Morrow County.

The SC shall calculate peak flood discharges for the 10-, 2-, 1- and 0.2-percent-annual-chance storm events for Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek, Little Blackhorse Canyon, Balm Fork and Lorraine Canyon. Flows for Willow Creek downstream of its confluence with Rhea Creek will include the effect of flows originating in the Rhea Creek drainage. In addition, the SC shall address all concerns or questions regarding Activity 6 that are raised by the NSP during the QC review performed under Activity 7.

Standards: All work under Activity 6 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydrologic modeling, the SC shall submit the results to the NSP for an QC review as described in Activity 7. In accordance with the TSDN format requirements described in

Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the SC shall make the following products available to FEMA for the flooding sources studied by detailed methods:

- Digital copies of all hydrologic modeling (input and output) files for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events;
- Digital and hardcopy versions of the Summary of Discharges Table presenting discharge data for the flooding sources for which hydrologic analyses were performed;
- Digital and hardcopy versions of draft text describing the hydrologic analyses for inclusion in the FIS report;
- Digital and hardcopy versions of all backup data used in the analysis, including work maps; and
- NSP Format Hydrology Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 7 - QC Review of Hydrologic Analyses

Responsible Mapping Partner: CTP & NSP

Scope: The NSP and CTP shall review the technical, scientific, and other information submitted by the SC under Activity 6 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practices and are sufficient to prepare the DFIRM. This work shall include, at a minimum, the activities summarized below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review shall focus on the following:
  - Use of acceptable models;
  - Use of appropriate methodology(ies);
  - Correctly applied methodology(ies)/model(s), including QC of input parameters;
  - Comparison with gage data and/or regression equations, if appropriate; and
  - Comparison with discharges for contiguous reaches or flooding sources.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydrologic modeling review. All supporting data should be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.

Standards: All work under Activity 7 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QC review; and
- Recommendations to resolve any problems that arise as a result of the QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 8 – Hydraulic Analyses

Responsible Mapping Partner: SC

Scope: The SC shall perform hydraulic analyses for approximately 11.6 miles of Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek, Little Blackhorse Canyon, Balm Fork and Lorraine Canyon. The hydraulic modeling shall include the 10-, 2-, 1- and 0.2-percent-annual-chance storm events based on peak discharges computed under Activity 6. The SC shall perform the hydraulic analyses using the HEC-RAS standard step-backwater model. If another hydraulic model is recommended by the SC, the alternative model must be reviewed and approved by FEMA, the NSP, and Morrow County.

The SC shall use cross-section and field data collected under Activity 3 to perform the hydraulic analyses. The hydraulic analyses shall be used to establish flood elevations and a regulatory floodway for Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek, Little Blackhorse Canyon, Balm Fork and Lorraine Canyon. The SC shall use the FEMA HEC-RAS checking program to check the reasonableness of the hydraulic analyses. To facilitate the QC review under Activity 9, the SC shall provide explanations for unresolved messages from the CHECK-RAS program, as appropriate. In addition, the SC shall address all concerns or questions regarding Activity 8 that are raised by the NSP during the QC review under Activity 9.

Important note for GIS-based (automated) modeling: If pre- and post- processing tools are used with a FEMA approved model, no review of these "tools" is necessary. Pre- and post-processing software tools, when used in conjunction with hydraulic models that are not currently on FEMA's accepted model list, must be reviewed and approved by FEMA before performing work under this Activity. Similarly, if software tools were used to perform modeling routines that emulate a model on FEMA's accepted model list, however, this source code has been rewritten to perform these tasks, these models also must be submitted to FEMA for review and approval in accordance with the conditions outlined in Subparagraph 65.6(a)(6)(i), (ii), and (iii) of the NFIP regulations.

Standards: All work under Activity 8 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydraulic modeling, the SC shall submit the results to the NSP for an QC review under Activity 9. In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the SC shall make the following products available to FEMA:

- Digital profiles of the 10-, 2-, 1- and 0.2-percent-annual-chance water-surface elevations representing existing conditions using FEMA's RASPLOT program or similar software;
- Digital and hardcopy versions of the Floodway Data Table for each subject flooding source that is in a format compatible with the DFIRM database;

- Digital and hardcopy versions of all hydraulic modeling (input and output) files;
- Digital and hardcopy versions of a table showing the range of Manning's "n" values used;
- Explanations for unresolved messages from the CHECK-RAS program, as appropriate;
- Digital and hardcopy versions of all backup data used in the analyses;
- Digital and hardcopy versions of draft text describing the hydraulic analyses for inclusion in the FIS report; and
- NSP Format Hydraulic Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

For GIS-based modeling, products include all input and output data, intermediate data processing products, GIS data layers, and final products.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 9 - QC Review of Hydraulic Analyses

Responsible Mapping Partner: CTP & NSP

Scope: The NSP and CTP shall review the technical, scientific, and other information submitted by the SC under Activity 8 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practices and are sufficient to prepare the DFIRM. This QC review of the hydraulic analyses shall include, at a minimum, the activities summarized below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation as appropriate. The technical review shall focus on the following:
  - Use of acceptable models;
  - Starting water-surface elevations;
  - Cross section geometry;
  - Manning's "n" values and expansion/contraction coefficients;
  - Bridge and culvert modeling;
  - Discharges;
  - Regulatory floodway computation methods; and
  - Tie-in to upstream and downstream non-revised profiles.
- Use the CHECK-RAS program to flag potential problems and focus review efforts.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 9 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QC review; and
- Recommendations to resolve any problems that arise as a result of the QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 10 – Floodplain Mapping (Detailed Riverine Analysis)

Responsible Mapping Partner: SC

Scope: The SC shall delineate the 1- and 0.2-percent-annual-chance floodplain boundaries and the regulatory floodway boundaries for the reaches of Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek, Little Blackhorse Canyon, Balm Fork and Lorraine Canyon as identified in Table 1-1. The SC shall incorporate all revised hydraulic modeling and shall use the newly acquired topographic data developed under Activity 4 to delineate the floodplain and regulatory floodway boundaries on a digital work map. The digital work map should also show Willow Creek Reservoir and dam, as they were not shown on the original FIRM, although the effects of such structures were previously reflected. The SC shall incorporate the results of all effective Letters of Map Change (LOMCs) within the revised areas as appropriate. In addition, the SC shall address all concerns or questions regarding Activity 10 that are raised by the NSP during the QC review under Activity 11.

Standards: All work under Activity 10 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of floodplain mapping for Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek, Little Blackhorse Canyon, Balm Fork and Lorraine Canyon, the SC shall submit the results to the NSP for an QC review under Activity 11. In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the SC shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, Base Flood Elevations (BFEs), flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale;

- A Summary Report that describes and provides the results of all automated or manual QC review steps taken during the preparation of the DFIRM;
- Any backup or supplemental information used in the mapping required for the QC review under Activity 9; and
- Intermediate Format Mapping Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 11 - QC Review of Floodplain Mapping (Revised Areas)

Responsible Mapping Partner: CTP & NSP

Scope: The NSP shall review the floodplain work maps submitted by the SC under Activity 10 to ensure that that the results of the analyses performed are accurately represented, the work maps are consistent with current FEMA standards, and the work maps are sufficient to prepare the DFIRM. This work shall include, at a minimum, the following activities:

- Review the cross sections for proper location and orientation on the work maps and agreement with the Floodway Data Table.
- Review the BFEs shown on the work maps for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths shown on the work maps for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries shown on the work maps for agreement with the flood elevations shown in the Floodway Data Table and the contour lines and other topographic information shown on the work maps.
- Review the floodplain widths at cross sections as shown on the work maps to ensure they match the widths shown on the Floodway Data Table.
- Review the floodplain boundaries as shown on the work maps to ensure they match the Flood Profiles.
- Review the flood insurance risk zone designations as shown on the work maps to ensure they are properly labeled.
- Review the DFIRM mapping files to ensure they were prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- Review the metadata files describing the DFIRM data to ensure they include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 11 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Activity 13 - DFIRM Production (Non-Revised Areas)

Responsible Mapping Partner: NSP

Scope: For all flooding sources except the reaches of Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek and Lorraine Canyon that will have updated flood hazard data developed under Activities 1 through 12, the NSP shall convert the effective FIRM/FBFM panels to digital format in accordance with the FEMA DFIRM specifications. The NSP shall use the base map acquired under Activity 12 for the conversion. Also noted should be the incorporation of Willow Creek Reservoir and dam into the DFIRM, as they were not shown on the original FIRM. The scope of Activity 13 covers the digitization of 12 FIRM panels and 12 FBFM panels. The NSP also shall incorporate LOMCs issued by FEMA since the current effective FIRM for each affected community.

The digital flood theme for Willow Creek, Shobe Creek, Hinton Creek, "Unnamed Creek" (in Lexington), Blackhorse Canyon, Rietman Creek, Little Blackhorse Canyon, Balm Fork and Lorraine Canyon shall not be digitized as part of Activity 13. Rather, the NSP shall leave this as a "hole" in the digital flood theme that will be filled in as part of Activity 14 using digital flood data developed under Activity 10.

Standards: All work under Activity 13 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QC review steps taken during the preparation of the DFIRM.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 14 – DFIRM Production (Merging Revised and Non-Revised Information)

Responsible Mapping Partner: NSP

Scope: Upon completion of the floodplain mapping activities for the revised area (Activity 10) and the DFIRM production for non-revised areas (Activity 13), the NSP shall merge the digital floodplain data into a single, updated DFIRM. This work is to include tie-in of flood hazard information with contiguous communities that were not studied as part of the Flood Map Project documented in this MAS. Also, the NSP shall tie in the revised and non-revised Flood Profiles, floodplain boundaries, and regulatory floodway boundaries. The NSP shall coordinate with FEMA, Morrow County, the City of Heppner, and the SC, as necessary, to resolve any potential tie-in issues.

Standards: All work under Activity 14 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QC review steps taken during the preparation of the DFIRM

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 14A – DFIRM Production (Application of DFIRM Graphics and Database Specifications)

Responsible Mapping Partner: NSP

Scope: The NSP shall apply the final FEMA DFIRM graphics and database specifications to the DFIRM files produced under Activity 14A. This work shall include adding all required annotation, line patterns, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user). The NSP also shall apply the current FEMA DFIRM specifications to the database files. The NSP shall coordinate with FEMA, Morrow County, the City of Heppner and the SC, as necessary, to resolve any problems that are identified during Activity 14A.

Standards: All work under Activity shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available to FEMA:

- DFIRM panels showing 1- and 0.2-percent-annual-chance floodplain boundary delineations, cross sections, BFEs, flood insurance risk zone designation labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- DFIRM database files, as appropriate, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all effective and revised flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QC review steps taken during the preparation of the DFIRM.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 15 – Preliminary DFIRM and FIS Report Distribution

Responsible Mapping Partner: NSP

Scope: Activity 15 consists of the final preparation, review, and distribution of the Preliminary copies of the Countywide DFIRM and FIS report for community official and general public review and comment. The activities to be performed are summarized below.

FIS Report Preparation: The NSP shall prepare the FIS report in the FEMA Countywide Format following the FEMA requirements specified in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Preliminary Transmittal Letter Preparation. The NSP shall prepare letters to transmit the Preliminary copies of the DFIRM and FIS report and related enclosures to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Final QC Review of Preliminary DFIRM and FIS Report: The NSP shall perform a final QC review of the Preliminary DFIRM and FIS report, including all data tables, Flood Profiles, and other components of the FIS report. The QC review procedures shall be consistent with the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Discrepancy Resolution: The NSP shall work with FEMA, the SC, Morrow County and the City of Heppner to resolve discrepancies identified during the final QC review.

Distribution of Preliminary DFIRM and FIS Report: The NSP shall distribute the Preliminary copies of the DFIRM and FIS report to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

News Release Preparation: The NSP shall prepare news release notifications of BFE changes for all affected communities if appropriate and perform QC reviews of the notifications for accuracy and compliance with FEMA format requirements. The NSP shall file the notifications for later submittal to FEMA for review.

Preliminary Summary of Map Actions (SOMA) Preparation: The NSP shall prepare Preliminary SOMAs for all affected communities if appropriate. The SOMA shall list pertinent information regarding LOMCs that will be affected by the issuance of the DFIRM (i.e., superseded, incorporated, revalidated).

Standards: All work under Activity 15 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the NSP shall make the following products available when requested by FEMA:

- Preliminary transmittal letters shall be prepared. These letters and any additional letters requested by FEMA shall be prepared in accordance with the current version of the FEMA *Document Control Procedures Manual.*
- Preliminary copies of the DFIRM and FIS report, including all updated data tables and Flood Profiles, shall be mailed to the community Chief Executive Officer (CEO) and floodplain administrator of each community in Morrow County, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.
- Preliminary SOMAs, prepared in accordance with FEMA requirements, shall be mailed with the Preliminary copies of the DFIRM and FIS report when appropriate.
- Revised DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM;
- Revised DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners,* shall be provided on CD-ROM.
- Revised metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners,* shall be provided on CD-ROM.
- A Summary Report that describes and provides the results of all automated or manual QC review steps taken during the preparation of the DFIRM.

Activity 16 - Post-Preliminary Processing

Responsible Mapping Partners: Morrow County, the Cities of Heppner, Ione & Lexington, the SC, and the NSP

Scope: Activity 16 consists of finalizing the DFIRM and FIS report after the Preliminary copies of the DFIRM and FIS report have been issued for public review and comment. The activities to be performed are summarized below.

Initiation of Statutory 90-Day Appeal Period: When required, upon completion of a 30-day community comment period and/or final coordination meeting with the community, the NSP shall arrange for and verify that the following activities are completed in accordance with the current version of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*:

- Proposed BFE determination letters are sent to the community CEOs and floodplain administrators.
- News release notifications of BFE changes are published in prominent newspapers with local circulation; and
- The appropriate notices (Proposed Rules) are published in the *Federal Register*.

Resolution of Appeals and Protests: Morrow County, the Cities of Heppner, Ione & Lexington, the SC, and the NSP shall support FEMA in reviewing and resolving appeals and protests received during the 90-day appeal period. For each appeal and protest, the following activities shall be conducted as appropriate:

- Initial processing and acknowledgment of the submittal;
- Technical review of the submittal;
- Preparation of letters requesting additional supporting data;
- Performance of revised analyses; and
- Preparation of the draft resolution letter and revised DFIRM and FIS report materials for FEMA review.

The NSP shall mail all associated correspondence upon authorization by FEMA.

Preparation of Special Correspondence: Morrow County, the City of Heppner, the SC, and the NSP shall support FEMA in responding to comments not received within the 90-day appeal period (referred to as "special correspondence"), including drafting responses for FEMA review when appropriate. The NSP also shall mail the final correspondence (and enclosures if appropriate) and distribute appropriate copies of the correspondence and enclosures upon receipt of authorization from FEMA.

Revision of DFIRM and FIS Report: If necessary, Morrow County, the City of Heppner, the SC, and the NSP shall work together to revise the DFIRM and FIS report at the direction of the FEMA Regional

Project Officer and distribute Revised Preliminary copies of the DFIRM and FIS report to the CEO and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Final SOMA Preparation: The NSP shall prepare Final SOMAs for the affected communities as appropriate.

Processing of Letters of Final Determination: The NSP shall work with FEMA to establish the effective date for the DFIRM and FIS report, and shall prepare a Letter of Final Determination (LFD) for each affected community for FEMA review in accordance with the FEMA *Document Control Procedures Manual*. The NSP also shall mail the final signed LFDs and enclosures (including the Final SOMA and the Final Rule for publication in the *Federal Register*, when appropriate) and distribute appropriate copies of the signed LFDs and enclosures upon receipt of authorization from FEMA.

Processing of Final DFIRM and FIS Report for Printing: The NSP shall prepare final reproduction materials for the DFIRM and FIS report and provide these materials to the FEMA Map Service Center for printing by the U.S. Government Printing Office. The NSP also shall prepare the appropriate paperwork to accompany the DFIRM and FIS report (including Print Processing Worksheet, Printing Requisition Forms, and Community Map Actions Form) and transmittal letters to the community CEOs.

Revalidation Letter Processing: The NSP, when appropriate, shall prepare and distribute letters to the community CEOs and floodplain administrators to notify the affected communities about LOMCs for which determinations will remain in effect after the DFIRM and FIS report become effective.

Archiving Data: The NSP shall ensure that technical and administrative support data are packaged in the FEMA-required TSDN format and stored properly in the library archives.

Standards: All work under Activity 16 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the requirements provided in the current versions of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*, Morrow County, the City of Heppner, the SC, and/or the NSP shall make the following products available to FEMA:

- Documentation that the news releases were published in accordance with FEMA requirements;
- Documentation that the appropriate *Federal Register* notices (Proposed and Final Rules) were published in accordance with FEMA requirements;
- Draft and final Special Correspondence (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final Appeal and Protest acknowledgment, additional data, and resolution letters (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final LFDs (and all associated enclosures, backup data, and other related information) for FEMA review and signature;
- Final SOMAs, as appropriate;

- DFIRM negatives and final FIS report materials, including all updated data tables and Flood Profiles;
- Paperwork for the final DFIRM and FIS report materials;
- Transmittal letters for the printed DFIRM and FIS report;
- LOMC Revalidation Letters, as appropriate; and
- Complete, organized archived technical and administrative support data.

Activity 17—Outreach

Responsible Entity: Morrow County and the Cities of Heppner, Ione and Lexington, and the NSP.

Scope: The outreach activities for a Flood Map Project can best be understood as a process that begins during the Project Scoping phase and continues through the Map Production and Post-preliminary phases. A regulatory overview of required activities is followed by a description of tools that can be used in working with stakeholders to keep them informed and to solicit their input.

The overarching goal for conducting outreach is to create a climate of understanding and ownership of the mapping process at the State and local levels. Well-planned outreach activities can reduce political stress, confrontation in the media, and public controversy, which can arise from lack of information, misunderstanding, or misinformation. These outreach activities also can assist FEMA and other members of the Project Team in responding to congressional inquiries.

By proactively reaching out to all key stakeholders as early in the Flood Map Project as possible, the maps can be used to their full potential. The likelihood of appeals may also be reduced or eliminated. Specific Contractor activities shall include, but are not limited to:

- Establishing two-way communication to address the needs of, inform and obtain feedback from, the stakeholders;
- Ensuring compliance with due process requirements;
- Interacting with technical representatives to ensure production of accurate and up-to-date maps;
- Enhancing ownership by communities;
- Tracking, monitoring, and evaluating outreach activities and adjusting efforts according to ongoing feedback and evolving project needs.

Standards: All work conducted under this task shall conform to the standards specified for this task in Section 5, "Applicable Standards" of this SOW. In the event of any contradictions between the SOW and the standards, the standards shall control.

Deliverables: Upon Completion of Outreach and Coordination the Contractor shall deliver the following to the FEMA Regional Project Officer in accordance with the delivery dates specified in task orders:

- A report detailing outreach and coordination activities

- Backup or supplemental information used in writing this report

Section 2—Technical and Administrative Support Data Submittal

The Project Team members for this Flood Map Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below.

All supporting documentation for the activities in this MAS shall be submitted in the TSDN format in accordance with Appendix M of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners*, dated April 2003. Appendix M is available for viewing or download on the FEMA Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf. Table 2-1 indicates the sections of the TSDN that apply to each mapping activity.

Table 2-1. Mapping Activities and Applicable TSDN Sections

Section of TSDN	Activities																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14, 14A	15	16	17
General Documentation																	
Special Problem Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Telephone Conversation Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Engineering Analyses																	
Hydrologic Analyses			X			X	X	X	X	X	X						
Hydraulic Analyses			X			X	X	X	X	X	X						
Key to Cross-Section Labeling			X			X	X	X	X	X	X						
Draft FIS Report						X	X	X	X								
Mapping Information	X	X		X	X					X	X	X	X	X	X	X	
Miscellaneous Reference Information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the responsible Mapping Partner shall complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR is to describe the issue and propose possible resolutions. (For additional information on SPRs, refer to Appendix M, Subsection M.2.1.1 of *Guidelines and Specifications for Flood Hazard Mapping Partners*.)

Additionally, the NSP shall collect and maintain a set of products for all Activities and shall compile a comprehensive TSDN for the entire project.

Section 3—Period of Performance

The mapping activities documented in this MAS will begin on May 1, 2004, and will be completed no later than December 1, 2006. The mapping activities may be terminated at the option of FEMA, Morrow County or the City of Heppner in accordance with the provisions of the respective Partnership Agreements dated April 28, 2004 and March 8, 2004.

Section 4—Funding/Cost-Sharing

FEMA is providing funding, i to fund the activities to be completed by the SC for this project and fund the activities to be completed by the NSP for this Flood Map Project. Morrow County and the City of Heppner are providing digital GIS data for this Flood Map Project.

Section 5—Standards

The standards relevant to this Mapping Activity Statement are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* to be referenced for each mapping activity are summarized in Table 5-2.

These Guidelines are available for viewing or download from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/fhm/dl_cgs.shtm.

In addition, intermediate data submission standards referenced in the previous sections are to be applied to the project for the data formats to be submitted to FEMA.

Table 5-1. Applicable Standards for Project Activities

Applicable Standards	1	2	3	4	5	6	7	8	9	10	11	12	13	14, 14A	15	16
Guidelines and Specifications for Flood Hazard Mapping Partners, April 2003	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
American Congress on Surveying and Mapping Procedures			X	X	X											
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-5810), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997			X	X	X											
Engineer Manual 1110-1-1000, *Photogrammetric Mapping* (USACE), July 1, 2002			X	X	X											
Engineer Manual 1110-2-1003, *Hydrographic Surveys* (USACE), January 1, 2002			X		X											
"Numerical Models Accepted by FEMA for NFIP Usage," Updated April 2003						X	X	X	X							
Content Standard for Digital Geospatial Metadata (Federal Geographic Data Committee), 1998				X	X					X	X	X	X	X	X	X
Document Control Procedures Manual, December 2000															X	X

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
1	Pre-Scoping	
2	Scoping	
3	Field Surveys and Reconnaissance	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.4, A.5, A.6, A.7, and A.8 Appendix F, Section F.3 Appendices B, C, and M
4	Topographic Data Development	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.2, A.3, A.7, and A.8 Appendix M
5	QC Review of Topographic Data	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.1) Appendix A, Sections A.2, A.3, A.7 (specifically Subsection A.7.5), and A.8 (specifically Subsection A.8.6) Appendix M
6	Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 Appendix C, Sections C.1 and C.7 Appendices E, F, G, H, and M