



Nebraska Department of Natural Resources Cooperating Technical Partners Mapping Activity Statement

Statement #14 –Digital Flood Insurance Rate Map (DFIRM) Production and Development of Updated Flood Data for Boyd, Franklin, Gosper, Johnson, Knox, Pawnee, and Perkins Counties, Nebraska

In accordance with the Cooperating Technical Partners (CTP) Memorandum of Agreement dated August 16, 1999, between Nebraska Department of Natural Resources (NDNR) and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement#14 is as follows:

1. **Statement Objective and Scope:** The objective of this Mapping Activity for flooding sources with drainage areas greater than one square mile is to develop new or updated Digital Flood Insurance Rate Maps (DFIRMs) and Flood Insurance Study (FIS) report(s) for the following:
 - a) Boyd County - Unincorporated and Incorporated Areas, which include
 - Anoka, Village of
 - Bristow, Village of
 - Butte, Village of
 - Gross, Village of
 - Lynch, Village of
 - Monowi, Village of
 - Naper, Village of, and
 - Spencer, Village of
 - b) Franklin County - Unincorporated and Incorporated Areas, which include
 - Bloomington, Village of
 - Campbell, Village of
 - Franklin, City of
 - Hildreth, Village of
 - Naponee, Village of
 - Riverton, Village of, and
 - Upland, Village of
 - c) Gosper County - Unincorporated and Incorporated Areas, which include
 - Elwood, Village of, and
 - Smithfield, Village of
 - d) Johnson County - Unincorporated and Incorporated Areas, which include
 - Cook, Village of
 - Crab Orchard, Village of
 - Elk Creek, Village of
 - Helena Precinct
 - Sterling, Village of, and
 - Tecumseh, City of
 - e) Knox County - Unincorporated and Incorporated Areas, which include
 - Bazile Mills, Village of
 - Bloomfield, City of
 - Center, Village of
 - Creighton, City of
 - Crofton, Village of
 - Niobrara, City of
 - Santee, Village of
 - Verdel, Village of

- Verdigre, Village of
 - Wausa, Village of, and
 - Winnetoon, Village of
- f) Pawnee County - Unincorporated and Incorporated Areas, which include
- Burchard, Village of
 - Du Bois, Village of
 - Lewiston, Village of
 - Pawnee City, City of
 - Steinauer, Village of, and
 - Table Rock, Village of
- g) Perkins County - Unincorporated and Incorporated Areas, which include
- Elsie, Village of
 - Grinton, Village of
 - Grant, City of
 - Madrid, Village of, and
 - Venango, Village of.

The FIS and DFIRMs will be produced in county-wide DFIRM format.

Additionally, this project will include developing new and/or updated flood hazard data, as summarized in the following table:

Flooding Source	Reach Limits	Reach Length	Detailed Riverine		Detailed Coastal			Redelin-eation of SFHAs Using Effective Profiles	Refine/ Establish Zone A
			Hydrology	Hydraulics	Stillwater	wave Height	Wave Runup		
All streams with drainage greater than 1 square mile									yes

This project will be completed by the Mapping Partners:

1. Nebraska Dept. of Natural Resources, and
2. PBS&J.

The activities, and who will complete them, are summarized in the table below.

The following sections describe the specific mapping activities associated with this mapping project. Each activity description identifies the responsible Mapping Partners, the Standards that must be met, and resultant map component.

Activity	CTP (NDNR)	MCC (PBS&J)	SC
Activity 1 – Field Surveys and Reconnaissance	X		
Activity 2 – Topographic Data Development	X		
Activity 3 – Independent QA/QC of Topographic Data		n/a	
Activity 4 – Hydrology	X		
Activity 5 – Independent QA/QC of Hydrology		n/a	
Activity 6 – Hydraulics	X		
Activity 7 – Independent QA/QC of Hydraulics		n/a	
Activity 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)		n/a	
Activity 8A – Floodplain Mapping (Redelineation Using Effective Profiles)		n/a	
Activity 8B – Floodplain Mapping (Refine/Establish Zone A)	X		
Activity 9 – Independent QA/QC of Floodplain Mapping		X	
Activity 10 – Base Map Acquisition and Preparation	X		
Activity 11 – DFIRM Production (Non-Revised Areas)		n/a	
Activity 11A – Independent QA/QC of DFIRM Production (Non-Revised Areas)		n/a	
Activity 12 – Merge Effective and Revised Information		X	
Activity 12A – Apply DFIRM Graphic Specifications		X	
Activity 12B – Independent QA/QC of DFIRM Graphics		n/a	
Activity 13 – Issue Preliminary FIS and FIRM		X	
Activity 14 – Post-Preliminary Processing		X	

Activity 1 - Field Surveys and Reconnaissance

Responsible Mapping Partner: Nebraska Department of Natural Resources (NDNR)

Scope: To supplement any field reconnaissance conducted during the scoping phase of this Flood Map Project, NDNR shall conduct a detailed field reconnaissance of the specified study area to determine conditions along the floodplain(s), locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses. In addition to the initial field reconnaissance, this activity includes conducting field surveys, including obtaining a maximum of 24 channel and floodplain cross sections in each county, and identifying or establishing a maximum of one temporary bench mark (ERMs) in each village or city. NDNR is responsible for coordinating with other team members collecting topographic data under Activity 2.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the Technical Support Data Notebook (TSDN) format described in Section 2, NDNR shall make the following products available to FEMA:

- A Final Methodology Report that includes a brief summarization of the findings from the field reconnaissance.

Activity 2 - Topographic Data Development

Responsible Entity: Nebraska Department of Natural Resources (NDNR)

Scope: To supplement the field surveys conducted under Activity 1, additional topographic data of the overbank areas of flooding sources will be obtained to delineate floodplain boundaries. Specifically, new topographic data will be generated for streams with drainage areas greater than 1 square mile using the original tagged vector contours used to create USGS 30 m Digital Elevation Models (DEMs) resampled to 10 m. NDNR is responsible for coordinating with other team members conducting field surveys under Activity 1.

Contour interval and/or accuracy for the topographic data will be selected based on the existing FEMA guidelines and specifications.

This Activity also consists of developing topographic maps and/or Digital Elevation Models (DEMs) for the subject flooding sources using the data collected in Activity 1. Unless directed to do otherwise by FEMA, all new topographic data must be developed and submitted in digital format.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, NDNR shall make the following products available to FEMA.

- A Final Methodology Report that includes a brief summarization of the findings from the field reconnaissance.

Activity 3 - Independent QA/QC of Topographic Data

This activity is not applicable.

Activity 4 - Hydrology

Responsible Entity: Nebraska Department of Natural Resources (NDNR)

Scope: Hydrologic analyses will be completed for all flooding sources within Boyd, Franklin, Gosper, Johnson, Knox, Pawnee, and Perkins Counties, Nebraska that have a drainage area greater than 1 square mile as listed in Section 1 of this Mapping Activity Statement. The hydrologic methods used for this analysis will be regression equations provided by the Nebraska Department of Roads, supplemented with stream gaging data or published reports, where available. Peak flood discharges will be calculated for the 1% annual chance storm events. These flood discharges will be the basis for subsequent hydraulic analyses of the subject flooding source(s). In addition, NDNR will be responsible for addressing all concerns or questions regarding this Activity raised during the QA/QC review outlined in Activity 5.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, NDNR shall make the following products available to FEMA:

- A Final Methodology Report that summarizes the methodology and findings of the hydrologic analyses.

Activity 5 - Independent QA/QC Review of Hydrologic Analyses

This activity is not applicable:

Activity 6 – Hydraulic Analyses

Responsible Entity: Nebraska Department of Natural Resources (NDNR)

Scope: NDNR will perform hydraulic analyses for all flooding sources within Boyd, Franklin, Gosper, Johnson, Knox, Pawnee, and Perkins Counties, Nebraska that have a drainage area greater than 1 mi², as listed in the Section 1 of this Mapping Activity Statement. The approximate lengths of the streams to be studied are indicated in the following table:

County	Approximate Length of Stream (mi)
Boyd	490
Franklin	530
Gosper	450
Johnson	280
Knox	980
Pawnee	340
Perkins	730

The modeling will include the 1% annual chance storm events based on peak discharges computed under Activity 4. The hydraulic methods used for this analysis will include normal depth calculations. NDNR will use cross-section and field data collected under Activity 1 to perform the hydraulic analyses. The hydraulic analyses will be used to delineate approximate floodplains for the subject flooding sources

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, NDNR shall make the following products available to FEMA:

- A Final Methodology Report that summarizes the methodology and findings of the hydrologic analyses.

Activity 7 - Independent QA/QC Review of Hydraulic Analyses

This activity is not applicable.

Activity 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)

This activity is not applicable.

Activity 8A – Floodplain Mapping (Redelineation Using Effective Profiles and Updated Topographic Data)

This activity is not applicable.

Activity 8B – Floodplain Mapping (Refinement or Creation of Zone A)

Responsible Entity: Nebraska Department of Natural Resources (NDNR)

Scope: NDNR will perform approximate analyses and delineate digital floodplain boundaries for all flooding sources in Boyd, Franklin, Gosper, Johnson, Knox, Pawnee, and Perkins Counties, Nebraska with drainage areas greater than 1 mi², as listed in Section 1 of this Mapping Activity Statement. The mapping will refine and/or create approximate Zone A flood zones using normal depth calculations and tagged vector contours, used to create USGS 30 m DEMs, resampled to 10 m. NDNR will delineate the floodplain boundaries on a digital work map based on existing topography or topographic data developed under Activity 2 of this Mapping Activity Statement, which will be the basis of the revised FIRM. In addition, NDNR will address all concerns or questions regarding this Activity raised during the independent QA/QC review outlined in Activity 9.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: Upon completion of floodplain mapping for flooding sources in Boyd, Franklin, Gosper, Johnson, Knox, Pawnee, and Perkins Counties, Nebraska with drainage areas greater than 1 mi², NDNR will submit the results to PBS&J for an independent QA/QC review as outlined in Activity 9.

In accordance with the TSDN format described in Section 2, NDNR shall make the following products available to FEMA.

- Digital work maps, with 1% annual chance floodplain boundary delineations and all applicable base map features (PLSS);
- DFIRM mapping files, in one of the GIS file and database formats specified in FEMA's DFIRM Specifications;
- Metadata files describing the DFIRM data, including the required information shown in the examples shown in FEMA's DFIRM Specifications;
- Complete set of plots of DFIRM panels showing approximate flood hazard boundaries at a suitable scale; and
- A Final Methodology Report that includes a brief summarization of the findings from the field reconnaissance.

Activity 9 - Independent QA/QC Review of Floodplain Mapping

Responsible Entity: PBS&J

Scope: PBS&J shall review the floodplain work maps submitted by NDNR under Activities 8, 8A, and 8B of this Mapping Activity Statement to ensure that the results of the hydraulic analyses are accurately represented on the work maps. This work will include, at a minimum, the following activities:

- Ensure DFIRM mapping files are in one of the GIS file and database formats specified in FEMA's DFIRM Specifications and conform to those specifications for content and attribution; and
- Review of the approximate floodplain delineation to ensure that water bodies and streams are within the floodplain delineations, and that there are no unnatural sharp angles in the floodplain delineation when viewed at the map scale.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, PBS&J shall make the following products available to FEMA:

- A Summary Report that describes the findings of the independent QA/QC review noting any deficiencies and providing recommendations to resolve them or agreeing with the mapping results; and
- An annotated work map with all questions and/or concerns indicated if necessary.

Activity 10 - Base Map Acquisition and Preparation

Responsible Entity: Nebraska Department of Natural Resources (NDNR)

Scope: This is a required activity when Activity 8B is performed. This activity consists of obtaining the digital base map Digital Ortho Quarter Quads (DOQQs) for the project. NDNR shall:

- Obtain digital files (raster or vector) of the base map;
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge;
- Certify that the digital data meet the minimum standards and specifications that FEMA requires for DFIRM production; and

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, NDNR shall make the following products available to FEMA.

- Written certification that the digital data meet the minimum FEMA standards and specifications; and
- Documentation that FEMA can use the digital base map.

Activity 11 - DFIRM Production (Non-Revised Areas)

This activity is not applicable.

Activity 11A - Independent QA/QC Review of DFIRM Production (Non-Revised Areas)

This activity is not applicable.

Activity 12 – Merging of Revised and Non-Revised Information

Responsible Entity: PBS&J

Scope: Upon completion of the Floodplain Mapping activity (Activity 8B) for the revised flooding sources, floodplain mapping for the City of Tecumseh, prepared by the NDNR under another agreement, will be merged into a single, updated DFIRM. The work for this activity will include tie-in of flood hazard information with contiguous communities that were not studied as part of this project. Also, the revised and non-revised Flood Profiles, floodplain boundaries, and regulatory floodway boundaries will be tied-in. PBS&J will coordinate with the Mapping Partners conducting Activity 8, as necessary, to resolve any potential tie-in issues.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, PBS&J shall make the following products available to FEMA.

- Digital work maps, with 1% annual chance floodplain boundary delineations, cross sections, BFEs, zone designation labels, and all applicable base map features shown;
- DFIRM mapping files, in one of the GIS file and database formats specified in FEMA's DFIRM Specifications, provided on CD-ROM;
- Metadata files describing the DFIRM data, including the required information shown in the examples shown in FEMA's DFIRM Specifications, provided on CD-ROM;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale;
- A QA/QC report that includes a description and the results of all automated or manual QA/QC steps taken during the preparation of the DFIRM.

Activity 12A – Application of DFIRM Graphic Specifications

Responsible Entity: PBS&J

Scope: Upon completion of merging of effective and revised floodplain mapping into a single, updated DFIRM (Activity 12), PBS&J shall apply the final FEMA DFIRM graphic specifications to the DFIRM mapping files. This work will include adding all required annotation, line patterns, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user).

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, PBS&J shall make the following products available to FEMA.

- DFIRM mapping files in one of the GIS file and database formats specified in FEMA's DFIRM Specifications, provided on CD-ROM;
- DFIRM database files in one of the database formats specified in FEMA's DFIRM Specifications, provided on CD-ROM;
- Metadata files describing the DFIRM data including the required information based on the examples shown in FEMA's DFIRM Specifications;
- Complete set of plots of the DFIRM panels showing all the details at the scale(s) agreed upon in the "Scope of Project;" and
- A QA/QC report that includes a description and the results of all automated or manual quality assurance steps taken during the preparation of the DFIRM.

Activity 12B - Independent QA/QC Review of DFIRM Graphics

This activity is not applicable.

Activity 13 – Preparation and Issuance of Preliminary FIS and DFIRM

Responsible Entity: PBS&J

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

- *FIS Report Preparation:* An FIS report will only be prepared for Johnson County, since there is only detailed flood information for the City of Tecumseh in Johnson County. Unless instructed otherwise by FEMA, PBS&J will prepare the revised FIS report in the county-wide format, incorporating information from the existing City of Tecumseh FIS report and including updated data tables and flood profiles. At a minimum, the FIS report will include the following: text; cover; data tables; photographs (if available); flood profiles; and floodway schematic.
- *Quality Assurance/Quality Control:* Final QA/QC review of the FIS report, including all data tables, profiles, and other components of the FIS, as appropriate, and the news release will be conducted. The QA/QC procedures will be consistent with FEMA standards outlined below for this activity.
- *Discrepancy Resolution:* PBS&J will be responsible for working with NDNR who is responsible for performing the activities of this project to resolve discrepancies identified during QA/QC.
- *Distribution of Preliminary DFIRMs and FIS Report:* PBS&J will distribute the preliminary copies of the FIS report and DFIRMs to the affected communities, State agencies, and others as identified by FEMA.
- *News Release and Federal Register Notice Preparation:* PBS&J will prepare the news release notifications of BFE changes in the City of Tecumseh. The news release will summarize newly proposed BFEs, modifications to existing BFEs, and any changes to the community's floodplain management ordinances to be NFIP compliant. Upon completion of a 30-day community comment period and/or final meeting with the community, and upon initiation of the 90-day appeal period, the PBS&J will arrange for and verify that the news release is published in the prominent newspaper(s) with local circulation within each affected community identified by the community and FEMA. PBS&J also will arrange for and verify that a similar notice is published in the *Federal Register*.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, PBS&J shall make the following products available to FEMA:

- Five complete sets of printed preliminary DFIRMs and FIS reports, including all updated data tables and flood profiles for mailing to the CEO of each community, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA;
- Preliminary transmittal letter(s); and
- DFIRM mapping files in one of the database formats specified in FEMA's DFIRM Specifications.

Activity 14 - Post-Preliminary Processing

Responsible Entity: PBS&J

Scope: This Activity consists of finalizing the DFIRM and FIS report after the preliminary FIS and DFIRM have been issued for public review and comment. The activities to be performed include:

- *Participating in Public Meetings:* When FEMA holds public meetings to present and discuss the results of this Flood Map Project, NDNR will attend the meetings and assist FEMA in the presentation as required.
- *Resolving Appeals and Protests:* Johnson County will have a 90-day appeal period for the BFE changes in the City of Tecumseh. There will not be a 90-day appeal period for Boyd, Franklin, Gosper, Knox, Pawnee, and Perkins Counties, however these counties will have a 30-day comment period. Appeals and protests will be reviewed and resolved prior to finalizing the FIRMs and FIS report. NDNR will provide support to FEMA in resolving appeals and protests. Activities may include, but not limited to, attending community meetings and assisting FEMA and PBS&J in addressing any issues that may arise in resolving appeals and protests from affected communities. For a typical protest, the following activities will be conducted: initial processing of the appeal/protest, performing a technical review of the appeal/protest, preparing letters to request additional data, performing revised analyses, and preparing a proposed resolution for FEMA's review. PBS&J will mail all associated correspondence upon authorization by FEMA.
- *Special Correspondence:* Comments received (referred to as "special correspondence") will be reviewed, and responses will be drafted by PBS&J for FEMA's review. PBS&J will also mail the final correspondence upon authorization by FEMA.
- *Revise DFIRMs and FIS Report:* If necessary, PBS&J will work with those parties responsible for preparing the DFIRMs under Activities 8B, 11, and 12 to prepare revised preliminary copies of the DFIRMs and FIS report, including all data tables and flood profiles. PBS&J will mail all revised preliminary copies of DFIRMs and associated correspondence upon authorization by FEMA.
- *Letters of Final Determination:* PBS&J will work with FEMA to establish effective dates for the DFIRMs and FIS report, prepare Letters of Final Determination (LFD) for FEMA review and signature, prepare a final notice for publication in the *Federal Register*, mail the LFDs with appropriate enclosures, and coordinate publication of the final notice in the *Federal Register*.
- *GPO Processing:* PBS&J will prepare final copies of the DFIRMs and FIS report, and provide them to FEMA. This will include preparing camera-ready film negatives of the DFIRMs and paper copies of the FIS report, including flood profiles; preparing appropriate paperwork to be included with DFIRMs and FIS report materials, including the transmittal letter to the communities CEOs, the print processing worksheets, the Printing Requisition Forms, and the Community Map Action Forms; and delivering the final materials and paperwork to FEMA in the format prescribed by FEMA.
- *Archiving Data:* PBS&J will package the backup data and correspondence for this Flood Map Project and transmit it to the Engineering Study Data Package Facility.

Standards: All work conducted under this Activity shall conform to the standards specified for this Activity in Section 5 of this Mapping Activity Statement.

Products: In accordance with the TSDN format described in Section 2, PBS&J shall make the following products available to FEMA as required:

- Draft LFDs and associated backup data and information for FEMA review;

- Draft Special Correspondence and backup data and information for FEMA review;
- Appeal and Protest resolution letters, and all backup data and information for FEMA review;
- One set of DFIRM negatives and paper FIS report, including all updated data tables and flood profiles;
- Paperwork required for printing of DFIRM panels and FIS report;
- Complete DFIRM spatial databases; and
- Completed and organized Engineering Study Data Packages.

2. Technical and Administrative Support Data Submittal: The Project Team members for this project that have responsibilities for activities included in this Mapping Activity Statement shall comply with the following data submittal requirements:

- All supporting documentation for the activities in this Mapping Activity Statement shall be submitted in accordance with Appendix M, Section M.2.1 of the *Guidelines and Specifications for Flood Hazard Mapping Partners*, prepared by FEMA, dated February 2002. The following table indicates the sections of the TSDN that apply to each activity.

TSDN—Applicable Sections

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

- If any issues arise that could affect the completion of an activity within the proposed scope or budget, the party responsible for that activity must complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR should describe the issue and propose possible resolutions.

Additionally, PBS&J will be responsible for collecting and maintaining a set of products for all Activities and shall compile a comprehensive TSDN for the entire project.

Period of Performance: The mapping activities assigned to NDNR in this MAS will be completed as specified in the Agreement Articles of the Cooperative Agreement. The Mapping Activities may be terminated at the option of FEMA or NDNR in accordance with the provisions of the August 16, 1999 CTP Partnership Agreement. Mapping activities assigned to the MCC will be completed as directed by the MCC Project Officer in coordination with the Regional Project Officer.

3. **Funding/Cost-Sharing:** Funding to complete MAS #14 will be provided by FEMA through a cooperative agreement and by NDNR. The cooperative agreement budget identifies the amount to be provided by each party.
4. **Standards:** Table 5-1 indicates the standards and documentation relevant to this Mapping Activity Statement. Table 5-2 shows the applicable sections of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* for each activity.

Table 5-1: Applicable Standards per Activity

Applicable Standards	Activities													
	1	2	3	4, 4A	5, 5A	6	7	8, 8A, 8B	9	10	11, 11A	12, 12A, 12B	13	14
Guidelines and Specifications for Flood Hazard Mapping Partners, February 2002	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
American Congress on Surveying and Mapping (ACSM) procedures	✓	✓	✓											
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-58), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	✓	✓	✓											
EM 1000-1-1000, "Photogrammetric Mapping," March 31, 1993	✓	✓	✓											
EM 1110-2-1003, "Hydrographic Surveys," October 31, 1994	✓		✓											
Numerical Models Accepted by FEMA for NFIP Usage, January 11, 2002				✓	✓	✓	✓							
Content Standards for Digital Geospatial Metadata (Federal Geographic Data Committee, 1998)		✓	✓					✓	✓	✓	✓	✓	✓	✓
Document Control Procedures Manual dated October 1993.													✓	✓

Table 5-2 Mapping Activities and Applicable Sections of Guidelines and Specifications for Flood Hazard Mapping Partners

Activity Number	Task Description	Applicable Volume, Section/Subsection, and Appendix of Guidelines and Specifications
1	Field Surveys and Reconnaissance	Volume 1, Sections 1.2, 1.3, 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.5, A.6, A.7, and A.8 Appendices B, C, and M
2	Topographic Data Development	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.2 and A.3 Appendix M
3	Independent QA/QC 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
4	Hydrology	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix C, Sections C.1 and C.7 Appendices E, F, G, H, and M
4A	Coastal Hazard Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.2.2) Appendix A, Section A.4 Appendices B, D, and M
5	Independent QA/QC Review of Hydrology	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix C, Section C.2 Appendices E, F, G, H, and M
5A	Independent QA/QC Review of Coastal Hazard Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 Appendices B, D, H, and M
6	Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Sections C.3 and C.7 Appendices B, E, F, G, H, and M

Table 5-2 Mapping Activities and Applicable Sections of Guidelines and Specifications for Flood Hazard Mapping Partners (Cont.)

Task Number	Task Description	Applicable Volume, Section/Subsection, and Appendix of Guidelines and Specifications
7	Independent QA/QC Review of Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Section C.5 Appendices B, E, F, G, H, and M
8	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C. 4 and C.6 Appendices K, L, and M
8A	Floodplain Mapping (Redelineation Using Effective Profiles and Updated Topographic Data)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.3) Appendices K, L, and M
8B	Floodplain Mapping (Refinement or Creation of Zone A)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices K, L, and M
9	Independent QA/QC Review of Floodplain Mapping	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices D, K, L, and M
10	Base Map Acquisition and Preparation	Volume 1, Sections 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsection 1.4.3) Appendices A and B

Table 5-2 Mapping Activities and Applicable Sections of Guidelines and Specifications for Flood Hazard Mapping Partners (Cont.)

Task Number	Task Description	Applicable Volume, Section/Subsection, and Appendix of Guidelines and Specifications
11	DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.2) Appendices K, L, and M
11A	Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K, L, and M
12	Merging of Revised and Non-Revised Information	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K and L
12A	Application of DFIRM Graphic Specifications	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K and L
12B	Independent QA/QC Review of DFIRM Graphics	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K, L, and M
13	Preparation and Issuance of Preliminary FIS and DFIRM	Volume 1, Sections 1.4 (specifically Subsections 1.4.2 and 1.4.3) and 1.5 (specifically Subsection 1.5.1) Appendices J, K, L, and M
14	Post-Preliminary Processing	Volume 1, Section 1.5 Appendices J, K, L, and M

5. Certification: The following certifications apply to this Mapping Activity Statement (as appropriate):

Activity 1 (Field Surveys and Reconnaissance) and Activity 2 (Topographic Data Development)

- Registered Professional Engineer or Licensed Land Surveyor will certify topographic information, in accordance with 44 CFR 65.5(c).

Activity 10 (Base Map Acquisition and Preparation)

- Community official or responsible party will provide written certification that the digital data meet FEMA's minimum standards and specifications.
- Responsible Mapping Partner will provide documentation that the digital base map can be used by FEMA.

Activities 8, 8A, and 8B (Floodplain Mapping) and Activity 11 (DFIRM Production – Non-Revised Areas)

- The DFIRM metadata files will include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.

Activity 4 (Hydrology), Activity 6 (Hydraulics), and Activities 8, 8A, and 8B (Floodplain Mapping)

- Hydrologic and/or hydraulic analyses and data will be certified by a Registered Professional Engineer or Licensed Land Surveyor in accordance with 44 CFR 65.6(f).
- Topographic information will be certified by a Registered Professional Engineer or Licensed Land Surveyor in accordance with 44 CFR 65.5(c).

6. Technical Assistance and Resources: Nebraska Department of Natural Resources may obtain copies of FEMA-issued LOMCs), archived engineering backup data, and data collected as part of the Mapping Needs Assessment Process from the MCC. The MCC may be contacted at 1-877 FEMA MAP (1-877-336-2627). General technical and programmatic information, such as FEMA 265, the Quick-2 computer program, and the MT-2 forms, can be downloaded from FEMA's Flood Hazard Mapping website (www.fema.gov/mit/tsd/). Specific technical and programmatic support may be provided through FEMA's MCC; such assistance should be requested through the FEMA MCC Project Officer specified in Section 11 of this Mapping Activity Statement.

Nebraska Department of Natural Resources may also consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or sub-contractors, and GIS-based engineering and modeling training.

7. Contractors: This item is not applicable.

Financial Reporting: Financial reporting will be in accordance with the Articles contained in the Cooperative Agreement.

8. Points of Contact: The FEMA Regional Project Officer is Robert C. Franke, and the CTP Project Manager is Brian Dunnigan or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, the assistance of FEMA's MCC should be requested through the FEMA MCC Project Officer, William Blanton Jr.

Each party has caused this Mapping Activity Statement to be executed by its duly authorized representative.

Brian P. Dunnigan
Brian P. Dunnigan, P.E.
Nebraska Department of Natural Resources

8/20/02
Date

Robert G. Bissell
Robert G. Bissell, Director
Flood Insurance and Mitigation Division
Federal Emergency Management Agency

9/4/02
Date

William R. Blanton Jr.
William R. Blanton Jr., Project Officer
Flood Insurance and Mitigation Administration
Federal Emergency Management Agency

9/17/02
Date