



**Doña Ana County  
Cooperating Technical Partners  
Mapping Activity Statement**

**Statement #001 –Digital Flood Insurance Rate Map (DFIRM) Production and Development of Updated Flood Data**

In accordance with the Cooperating Technical Partners (CTP) Memorandum of Agreement dated December 3, 2001, between Doña Ana County, New Mexico and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement #001 is as follows:

- 1. Statement Objective and Scope:** The objective of this Mapping Activity for Doña Ana County is to develop a new or updated Digital Flood Insurance Rate Map(s) (DFIRM) and Flood Insurance Study (FIS) report(s) for Doña Ana County. The FIS and DFIRM will be produced in countywide 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		
Lauson Arroyo	Lauson Dam (West side T26S, R4E, S19) and Anthony Lateral	16,000 ft	✓	✓					
Breedlove Arroyo	Breedlove Dam (East of I-10) and Anthony Lateral	10,500 ft	✓	✓					

This project will be completed by the Mapping Partners listed below Doña Ana County, PBS&J, & Doña Ana County Flood Commission Contractor

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

### Activity 1 - Field Surveys and Reconnaissance

Responsible Mapping Partner: Doña Ana County Flood Commission Contractor to be determined.

Scope: To supplement any field reconnaissance conducted during the scoping phase of this Flood Map Project, Doña Ana County Flood Commission Contractor shall conduct a detailed field reconnaissance of the specified study area 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, this activity includes conducting field surveys, including obtaining channel and floodplain cross sections, identifying or establishing temporary bench marks (ERMs), and obtaining the physical dimensions of hydraulic and flood-control structures.

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, Doña Ana County Flood Commission Contractor 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; and

- Survey notebook containing cross sections and structural data.

## **Activity 2 - Topographic Data Development**

Responsible Entity: Doña Ana County Flood Commission Contractor

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 Lauson and Breedlove Arroyos using as per County contract. 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. Upon completion of topographic data collection and processing for Lauson and Breedlove Arroyos, this data will be submitted to Doña Ana County Flood Commission for an independent Quality Assurance/Quality Control (QA/QC) review under Activity 3. Data for the remaining flooding sources will be submitted for an independent QA/QC review at the completion of this Activity. Doña Ana County Flood Commission Contractor will be responsible for addressing all concerns or questions regarding this Activity raised during the QA/QC review outlined in Activity 3.

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, Doña Ana County Flood Commission Contractor shall make the following products available to Doña Ana County Flood Commission who shall make them available to FEMA.

- Hardcopy topographic maps;
- Completed Form No. 5 of *Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions* (MT-2). Complete set of MT-2 forms are available from FEMA web site at [http://www.fema.gov/mit/tsd/DL\\_MT-2.htm](http://www.fema.gov/mit/tsd/DL_MT-2.htm);
- Report summarizing methodology and results;
- Mass points and breaklines data on CD-ROM;
- Digital workmap 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 (NCPs) used to control remote sensing and ground surveys;
- Metadata compliant with Federal Geographic Data Committee standards.

## **Activity 3 - Independent QA/QC of Topographic Data**

Responsible Entity: Doña Ana County Flood Commission

Scope: Doña Ana County Flood Commission shall review the mapping data generated by Doña Ana County Flood Commission Contractor under Activity 2 of this Mapping Activity Statement 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 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, Doña Ana County Flood Commission shall make the following products available to FEMA.

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

#### **Activity 4 - Hydrology**

Responsible Entity: Doña Ana County Flood Commission Contractor

Scope: Hydrologic analyses will be completed for approximately 6.95 square miles of drainage area for the flooding source(s) listed in Section 1 of this Mapping Activity Statement. The hydrologic methods used for this analysis will be HEC-1. Peak flood discharges will be calculated for the 10%, 2%, 1% and 0.2% annual chance storm events. These flood discharges will be the basis for subsequent hydraulic analyses of the subject flooding source(s). In addition, Doña Ana County Flood Commission Contractor 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: Upon completion of hydrologic modeling for Lauson and Breedlove Arroyos, Doña Ana County Flood Commission Contractor will submit the results to Doña Ana County Flood Commission for an independent QA/QC review as described in Activity 5. Doña Ana County Flood Commission Contractor will submit the results for the remaining flooding sources for an independent QA/QC review at the completion of this Activity.

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

- Digital copies of all hydrologic modeling (input and output) files for 10%, 2%, 1% and 0.2% annual chance storm events.
- "Summary of Discharges" table(s) presenting discharge data for each flooding source.
- Draft text for Section 3.1, Hydrologic Analyses, of FIS report.
- Appropriate SC application/certification form for hydrology.
- All backup data used in the analysis, including work maps.
- For GIS-based modeling, products include all input and output data, intermediate data processing products, GIS data layers, and final products.

#### **Activity 5 - Independent QA/QC Review of Hydrologic Analyses**

Responsible Entity: Doña Ana County Flood Commission

Scope: Doña Ana County Flood Commission shall review the technical, scientific, and other information submitted by Doña Ana County Flood Commission Contractor under Activity 4 of this Mapping Activity Statement to ensure that the data and modeling are consistent with FEMA standards and standard engineering practices and are sufficient to revise the FIRM. This work will include, at a minimum, the following activities:

- Review submittal for technical and regulatory adequacy, completeness of required information, application/certification forms, and supporting data and documentation. The technical review will focus on:
  - 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 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, Doña Ana County Flood Commission shall make the following products available to FEMA.

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

### **Activity 6 – Hydraulic Analyses**

Responsible Entity: Doña Ana County Flood Commission Contractor

Scope: Doña Ana County Flood Commission Contractor will perform hydraulic analyses for approximately five (5) miles of the flooding sources listed in the Section 1 of this Mapping Activity Statement. The modeling will include the 10%, 2%, 1% and 0.2% annual chance storm events based on peak discharges computed under Activity 4. The hydraulic methods used for this analysis will include CHECK-2 or CHECK-RAS. Doña Ana County Flood Commission Contractor will use cross-section and field data collected under Activity 1 to perform the hydraulic analyses. The hydraulic analyses will be used to establish flood elevations and regulatory floodways for the subject flooding sources. Doña Ana County Flood Commission shall use a FEMA checking program, CHECK-2 (if HEC-2 hydraulic model is used) or CHECK-RAS (if HEC-RAS hydraulic model is used), to check the reasonableness of hydraulic analyses. To facilitate the independent QA/QC review under Activity 7, Doña Ana County Flood Commission Contractor shall provide an explanation for each unresolved message from the CHECK-2 or CHECK-RAS program, as appropriate. In addition, Doña Ana County Flood Commission Contractor will address all concerns or questions regarding this Activity raised during the independent QA/QC review under Activity 7.

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 hydraulic modeling for Lauson and Breedlove Arroyos, Doña Ana County Flood Commission Contractor will submit the results to Doña Ana County Flood Commission for an independent QA/QC review as described in Activity 7. Doña Ana County Flood Commission Contractor will submit the results for the remaining flooding sources for an independent QA/QC review at the completion of this Activity.

In accordance with the TSDN format described in Section 2, Doña Ana County Flood Commission shall make the following products available to FEMA:

- Digital profiles of the 10%, 2%, 1% and 0.2% annual chance water-surface elevations representing existing conditions using FEMA's RASPLLOT program or similar software;
- Floodway Data Table(s) for each subject flooding source. The Floodway Data Table(s) must be compatible with the DFIRM database;
- Digital copies of all hydraulic modeling (input and output) files;
- Table with range of Manning's "n" values
- An explanation for each unresolved message from CHECK-2 or CHECK-RAS program, as appropriate;
- All backup data used in the analyses;
- Draft text for inclusion in Section 3.2, Hydraulic Analyses, of FIS report; and

### **Activity 7 - Independent QA/QC Review of Hydraulic Analyses**

Responsible Entity: Doña Ana County Flood Commission

Scope: Doña Ana County Flood Commission shall review the technical, scientific, and other information submitted by Doña Ana County Flood Commission Contractor under Activity 6 of this Mapping Activity Statement to ensure that the data and modeling are consistent with FEMA standards and standard engineering practices and are sufficient to revise the FIRM. This independent QA/QC review of the hydraulic analyses will include, at a minimum, the following activities:

- Review submittal for technical and regulatory adequacy, completeness of required information, application/certification forms, and supporting data and documentation. The technical review will focus on:
  - 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-2 (when HEC-2 model was used) or CHECK-RAS (when HEC-RAS model was used) programs 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 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, Doña Ana County Flood Commission shall make the following products available to FEMA:

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

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

Responsible Entity: Doña Ana County Flood Commission Contractor

Scope: Doña Ana County Flood Commission Contractor shall delineate digital floodplain and regulatory floodway boundaries for the flooding sources listed in Section 1 of this Mapping Activity Statement. The mapping will incorporate all revised hydraulic modeling and newly acquired topographic information. Doña Ana County Flood Commission Contractor will delineate the floodplain boundaries for the 1% and 0.2% recurrence intervals and the regulatory floodway 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. Doña Ana County Flood Commission Contractor will provide an explanation for selecting an existing topographic map if one is used for the floodplain boundary delineation. Doña Ana County Flood Commission Contractor will incorporate the results of all effective Letters of Map Change as appropriate. In addition, Doña Ana County Flood Commission Contractor 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 Lauson and Breedlove Arroyos, Doña Ana County Flood Commission Contractor will submit the results to Doña Ana County Flood Commission for an independent QA/QC review under Activity 9. Doña Ana County Flood Commission Contractor will submit the mapping for the remaining flooding sources for an independent QA/QC review at the completion of this Activity.

In accordance with the TSDN format described in Section 2, Doña Ana County Flood Commission shall make the following products available to FEMA:

- Digital work maps with the 1% and 0.2% annual chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, Base Flood Elevations (BFEs), zone designation labels, and all applicable base map features;
- Explanation for the selection of an existing topographic map;
- 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 the 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; and
- Any backup or supplemental information used in the mapping required for the independent QA/QC review outlined in Activity 9.

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

Responsible Entity: Doña Ana County Flood Commission Contractor

Scope: Doña Ana County Flood Commission Contractor will delineate digital floodplain and regulatory floodway boundaries for the flooding sources listed Section 1 of this Mapping Activity Statement. The Flood Profiles and Floodway Data Tables from the effective FIS report dated September 6, 1995, will be used, in conjunction with the effective hydraulic models, to produce these delineations. Doña Ana County Flood Commission Contractor will delineate the floodplain boundaries for the 1% and 0.2% annual chance recurrence intervals and the regulatory floodway boundaries on a digital work map based on new topographic data. If the new topography does not reflect the same hydraulic characteristics as in the effective study, Doña Ana County Flood Commission will evaluate the topography to determine if changes are significant enough to invalidate the floodplain boundary and regulatory floodway boundary redelineations. Also, Doña Ana County Flood Commission will contact the James Orwat with a recommendation. In addition, Doña Ana County Flood Commission Contractor 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 Lauson and Breedlove Arroyos, Doña Ana County Flood Commission Contractor will submit the results to Doña Ana County Flood Commission for an independent QA/QC review as outlined under Activity 9. Doña Ana County Flood Commission Contractor will submit the mapping for the remaining flooding sources for the independent QA/QC review at the completion of this Activity.

In accordance with the TSDN format described in Section 2, Doña Ana County Flood Commission shall make the following products available to FEMA.

- Digital work maps, with 1% and 0.2% annual chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, zone designation labels and all applicable base map features;
- 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 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; and
- Any backup or supplemental information used in the mapping required for the independent QA/QC review outlined in Activity 9.

## **Activity 9 - Independent QA/QC Review of Floodplain Mapping**

Responsible Entity: Doña Ana County Flood Commission

Scope: Doña Ana County Flood Commission shall review the floodplain work maps submitted by Doña Ana County Flood Commission Contractor 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:

- Review the cross sections for proper location and orientation on the work map and agreement with the Floodway Data Table.
- Review the BFEs shown on the work map for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries 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.
- Floodplain widths at cross section must match floodway data table. Floodplain boundaries as shown on work maps match profiles
- Ensure zone designations are indicated properly.
- 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.
- Ensure metadata files describing the DFIRM data include the required information and follow the examples shown in FEMA's DFIRM Specifications.

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, Doña Ana County Flood Commission 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: Doña Ana County Flood Commission

Scope: This is a required activity when Activities 8, 8A, 8B, and 11 are performed. This activity consists of obtaining the Doña Ana County digital base map for the project. Doña Ana County 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

- Populate the DFIRM database for base map features and applicable data.

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, Doña Ana County 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)**

Responsible Entity: Doña Ana County Flood Commission

Scope: For all flooding sources except those specified in Section 1 of this Mapping Activity Statement (that will have updated flood data developed under Activities 1 through 9), Doña Ana County Flood Commission will convert the effective FIRM/FBFM panels to digital format in conformance with FEMA's DFIRM specifications. Doña Ana County Flood Commission will use the base map acquired under Activity 10 of this Mapping Activity Statement for the conversion. The scope of this Activity covers the digitization of 50-1050 FIRM panels. Doña Ana County Flood Commission also will incorporate LOMCs issued by FEMA since the current effective FIRM for each affected community. The digital flood theme for the flooding sources specified in Section 1 will not be digitized as part of this Activity; rather, Doña Ana County Flood Commission will leave these as "holes" in the digital flood theme that will be filled in as part of Activity 12 using digital flood data from Activities 8, 8A, and/or 8B.

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, Doña Ana County Flood Commission 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;
- 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 the DFIRM panels showing all unrevised flood hazard information taken from the effective FIRMs and FBFMs at a suitable scale; 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 DFIRMs, including a check that the road and floodplain relationship is maintained for all unrevised areas.

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

Responsible Entity: PBS&J

Scope: PBS&J shall review the DFIRM panels submitted by Doña Ana County Flood Commission under Activity 11 of this Mapping Activity Statement to ensure that the unrevised flood hazard information taken from the effective FIRM and FBFM panels is accurately represented on the DFIRM panels. This work will include, at a minimum, ensuring the following:

- Unrevised flood hazard information shown on the effective FIRM and FBFM panels is completely and accurately captured in the digital files.

- The floodway widths agree with the widths shown in the Floodway Data Table(s) and the results of the hydraulic modeling within a tolerance of 5 percent.
- The distances between cross sections agree with the distances shown in the Floodway Data Table(s) and the results of the hydraulic modeling within a tolerance of 5 percent.
- Road and floodplain relationships are maintained for all unrevised areas.
- 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.
- Metadata files describing the DFIRM data include the required information and follow the examples shown in FEMA's DFIRM Specifications.

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
- Annotated DFIRM panels with all questions and/or concerns indicated, if necessary.

### **Activity 12 – Merging of Revised and Non-Revised Information**

Responsible Entity: Doña Ana County Flood Commission

Scope: Upon completion of the Floodplain Mapping activity (Activity 8) for the revised flooding sources and the Digital FIRM Production activity (Activity 11) for non-revised flooding sources, the digital floodplain data will be merged into a single, updated Digital FIRM. This work 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. Doña Ana County Flood Commission will coordinate with the Mapping Partners conducting Activities 8 and 11, 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, Doña Ana County Flood Commission 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: Doña Ana County Flood Commission

Scope: Upon completion of merging of effective and revised floodplain mapping into a single, updated DFIRM (Activity 12), Doña Ana County Flood Commission 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, Doña Ana County Flood Commission 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**

Responsible Entity: PBS&J

Scope: PBS&J shall review the DFIRM panels submitted by Doña Ana County Flood Commission under Activity 12A of this Mapping Activity Statement to ensure that the DIRM panels conform to FEMA's DFIRM graphic standards. This work will include, at a minimum, the following:

- All required DFIRM features are accurately and legibly labeled and follow the examples shown in FEMA's DFIRM Specifications. This includes all flood hazard zones, BFEs, cross sections, coastal transects, studied streams, mapped political entities, and all roads within and adjacent to the 1% annual chance flood hazard areas.
- All DFIRM features are correctly symbolized with the appropriate symbol, line pattern, or area shading and follow the examples shown in FEMA's DFIRM Specifications.
- All map collar information is complete, correct, and follows the examples shown in FEMA's DFIRM Specifications.
- 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.
- DFIRM database files are in one of the database formats specified in FEMA's DFIRM Specifications and conform to those specifications for content and attribution.
- Metadata files describing the DFIRM data include the required information and follow the examples shown in FEMA's DFIRM Specifications.

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
- Annotated DFIRM panels with all questions and/or concerns indicated, if necessary.

### **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:* Unless instructed otherwise by FEMA, PBS&J will prepare the revised FIS report in the format of the existing FIS report, revising the report only to reflect current conditions and include updated data tables and flood profiles. At a minimum, the FIS report will include the following: text; cover; vicinity map; data tables; photographs (if available); flood profiles; floodway schematic; and, when necessary, transect schematic and transect location map.
- *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 Doña Ana County Flood Commission and Doña Ana County Flood Commission Contractor who are responsible for performing the activities of this project to resolve discrepancies identified during QA/QC.
- *Distribution of Preliminary DFIRM and FIS Report:* PBS&J will distribute the preliminary copies of the FIS report and DFIRM 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. 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 (5) 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);
- DFIRM mapping files in one of the database formats specified in FEMA's DFIRM Specifications;
- DFIRM database files in one of the database formats specified in FEMA's DFIRM Specifications;
- Metadata files describing the DFIRM data, including the required information as presented in the examples shown in FEMA's DFIRM Specifications;
- 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 preliminary copies of the DFIRM and FIS report;
- Documentation showing that the news release(s) was published correctly in accordance with FEMA requirements and that a similar notice was published correctly in the *Federal Register* in accordance with FEMA requirements

### **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, PBS&J, Doña Ana County Flood Commission and Doña Ana County Flood Commission Contractors will attend the meetings and assist FEMA in the presentation as required.
- *Resolving Appeals and Protests:* Appeals and protests received during the 90-day appeal period will be reviewed and resolved prior to finalizing the FIRMs and FIS report. , PBS&J, Doña Ana County Flood Commission and Doña Ana County Flood Commission Contractors will provide support to FEMA in resolving appeals and protests. Activities may include, but not limited to, attending community meetings and assisting FEMA and the PBS&J in addressing any issues that may arise in resolving appeals and protests from affected communities. For a typical appeal and 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 within the 90-day appeal period (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 DFIRM under Activities 8, 8A, 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.
- *Letter of Final Determination:* PBS&J will work with FEMA to establish an effective date for the DFIRM and FIS report, prepare a Letter of Final Determination (LFD) for FEMA review and signature, prepare a final notice for publication in the *Federal Register*, mail the LFD with appropriate enclosures, and coordinate publication of the final notice in the *Federal Register*.

- *GPO Processing:* PBS&J will prepare final copies of the DFIRM and FIS report, and provide them to FEMA . This will include preparing camera-ready film negatives of the DFIRM and paper copies of the FIS report, including flood profiles; preparing appropriate paperwork to be included with DFIRM and FIS report materials, including the transmittal letter to the community CEO, the print processing worksheet, the Printing Requisition Form, and the Community Map Action Form; 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 LFD 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;
- Five (5) sets of DFIRM negatives and paper FIS reports, including all updated data tables and flood profiles;
- Paperwork required for printing of DFIRM panels and FIS report;
- Complete DFIRM spatial database; 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
<b>General Documentation</b>														
Special Problem Reports	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Telephone Conversation Reports	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Meeting Minutes/Reports	o	o	o	o	o	o	o	o	o	o	o	o	o	o

General Correspondence	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
<b>Engineering Analyses</b>														
Hydrologic and Hydraulic Analyses	ø	ø		ø	ø	ø	ø							
<b>Section of TSDN</b>	<b>Activities</b>													
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4, 4A</b>	<b>5, 5A</b>	<b>6</b>	<b>7</b>	<b>8, 8A, 8B</b>	<b>9</b>	<b>10</b>	<b>11, 11A</b>	<b>12, 12A, 12B</b>	<b>13</b>	<b>14</b>
Key to Cross-section Labeling and Key to Transect Labeling	ø	ø				ø	ø	ø	ø					
<b>Draft FIS Report</b>				ø		ø							ø	ø
<b>Mapping Information</b>		ø						ø	ø	ø	ø	ø	ø	ø
<b>Miscellaneous Reference Materials</b>	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø

- 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, Doña Ana County Flood Commission and Doña Ana County Flood Commission Contractors will be responsible for collecting and maintaining a set of products for all Activities and shall compile a comprehensive TSDN for the entire project.

- 3. Period of Performance:** The mapping activities outlined in this MAS will begin on September 1, 2002 and will be completed no later than September 30, 2004. The Mapping Activities may be terminated at the option of FEMA or Doña Ana County Flood Commission in accordance with the provisions of the December 1, 2001 CTP Partnership Agreement.

The period of performance will be in accordance with Cooperative Agreement Article II.

- 4. Funding/Cost-Sharing:** \$50,000 through the Cooperating Technical Partners
- 5. 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	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
American Congress on Surveying and Mapping (ACSM) procedures	Ø	Ø	Ø											
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-58), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	Ø	Ø	Ø											
EM 1000-1-1000, "Photogrammetric Mapping," March 31, 1993	Ø	Ø	Ø											
EM 1110-2-1003, "Hydrographic Surveys," October 31, 1994	Ø		Ø											
Numerical Models Accepted by FEMA for NFIP Usage, January 11, 2002				Ø	Ø	Ø	Ø							
Content Standards for Digital Geospatial Metadata (Federal Geographic Data Committee, 1998)		Ø	Ø					Ø	Ø	Ø	Ø	Ø	Ø	Ø
Document Control Procedures Manual dated October 1993.													Ø	Ø

August 23, 2002  
 Agreement #1  
 (Template Version 5.2, 3/25/02)

**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	NA
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

**6. Schedule and Milestones:**

{The following table should be modified to include only activities proposed to be undertaken in this MAS.

Note: Due dates should be provided for all project tasks in the following table. If the exact project schedule is undetermined or schedules subsequently change, the table can be updated and the MAS amended to reflect the updated schedule. All changes to the project schedule should be coordinated with the FEMA Project Officer.}

ACTIVITY	RESPONSIBLE ENTITY	DUE DATE
Activity 1 – Field Surveys and Reconnaissance	Doña Ana County Flood Commission Contractor	2/28/03
Activity 2 – Topographic Data Development	Doña Ana County Flood Commission Contractor	03/31/03
Activity 3 – Independent QA/QC of Topographic Data	Doña Ana County Flood Commission	04/30/03
Activity 4 –Hydrology	Doña Ana County Flood Commission Contractor	11/30/03
Activity 5–Independent QA/QC of Hydrology	Doña Ana County Flood Commission	12/31/03
Activity 6 – Hydraulics	Doña Ana County Flood Commission Contractor	11/30/03
Activity 7 – Independent QA/QC of Hydraulics	Doña Ana County Flood Commission	12/31/03
Activity 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Doña Ana County Flood Commission Contractor	03/31/04
Activity 9 – Independent QA/QC of Floodplain Mapping	Doña Ana County Flood Commission	04/30/04
Activity 10 – Base Map Acquisition and Preparation	Doña Ana County Flood Commission	11/30/02
Activity 11 – DFIRM Production (Non-Revised Areas)	Doña Ana County Flood Commission	12/31/02
Activity 11A – Independent QA/QC of DFIRM Production (Non-Revised Areas)	PBS&J	01/31/03
Activity 12 – Merge Effective and Revised Information	Doña Ana County Flood Commission Contractor	05/30/04
Activity 13 – Issue Preliminary FIS and FIRM	PBS&J	06/30/04
Activity 14 – Post-Preliminary Processing	PBS&J	09/30/04

**7. 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).
- Certification of topographic information by the American Society for Photogrammetry and Remote Sensing is also acceptable.

**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).
- Any levee systems to be accredited will be certified in accordance with 44 CFR 65.10(e).

- 8. Technical Assistance and Resources:** Doña Ana County Flood Commission 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/](http://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.

Doña Ana County Flood Commission 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.

- 9. Contractors:** Doña Ana County Flood Commission Contractors to be determined at a latter date Doña Ana County Flood Commission will ensure that procurement of subcontractors as part of this Mapping Activity Statement complies with the requirements of 44 CFR 13.36.

**Financial Reporting:** Financial reporting requirements will be in accordance with Cooperative Agreement Articles V & VI.

- 10. Points of Contact:** The FEMA Regional Project Officer is James Orwat, and the CTP Project Manager is Paul T. Dugie 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, James Orwat.

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

Paul T. Dugie  
Paul T. Dugie, CFM, PE Flood Commission Director  
Doña Ana County Flood Commission

8/23/02  
Date

James M. Orwat  
James Orwat, PE  
Federal Emergency Management Agency

8/23/2002  
Date

\_\_\_\_\_  
{Insert FEMA MCC Project Officer's Name}  
Federal Emergency Management Agency

\_\_\_\_\_  
Date