



**County of Summit, Ohio  
Cooperating Technical Partners  
"EXHIBIT A"  
Mapping Activity Statement 2002-01**

**Statement #1 – 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 September 27, 2002, between the County of Summit, Ohio, and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement#1 is as follows:

- 1. Statement Objective and Scope:** The objective of this Mapping Activity for the County of Summit, Ohio, is to develop a new or updated Digital Flood Insurance Rate Map(s) (DFIRM) and Flood Insurance Study (FIS) report(s) for the County of Summit, Ohio. 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		
Mud Brook	0.75 Mile US of SR 303 Bridge downstream to Cuyahoga River	11.59 Miles	√	√				√	√
Brandywine Creek	Ashley Drive (just south of Middleton Road) downstream to Cuyahoga River	12.45 Miles	√	√				√	√
Yellow Creek	West County Line (just US of S. Medina Line Road) downstream to Cuyahoga River	10.88 Miles	√	√				√	√

This project will be completed by the Mapping Partners listed below:  
 Summit County Engineers Office  
 PBS&J, as FEMA's Map Coordination Contractor (MCC)  
 United States Geological Survey, as Summit County Subcontractor

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	CTP Subcontractor	MCC
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 5–Independent QA/QC of Hydrology			X
Activity 6 – Hydraulics		X	
Activity 7 – Independent QA/QC of Hydraulics			X
Activity 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)		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)			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			X
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: Summit County Subcontractor

Scope: To supplement any field reconnaissance conducted during the scoping phase of this Flood Map Project, the subcontractor 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. The subcontractor 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, the subcontractor shall make the following products available to FEMA:

- A report summarizing the findings of the field reconnaissance.

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

**Responsible Entity:** Summit County Engineer's Office

**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 Mud Brook, Brandywine Creek, and Yellow Creek using the County of Summit Engineer's detailed digital mapping and orthographic photographic images. Summit County Engineer's Office 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. Upon completion of topographic data collection and processing for Mud Brook, Brandywine Creek, and Yellow Creek, this data will be submitted to the subcontractor 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. The Summit County Engineer's Office 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, the subcontractor shall make the following products available to FEMA.

- Digital topographic maps;
- Report summarizing methodology and results;
- Digital work map with contours;
- Checkpoint analyses to assess the accuracy of data including Root Mean Square Error (RMSE) calculations to support vertical accuracy;
- 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: Summit County Subcontractor

Scope: The subcontractor shall review the mapping data generated by the Summit County Engineer's Office 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, the subcontractor 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: Summit County Subcontractor

Scope: Hydrologic analyses will be completed for approximately 67.9 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 analysis of existing gage records and regression equations. Peak flood discharges will be calculated for the 100-year annual chance storm event. This flood discharge will be the basis for subsequent hydraulic analyses of the subject flooding source(s). In addition, the subcontractor 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, the subcontractor will submit the results to PBS&J for an independent QA/QC review as described in Activity 5.

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

- Digital copies of all hydrologic modeling (input and output) files for the 100-year 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.
- All backup data used in the analysis, including work maps.

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

Responsible Entity: PBS&J

Scope: PBS&J shall review the technical, scientific, and other information submitted by Summit County or its subcontractor 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, PBS&J 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:** Summit County Subcontractor

**Scope:** The subcontractor will perform hydraulic analyses for approximately 34.92 miles of the flooding sources listed in the Section 1 of this Mapping Activity Statement. The modeling will include the 1% annual chance storm event based on peak discharges computed under Activity 4. The hydraulic methods used for this analysis will include latest version of HEC-RAS approved by FEMA. The subcontractor 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. The subcontractor shall use CHECK-RAS to check the reasonableness of hydraulic analyses. In addition, the subcontractor 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, the subcontractor will submit the results to PBS&J for an independent QA/QC review as described in Activity 7.

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

- 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
- All backup data used in the analyses;

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

Responsible Entity: PBS&J

Scope: PBS&J shall review the technical, scientific, and other information submitted by Summit County or its subcontractor 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, PBS&J 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: Summit County Subcontractor

Scope: The subcontractor 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. The subcontractor 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. The subcontractor will provide an explanation for selecting an existing topographic map if one is used for the floodplain boundary delineation. The subcontractor will incorporate the results of all effective Letters of Map Change as appropriate. In addition, The Subcontractor 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 Mud Brook, Brandywine Creek and Yellow Creek, the subcontractor will submit the results to PBS&J for an independent QA/QC review under Activity 9.

In accordance with the TSDN format described in Section 2, the subcontractor 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;
- 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 9 - Independent QA/QC Review of Floodplain Mapping**

Responsible Entity: PBS&J

Scope: PBS&J shall review the floodplain work maps submitted by the subcontractor 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
- For coastal studies, review the wave setup and runup height elevations shown on the work map for agreement with those shown on the data table(s) and check whether the stillwater elevations are shown where coastal and riverine flooding studied by detailed methods join.
- 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, 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:** Summit County Subcontractor

**Scope:** This is a required activity when Activities 8, 8A, 8B, and 11 are performed. This activity consists of obtaining the digital base maps for the project. The subcontractor 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, the subcontractor 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: PBS&J

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), PBS&J will convert the effective FIRM/FBFM panels to digital format in conformance with FEMA's DFIRM specifications. PBS&J 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 appropriate FIRM panels and appropriate FBFM panels. PBS&J 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, PBS&J 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, 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;
- 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 12 – Merging of Revised and Non-Revised Information**

Responsible Entity: PBS&J

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. PBS&J 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, 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: 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 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 the subcontractor and the Summit County Engineer's Office 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:

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

- 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.

**3. Period of Performance:** The mapping activities outlined in this MAS will begin on October 1, 2002 and will be completed no later than September 30, 2003. The Mapping Activities may be terminated at the option of FEMA or the Summit County Engineer's Office in accordance with the provisions of the \_\_\_\_\_ CTP Partnership Agreement.

**4. Funding/Cost-Sharing:**

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

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

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
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
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

**6. Schedule and Milestones:**

<b>ACTIVITY</b>	<b>RESPONSIBLE ENTITY</b>	<b>DUE DATE</b>
Activity 1 – Field Surveys and Reconnaissance	USGS	TBA
Activity 2 – Topographic Data Development	County of Summit Engineer	TBA
Activity 3 – Independent QA/QC of Topographic Data	USGS	TBA
Activity 4 –Hydrology	USGS	TBA
Activity 5–Independent QA/QC of Hydrology	PBS&J	TBA
Activity 6 – Hydraulics	USGS	TBA
Activity 7 – Independent QA/QC of Hydraulics	PBS&J	TBA
Activity 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	USGS	TBA
Activity 9 – Independent QA/QC of Floodplain Mapping	PBS&J	TBA
Activity 10 – Base Map Acquisition and Preparation	USGS	TBA
Activity 11 – DFIRM Production (Non-Revised Areas)	PBS&J	TBA
Activity 11A – Independent QA/QC of DFIRM Production (Non-Revised Areas)	PBS&J	TBA
Activity 12 – Merge Effective and Revised Information	PBS&J	TBA
Activity 12A – Apply DFIRM Graphic Specifications	PBS&J	TBA
Activity 12B – Independent QA/QC of DFIRM Graphics	PBS&J	TBA
Activity 13 – Issue Preliminary FIS and FIRM	PBS&J	TBA
Activity 14 – Post-Preliminary Processing	PBS&J	TBA

**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:** The Summit County Engineer's Office 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.

The Summit County Engineer's Office 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:** Contractors to be utilized by the County of Summit Engineer along with activities they are responsible for completing are indicated above. The County of Summit Engineer will ensure that procurement of subcontractors as part of this Mapping Activity Statement complies with the requirements of 44 CFR 13.36.
- 10. Financial Reporting:** Financial reporting requirements will be in accordance with the Cooperative Agreement.
- 11. Points of Contact:** The FEMA Regional Project Officer is Ken Hinterlong, and the CTP Project Manager is David E. White, P.E. 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, Bill Blanton.

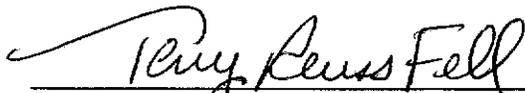
Each party has caused this Mapping Activity Statement to be executed by its duly authorized representative.



Gene Esser, P.E., P.S., County of Summit Engineer  
County of Summit, Ohio

11/15/02

Date



Terry Reuss Fell, Chief  
Hazard Identification and Risk Assessment Branch  
FEMA, Region V

9-26-02

Date