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Mifflin County, Pennsylvania Cooperating Technical Partner Mapping Activity Statement

Agreement 2001-01: Refinement of Approximate Zone A Boundaries

In accordance with the Cooperating Technical Partner (CTP) Memorandum of Agreement dated December 10, 1999, between Mifflin County, Pennsylvania and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement 2001-01 is as follows:

- 1. Objective and Scope:** The objective of this Mapping Activity is to refine and/or establish approximate Zone A flood zone boundaries in Mifflin County. Specifically, for those areas identified as problematic under the fiscal year 2000 Mapping Activity Statement, Mifflin County will undergo the following tasks:
1. Estimate the 100-year flow using the appropriate USGS regression Equation,
 2. Obtain a representative cross-section of the watercourse and floodplain,
 3. Compute a normal depth for this region using HEC-RAS, accounting for potential backwater behind hydraulic structures. The actual backwater elevation will be discussed with each project officer before completion of the analysis.
 4. Revise the Mifflin County Floodplain maps with the newly computed elevation using the County's existing topographic data.

Prior to the initiation of work under this agreement, the FEMA and Mifflin County points of contact will meet to review the problematic areas referenced above and determine which areas will undergo the above described procedure for refinement.

- 2. Period of Performance:** The period of performance will be in accordance with Agreement Article II.
- 3. Funding/Cost-Sharing:** FEMA will provide funding in the amount of \$37,830 for this project. The Mifflin County Mapping Department will provide in-kind services of an unspecified amount.
- 4. Standards:** The following standards and documents are relevant to this Mapping Activity:
- 1% annual chance water-surface elevations for approximate Zone A floodplain mapping will be determined using analyses consistent with the methods detailed in FEMA 265, *Managing Floodplain Development in Approximate Zone A Areas* (April 1995), and Chapter 6 of FEMA 37, *Guidelines and Specifications for Study Contractors* (January 1995). (FEMA 37 and FEMA 265 are available at FEMA's Web site at http://www.fema.gov/mit/tsd/EN_reg.htm). Mifflin County may expand on the approaches for analyzing Zone A areas outlined in FEMA 37 and FEMA 265 and/or develop new approaches. Such approaches should be coordinated with the FEMA Regional Project Officer prior to commencement of analysis and mapping.
 - Computer models used for hydrologic and/or hydraulic analyses will meet the requirements of 44 CFR 65.6(a)(6) and be listed on FEMA's *Numerical Models Accepted by FEMA for NFIP Usage* (http://www.fema.gov/mit/tsd/EN_modl.htm).
 - Topographic mapping used to delineate the Zone A floodplains will be of adequate scale and topographic definition to provide reasonable accuracy. Planimetric features will be

compatible with the base map (with respect to horizontal accuracy) selected by FEMA for Digital FIRM production. Topographic mapping taken from aerial photogrammetry or surveys will comply with the requirements of Appendix 4 of FEMA 37. The selection of the topographic mapping source to be used will be coordinated with the FEMA Project Officer prior to analysis and mapping.

- For areas depicted as Zone A on the effective FIRM that have been altered by the placement of earthen fill, the requirements of 44 CFR 65.5(a) apply.
- Work maps depicting the revised Zone A boundaries will comply with the requirements outlined in Chapter 9 of FEMA 37.
- Digital mapping submissions will comply with the requirements of Chapter 9 and Appendix 7 of FEMA 37.

5. Products: Mifflin County shall make the following products available:

- Topographic work maps depicting the revised 1% annual chance approximate floodplain boundaries, designated as Zone A.
- Written summary of the analysis methodologies used.
- All back-up data, including supporting calculations and assumptions for any computed 1% annual chance water-surface elevations. If computer models are utilized, input and output should be provided in both hardcopy and digital (CD-ROM, 3.5" diskette, or zip disk) format.
- If automated GIS-based models are applied, then all input data, output data, intermediate data processing products, and GIS data layers.
- Completed Forms 1 through 5 of *Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions* (MT-2).

6. Schedule and Milestones:

Milestone 1: Products for the first milestone to be provided to the FEMA Project Officer include:

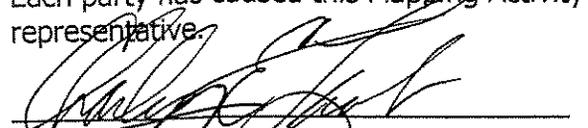
- Annotated copies of effective FIRMs depicting proposed revisions and/or Zone A areas to be added.
- Documentation of the proposed source of topographic data, scale, contour interval, source/methodology, date of survey/data collection, vertical and horizontal datums, and comparison of planimetric features with the Digital FIRM base map selected for use by FEMA.
- A written description of the proposed analysis methodology.

Milestone 2 (Final Product): Final products to be provided to the FEMA Project Officer include:

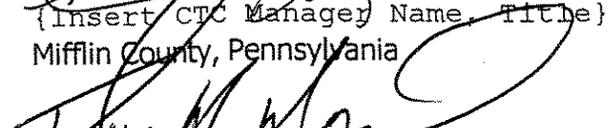
- Topographic work maps depicting 1% annual chance (Zone A) floodplain boundaries.
- All supporting computations, including computer model input and output.
- Completed Forms 1 through 5 of *Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions* (MT-2).
- If GIS-based models are applied, all input and output data, intermediate data processing products, and GIS data layers. A Quality Assurance/Quality Control (QA/QC) report documenting that the results of the independent review of all computational and data processing procedures were independently reviewed will also be submitted.

- 7. Certification:** The following certifications apply to this Mapping Activity (as appropriate):
- 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).
 - If fill is to be considered in the mapping to raise land areas above the 1% annual chance flood elevation, certification of the fill will be provided in accordance with 44 CFR 65.5(a)(6) by the community's NFIP permit official, a registered Professional Engineer, or a Licensed Land Surveyor.
- 8. Technical Assistance and Resources:** Mifflin County may obtain copies of FEMA-issued Letters of Map Change (LOMCs), archived engineering back-up data, and data collected as part of the Mapping Needs Assessment Process from FEMA's Mapping Coordination Contractor (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 Web site (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 12 of this Mapping Activity Statement.
- 9. Contractors:** Procurement of subcontractors using Federal funds provided as part of this Mapping Activity will comply with the requirements of 44 CFR 13.36.
- 10. Quality Assurance/Quality Control (QA/QC) Procedures:** Mifflin County will undertake internal QC reviews to ensure that the products described under Section 5 of this Mapping Activity Statement conform with the standards outlined under Section 4 of this Mapping Activity Statement. Additionally, an independent review for compliance with these standards will be undertaken by Dewberry & Davis. The QA/QC procedures outlined in Chapter 10 of FEMA 37 should be followed during the development of the approximate Zone A analyses and mapping.
- 11. Reporting:** Reporting requirements will be in accordance with Agreement Articles V & VI.
- 12. Points of Contact:** The FEMA Regional Project Officer is Erik Rourke, and the CTP Project Manager is Brian Forshey or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. If it is necessary, the assistance of FEMA's MCC should be requested through the FEMA MCC Project Officer, Samara Ebinger.

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



 {Insert CTC Manager Name, Title}
 Mifflin County, Pennsylvania



 Thomas M. Majusiak
 Division Director

8/6/01

 Date

8/20/01

 Date