Licking County, Ohio
Federal Emergency Management Agency
Cooperating Technical Partner

Task Agreement 2001-01 - Refinement of Approximate Zone A Boundaries

In accordance with the CTP Memorandum of Agreement dated January 31, 2001 between Licking County, Ohio and the Federal Emergency Management Agency, Task Agreement 2001-02 is as follows:

1. **Objective and Scope:** The objective of this agreement is to refine and/or establish approximate Zone A flood zone boundaries in Licking County. Analyses will be of the 1% annual chance flood representing existing conditions and will encompass approximately 25.8 square miles of drainage area and 16.9 linear miles of flooding including the following flooding sources: please review Attachment A. These Zone A floodplain delineations will be used by FEMA to revise the December 1, 1983 Flood Insurance Rate Map (FIRM) for Licking County. Licking County will use the 1% annual chance flood elevations determined as part of this agreement for floodplain management in accordance with the provisions of Title 44 of the Code of Federal Regulations (CFR) 60.3(b)(4).

2. **Period of Performance:** This Task Agreement will begin on January 31, 2001 and end no later than December 7, 2002. This Task Agreement may be terminated at the option of FEMA or Licking County in accordance with the provisions of the January 31, 2001 CTP Memorandum of Agreement.

3. **Funding/Cost-Sharing:** Funding for this mapping activity was provided by FEMA Project Impact grant money awarded to Licking County in December, 1998.

4. **Standards:** The following standards and documents are relevant to this Task Agreement:

   - 1% annual chance (100-year) 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 website at http://www.fema.gov/mit/tsd/EN_reg.htm) Licking 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 Project Officer prior to commencement of analysis and mapping.
   - Computer models used for hydrologic and/or hydraulic analyses must 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 flood plain boundaries must be of adequate scale and topographic definition to provide reasonable accuracy. Planimetric features must be compatible with the base map (with respect to horizontal accuracy) to be used by FEMA for Digital FIRM production. Topographic mapping taken from aerial

photogrammetry or surveys must comply with the requirements of Appendix 4 of FEMA 37. The selection of the topographic mapping source to be used must 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 must comply with the requirements outlined in Chapter 9 of FEMA 37.
- Digital mapping submissions must comply with the requirements of Chapter 9 and Appendix 7 of FEMA 37.
- (Delete this item if automated GIS-based modeling and mapping are not utilized) Automated data processing and modeling algorithms for GIS-based modeling and mapping must be documented and submitted to ensure they are consistent with the standards outlined above. Digital data sets (such as elevation, basin, or land use data) must be documented and submitted to FEMA for approval prior to performing the analysis to ensure they meet minimum requirements. If non-commercial (ie, custom developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software must be submitted to FEMA for review prior to performing the scope of work.

5. **Deliverables:** Licking County shall deliver to FEMA:
   - Topographic work maps depicting the revised 1% annual chance approximate floodplain boundaries, designated as Zone A.
   - Written summary of the analysis methodologies used.
   - All backup 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.
   - Form numbers 1 through 5 of *Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions* (MT-2).

6. **Schedule and Milestones:**

   Milestone 1: Tasks to be completed for the first milestone include:
   - Final selection of flooding sources and limits to be studied.
   - Selection of suitable topographic data for floodplain delineation, including comparison of planimetric features (such as roads) to the base map planned for use by FEMA for Digital FIRM production.
   - Selection of analysis methodology.

   Deliverables for the first milestone include:
   - Annotated copies of effective FIRMs depicting limits of proposed revisions and/or Zone A areas to be added.

- Documentation of the proposed source of topographic data, including: 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 planned for use by FEMA.
- A written description of the proposed analysis methodology.
- (Delete if automated H&H is not utilized) Documentation of digital data sets to be used (such as elevation, basin, and land use data). Full user documentation; technical description of methodologies and algorithms; and a copy of the source codes and custom-developed software applications for GIS-based modeling must also be submitted.

Deliverables for Milestone 1 will be submitted to the FEMA Project Officer no later than December 7, 2001.

Milestone 2 (Final Deliverable): Tasks to be completed for the second milestone include:

- Analysis of 1% annual chance flood elevations.
- Delineation of 1% annual chance floodplain boundaries.

Deliverables for the second milestone include:

- Topographic work maps depicting 1% annual chance (Zone A) floodplain boundaries.
- All supporting computations, including computer model input and output.
- Completed form numbers 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 QA/QC report documenting the results of the independent review of all computational and data processing procedures were independently reviewed must also be submitted.

Final deliverables will be submitted to the FEMA Project Officer no later than September 7, 2002.

7. **Certification:** The following certifications apply to this task agreement (as appropriate):
   - Hydrologic and/or hydraulic analyses and data must be certified by a registered professional engineer or licensed land surveyor in accordance with 44 CFR 65.6(f).
   - Topographic information must 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 must 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:** Licking County may obtain copies of FEMA-issued Letters of Map Change (LOMC), archived engineering backup data, and data collected as part of the Five-Year Mapping Needs Assessment from FEMA's Mapping Coordination Contractor (MCC). The MCC may be contacted at 1-877 FEMA MAP. General technical and programmatic information, such as FEMA 265, the Quick-2 computer program, and the

MT-2 forms can be downloaded from FEMA's Flood Hazard Mapping website (www.fema.gov/mit/tsd/). Specific technical and programmatic support may be provided through FEMA's MCC; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this agreement.

(Delete this paragraph if GIS-based automated techniques are not utilized) Licking County, OH may also consult with the FEMA Project Officer to request support in the areas of: selection of data sources, digital data accuracy standards, assessing vertical data accuracy, data collection methods or sub-contractors, and GIS-based engineering and modeling training.

9. **Subcontractors:** Licking County, OH will enter into a contract with a qualified engineering consulting firm to complete the necessary mapping activities under the CTP Agreements. Procurement of subcontractors using Federal funds provided as part of this Task Agreement must comply with the requirements of 44 CFR 13.36.

10. **QA/QC Procedures:** The Quality Assurance procedures outlined in Chapter 10 of FEMA 37 should be followed during the development of the approximate Zone A analyses and mapping. Analyses and mapping should be independently reviewed for compliance with the standards defined in Section 4 of this agreement. This independent review will be conducted by FEMA.

    (For automated H&H) For GIS-based, automated modeling, QA/QC tasks should ensure automated calculations are reasonable and in compliance with standard flood modeling and mapping approaches. Licking County, OH must document internal QA/QC procedures to FEMA to ensure all calculations and data processing were reviewed.

11. **Reporting:** FEMA will conduct an independent review through a QA/QC process.

12. **Points of Contact:** The FEMA Project Officer is Eric Berman and the CTP's Project Manager is Jake Greuey, or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities.

Each party has caused this Task Agreement to be executed by its duly authorized representatives.

Jay N. Baird — 1/29/01

Jay Baird, President
Licking Co. Board of Commissioners — date

Terry Reuss Fell — 4/3/01

Terry Reuss Fell, Chief, Hazard Identification and Mitigation Division, FEMA - Region V — date

ATTACHMENT A

South Fork Licking River Watershed Floodplain Remapping Project

Streams to be mapped as Approximate A Zones under Task Agreement 2001-01

Sub- Basin	Stream	Description	Approx. Mileage	Drainage Area (sq. mi)
South Fork				
	Muddy Fork	W. to Summit Rd.	4.46	5.3
	Beechwood Trails Trib.		1	1.8
	Trib.S. of Etna	NW of Watkins H.S.	3.38	2
	Trib. Near Creek Rd.	Trib. W. of Watkins R	1.82	4
	Trib. S. of Kirkersville	W. to 2nd US 40 Cros	1.3	3.5
		Total	11.96	16.6
Raccoon				
	Kiber Run	W. to Duncan Plains	1.88	1.6
	Trib. To Miller's Cr.	W. to Caswell Rd.	0.71	2.2
	Trib. To Hazelton Cr.	W. to S.R. 310	0.88	2.4
	Pet Run	Map Lower 1.5 Miles	1.5	3
		Total	4.97	9.2
		TOTAL MILEAGE	**16.93**	**25.8**