Gwinnett County, Georgia
Federal Emergency Management Agency
Cooperating Technical Partners
Mapping Activity Statement

Agreement #1- Hydrologic and Hydraulic Analyses and Floodplain Mapping

In accordance with the Cooperating Technical Partners (CTP) Memorandum of Agreement dated June 11, 2001, between Gwinnett County, Georgia and the Federal Emergency Management Agency (FEMA), Agreement #1 is as follows:

1. **Objective and Scope:** The objective of this Mapping Activity is to develop detailed hydrologic and hydraulic analyses and floodplain and floodway mapping for the existing and future land use conditions in Gwinnett County. A hydrologic and hydraulic analysis will be completed for five (5) of the watershed basins in the county. Flood profiles and floodways will be developed for approximately 100 miles of stream. The product will be detailed digital floodplain mapping representing existing and future land use conditions floodplains and floodway mapping representing future land use conditions mapped on the existing land use floodplain. The future land use 1% chance annual chance floodplain will be used as the Zone X designation in the five (5) watersheds in lieu of the .2% annual chance floodplain. This data along with the remaining existing floodplain designations will be used to develop a countywide digital Flood Insurance Rate Map (FIRM) for Gwinnett County.

2. **Period of Performance:** This Mapping Activity will begin on JANUARY 25, 2002 and end no later than January 1, 2004. This Mapping Activity may be terminated at the option of FEMA or Gwinnett County, Georgia in accordance with the provisions of the June 11, 2001, CTP Memorandum of Agreement.

3. **Funding/Cost-Sharing:** The County will fund the completion of hydrologic and hydraulic work for the Apalachee River, Alcovy River, Big Haynes Creek, Mulberry River and Crooked Creek. FEMA will provide for the processing of this information and the digitization of the remaining existing floodplain designations into a digital countywide Flood Insurance Rate Maps (FIRM) and a new Flood Insurance Study (FIS) Text for Gwinnett County.

4. **Technical Assistance and Resources:** FEMA will provide technical assistance and resources to Gwinnett County for the completion of this Mapping Activity Statement. FEMA will prepare digital countywide FIRM's and a FIS text that reflect the modeling efforts by Gwinnett County on the 5 watersheds studied. FEMA's Mapping Coordination Contractor (MCC), Dewberry & Davis (D&D), will prepare the digital countywide FIRM's for FEMA. The digital countywide FIRM's and FIS text will be prepared in accordance with FEMA's *Guidelines and Specifications for Flood Map Production Coordination Contractors (Final Draft dated February 17, 1999).* Also included is the digitizing of the 1% annual chance floodplains and floodways for the remaining floodprone areas as shown on the County's FIRM's and on the FIRM panels of the incorporated municipalities of the City of Sugar Hill, the City of Buford, the City of Suwanee, the Town of Rest Haven, the City of Berkeley Lake, the City of Norcross, the City of Lilburn, the City of Duluth, the City of Grayson, the City of Loganville, the City of Snellville, the City of Dacula and the City of Lawrenceville.

FEMA's MCC, D&D, will perform a limited engineering review of the five (5) watershed flood study modeling efforts. The submission by the county of their contractors QC documents will be sufficient documentation that a detailed review has been accomplished.

In addition, FEMA's MCC, D&D, will be available to the County for technical and programmatic support; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this Mapping Activity Statement. General technical and programmatic information can be downloaded from FEMA's Flood Hazard Mapping web site (www.fema.gov/mit/tsd).

5. **Standards:** The following standards and documents are relevant to this Mapping Activity:

   - Detailed hydrologic and hydraulic analyses and floodplain mapping will follow the standards set forth in FEMA 37, *Guidelines and Specifications for Study Contractors* (January 1995) and Title 44 of the Code of Federal Regulations (CFR), Part 65.

   - Computer models used for the hydrologic and/or hydraulic analyses will be the HEC-1 or HEC-HMS model and the HEC-RAS model.

   - The Technical Support Data Notebook will follow the standards set forth in FEMA 37, *Guidelines and Specifications for Study Contractors* (January 1995).

   - Topographic mapping used to delineate floodplain and floodway boundaries 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) to be used by FEMA for Digital FIRM production. Topographic mapping taken from aerial photogrammetry or surveys should comply with the requirements of Appendix 4 of FEMA 37.

   - Any levee or dike systems to be shown on the community's FIRM as providing protection from the 1% annual chance flood will comply with the requirements of 44 CFR 65.10. Chapter 7 of FEMA 37 provides guidelines for evaluating levee systems.

   - Flood elevations and floodplain and floodway boundaries will reasonably tie in to non-revised information in accordance with 44 CFR 65.6(a)(6).

   - Digital mapping will comply with the requirements of Chapter 9 and Appendix 7 of FEMA 37.

   - Digital Elevation Models (DEMs) and field survey data will meet vertical accuracy requirements contained in Appendix 4 of FEMA 37.

6. **Products:** Gwinnett County will make available the following data from the five (5) watershed flood studies:

   - Technical Support Data Notebooks, meeting the standards of FEMA 37, for the Apalachee River, Alcovy River, Big Haynes Creek, Mulberry River, and Crooked Creek;

- Digital 1% annual chance floodplain representing existing conditions and existing land use for the Apalachee River, Alcovy River, Big Haynes Creek, Mulberry River, and Crooked Creek;

- Digital 1% annual chance floodway representing future conditions mapped on the existing conditions floodplain for the five (5) identified watersheds. The future land use floodways will be computed based upon the flows associated with the future land use runoff and the subsequent 1% annual chance floodstages. These floodway widths will then be input back into the existing land use 1% annual chance flood HEC-RAS files to compute the floodway surcharge associated with the more restrictive floodway widths;

- Digital 1% annual chance floodplain representing future conditions for the Apalachee River, Alcovy River, Big Haynes Creek, Mulberry River, and Crooked Creek;

- Digital profiles of the 10%, 2%, 1%, and 0.2% annual chance water surface elevations representing existing conditions;

- Digital profiles of the 1% annual chance water surface elevations representing future conditions

- Copies of MT-2 Forms for each of the five (5) watershed studied;

- Digital copies of all HEC-1/HEC-HMS and HEC-RAS modeling for existing land use and existing conditions (input and output files) for the 10%, 2%, 1%, and 0.2% annual chance flood;

- Digital copies of all HEC-1/HEC-HMS and HEC-RAS modeling for future land use and future conditions (input and output files) for the 1% annual chance flood;

- Digital copy of the HEC-RAS modeling for the future land use condition floodway widths with the existing land use and existing conditions discharges;

- All back-up data used in the analyses or mapping to include survey data and HEC-1/HEC-HMS parameter development;

- Digital base map to be used for the FIRM panels; and

- Quality control (QC) documents for the HEC-1/HEC-HMS and HEC-RAS modeling in each of the five (5) watersheds.

7. **Schedule and Milestones:**

Milestone 1 (Digital Base Mapping): The County's latest digital base map will be submitted upon adoption of the Mapping Activity Statement, for review by FEMA's MCC, D&D. Digital base map information from the year 2000 aerial photographs will be available by June 2002 for the northern half of the County and will be submitted to D&D by July 2002. Digital base map information from the year 2000 aerial photographs for the southern half of the County will not be available at this time; the County will provide digital base map information from the 1988 aerial photographs for the southern half of the County. D&D will provide comments in a timely fashion

back to the FEMA and Gwinnett County concerning compliance of the county's digital product with FEMA specifications.

Milestone 2 (Watershed Flood Studies): Products associated with the five (5) watershed flood studies will be provided to the FEMA Project Officer on or before July 2002. This includes submittal of all data listed in Section 6 of this Mapping Activity Statement that pertain to these watershed master plans. The projected submittal dates of the five (5) watershed studies is as follows:

- Apalachee River — September 2001
- Alcovy River — January 2002
- Crooked Creek — February 2002
- Big Haynes Creek — March 2002
- Mulberry River — July 2002

Milestone 3 (Preliminary DFIRM): FEMA's MCC, D&D, will prepare the countywide DFIRM product and will provide a copy of the Preliminary DFIRM panels and FIS text to the county for review and comment prior to FEMA and Gwinnett County holding the Public Information Meeting (PIM) to present the new DFIRM's to the public. The DFIRM and FIS text will be delivered to the county approximately 6 months after the submittal of the Mulberry River flood study.

Milestone 4 (Appeals Period): The County will be available to assist in answering and resolving any technical appeals submitted during the statutory 90-day appeal period which follows the Final PIM in the county.

Milestone 5 (Letter of Final Determination): FEMA will provide the county with a Letter of Final Determination (LFD) approximately 2 months after the completion of the 90 day appeal period or the resolution of all appeals. The LFD will finalize all base (1% chance) flood elevations.

8. **Certification:** The following certifications apply to this Mapping Activity (as appropriate):

   - A registered professional engineer or licensed land surveyor in accordance with 44 CFR 65.6(f) will certify hydrologic and/or hydraulic analyses and data.
   - A registered professional engineer or licensed land surveyor in accordance with 44 CFR 65.5(c) will certify topographic information. Topographic information associated with the Gwinnett County 1988 contour maps will not require certification as long as Gwinnett County accepts these as best available topographic mapping.
   - 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.
   - Any levee systems to be accredited as discussed in Section 4 of this Mapping Activity Statement will be certified in accordance with 44 CFR 65.10(e).

9. **Subcontractors:** Not Applicable

10. **Quality Assurance/Quality Control (QA/QC) Procedures:** The QA/QC procedures outlined in Chapter 10 of the *Guidelines and Specifications for Study Contractors* shall be used by the county and their contractors to assure the quality of the Flood Insurance Study (FIS) data that is being submitted. Analyses and mapping should be independently reviewed for compliance with the standards defined in Section 5 of this Mapping Activity Statement. Gwinnett County and FEMA's MCC, D&D will conduct the independent review.

    The QA/QC documents submitted by the County for the HEC-1/HEC-HMS and HEC-RAS modeling on the five (5) watersheds identified in this Mapping Activity Statement, shall be used by the MCC as an acceptable review, in lieu of a detailed engineering review by the MCC of the applicable models.

11. **Reporting:** Quarterly reports will be prepared by the County and FEMA's MCC, D&D. These reports will address the status of the project and identify any areas where problems may exist. These reports will be submitted to the FEMA Project Officer.

12. **Points of Contact:** The FEMA Project Officer is Laura Algeo and the CTP's Project Manager is Sam Fleming, or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities.

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

David Evans, Division Director
Storm Water Management
Gwinnett County Department of Public Utilities

1-15-02
Date

Laura Algeo, CTP Project Officer
Federal Emergency Management Agency

1-25-02
Date