Prince George's County, Maryland
Federal Emergency Management Agency
Cooperating Technical Partner
Mapping Activity Statement

Agreement 2001-01 Hydrologic and Hydraulic Analyses and Floodplain Mapping

In accordance with the Cooperating Technical Partner (CTP) Memorandum of Agreement dated August 9, 1999 between Prince George's County and the Federal Emergency Management Agency (FEMA), Agreement 2001-01 is as follows:

1. Objective and Scope: The objective of this Mapping Activity is to develop detailed hydrologic and hydraulic analyses, and floodplain mapping in Prince George's County. Hydrologic analyses will be completed for approximately 93 square miles of drainage area and hydraulic analysis and floodplain mapping for approximately 105 linear miles of flooding, including the following flooding sources within the Western Branch Watershed:

1. Baldhill Hill Branch (Drainage Area = 6.01 square miles)
2. Folly Branch (D.A. = 6.29 mi2)
3. Lottsford Branch (D. A. = 9.07 mi2)
4. Northeast Branch (D. A. = 3.87 mi2)
5. Unnamed Tributary No. 7 (D. A. = 3.14 mi2)
6. Southwest Branch (D. A. = 15.47 mi2)
7. Unnamed Tributary No. 8 (D. A. = 1.16 mi2)
8. Ritchie Branch (D. A. = 2.41 mi2)
9. Collington Branch (D. A. = 23.46 mi2)
10. East Branch (D. A. = 1.64 mi2)
11. Unnamed Tributary No. 10 (D. A. = 1.0 mi2)
12. Black Branch (D. A. = 2.89 mi2)
13. Turkey Branch (D. A. = 2.19 mi2)
14. Cabin Branch (D. A. = 8.47 mi2)
15. Back Branch (D. A. = 2.65 mi2)
16. Federal Spring Branch (D. A. = 4.07 mi2)
17. Western Branch.

GIS-based hydrologic and hydraulic modeling and mapping techniques will be applied to develop digital GIS data sets in support of the automation or semi-automation of modeling and floodplain mapping.

2. **Period of Performance:**
   The period of performance will be in accordance with Agreement Article II.

3. **Funding/Cost-Sharing:** The total project cost for this effort is $60,000 with cost sharing divided between the Federal Emergency Management Agency ($40,000) and Prince George's County ($20,000)

4. **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. FEMA 37 is available at FEMA's web site at http://www.fema.gov/mit/tsd/EN_reg.htm.
   - Computer models used for hydrologic and/or hydraulic analyses will meet the requirements of 44 CFR 65.6(a)(6) and be 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 floodplain 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 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.
   - 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).
   - The floodway will be established in accordance with 44 CFR 65.7, as well as any applicable state requirements.
   - Digital mapping will comply with the requirements of Chapter 9 and Appendix 7 of FEMA 37.
   - Automated data processing and modeling algorithms for GIS-based modeling and mapping will be documented and provided to ensure they are consistent with the standards outlined above. Digital data sets (such as elevation, basin, or land use data) will be documented and provided to FEMA for approval prior to performing the analysis to ensure they meet minimum requirements. If non-commercial (i.e., custom developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software will be provided to FEMA for review prior to performing the scope of work.
   - Digital Elevation Models (DEMs) and field survey data will meet vertical accuracy requirements contained in Appendix 4 of FEMA 37.

5. **Products:** Prince George's County will make available items outlined in Chapter 11 of FEMA 37 in the Technical Support Data Notebook (TSDN) format. These include:
   - Digital 1% and 0.2 % annual chance floodplain boundaries;
   - Digital profiles of the 10%, 2%, 1%, and 0.2% annual chance water surface elevations representing existing conditions;
   - Flood Insurance Study (FIS) report;
   - Digital copies of all hydrologic and hydraulic modeling (input and output files); and
   - All back-up data used in the analyses or mapping.

For GIS-based modeling and mapping, Prince George's County will deliver all digital input and output data, intermediate data processing products, GIS data layers, and final products in the format of the DFIRM database structure.

6. **Schedule and Milestones:**

Milestone 1 (Scoping Phase): Upon completion, products for the first milestone will be provided to the FEMA Project Officer. These include:

- Annotated copies of effective FIRMs depicting limits of proposed study.
- 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 summary of the initial data research; proposed analysis methodologies; and a work plan.
- 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 will also be provided.
- Copies of topographic maps depicting proposed cross section locations.

Milestone 2 (Hydrology Phase): Upon completion, products for the second milestone will be provided to the FEMA Project Officer. This includes draft hydrologic analyses in accordance with the TSDN format.

Milestone 3 (Hydraulics Phase): Upon completion, products for the third milestone will be provided to the FEMA Project Officer. These include the hydraulic models and sample floodplain mapping in accordance with TSDN format.

Milestone 4 (Final Products): Upon completion, final products will be provided to the FEMA Project Officer. These include:

- The completed TSDN and accompanying data containing the information outlined in Section 5 of this Mapping Activity Statement.
- A QA/QC report documenting the results of the independent review of all computational and data processing procedures

Final products will be made available in accordance with the Period of Performance described in Section 2 of this Mapping Activity Statement.

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.
- 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).

8. **Technical Assistance and Resources:** Prince George's County may obtain copies of LOMCs, archived engineering back-up data, and data collected as part of the Five-Year Mapping Needs Assessment from FEMA's Mapping Coordination Contractor (MCC) as part of the initial data research. Copies of FEMA's rule-based engineering software packages such as CHECK-2 to evaluate HEC-2 models and FISPLOT, an automated flood profile plotting software package, may also be obtained through the MCC/TEC. The MCC/TEC may be contacted at 1-877-FEMA-MAP (336-2627). General technical and programmatic information 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/TEC; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this Mapping Activity Statement.

   Prince George's County may also consult with the FEMA Project Officer to request support in the areas of: recommended data sources, recommended digital data accuracy standards, assessing vertical data accuracy, data collection methods or sub-contractors, GIS-based engineering and modeling training.

9. **Subcontractors:** 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:** The QA/QC procedures outlined in Chapter 10 of the *Guidelines and Specifications for Study Contractors* should be followed during the development of the hydrologic and hydraulic analyses and floodplain mapping. Analyses and mapping should be independently reviewed for compliance with the standards defined in Section 4 of this Mapping Activity Statement. This independent review will be conducted by Dewberry & Davis.

    For GIS-based, automated modeling, QA/QC activities should ensure automated calculations are reasonable and in compliance with standard flood modeling and mapping approaches. Prince George's County will document internal QA/QC procedures to FEMA to ensure all calculations and data processing were reviewed.

11. **Reporting:** Reporting requirements will be in accordance with Agreement Articles V & VI.

12. **Points of Contact:** The FEMA Project Officer is Erik J. Rourke and the CTC's Project Manager is Dr. Mow-Soung Cheng, 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.

Deputy Chief Administrative Officer
CTP Partner's authorized representative — date 7/13/01

FEMA authorized representative — date 7/23/01

State representative* — date

* In States where statutory and/or regulatory requirements require the State's review and/or approval of new flood hazard data, the State will be a signatory to a community's Mapping Activity Statement.

Reviewed & Approval Recommended
Samuel E. Wynkoop, Jr.
Director, DER

FEDERAL EMERGENCY MANAGEMENT AGENCY

AGREEMENT ARTICLES

GRANTEE: Prince George's County Government

AGREEMENT NUMBER: _____ **AMENDMENT NUMBER:** AWARD

PERFORMANCE PERIOD: September 30, 2001 thru September 30, 2002

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ARTICLE I – PROJECT DESCRIPTION

The Recipient shall perform the work described in the Program Narrative/Mapping Activities Statement, which was included as part of the application package and made a part of these Cooperative Agreement Articles.

ARTICLE II – PERIOD OF PERFORMANCE

The period of performance shall be twelve (12) months from the effective date of this Cooperative Agreement: September 30, 2001 thru September 30, 2002

ARTICLE III – AMOUNT TO BE AWARDED

This Cooperative Agreement is for the administration and completion of an approved Cooperative Technical Communities Initiative. Cooperative agreement funds shall not be used for other purposes.

The scope and conditions of the tasks to be undertaken by the Recipient with the amount of money identified on FEMA Form 76-10A as the "AMOUNT AWARDED THIS ACTION" during the time identified as the "PERFORMANCE PERIOD" are contained in the Program Narrative/Mapping Activities Statement.

ARTICLE IV – REQUEST FOR ADVANCE/REIMBURSEMENT

FEMA also uses the Direct Deposit/Electronic Funds Transfer (DD/EFT) method of payment to its Recipients. To enroll in the DD/EFT, the Recipient must complete a Standard Form 1199A, Direct Deposit Form. The Recipient may be paid in advance, or reimbursed by completing the Standard Form (SF) 270, Request for Advance/Reimbursement. The timing and amount of cash advances should be as close as administratively possible to the actual cash disbursement by the Recipient.

ARTICLE V – FINANCIAL REPORTS

The Recipient shall submit financial reports (FEMA Form 20-10, Financial Status Report), to the FEMA Regional Office, within 30 days after the end of each quarter. Reporting dates are: January 30, April 30, July 30 and October 30. The final financial report is due 90 days after the close of the Cooperative Agreement. Copies of the financial status report are to submitted to the FEMA Regional Office. The address is as follows:

FEMA Region IIII
One Independence Mall, Sixth Floor
615 Chestnut Street
Philadelphia, PA 19106-4404
Attn: Operations Support Division

NOTE: If the SF 270 is used for payment, the quarterly financial reports may be waived with only a final financial report due 90 days after the close of the Cooperative Agreement.

ARTICLE VI – PERFORMANCE REPORTS

The Recipient shall submit performance reports to the FEMA Regional Office within 30 days after the end of each quarter -- January 30, April 30, July 30, and October 30. A final performance report is due 90 days after the close of the grant. The Recipient shall submit copies of the performance report to the FEMA Regional Office at the address listed in Article VI.

ARTICLE VII – PROJECT OFFICIALS

A. The FEMA officials for the Cooperating Technical Communities Initiative are as follows:

1. The Program Officer (PO) shall be an official at the FEMA Regional Office who will be responsible for the technical monitoring of the stages of work and technical performance of the activities described in the Program Narrative/Mapping Activities Statement.

2. The Assistance Officer (AO) is the FEMA Official who has full authority to negotiate, administer and execute all business matters of the Cooperative Agreement.

ARTICLE VIII – BUDGET

A. The Recipient shall follow prior approval requirements found in the Emergency Management and Assistance Regulations, 44 CFR, Part 13.30. For non-construction grants, transfers of funds between total direct cost categories in the approved budget shall receive the prior approval of FEMA when such cumulative transfers among those direct cost categories exceed ten percent of the total budget. The Recipient shall obtain prior written approval for any budget revision which would result in the need for additional funds. If a grant provides funding for both construction and non-construction activities, the Recipient must obtain written approval from FEMA before making any fund or budget transfer from non-construction to construction or vice versa.

B. No transfer of funds to agencies other than those identified in the approved grant application shall be made without prior approval of FEMA.

C. All contributions, cash and in-kind, are accepted as part of the Recipient's matching share. Except as allowed by Federal Statute, no other Federal grant funds can be used as a match. One exception is the Community Development Block Grant, which can be used as Recipient's in-kind match. The following documentation is required for matching cash contributions: Record of source of donor, dates, rates, amounts, and deposit slips. The following documentation is required for matching in-kind contributions: Record of donor, dates, rates, and amount. Requirements for in-kind contributions can be found in OMB Circular A-102, Common Rule, Part 13.24.

D. No additional cooperative agreements, monetary increase amendments hereto, or time extension amendments hereto, will be approved unless all financial or performance reports are current. Exceptions to this policy must be concurred on by the FEMA Program Officer or his/her designate.

ARTICLE IX – OTHER TERMS AND CONDITIONS

The other terms and conditions of this agreement are as follows:

A. Prior to the start of any construction activity, the Recipient shall ensure that all applicable Federal, State, and local permits and clearances are obtained.

B. Preaward costs applicable to the Cooperative Technical Communities Initiative are allowable if approved, in writing, during the pre-application process by the FEMA Program Officer or his/her designate.

C. The funds for the Cooperative Agreement shall only be used to cover allowable costs, included in the application package, which are incurred during the performance period. In addition, valid obligations incurred before the end of the performance period for purchased services, equipment and supplies, specifically identified in the approved application shall be considered allowable cooperative agreement costs to the extent of actual subsequent expenditures. If obligations are included in the claimed grant costs, adequate records shall be maintained to disclose fully the date and amount incurred and the date and amount of subsequent payment. Obligations claimed in one grant reporting period shall be excluded from expenditures claimed in prior or subsequent periods.

D. The Recipient is free to copyright any original work developed in the course of or under the agreement. FEMA reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, the work for Government program purposes. Any publication resulting from work performed under this agreement shall include an acknowledgement of FEMA financial support and a statement that the publication does not necessarily reflect FEMA's views.

E. Recipients are encouraged to integrate National Environmental Policy Act (NEPA) compliance and related legislation as implemented under 44 CFR, Part 10, with the initial planning and decision making process for this program. Recipients are encouraged to seek support from FEMA Environmental Officers in complying with NEPA requirements.

F. The Recipient shall transfer to FEMA, the appropriate share, based on the Federal support percentage, of any refund, rebate, credit or other amounts arising from the performance of this Cooperative Agreement, along with accrued interest, if any. The Recipient shall take necessary action to effect prompt collection of all monies due or which may become due and to cooperate with FEMA in any claim or suit in connection with amounts due.

G. The Recipient agrees, by accepting the funds in this cooperative agreement from FEMA, to comply with all the provisions of 44 CFR, Subsection 13.32, Equipment. Instructions on which property items are to be reported should be provided in writing by the Program Officer or his/her designate.

ARTICLE X – AUDIT REQUIREMENTS

All Recipients and Sub-recipients must follow the audit requirements of OMB Circular A-133, revised.

ARTICLE XI – ORDER OF PRECEDENCE

If two Cooperative Agreement-applicable documents appear to be in conflict, the order of precedence is the law, the highest priority document. Next are documents closest to the law; i.e., regulations, followed by any like document that has been issued most recently because it may supersede earlier documents. Documents must avoid conflicts with guidance in other applicable documents. In the event of a conflict, FEMA must resolve the conflict.

ARTICLE XII – GENERAL PROVISIONS

The following are hereby incorporated into this agreement by reference:

44 CFR	Emergency Management and Assistance Regulations	
	Part 13	Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments
	Part 7	Nondiscrimination In Federally-Assisted Programs (FEMA)
	Part 10	Environmental Considerations
	Part 14	Administration of Grants: Audits of State and Local Governments
	Part 17	Government-wide Debarment and Suspension (Non-procurement) and Government-wide Requirements for Drug-Free Workplace (Grants)
	Part 18	New Restrictions on Lobbying
	SUBCHAPTER B – Insurance and Hazard Mitigation	
31 CFR 205.6	Funding Techniques	
P.L. 95-224	Federal Grant and Cooperative Agreement Act of 1977	

P.L. 101-336	The Americans With Disabilities Act
E.O. 12372	Intergovernmental Review of the Federal Emergency Management Agency Programs and Activities
OMB Circular A-21	Cost Principles for Educational Institutions
OMB Circular A-50	Audit Follow-up
OMB Circular A-87	Cost Principles for State and Local Governments
OMB Circular A-102	Uniform Administration Requirements for Grants & Agreements With State and Local Governments
OMB Circular A-110	Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations
OMB Circular A-122	Cost Principles for Nonprofit Organizations
OMB Circular A-123	Internal Control System
OMB Circular A-133 (Revised)	Audits of States, Local Governments, and Nonprofit Organizations
FEMA Manual 2700.1	Advance Finance Payment Systems
Assurances	Grant Agreement Application and Assurances contained therein received by FEMA on 9/17/99.

ARTICLE **XIII – CONTENTS OF GRANT**

This Cooperative Agreement No. EMP-1999-GR-2228 consists of the following:

1. FEMA Assistance Award/Amendment
2. Agreement Articles I through XIII