



Georgia Department of Natural Resources COOPERATING TECHNICAL PARTNERS MAPPING ACTIVITY STATEMENT

Mapping Activity Statement No. 2 – Digital Flood Insurance Rate Map Production and Development of Updated Flood Data

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated August 16, 1999, between State of Georgia Department of Natural Resources (DNR) and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement (MAS) No. 2 is as follows.

SECTION 1—OBJECTIVE AND SCOPE

The objective of the Flood Map Project documented in this MAS is to develop a Digital Flood Insurance Rate Map (DFIRM) and Flood Insurance Study (FIS) report for Gwinnett County, Georgia. The DFIRM and FIS report will be produced in the FEMA Countywide Format. The DFIRM product will be referenced to the North American Vertical Datum of 1988 (NAVD).

In addition the Mapping Partners involved in this project will develop new and/or updated flood hazard data, as summarized in the table below.

Flooding Source	Reach Limits	Hydrologic Analyses	Hydraulic Analyses	Floodplain Mapping	DFIRM Production	Refinement or Creation of Zone A
Apalachee River and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Alcovy River and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Big Haynes Creek and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Beaver Run and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	

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Flooding Source	Reach Limits	Hydrologic Analyses	Hydraulic Analyses	Floodplain Mapping	DFIRM Production	Refinement or Creation of Zone A
Crooked Creek and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Jackson Creek and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Little Mulberry River and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Sweetwater Creek and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Upper Yellow River and its tributaries	Up to 1 square mile drainage area	Provided by county contractors	Provided by county contractors	Provided by county contractors	X	
Remaining Effective FIS Streams	Up to 1 square mile drainage area				X	

This Flood Map Project will be completed by the following

- State of Georgia DNR;
- Gwinnett County, Georgia;
- Lowe Engineers Project Team (Contractor).

The activities for this Flood Map Project, including required Quality Assurance/Quality Control (QA/QC) reviews, and the Mapping Partners that will complete them are summarized in the table below. The sections of this MAS that follow the table below describe the specific activities, responsible Mapping Partner(s), FEMA standards that must be met, and resultant map components.

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Activities	CTP	FEMA
Activity 1A – Scoping and Outreach	X	
Activity 5 – QA/QC Review of Hydrologic Analysis	X	X
Activity 7 – QA/QC Review of Hydraulic Analyses	X	X
Activity 9 – QA/QC review of Floodplain Mapping (Revised Areas)	X	X
Activity 10 – Base Map Acquisition	X	
Activity 11 – DFIRM Production (Non-Revised Areas)	X	
Activity 11A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	X	X
Activity 12 – DFIRM Production (Merge Revised and Non-Revised Information)	X	
Activity 12A – Application of DFIRM Graphic and Database Specifications	X	
Activity 12B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications	X	X
Activity 13 – Preliminary DFIRM and FIS Report Distribution	X	
Activity 14 – Post-Preliminary Processing	X	

Activity 1A – Scoping and Outreach

Responsible Mapping Partner: State of Georgia DNR and their contractor.

Scope: The State of Georgia DNR and their contractor shall conduct a scoping/kick-off meeting for the Gwinnett County mapping project. The initial kick-off meeting will cover the scope of the project and the schedule for the completion of the new Digital Flood Insurance Rate Maps (DFIRM) for Gwinnett County. Any changes in scope as a result of the kick-off meeting will be reflected as a modification to this MAS.

The State of Georgia DNR and their contractor will perform four (4) additional status meetings with Gwinnett County and FEMA Region IV at strategic points in the process of the project. The scheduling of the status meetings will be decided upon at the project kick-off meeting.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS. In addition, all communication and coordination with local governments will be done in accordance with Title 44 Code of Federal Regulations Part 66.

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Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the State of Georgia DNR shall make the following products available to FEMA:

- Minutes summarizing the kick-off and status meetings; and
- Project schedules indicating project milestones.

Activity 5 - Independent QA/QC Review of Hydrologic Analyses

Responsible Mapping Partner: FEMA, State of Georgia DNR and their contractor.

Scope: State of Georgia DNR's contractor and FEMA shall review the technical, scientific, and other information developed by Gwinnett County's contractors to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to prepare the DFIRM. A list of what was reviewed by Georgia DNR as QA/QC will be submitted to FEMA in order to determine if further review is necessary. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
 - 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 must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 5 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia DNR shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QA/QC review;

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- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- QA/QC review document certified by a Registered Engineer in the State of Georgia.

Activity 7 - Independent QA/QC Review of Hydraulic Analyses

Responsible Mapping Partner: FEMA, State of Georgia DNR and their contractor.

Scope: State of Georgia DNR's contractor and FEMA shall review the technical, scientific, and other information developed by Gwinnett County's contractors to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to prepare the DFIRM. A list of what was reviewed by Georgia DNR as QA/QC will be submitted to FEMA in order to determine if further review is necessary. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
 - Use of acceptable model(s);
 - Starting water-surface elevations;
 - Cross-section geometry;
 - Manning's "n" values and expansion/contraction coefficients;
 - Bridge and culvert modeling;
 - Flood discharges;
 - Regulatory floodway computation methods; and
 - Tie-in to upstream and downstream non-revised Flood Profiles.
- Use the CHECK-2 or CHECK-RAS program as appropriate 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 under Activity 7 shall be performed in accordance with the standards specified in Section 5 of this MAS.

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Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia DNR shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QA/QC review;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- QA/QC review document certified by a Registered Engineer in the State of Georgia.

Activity 9 - Independent QA/QC Review of Floodplain Mapping (Revised Areas)

Responsible Mapping Partner: FEMA, State of Georgia DNR and their contractor.

Scope: State of Georgia DNRs contractor and FEMA shall perform an independent review of the floodplain mapping prepared by Gwinnett County's contractors to ensure that the mapping is consistent with FEMA standards and is sufficient to prepare the DFIRM. A list of what was reviewed by Georgia DNR as QA/QC will be submitted to FEMA in order to determine if further review is necessary. This work shall include, at a minimum, the activities listed below.

- Review the cross sections for proper location and orientation on the work map and agreement with the Floodway Data Table.
- Review the BFE's 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.
- Review the floodplain widths at cross sections as shown on the work maps to ensure they match the Floodway Data Table.
- Review the floodplain boundaries as shown on the work maps to ensure they match the Flood Profiles.
- Review the flood insurance risk zones as shown on the work maps to ensure they are labeled properly.
- Review the DFIRM mapping files to ensure they were prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- Review the metadata files to ensure they include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 9 shall be performed in accordance with the standards specified in Section 5 of this MAS.

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Scope: For all flooding sources except those segments for which updated flood data is available (See Table in Section 1), State of Georgia DNR and their contractors shall convert the information shown on the effective FIRM panels for all incorporated and unincorporated areas of Gwinnett County to digital format in conformance with FEMA DFIRM specifications. The State of Georgia DNR and their contractors shall use the base map acquired under Activity 10 for the conversion. The scope of Activity 11 covers the digitization of portions of approximately 50 FIRM panels. The State of Georgia DNR and their contractors also shall incorporate the results of LOMCs issued by FEMA since the date of the current effective FIRM for each affected community. The State of Georgia DNR shall not digitize the flood theme for those segments of flooding sources for which updated flood data will be developed. Rather, the State of Georgia DNR shall leave these as “holes” in the digital flood theme that will be filled in as part of Activity 12 using the digital flood data developed Gwinnett County’s contractors.

Standards: All work under Activity 11 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia DNR shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM, including a check that the road and floodplain relationship is maintained for all non-revised areas.

Activity 11A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)

Responsible Mapping Partner: FEMA, State of Georgia DNR and their contractor.

Scope: State of Georgia DNR and FEMA shall review the DFIRM panels prepared under Activity 11 to ensure that the new DFIRM panels accurately represent the information shown on the effective FIRMs and FBFMs for the area mapped. The QA/QC review will be performed by one of the engineering firms on Lowe Engineers project team. The engineering firm performing the QA/QC review will differ from the firm that performs the tasks under Activity 11. A list of what was reviewed by Georgia DNR as QA/QC

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will be submitted to FEMA in order to determine if further review is necessary. This work shall include, at a minimum, checking the following:

- Cross sections were properly located and oriented as shown on the FIRM or FBFM.
- BFEs are properly located and agree with the BFEs shown on the FIRM.
- Regulatory floodway widths agree with the widths shown on the FIRM or FBFM.
- The 1 and 0.2-percent-annual-chance floodplain boundaries agree with the floodplain boundaries shown on the FIRM and the contour lines, other topographic information, and planimetric information shown on the DFIRM base.
- For coastal studies, setup and runup height elevations shown on the work map agree with those shown on the data table(s), and stillwater elevations are shown where coastal and riverine flooding studied in detail join.
- Flood insurance risk zone designations are indicated properly.
- Road and floodplain relationships are maintained for all unrevised areas.
- DFIRM mapping files meet the GIS file and database format requirements specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those requirements for content and attribution.
- Metadata files describing the DFIRM data include the required information.

Standards: All work under Activity 11A shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia DNR shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary.

Activity 12 –DFIRM Production (Merging Revised and Non-Revised Information)

Responsible Mapping Partner: State of Georgia DNR and their contractor.

Scope: Upon completion of the floodplain mapping QA/QC activities for the revised flooding sources (Activity 9) and the DFIRM production for non-revised areas (Activity 11), the State of Georgia DNR and their contractor shall merge the digital floodplain data into a single, updated DFIRM. This work is to

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include tie-in of flood hazard information for areas that were not studied as part of the Flood Map Project documented in this MAS. The State of Georgia DNR also shall tie in the revised and non-revised Flood Profiles, floodplain boundaries, and regulatory floodway boundaries with contiguous communities that were not studied as part of the Flood Map Project documented in this MAS.

Standards: All work under Activity 12 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia Department of Natural Resources shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.

Activity 12A – DFIRM Production (Application of DFIRM Graphics and Database Specifications)

Responsible Mapping Partner: State of Georgia DNR and their contractor.

Scope: The State of Georgia DNR and their contractor shall apply the final FEMA DFIRM graphic and database specifications to the DFIRM files produced under Activity 12. This work shall include adding all required annotation, line pattern, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user).

Standards: All work under Activity 12A shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia Department of Natural Resources shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;

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- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- Standard FEMA DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood hazard Mapping Partners*; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.

Activity 12B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications

Responsible Mapping Partner: FEMA, State of Georgia DNR and their contractor.

Scope: Upon completion of the DFIRM production activities (Activities 11, 12, and 12A), State of Georgia DNR and FEMA shall perform an internal review of the DFIRM to ensure it meets current FEMA graphic specifications. In addition, the State of Georgia DNR shall review the DFIRM spatial database to determine if it meets current FEMA database specifications. The QA/QC review will be performed by one of the engineering firms on the Lowe Engineers project team. The engineering firm performing the QA/QC will differ from the firm that performed the tasks under Activity 11, 12, and 12A. A list of what was reviewed by Georgia DNR as QA/QC will be submitted to FEMA in order to determine if further review is necessary. This work shall ensure that the requirements below are met.

- All required DFIRM features are accurately and legibly labeled and follow the examples shown in the FEMA DFIRM specifications. This includes all flood insurance risk zones, BFEs, cross sections, studied streams, mapped political entities, and all roads within and adjacent to the 1-percent-annual-chance floodplains.
- All DFIRM features are correctly symbolized with the appropriate symbol, line pattern, or area shading and follow the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- All map collar information is complete, correct, and follows the requirements specified in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- DFIRM mapping files are in one of the GIS file and database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- DFIRM database files are in one of the database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- Metadata files describing the DFIRM data include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- The FIS report is prepared in the FEMA Countywide Format as documented in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

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Standards: All work under Activity 12B shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, State of Georgia Department of Natural Resources shall make the following products available to FEMA:

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results and the results of all automated or manual QA/QC steps taken during the independent QA/QC review;
- Recommendations to resolve any problems that are identified during the independent QA/QC review;
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary; and
- QA/QC review document certified by a Registered Engineer in the State of Georgia.

Activity 13 - Preliminary DFIRM and FIS Report Distribution

Responsible Mapping Partners: FEMA, State of Georgia DNR and their contractor.

Scope: Activity 13 consists of the final preparation, review, and distribution of the Preliminary copies of the DFIRM and FIS report for community official and general public review and comment. The activities to be performed are summarized below.

Preliminary Transmittal Letter Preparation: Unless otherwise instructed by FEMA, the State of Georgia DNR and their contractor shall prepare letters to transmit the Preliminary copies of the DFIRM and FIS report and related enclosures to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Final QA/QC Review of Preliminary DFIRM and FIS Report: FEMA and the State of Georgia DNR and their contractor shall perform a final QA/QC review of the Preliminary DFIRM and FIS report, including all data tables, Flood Profiles, and other components of the FIS report. The QA/QC review procedures shall be consistent with the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Discrepancy Resolution: The State of Georgia DNR and their contractor shall resolve any discrepancies identified during the final QA/QC review.

Distribution of Preliminary DFIRM and FIS Report: Unless otherwise instructed by FEMA, the State of Georgia DNR and their contractor shall distribute the Preliminary copies of the DFIRM and FIS report to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

News Release Preparation: Unless otherwise instructed by FEMA, the State of Georgia DNR and their contractor shall prepare news release notifications of BFE changes for all affected communities if appropriate and perform QA/QC reviews of the notices for accuracy and compliance with FEMA format requirements.

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Preliminary Summary of Map Actions (SOMA) Preparation: Unless otherwise instructed by FEMA, the State of Georgia DNR and their contractor shall prepare Preliminary SOMAs for all affected communities if appropriate. The SOMA shall list pertinent information regarding LOMCs that will be affected by the issuance of the DFIRM (i.e., superseded, incorporated, revalidated).

Standards: All work under Activity 13 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners* and the requirements documented in Section 1 and Appendix A of the *FEMA Document Control Procedures Manual*. The State of Georgia DNR and their contractors shall make the products listed below available to FEMA.

- Preliminary transmittal letters shall be prepared. These letters and any additional letters requested by FEMA shall be prepared in accordance with the current version of the *FEMA Document Control Procedures Manual*.
- Preliminary copies of the DFIRM and FIS report, including all updated data tables and Flood Profiles shall be mailed to the Chief Executive Officer (CEO) and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.
- Preliminary SOMAs, prepared in accordance with FEMA requirements, shall be provided as appropriate.
- Revised DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM.
- Revised DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM.
- Revised metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM.
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM shall be provided.

Activity 14 - Post-Preliminary Processing

Responsible Mapping Partners: State of Georgia DNR and their contractor.

Scope: Activity 14 consists of finalizing the DFIRM and FIS report after the Preliminary copies of the DFIRM and FIS report have been issued to community officials and the public for review and comment. The activities to be performed are summarized below.

Initiation of Statutory 90-Day Appeal Period: When required, upon completion of a 30-day community comment period and/or final coordination meeting with the affected communities, the State of Georgia DNR shall arrange for and verify that the following activities are completed in accordance with the

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Hydraulic Analyses	X			X	X	X	X	X	X					
Key to Cross-Section Labeling	X			X	X	X	X	X	X					
Key to Transect Labeling	X			X	X	X	X	X	X					
Draft FIS Report				X	X	X	X							
Mapping Information								X	X	X	X	X	X	X
Miscellaneous Reference Information	X			X	X	X	X	X	X	X	X	X	X	X

SECTION 3—PERIOD OF PERFORMANCE

The mapping activities outlined in this MAS will begin upon the Notice to Proceed (NTP) issuance from FEMA and will be completed no later than 18 months from the NTP, not to proceed beyond September 30, 2005. The completion time of 18 months is contingent upon the start of the 90-day appeal period no later than 1 month from the issuance of the Preliminary DFIRMs. The mapping activities may be terminated at the option of FEMA or State of Georgia DNR in accordance with the provisions of the Partnership Agreement dated August 16, 1999.

SECTION 4—FUNDING/LEVERAGE

SECTION 5—STANDARDS

The standards relevant to this Mapping Activity Statement are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* to be referenced for each mapping activity are summarized in Table 5-2.

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Table 5-1. Applicable Standards for Project Activities

Applicable Standards	Activities													
	1	2	3	4, 4A	5, 5A	6	7	8, 8A, 8B	9	10	11, 11A	12, 12A	13	14
<i>Guidelines and Specifications for Flood Hazard Mapping Partners</i> , February 2002	X			X	X	X	X	X	X	X	X	X	X	X
American Congress on Surveying and Mapping (ACSM) procedures	X													
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-58), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X													
EM 1000-1-1000, <i>Photogrammetric Mapping</i> , March 31, 1993	X													
EM 110-2-1003, <i>Hydrographic Surveys</i> , October 31, 1994	X													
Numerical Models Accepted by FEMA for NFIP Usage, January 11, 2002				X	X	X	X							
<i>Content Standards for Digital Geospatial Metadata</i> (Federal Geographic Data Committee, 1998)								X	X	X	X	X	X	X
<i>Document Control Procedures Manual</i> , December 2000												X	X	X

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Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
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 Review 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	Hydrologic Analyses	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
4A	Coastal Hazard Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.2.2) Appendix A, Section A.4 Appendices B, D, and M
5	Independent QA/QC Review of Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix C, Section C.2

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Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
5A	Independent QA/QC Review of Coastal Hazard Analyses	Appendices E, F, G, H, and M Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 Appendices B, D, H, and M
6	Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix C, Sections C.3 and C.7 Appendices B, E, F, G, H, and M
7	Independent QA/QC Review of Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Section C.5 Appendices B, E, F, G, H, and M
8	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C. 4 and C.6 Appendices K, L, and M
8A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.3) Appendices K, L, and M
8B	Floodplain Mapping (Refinement or Creation of Zone A)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices K, L, and M
9	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C.4 and C.6

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Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
	Areas)	Appendices K, L, and M
10	Base Map Acquisition and Preparation	Volume 1, Section 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsection 1.4.3) Appendices A and B
11	Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.2) Appendices K, L, and M
11A	DFIRM Production (Merging Revised and Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K, L, and M
12	DFIRM Production (Merging Revised and Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K, L, and M
12A	DFIRM Production (Application of DFIRM Graphic and Database Specifications)	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K, L, and M
12B	Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K, L, and M
13	Preliminary DFIRM and FIS Report Distribution	Volume 1, Section 1.4 (specifically Subsections 1.4.2 and 1.4.3) Appendix C, Sections C.4 and C.6 Appendices J, K, L, and M
14	Post-Preliminary Processing	Volume 1, Section 1.4 (specifically Subsection 1.4.2 and 1.4.3) Appendices J, K, L, and M

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SECTION 6—SCHEDULE

The activities documented in this MAS shall be completed in accordance with the project schedule below. The deliverables identified in the Activities documented in this MAS shall be completed and submitted to FEMA in accordance with the project schedule below. All due dates are referenced from the Notice to Proceed Date (NTP) from FEMA. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

ACTIVITIES	RESPONSIBLE PARTNER(S)	DATE DUE
Activity 5 – QA/QC Review of Hydrologic Analyses	CTP	2 months
Activity 7 – QA/QC Review of Hydraulic Data	CTP	2 months
Activity 9 – QA/QC Review of Floodplain mapping (Revised Areas)	CTP	2 months
Activity 10 – Base Map Acquisition	CTP	1 month
Activity 11 – DFIRM Production (Non-Revised Areas)	CTP	4 months
Activity 11A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	CTP	5 months
Activity 12 – DFIRM Production (Merge Revised and Non-Revised Information)	CTP	6 months
Activity 12A – Application of DFIRM Graphic and Database Specifications	CTP	6 months
Activity 13 – Preliminary DFIRM and FIS Report Distribution	CTP	7 months
Activity 14 – Post-Preliminary Processing	CTP	18 months

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Status Reporting: Status reports will be submitted on a quarterly basis in accordance with the financial reporting submittals. At a minimum these reports will include a summary of the work that was completed during the quarter and a comparison for the % work completed to the % of funds expended. The FEMA Regional project officer, as needed, may request additional information on status.

SECTION 11—POINTS OF CONTACT

The points of contact for this Flood Map Project are Laura Algeo, the FEMA Regional Project Officer; Collis Brown, the Project Manager for State of Georgia DNR; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, additional assistance should be requested through the FEMA Regional Project Officer.

Each party has caused this MAS to be executed by its duly authorized representative.



David Word
Acting Director, Environmental Protection Division
State of Georgia Department of Natural Resources

9/23/03

Date



Laura Algeo
Regional Project Officer
Federal Emergency Management Agency, Region 4

9/23/03

Date