



FEMA

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES COOPERATING TECHNICAL PARTNERS COORDINATED NEEDS MANAGEMENT STRATEGY MAPPING ACTIVITY STATEMENT

CNMS Mapping Activity Statement No. FY10.CNMS

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated September 20, 1999 between South Carolina Department of Natural Resources (SCDNR) and the Federal Emergency Management Agency (FEMA), CNMS Mapping Activity Statement (MAS) No. FY10.CNMS is as follows:

SECTION 1—OBJECTIVE AND SCOPE

Section 575 of the National Flood Insurance Reform Act of 1994 mandates that at least once every 5 years FEMA assess the need to revise and update all floodplain areas and flood risk zones identified, delineated, or established under Section 1360 of the National Flood Insurance Act, as amended.

In order to meet this requirement FEMA has developed a next generation strategy that utilizes modern geospatial technologies along with current FEMA policies, requirements and procedures to coordinate the management of mapping needs in a comprehensive approach referred to as the Coordinated Needs Management Strategy (CNMS).

It is necessary to determine the relative accuracy of flood hazard data presented on a community's Flood Insurance Rate Map (FIRM) before the map production process begins. The effective date of the FIRM does not provide an indication that the engineering analyses have been updated or are in need of an update to account for existing watershed characteristics that may influence the flood hazard information. Therefore, a needs assessment must be conducted to determine whether the flood hazard information reflected on the FIRM represents existing conditions and is deemed to be valid or current. The age of the analysis shall not be a determining factor in assessing the need for a restudy if the results of the needs assessment reflect the potential for minimal change to the flood hazard information.

The goal of CNMS is to define the validity of the engineering study data within the mapped inventory at the stream level. For the initial population of CNMS, SCDNR shall coordinate with the Regional office to have all flooding source centerlines included in CNMS and have defined every segment contained in the CNMS stream network as valid, invalid, or in progress. The intent of having this information is to define the mapping need of each engineering study, determine and time-stamp the validity of the engineering study, and establish a national baseline record of New, Validated or Updated Engineering (NVUE) reporting geospatially that will influence future program production planning activities. In FY11, CTPs shall utilize CNMS as the sole source for reporting flood map update needs to the FEMA Regional Offices through the Annual Business Plan process. The appropriate Regional Service Center (RSC) will be used to collect Regional data once it is completed. Future maintenance of this data will be documented in a future project specific MAS or Program Management MAS.

SCDNR will validate all flooding source centerlines in the CNMS inventory for each watershed identified in Table 1.1, Watershed(s) to be Validated, as determined by the CNMS Inventory. The watersheds listed below are for the entire State of South Carolina. CNMS inventory has been completed for Berkeley, Florence and Lexington Counties under MAS FY09.14 as part of the scoping tasks. The primary focus of the CNMS inventory under MAS FY10.CNMS is for the remaining 43 of the 46 counties in South Carolina.

Table 1.1 Watershed(s) to be Validated

Watershed(s)	Flooding Source Types to be Evaluated				
	Requires Assessment	Unknown	Valid	Invalid	In Progress
Watershed 03040104 (Upper Pee Dee)	✓	✓			
Watershed 03040105 (Rocky)	✓	✓			
Watershed 03040201 (Lower Pee Dee)	✓	✓	✓	✓	✓
Watershed 03040202 (Lynches)	✓	✓	✓	✓	✓
Watershed 03040203 (Lumber)	✓	✓			
Watershed 03040204 (Little Pee Dee)	✓	✓			
Watershed 03040205 (Black)	✓	✓			
Watershed 03040206 (Waccamaw)	✓	✓			
Watershed 03040207 (Carolina Coastal-Sampit)	✓	✓			
Watershed 03050101 (Upper Catawba)	✓	✓			
Watershed 03050103 (Lower Catawba)	✓	✓			
Watershed 03050104 (Wateree)	✓	✓			

Flooding Source Types to be Evaluated					
Watershed(s)	Requires Assessment	Unknown	Valid	Invalid	In Progress
Watershed 03050105 (Upper Broad)	✓	✓			
Watershed 03050106 (Lower Broad)	✓	✓			
Watershed 03050107 (Tyger)	✓	✓			
Watershed 03050108 (Enoree)	✓	✓			
Watershed 03050109 (Saluda)	✓	✓	✓	✓	✓
Watershed 03050110 (Congaree)	✓	✓	✓	✓	✓
Watershed 03050111 (Lake Marion)	✓	✓			
Watershed 03050112 (Santee)	✓	✓	✓	✓	✓
Watershed 03050201 (Cooper)	✓	✓	✓	✓	✓
Watershed 03050202 (South Carolina Coastal)	✓	✓	✓	✓	✓
Watershed 03050203 (North Fork Edisto)	✓	✓	✓	✓	✓
Watershed 03050204 (South Fork Edisto)	✓	✓			
Watershed 03050205 (Edisto)	✓	✓			
Watershed 03050206 (Four Hole Swamp)	✓	✓			

Watershed(s)	Flooding Source Types to be Evaluated				
	Requires Assessment	Unknown	Valid	Invalid	In Progress
Watershed 03050207 (Salkehatchie)	✓	✓			
Watershed 03050208 (Broad-St. Helena)	✓	✓			
Watershed 03060101 (Seneca)	✓	✓			
Watershed 03060102 (Tugaloo)	✓	✓			
Watershed 03060103 (Upper Savannah)	✓	✓			
Watershed 03060105 (Little)	✓	✓			
Watershed 03060106 (Middle Savannah)	✓	✓			
Watershed 03060107 (Stevens)	✓	✓			
Watershed 03060109 (Lower Savannah)	✓	✓			
Watershed 06010105 (Upper French Broad)	✓	✓			

This CNMS Project will be completed by the following Mapping Partners:

- SCDNR;
- AECOM (Mapping Subcontractor); and
- URS Corporation (Mapping Subcontractor).

The Mapping Partner shall notify FEMA and all applicable parties of all meetings, if necessary, with community officials at least two weeks prior to the meeting (with as much notice as possible). FEMA and/or its contractor may or may not attend the community meetings.

The Mapping Partner shall maintain an archive of all data submitted. (All supporting data must be retained for three years from the date a funding recipient submits its final expenditure report to FEMA.)

In cooperation with the FEMA Project Officer, a Project Management Team (PMT) will be established by the SCDNR consisting of representatives from SCDNR, AECOM, URS Corporation, FEMA's regional engineer, the RSC, and other appropriate parties. The PMT will be responsible for coordinating the activities identified in this CNMS MAS. The FEMA Region will be provided with documentation identifying the established PMT.

Validation Process Documentation Checksheet

Responsible Mapping Partner: SCDNR

Scope: Documentation of research and methodologies influencing validation findings recorded in the S_Studies_Ar feature class are to be retained by SCDNR or its mapping subcontractors and recorded in the validation process documentation checksheet (CNMS Database User's Guide, Appendix B). This checksheet must be provided to support validation decisions and inputs into CNMS. Information provided in these fields will document the location, source, and methodologies used in order to determine various validation decisions. GIS data layers and output results from the CNMS validation process will be maintained and stored by SCDNR or its mapping subcontractors but must be referenced in the Validation Process Documentation Checksheet. The need of the mapping partner to maintain records is important as the deliverable is subject to scrutiny of the validation decisions made by SCDNR or its mapping subcontractors.

Standards: All Program Management work shall be performed in accordance with the standards specified in Section 4 - Standards.

Deliverables:

- Validation Process Documentation Checksheet

Populating the CNMS Studies Database

Responsible Mapping Partner: SCDNR

Scope: SCDNR or its mapping subcontractors will use the Validation Checklist (CNMS Database User's Guide, Appendix A) and populate appropriate table records in the S_Studies_Ar feature class in the CNMS Geodatabase.

Utilization of the Validation Checklist is primarily directed toward the evaluation of existing detailed floodplain studies, the results of which are captured as a 'CNMS Study Record'. Lack of an existing FEMA flood hazard study should result in development of a CNMS 'Request' Record. The central purpose of the Validation Checklist is to outline a format that must be utilized to document a flood study as being VALIDATED or an UNMET NEED.

The CNMS Validation checklist is divided into three main categories; Background Information, Critical Elements, and Secondary Elements. The Background Information category contains the date of the effective analyses for each studied stream, the Hydrologic and Hydraulic (H&H) models used for the effective study, and if the H&H models are available in a digital format. The Critical Elements section of the checklist includes 7 critical elements that consist of physical factors, climatological factors, and

engineering methodology that have changed since the date of the effective analyses. The Secondary Elements section contains 10 secondary factors that have changed since the date of the effective analyses, and are used in the validation process.

Any deficiency identified as an UNMET NEED or a CNMS Request Record will warrant a review for inclusion in the map update investment process. For existing floodplain studies, this review will be triggered when one critical or four or more secondary deficiencies have been identified to mark the area as having an UNMET NEED. Based on the Validation Checklist, if the validation evaluation identifies no critical elements and less than four secondary deficiencies for a stream segment flood study, the engineering analysis is considered VALIDATED. Validating approximate studies is completed independent of the Validation Checklist. For validation rules applicable to approximate studies refer to CNMS Database User's Guide.

Standards: All Program Management work shall be performed in accordance with the standards specified in Section 4 - Standards.

Deliverables:

- CNMS Geodatabase with the following elements populated as specified in the CNMS User's Guide:
 - 'S_Studies_Ar' Polygon feature class populated for detailed engineering studies.
 - 'S_Requests_Ar' Point/Polygon feature class populated as necessary.
 - 'Specific_Needs_Info' Table populated as necessary.
 - 'Point_of_Contact' Table populated as necessary.

Updating the CNMS Inventory

Responsible Mapping Partner: SCDNR

Scope: The CNMS Inventory serves as spatial linework representing flooding sources within FEMA's map inventory and the foundation for NVUE reporting. Validation status assigned to the CNMS Inventory linework is sourced from the CNMS Studies dataset (S_Studies_Ar). SCDNR or its mapping subcontractors will use the existing CNMS Inventory linework acquired from the Region as a baseline for updating the flooding source centerlines previously attributed as "Requires Assessment" or "Unknown". As study validation categories are updated or changed in the CNMS Studies records (polygons created under the Populating the CNMS Studies Database task of this MAS) these changes will be imprinted on the respective flooding source centerlines in the CNMS Inventory. Modifying the Inventory linework geometry prior to attribute transfer from the S_Studies_Ar polygons may be necessary due to a) better quality line geometry available, or b) due to inaccurate representation of stream miles for the SFHAs in the existing Inventory. The validation status of all streams within the CNMS Inventory shall be labeled as Valid, Invalid, In Progress, or Unknown as described in Section 2.3 of the CNMS Database User's Guide.

Standards: All Program Management work shall be performed in accordance with the standards specified in Section 4 - Standards.

Deliverables:

- CNMS Geodatabase with 'S_Studies_Ln' Feature Class (Polyline) updated to inherit the current validation statuses from the 'S_Studies_Ar' feature class and updated to reflect any changes in validation status of approximate studies.

SECTION 2—PERIOD OF PERFORMANCE

The mapping activities outlined in this CNMS MAS will be completed as specified in the Agreement Articles of the Cooperative Agreement. The Activities may be terminated at the option of FEMA or SCDNR in accordance with the provisions of the Partnership Agreement dated September 20, 1999. If these activities are terminated, all products produced to date must be returned to the FEMA Regional Office and the remaining funds from uncompleted activities, provided by FEMA for this CNMS MAS, will be returned to FEMA.

SECTION 3—FUNDING/LEVERAGE

FEMA is providing funding, in the amount of _____ to SCDNR for the completion of this CNMS Project. SCDNR shall provide any additional resources required to complete the assigned activities for this CNMS Project. Activities associated with any additional needs would be performed based on availability of additional funds. The leverage listed below includes in-kind services and estimated values for acquired information (i.e. database population, CNMS Inventory update, validation process documentation, etc.). SCDNR shall complete Table 3.1 Contribution and Leverage

Table 3.1 Contribution and Leverage

CNMS Task	FEMA Contribution	Partner Contribution	% Partner Leverage	Total Project Cost
CNMS Phase III				
TOTAL FUNDING AMOUNTS				

SECTION 4—STANDARDS

The standards relevant to this CNMS MAS are the CNMS File Geodatabase, the CNMS Database User's Guide, Version 3.0, April 2010, CNMS Sample Validation Process Documentation Checksheet, and appropriate FEMA Procedural Memorandums. These documents can be obtained from the FEMA library at <http://www.fema.gov/library/index.jsp>.

SECTION 5— SCHEDULE

The activities documented in this CNMS MAS shall be completed and submitted as outlined in Table 5.1 by the following dates: 33% of total number of watersheds/counties (must include planned FY11 studies) by September 30, 2010; 67% of the total watersheds by December 31, 2010; and 100% of the total watersheds by May 15, 2011 to the appropriate RSC for Regional consolidation. The following table lists the watersheds/counties in priority and the date they will be submitted.

Table 5.1 – CNMS Completion Schedule

CNMS PRIORITY	COUNTIES	WATERSHEDS (See Table 1.1 for USGS HUC 8 Numbers)	COMPLETION DATE
1	Aiken Anderson Barnwell Berkeley Calhoun Chester Dillon Edgefield Fairfield Florence Lancaster Lexington Marion McCormick Oconee Richland	Middle Savannah and South Fork Edisto Seneca and Saluda Middle Savannah, Salkehatchie and South Fork Edisto Cooper, Santee and South Carolina Coastal Congaree, Lake Marion and North Fork Edisto Lower Catawba and Lower Broad Little Pee Dee and Lower Pee Dee Stevens, South Fork Edisto and Upper Savannah Wateree and Lower Broad Lower Pee Dee and Lynches Lower Catawba and Lynches Saluda, Congaree and North Fork Edisto Lower Pee Dee and Little Pee Dee Upper Savannah and Stevens Tugaloo and Seneca Congaree, Wateree and Lower Broad	9/30/2010
2	Abbeville Chesterfield Darlington Dorchester Greenville Greenwood Kershaw Laurens Marlboro Newberry Orangeburg Pickens Spartanburg Sumter Williamsburg York	Upper Savannah and Saluda Lynches and Lower Pee Dee Lower Dee Pee and Lynches Edisto, Four Hole Swamp and South Carolina Coastal Saluda, Enoree and Tyger Saluda, Upper Savannah and Stevens Wateree, Lynches and Black Saluda and Enoree Lower Pee Dee and Little Pee Dee Saluda, Enoree and Lower Broad Edisto, North Fork Edisto, South Fork Edisto, Four Hole Swamp Seneca and Saluda Enoree, Tyger and Upper Broad Wateree, Black and Lake Marion Black, Santee and Lynches Upper Broad, Lower Broad, Lower Catawba	12/31/2010
3	Allendale Bamberg Beaufort Charleston Cherokee Clarendon Colleton Georgetown Hampton Horry Jasper Lee Saluda Union	Middle Savannah, Lower Savannah, Broad-St. Helena and Salkehatchie Salkehatchie, South Fork Edisto and Edisto Broad-St. Helena South Carolina Coastal and Cooper Upper Broad Lake Marion, Black and Santee Salkehatchie, Edisto and Broad-St. Helena Santee, Black, Waccamaw and Coastal Carolina-Sampit Lower Savannah, Broad-St Helena and Salkehatchie Waccamaw, Costal Carolina-Sampit, Little Pee Dee and Lower Pee Dee Lower Savannah, Broad-St. Helena Wateree, Black and Lynches Saluda Tyger, Lower Broad and Upper Broad	5/15/2011

If gaps or missing information in the submittal is identified then the CTP shall provide missing information within 1 month of notification from the RSC. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

SECTION 6—CERTIFICATIONS

For completion of the CNMS Validation Checklist, some of the validation elements should be completed under the supervision of an engineer or other responsible party. For example, investigation of updated and effective peak discharges based on confidence limits criteria in the FEMA Guidelines and Specifications (G&S) for Flood Hazard Mapping Partners. Entering & updating the validation elements in the Geodatabase should be performed by users experienced with Geographic Information Systems (GIS) software.

SECTION 7—TECHNICAL ASSISTANCE AND RESOURCES

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected from FEMA and/or your Regional Project Officer. Specific technical and programmatic support may be provided through FEMA and/or its contractor; such assistance should be requested through the FEMA Project Officer specified in Section 11 – Points of Contact.

Data requests to the FEMA library will follow guidance documentation within the CNMS Procedure Memorandums for data library requests. Project Team members also may consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and GIS-based engineering and modeling training.

SECTION 8—CONTRACTORS

SCDNR intends to use the services of AECOM and URS Corporation as contractors for this CNMS Project. SCDNR shall ensure that the procurement for all contractors used for this Flood Map Project complies with the requirements of 44 CFR 13.36.

SECTION 9—REPORTING

Financial Reporting: Because funding has been provided to SCDNR by FEMA, financial reporting requirements for SCDNR will be in accordance with Cooperative Agreement Articles. SCDNR shall also refer to 44 CFR 13.41.

SCDNR shall provide financial reports to the FEMA Regional Project Officer and Assistance Officer in accordance with the terms of the signed Cooperative Agreement for this MAS.

Status Reporting: Status reports will be submitted on a quarterly basis in accordance with the financial reporting submittals. SCDNR shall refer to 44 CFR 13.4 to obtain minimum requirements for status reporting. The Project Officer, as needed, may request additional information on status.

SCDNR may meet with FEMA and/or its contractor up to bi-weekly, or more frequently if needed, to review the progress of the project in addition to the quarterly financial and status submittals. These meetings will alternate between FEMA's Regional Office, the SCNDR office, and conference calls, as necessary.

The Project Officer, as needed, may request additional information on status on an ad hoc basis.

Section 10—Project Coordination

Throughout the project, all members of the PMT will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities shall include:

- Meetings, teleconferences, and video conferences with FEMA and other Project Team members monthly;
- Telephone conversations with FEMA and other Project Team members on a scheduled basis monthly and an ad hoc basis, as required;
- E-mail, facsimile transmissions, and letters, as required.

SECTION 11—POINTS OF CONTACT

The points of contact for this CNMS Project are Kristen Martinenza, P.E., the FEMA Regional Project Officer and Maria Cox Lamm, the State Coordinator for SCDNR; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, any additional FEMA assistance should be requested through the FEMA Regional Project Officer.

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

Maria Cox Lamm

Maria Cox Lamm
State Coordinator, Flood Mitigation Programs
South Carolina Department of Natural Resources

7/26/10
Date

Kristen Martinenza

Kristen Martinenza, P.E.
Regional Project Officer
Federal Emergency Management Agency, Region IV

7/29/10
Date

