



FEMA

State of North Carolina COOPERATING TECHNICAL PARTNERS COORDINATED NEEDS MANAGEMENT STRATEGY MAPPING ACTIVITY STATEMENT

CNMS Mapping Activity Statement No. 1

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated September 15, 2000 between the State of North Carolina and the Federal Emergency Management Agency (FEMA), CNMS Mapping Activity Statement (MAS) No. 1 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, The State of North Carolina Floodplain Mapping Program (NCFMP) 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.

The NCFMP 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.

Table 1.1 Watershed(s) to be Validated

Watershed(s)	Flooding Source Types to be Evaluated				
	Requires Assessment	Unknown	Valid	Invalid	In Progress
Broad River Basin	✓	✓	✓	✓	✓
Cape Fear River Basin	✓	✓	✓	✓	✓
Catawba River Basin	✓	✓	✓	✓	✓
Chowan River Basin	✓	✓	✓	✓	✓
French Broad River Basin	✓	✓	✓	✓	✓
Hiwassee River Basin	✓	✓	✓	✓	✓
Little Tennessee River Basin	✓	✓	✓	✓	✓
Lumber River Basin	✓	✓	✓	✓	✓
Neuse River Basin	✓	✓	✓	✓	✓
New River Basin	✓	✓	✓	✓	✓
Pasquotank River Basin	✓	✓	✓	✓	✓
Roanoke River Basin	✓	✓	✓	✓	✓
Savannah River Basin	✓	✓	✓	✓	✓
Tar-Pamlico River Basin	✓	✓	✓	✓	✓
Watauga River Basin	✓	✓	✓	✓	✓
White Oak River Basin	✓	✓	✓	✓	✓
Yadkin River Basin	✓	✓	✓	✓	✓

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

- State of North Carolina Floodplain Mapping Program; and
- NCFMP contractors.

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 NCFMP consisting of representatives from the NCFMP and FEMA's regional engineer. 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: State of North Carolina Floodplain Mapping Program

Scope: Documentation of research and methodologies influencing validation findings recorded in the S_Studies_Ar feature class are to be retained by the NCFMP 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 NCFMP 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 NCFMP.

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: State of North Carolina Floodplain Mapping Program

Scope: The NCFMP 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: State of North Carolina Floodplain Mapping Program

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). The NCFMP 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"; and the NCFMP will validate the values provided by the PTS previously attributed as "Validated". 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.

Tasks include:

1. Replacement of the CNMS Inventory streams with NCFMP LiDAR based DFIRM stream centerlines;
2. Modifying the CNMS Inventory streams from the NHD medium resolution data set to have a clean merged data set;
3. Verify and modify as needed centerlines previously attributed as "Validated", approximately 1,009 centerlines;
4. Populate centerlines previously attributed as "Requires Assessment" or "Unknown", approximately 464,641 centerlines.

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 the State of North Carolina Floodplain Mapping Program in accordance with the provisions of the Partnership Agreement dated September 15, 2000. 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 the State of North Carolina Floodplain Mapping Program for the completion of this CNMS Project. The State of North Carolina Floodplain Mapping Program 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.). The State of North Carolina Floodplain Mapping Program 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
Validation Process Documentation Checksheet; Populating the CNMS Studies Database; and Updating the CNMS Inventory		0	0%	

TOTAL FUNDING AMOUNTS	\$	\$0	0%	\$
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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 by **December 31, 2010** to the appropriate RSC for Regional consolidation. 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

The State of North Carolina Floodplain Mapping Program intends to use the services of the NCFMP contractors for this CNMS Project. The State of North Carolina Floodplain Mapping Program 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 the State of North Carolina Floodplain Mapping Program by FEMA, financial reporting requirements for the State of North Carolina Floodplain Mapping Program will be in accordance with Cooperative Agreement Articles. The State of North Carolina Floodplain Mapping Program shall also refer to 44 CFR 13.41.

The NCFMP 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. The NCFMP 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.

The NCFMP may meet with FEMA, if needed, to review the progress of the project in addition to the quarterly financial and status submittals. These meetings will alternate between the NCFMP's 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 as needed;
- Telephone conversations with FEMA on an as needed 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., CFM, the FEMA Regional Project Officer; John K. Dorman, the Director for the NCFMP; 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.

John Kay Dorman

John K. Dorman
Director
NCFMP

8/6/10

Date

Kristen Martineza

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

8/16/10

Date