Overview of Risk MAP CNMS and NVUE Status

Fiscal Year 2015 Report to Congress

September 18, 2015

Homeland Security

FEMA

Foreword from the Administrator

I am pleased to present the following report, "Overview of Risk MAP CNMS and NVUE Status," which has been prepared by the Federal Emergency Management Agency.

This report has been compiled pursuant to a requirement in *Title 42 of the United States Code, Subchapter III, Section 4101(e)*. An overview is included.

Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable John Carter
Chairman, House Appropriations Subcommittee on Homeland Security

The Honorable Lucille Roybal-Allard
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable John Hoeven
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Jeanne Shaheen
Ranking Member, Senate Appropriations Subcommittee on Homeland Security

Inquiries relating to this report may be directed to me at (202) 646-3900 or to the Department's Deputy Undersecretary for Management and Chief Financial Officer, Chip Fulghum at (202) 447-5751.

Sincerely,

W. Craig Fugate
Administrator
Federal Emergency Management Agency

Overview of Risk MAP CNMS and NVUE Status

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I. Legislative Language

This document has been compiled pursuant to language set forth in Title 42 of the United States Code, Subchapter III, Section 4101(e), which states:

> Once during each 5-year period (the 1st such period beginning on September 23, 1994) or more often as the Administrator determines necessary, the Administrator shall assess the need to revise and update all floodplain areas and flood risk zones identified, delineated, or established under this section, based on an analysis of all natural hazards affecting flood risks.

Senate Report 113-198 accompanying the *Fiscal Year 2015 Department of Homeland Security Appropriations Act* (P.L. 114-4) states:

> In order to better understand the progress in producing accurate, up-to-date flood maps, the Committee directs FEMA to report within 90 days of the date of enactment of this act on the status of valid map data as reflected in the Coordinated Needs Management Strategy [CNMS] data base. FEMA should include in this report information on metrics used to define progress in updating engineering data as recorded in the CNMS data base.

II. Background

The Federal Emergency Management Agency (FEMA) is required by Title 42 of the United States Code, Subchapter III, Section 4101(e) to assess on a 5-year cycle the need to revise and update all floodplain areas and flood risk zones identified, delineated, or established under the section, based upon an analysis of all natural hazards affecting flood risks. This assessment is important because, over time, manmade development and natural processes can alter the land and hydraulic characteristics for a given area, resulting in changes to the flood risk. Revisions to the delineated floodplains are initiated and prioritized based upon multiple factors, including the identification of instances where data on Flood Insurance Rate Maps (FIRM) no longer reflect the current risks in floodprone areas. FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) program uses modern geospatial technologies and FEMA policy to coordinate a national, comprehensive approach to managing mapping needs. This is executed through the Coordinated Needs Management Strategy (CNMS). CNMS aggregates existing digital map data to inventory and manage flood map update issues and to support FIRM revision and production planning activities. The CNMS inventory contributes to the identification of risk in two important ways:

- **Validates Flood Hazard Areas:** Indicates where the depiction of flood hazards on FIRMs has been validated through detailed assessment.
- **Identifies Flood Hazard Areas Requiring Improvement:** Depicts which previously studied or unstudied floodplains inadequately represent flood hazards to identify areas where improvement of flood hazard data is required.

FEMA assesses the flood map inventory based on physical, climatological, and engineering factors to evaluate the depiction of the flood risk presented on the FIRM. FEMA utilizes this CNMS assessment process to report New, Valid, or Updated Engineering (NVUE). The reporting of NVUE statistics is used to measure data quality by ensuring that flood hazard data are new, have been updated, or are deemed to be still valid through a continuous review and update process.

III. Analysis/Discussion

NVUE metrics distinguish between engineering studies that adequately identify the level of flood risk (known as Valid) from those that are in need of restudy (known as Unverified). The engineering study validation process evaluates whether or not the identified flood hazard is accurately depicted, based on FEMA's technical mapping guidelines and specifications, on a community's FIRM. Changes in topography, hydrology, and/or land development are evaluated as part of this validation process. When a floodplain study is found to be deficient, it is labeled as "Unverified" in the CNMS database. Valid studies require re-assessment every 5 years to determine if the flood hazard depicted on the FIRM is still accurate. Currently, 49 percent of the CNMS inventory is deemed Valid, a 17-percent increase from 2011, as shown in Figure 1.

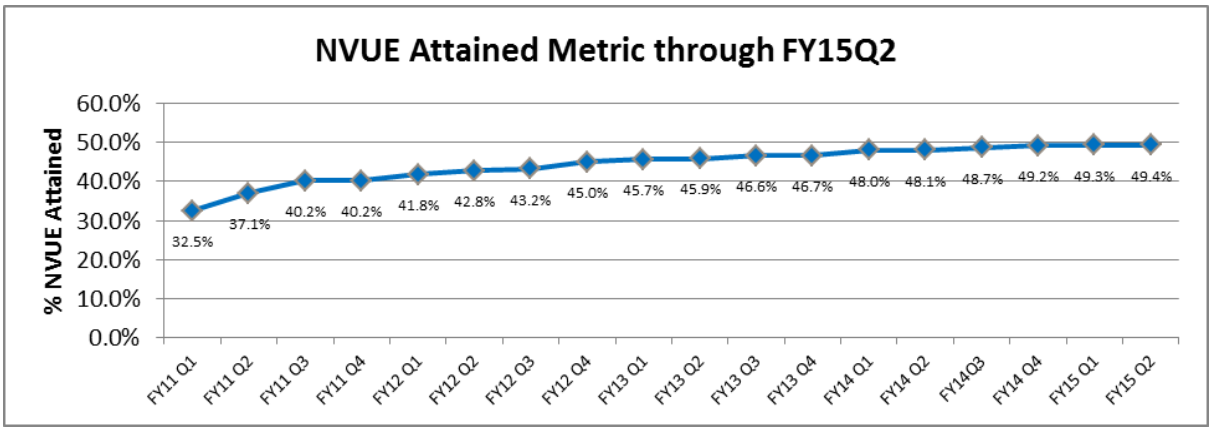

Figure 1: NVUE Percentage of Increase from 2011

In addition to Valid and Unverified miles, 432,992 miles (39 percent of the inventory) are categorized in CNMS as Unknown and have yet to be assessed through the validation process. These flood miles have not been subjected to the validation process to determine if they reflect the current flood risk present and shows the total miles within each of these three main categories of the CNMS Inventory as of the second quarter (Q2) of Fiscal Year (FY) 2015.

Table 1: CNMS Inventory per Region as of Q2 FY 2015

Region	Valid Miles	Unverified Miles	Unknown Miles	Full Inventory Miles[1]
I	7,435	8,781	16,356	32,572
II	13,464	1,308	18,141	32,913
III	46,337	4,416	29,339	80,092
IV	188,008	28,302	33,061	249,371
V	60,355	10,083	53,427	123,865
VI	67,199	3,331	174,958	245,488
VII	130,791	61,528	44	192,363
VIII	11,461	3,121	49,054	63,636
IX	26,596	2,603	30,712	59,911
X	3,747	3,826	36,133	43,706
National	**555,393**	**127,299**	**441,225**	**1,123,917**

[1]Full Inventory Denominator Miles as of 3/31/2015. Does not include any coastal studies, which are tracked separately by FEMA.

FEMA has a target of progressing toward a full maintenance phase of its inventory, where the map inventory is assessed within a 5-year cycle and 80 percent of the miles are identified as Valid. The timeframe to achieve this target is dependent on the level of annual funding that the program receives. FEMA tracks this target via the NVUE % Attained and NVUE % Attained + Initiated metrics.

- **NVUE % Attained** is a ratio of all NVUE study miles divided by the total miles in FEMA's mapped inventory. A new or updated study is considered NVUE-compliant after the issuance of a Preliminary FIRM.
- **NVUE % Attained + Initiated** accounts for the percentage of attained miles and adds the total miles for which FEMA has committed funding toward new or updated studies, but which have not yet been issued as part of a Preliminary FIRM.

Table 2 shows the current status of the NVUE % Attained and NVUE % Attained + Initiated as of FY 2015 Q2.

Table 2: NVUE Attained and Initiated Per Region as of FY 2015 Q2

NVUE Attained Summary Table Q2 FY15 per FEMA Region				
Region	**VALID Miles**	**NVUE % Attained**	**NVUE Initiated Miles**	**NVUE % Attained + Initiated**
I	7,435	22.8%	74	23.1%
II	13,464	40.9%	494	42.4%
III	46,337	57.9%	1,510	59.7%
IV	188,008	75.4%	9,959	79.4%
V	60,355	48.7%	9,559	56.4%
VI	67,199	27.4%	9,838	31.4%
VII	130,791	68.0%	5,560	70.9%
VIII	11,461	18.0%	642	19.0%
IX	26,596	44.4%	1,345	46.6%
X	3,747	8.6%	3,801	17.3%
National	**555,393**	**49.4%**	**42,783**	**53.2%**

Appendix

Table 3 - National NVUE Attained by State

National NVUE Attained Summary Table: FY15 - Q2 *by State*				
State	**Region**	**VALID Miles**	**Full Inventory Denominator Miles**	**NVUE % Attained**
Connecticut	01	1,200	4,564	26.3%
Maine	01	2,494	11,177	22.3%
Massachusetts	01	1,601	6,396	25.0%
New Hampshire	01	1,097	5,184	21.2%
Rhode Island	01	196	834	23.4%
Vermont	01	848	4,416	19.2%
New Jersey	02	3,427	7,024	48.8%
New York	02	9,620	24,804	38.8%
Puerto Rico	02	407	955	42.6%
Virgin Islands	02	10	130	7.7%
Delaware	03	332	865	38.4%
District of Columbia	03	41	46	89.1%
Maryland	03	5,669	6,104	92.9%
Pennsylvania	03	30,971	37,299	83.0%
Virginia	03	5,255	22,728	23.1%
West Virginia	03	4,069	13,049	31.2%
Alabama	04	29,266	37,013	79.1%
Florida	04	19,452	42,579	45.7%
Georgia	04	33,392	39,628	84.3%
Kentucky	04	28,521	31,386	90.9%
Mississippi	04	20,142	33,624	59.9%
North Carolina	04	24,398	27,797	87.8%
South Carolina	04	16,182	17,305	93.5%
Tennessee	04	16,654	20,041	83.1%
Illinois	05	4,354	25,593	17.0%
Indiana	05	8,532	16,425	51.9%
Michigan	05	9,457	11,895	79.5%
Minnesota	05	11,021	22,057	50.0%
Ohio	05	16,216	20,901	77.6%
Wisconsin	05	10,774	26,994	39.9%
Arkansas	06	8,235	36,901	22.3%

National NVUE Attained Summary Table: FY15 - Q2 *by State*				
State	**Region**	**VALID Miles**	**Full Inventory Denominator Miles**	**NVUE % Attained**
Louisiana	06	9,246	31,654	29.2%
New Mexico	06	8,162	22,434	36.4%
Oklahoma	06	17,173	38,022	45.2%
Texas	06	24,383	116,477	20.9%
Iowa	07	30,527	40,243	75.9%
Kansas	07	32,250	51,408	62.7%
Missouri	07	36,201	53,499	67.7%
Nebraska	07	31,812	47,214	67.4%
Colorado	08	2,846	14,445	19.7%
Montana	08	1,382	11,903	11.6%
North Dakota	08	2,220	6,316	35.2%
South Dakota	08	2,683	13,247	20.3%
Utah	08	1,219	6,671	18.3%
Wyoming	08	1,112	11,055	10.1%
American Samoa	09	1	4	25.0%
Arizona	09	11,602	22,521	51.5%
California	09	8,670	28,852	30.0%
Guam	09	61	84	72.6%
Hawaii	09	313	394	79.4%
N. Marianas Islands	09	0	0	0.0%
Nevada	09	5,949	8,056	73.8%
Alaska	10	138	1,284	10.7%
Idaho	10	233	11,908	2.0%
Oregon	10	1,657	15,402	10.8%
Washington	10	1,719	15,112	11.4%