

Issue 26: FIS Report and FIRM Standards for Mapping Future Conditions

Background

The North Carolina Floodplain Mapping Program (NCFMP) has augmented the Federal Emergency Management Agency (FEMA) Flood Insurance Studies (FISs) and Flood Insurance Rate Maps (FIRMs) in an effort to enhance their usability for the public officials and residents of North Carolina. One such innovation is the mapping of the future conditions flood insurance risk zone based on future conditions hydrology for informational purposes. The addition of this data will give public officials the ability to administer ordinances, issue building permits, carry out their county planning, etc. based on the typically more conservative future conditions floodplain. This data will be incorporated into an FIS only at the request of a community, with the approval of the NCFMP, and if the community provides the future conditions analysis needed. To date, future conditions mapping has been shown in Mecklenburg (prepared by Mecklenburg County Storm Water Services under CTP agreement with FEMA), Wake, Durham, New Hanover, and Guilford Counties.

Recommendations

The future conditions hydrologic analysis submitted by the community must meet the standards outlined in the document "Modernizing FEMA's Flood Hazard Mapping Program: Recommendations for Using Future Conditions Hydrology for the National Flood Insurance Program" found at http://www.fema.gov/plan/prevent/fhm/frm_fchy.shtm to be shown on the FIRM and included in the FIS Report.

FIRM Panels

To minimize confusion by FIRM users that make determinations regarding Federal mandatory flood insurance purchase requirements, the future conditions 1-percent annual-chance floodplains shall be displayed identically to the 0.2-percent-annual-chance floodplains, with the Zone X (shaded) fill. Those users now recognize that areas designated as Zone X (shaded) are floodprone, but that the mandatory flood insurance purchase requirement does not apply. Because the risk premium rates for buildings located in the future conditions 1-percent-annual-chance (100-year) floodplain will be the rate comparable to other areas outside the SFHA, designating these areas as "Zone X (FUTURE)" as shown below is sufficient.

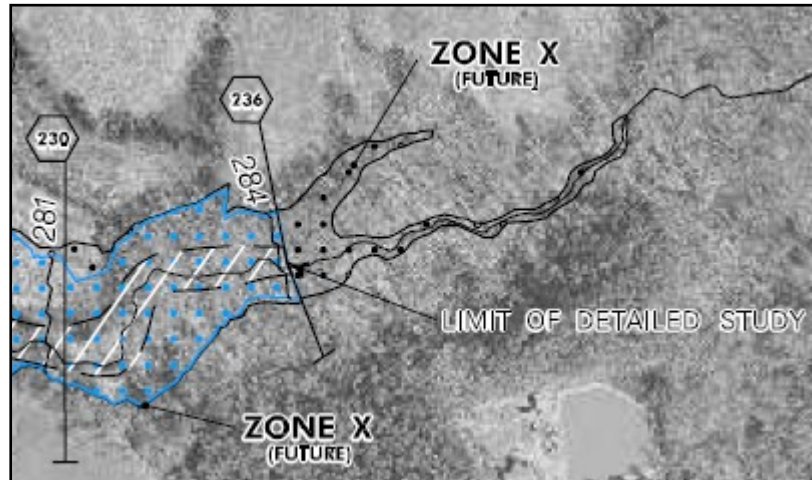


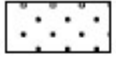

Figure 1: Future Conditions on a Stream Studied by Detailed Methods



Figure 2: Future Conditions on a Stream Studied by Limited Detailed Methods

North Carolina Cooperating Technical State Mapping Program

The legend on each DFIRM panel in a county showing future conditions flooding should be modified as shown below:

	OTHER FLOOD AREAS
ZONE X	Areas of 0.2% annual chance flood; <u>areas of future conditions 1% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot</u> or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	OTHER AREAS
ZONE X	Areas determined to be outside the 0.2% annual chance and <u>future conditions 1% annual chance floodplain.</u>

For Mecklenburg County only, future conditions elevations will be included in the Flood Hazard Data Tables (FHDTs) on the panels as shown below.

FLOOD HAZARD DATA TABLE				1% Annual Chance (100-year) Water-Surface Elevation (Feet NAVD88)		Floodway	Community Encroachment Line
Cross Section	Stream Station	Flood Discharge (cfs)		Existing Land Use Conditions	Future Land Use Conditions	Distance in Feet From Center of Stream to Encroachment Boundary (Looking Downstream)	
		Existing Land Use Conditions	Future Land Use Conditions			Left / Right	Left / Right
ROCKY RIVER							
A	847 ¹	3790	6786	647.2	649.5	260 / 119	263 / 119
B	1749 ¹	3790	6786	647.7	650.1	200 / 100	202 / 101
C	2585 ¹	3834	6975	648.7	651.2	115 / 30	129 / 32
D	3225 ¹	3834	6975	650.6	653.0	35 / 125	42 / 150

FIS Report

The following definition will be added to Table 2 – Flood Zone Designations:

X (Future Base Flood)	Zone X (Future Base Flood) is the flood insurance risk zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No BFEs or base flood depths are shown within this zone.
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Information regarding the future conditions analysis should be included in Section 5.0 Engineering Methods. Below is an excerpt from the Wake County Hydrology section of the FIS Report:

The 1% annual chance peak discharges for anticipated future development conditions were computed for newly studied streams in Wake County. Future land use planning and zoning information supplied by Wake County was used to develop anticipated future land use information and percents impervious for studied streams. The future land use information was used to develop future conditions rainfall-runoff modeling (HEC-HMS 2.2.1), which was in turn used to determine future discharges for streams for which rainfall-runoff modeling

Discussion Summary

Date Discussed: N/A

Discussion Attendees: N/A

Summary of Discussion

N/A

Final Guidelines

See Recommendations above

References

Modernizing FEMA's Flood Hazard Mapping Program: Recommendations for Using Future
Conditions Hydrology for the National Flood Insurance Program
NCFMP DFIRM Graphical Specifications, August 2006
NCFMP Restudy Manual, September 12, 2006

Points of Contact

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