



# Federal Emergency Management Agency

Washington, D.C. 20472

## LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	City of Charlotte Mecklenburg County North Carolina	NO PROJECT	FLOODWAY HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS UPDATED TOPOGRAPHIC DATA
	COMMUNITY NO.: 370159		
IDENTIFIER	NC-14-424 – Little Hope Creek And Little Hope Creek Tributary Flood Study Revision	APPROXIMATE LATITUDE & LONGITUDE: 35.167, -80.855 SOURCE: Other DATUM: NAD 83	
ANNOTATED MAPPING ENCLOSURES		ANNOTATED STUDY ENCLOSURES	
TYPE: FIRM* NO.: 3710454100K DATE: February 19, 2014 TYPE: FIRM* NO.: 3710454200K DATE: February 19, 2014		DATE OF EFFECTIVE FLOOD INSURANCE STUDY: February 19, 2014 PROFILE(S): 116P AND 117P FLOODWAY DATA TABLE: 17 SUMMARY OF DISCHARGES TABLE: 10	

Enclosures reflect changes to flooding sources affected by this revision.

\* FIRM - Flood Insurance Rate Map; \*\* FBFM - Flood Boundary and Floodway Map; \*\*\* FHBM - Flood Hazard Boundary Map

### FLOODING SOURCE(S) & REVISED REACH(ES)

See Page 2 for Additional Flooding Sources

Little Hope Creek - From the Little Sugar Creek confluence to approximately 1,500 feet upstream of East Woodlawn Road

Little Hope Creek Tributary - From the Little Hope Creek confluence to approximately 800 feet upstream of Bradbury Drive.

### SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Little Hope Creek	Zone AE	Zone AE	YES	YES
	BFES	BFES	YES	NONE
	Floodway	Floodway	YES	YES
Little Hope Creek Tributary	Zone AE	Zone AE	YES	NONE

\* BFES - Base Flood Elevations

### DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Luis Rodriguez, P.E., Chief  
Engineering Management Branch  
Federal Insurance and Mitigation Administration



**Federal Emergency Management Agency**  
Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

**OTHER FLOODING SOURCES AFFECTED BY THIS REVISION**

**FLOODING SOURCE(S) & REVISED REACH(ES)**

Little Hope Creek Tributary - From the Little Hope Creek confluence to approximately 800 feet upstream of Bradbury Drive.

**SUMMARY OF REVISIONS**

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Little Hope Creek Tributary	Floodway BFEs	Floodway BFEs	YES YES	YES NONE

\* BFEs - Base Flood Elevations

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

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## LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

### COMMUNITY INFORMATION

#### APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

We provide the floodway designation to your community as a tool to regulate floodplain development. Therefore, the floodway revision we have described in this letter, while acceptable to us, must also be acceptable to your community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations.

#### COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance discharges computed in the submitted hydrologic model. Future development of projects upstream could cause increased discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on discharges and could, therefore, indicate that greater flood hazards exist in this area.

Your community must regulate all proposed floodplain development and ensure that permits required by Federal and/or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

A handwritten signature in black ink, appearing to read "Luis Rodriguez".

Luis Rodriguez, P.E., Chief  
Engineering Management Branch  
Federal Insurance and Mitigation Administration



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## LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. Moises Dugan  
Director, Mitigation Division  
Federal Emergency Management Agency, Region IV  
Koger Center - Rutgers Building, 3003 Chamblee Tucker Road  
Atlanta, GA 30341  
(770) 220-5400

### STATUS OF THE COMMUNITY NFIP MAPS

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

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Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

**PUBLIC NOTIFICATION OF REVISION**

A notice of changes will be published in the *Federal Register*. This information also will be published in your local newspaper on or about the dates listed below and through FEMA's Flood Hazard Mapping website at [https://www.floodmaps.fema.gov/fhm/Scripts/bfe\\_main.asp](https://www.floodmaps.fema.gov/fhm/Scripts/bfe_main.asp).

LOCAL NEWSPAPER

Name: *The Charlotte Observer*

Dates: October 20, 2014 & October 27, 2014

Within 90 days of the second publication in the local newspaper, a citizen may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. Therefore, this letter will be effective only after the 90-day appeal period has elapsed and we have resolved any appeals that we receive during this appeal period. Until this LOMR is effective, the revised flood hazard determination information presented in this LOMR may be changed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

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Engineering Management Branch  
Federal Insurance and Mitigation Administration

Section 5.0 – Engineering Methods

Table 10—Summary of Discharges

Flooding Source and Location	Basin Outlet ID	Upstream Drainage Area (sq. mi.)	Existing Peak Discharge (cfs)			
			10%	2%	1%	0.2%
			Future Peak Discharge (cfs)			
				(1%)		
<b>Derita Branch</b>						
Approximately 2,510 ft. downstream of West Craighead Road	J_ULS_14	1.85	936	1,476	1,725 (1,893)	2,359
Approximately 20 ft. upstream of West Craighead Road	J_ULS_8	1.40	702	1,131	1,330 (1,503)	1,821
Approximately 1,480 ft. upstream of West Craighead Road	J_ULS_266	1.08	558	908	1,070 (1,245)	1,476
Approximately 2,610 ft. upstream of West Craighead Road	J_ULS_4	0.87	456	736	864 (1,015)	1,187
At 350 ft. downstream of Cannon Avenue	J_ULS_189	0.45	215	353	417 (508)	579
At Princess Street	J_ULS_248	0.16	59	96	113 (139)	157
<b>Little Hope Creek</b>						
Just upstream of the Little Sugar Creek confluence	J_LLS_135	3.15	2,336	3,656	4,226 (4,541)	5,492
At East Woodlawn Road	J_LLS_241	1.11	840	1,310	1,643 (1,878)	2,402
<b>Little Hope Creek Tributary</b>						
At the Little Hope Creek confluence	J_LLS_124	1.36	1,434	2,284	2,671 (2,833)	3,663
<b>Little Sugar Creek</b>						
Approximately 15,800 ft. downstream of South Polk Street	J_LLS_204	51.12	7,901	11,761	13,306 (13,865)	17,212
At South Polk Street	J_LLS_205	50.13	8,597	12,261	13,909 (14,510)	18,616
At Pineville-Matthews Road	J_LLS_157	49.56	8,608	12,414	14,099 (14,714)	18,787
Approximately 1,290 ft. downstream of I-485	J_LLS_155	49.02	8,860	12,867 352	14,642 (15,306)	19,150
Approximately 3,440 ft. upstream of I-485	J_LLS_151	47.82	8,976	12,981	14,770 (15,413)	19,250

REVISED DATA

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Kings Branch (continued)								
195	19,479 <sup>1</sup>	59	438	2.8	614.8	614.8	615.3	0.5
198	19,761 <sup>1</sup>	36	228	5.5	615.2	615.2	615.7	0.5
205	20,516 <sup>1</sup>	45	319	3.3	618.2	618.2	618.6	0.4
212	21,191 <sup>1</sup>	30	234	4.5	619.2	619.2	619.6	0.4
222	22,172 <sup>1</sup>	31	177	6.0	627.3	627.3	627.3	0.0
Little Hope Creek								
003	259 <sup>2</sup>	62	645	6.6	589.3	588.8 <sup>3</sup>	589.3	0.5
009	900 <sup>2</sup>	95	850	5.0	593.9	593.9	594.4	0.5
015	1,521 <sup>2</sup>	55	468	9.0	596.3	596.3	596.6	0.3
021	2,106 <sup>2</sup>	80	493	8.6	599.7	599.7	600.1	0.4
026	2,550 <sup>2</sup>	90	624	6.8	603.5	603.5	603.9	0.4
029	2,931 <sup>2</sup>	81	510	8.3	605.2	605.2	605.7	0.5
033	3,287 <sup>2</sup>	69	593	7.1	607.3	607.3	607.7	0.4
036	3,638 <sup>2</sup>	74	396	10.7	608.1	608.1	608.4	0.3
042	4,200 <sup>2</sup>	138	870	4.9	613.0	613.0	613.2	0.2
046	4,601 <sup>2</sup>	208	1,039	4.1	614.0	614.0	614.2	0.2
052	5,184 <sup>2</sup>	170	630	2.6	615.0	615.0	615.3	0.3
059	5,915 <sup>2</sup>	88	214	7.7	617.1	617.1	617.6	0.5
063	6,301 <sup>2</sup>	180	361	4.6	620.0	620.0	620.2	0.2

<sup>1</sup>Feet above confluence with Sugar Creek

<sup>2</sup>Feet above confluence with Little Sugar Creek

<sup>3</sup>Elevation computed without consideration of backwater effects

REVISED DATA

TABLE 17

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MECKLENBURG COUNTY, NC  
AND INCORPORATED AREAS**

**FLOODWAY DATA** REVISED TO REFLECT  
LOMR EFFECTIVE:  
**FEBRUARY 24, 2015**

**KINGS BRANCH – LITTLE HOPE CREEK**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Little Hope Creek (continued)								
068	6,784 <sup>1</sup>	77	255	6.4	620.9	620.9	621.3	0.4
070	6,971 <sup>1</sup>	120	764	2.2	626.9	626.9	627.3	0.4
Little Hope Creek Tributary								
011	1,104 <sup>2</sup>	110	443	6.0	617.8	617.8	618.1	0.3
017	1,714 <sup>2</sup>	190	743	3.6	622.1	622.1	622.7	0.6
020	2,042 <sup>2</sup>	89	371	7.2	622.9	622.9	623.2	0.3
REVISED DATA								

<sup>1</sup>Feet above confluence with Little Sugar Creek

<sup>2</sup>Feet above confluence with Little Hope Creek

TABLE 17

FEDERAL EMERGENCY MANAGEMENT AGENCY

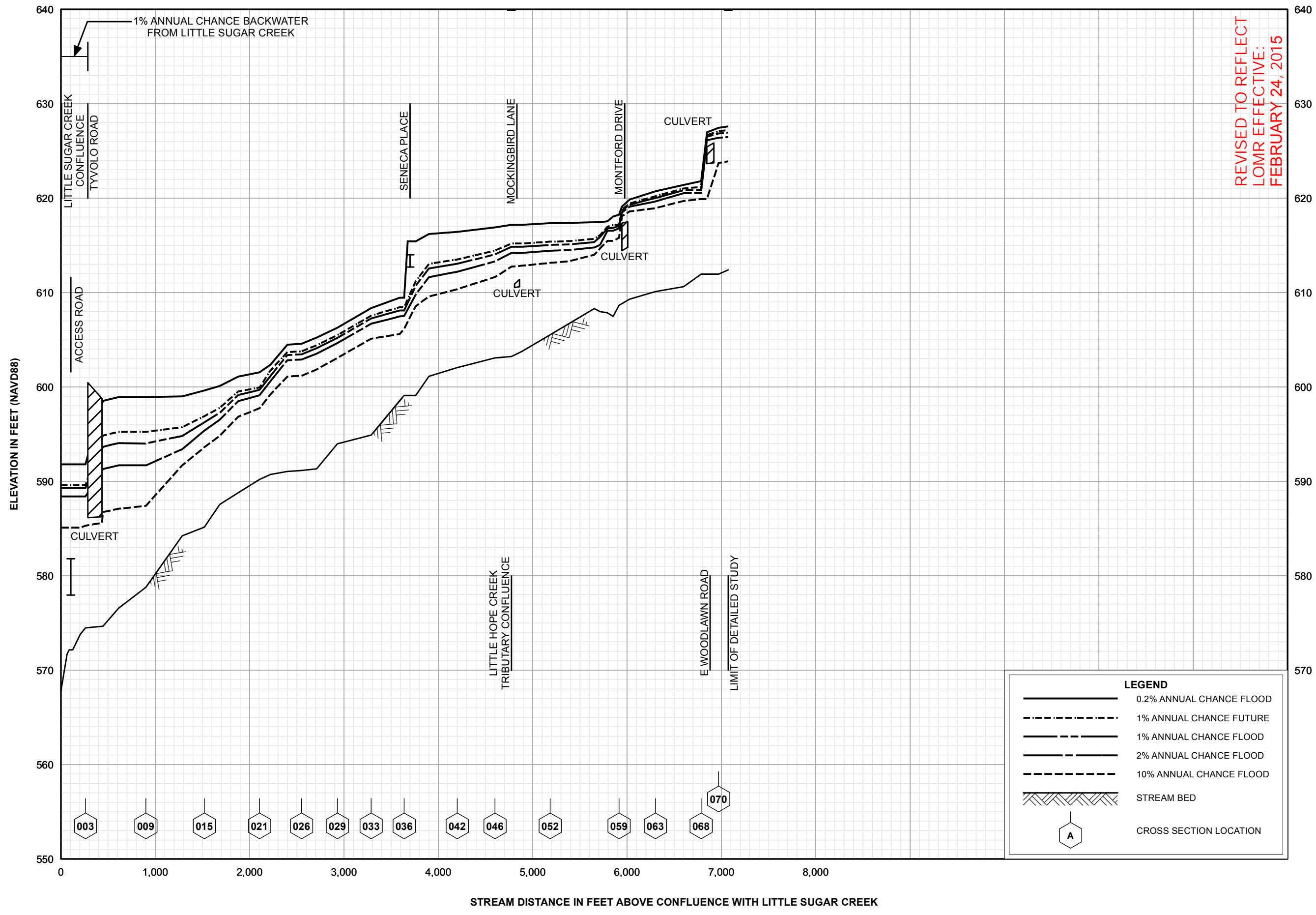
MECKLENBURG COUNTY, NC  
AND INCORPORATED AREAS

FLOODWAY DATA

REVISED TO REFLECT  
LOMR EFFECTIVE:  
FEBRUARY 24, 2015

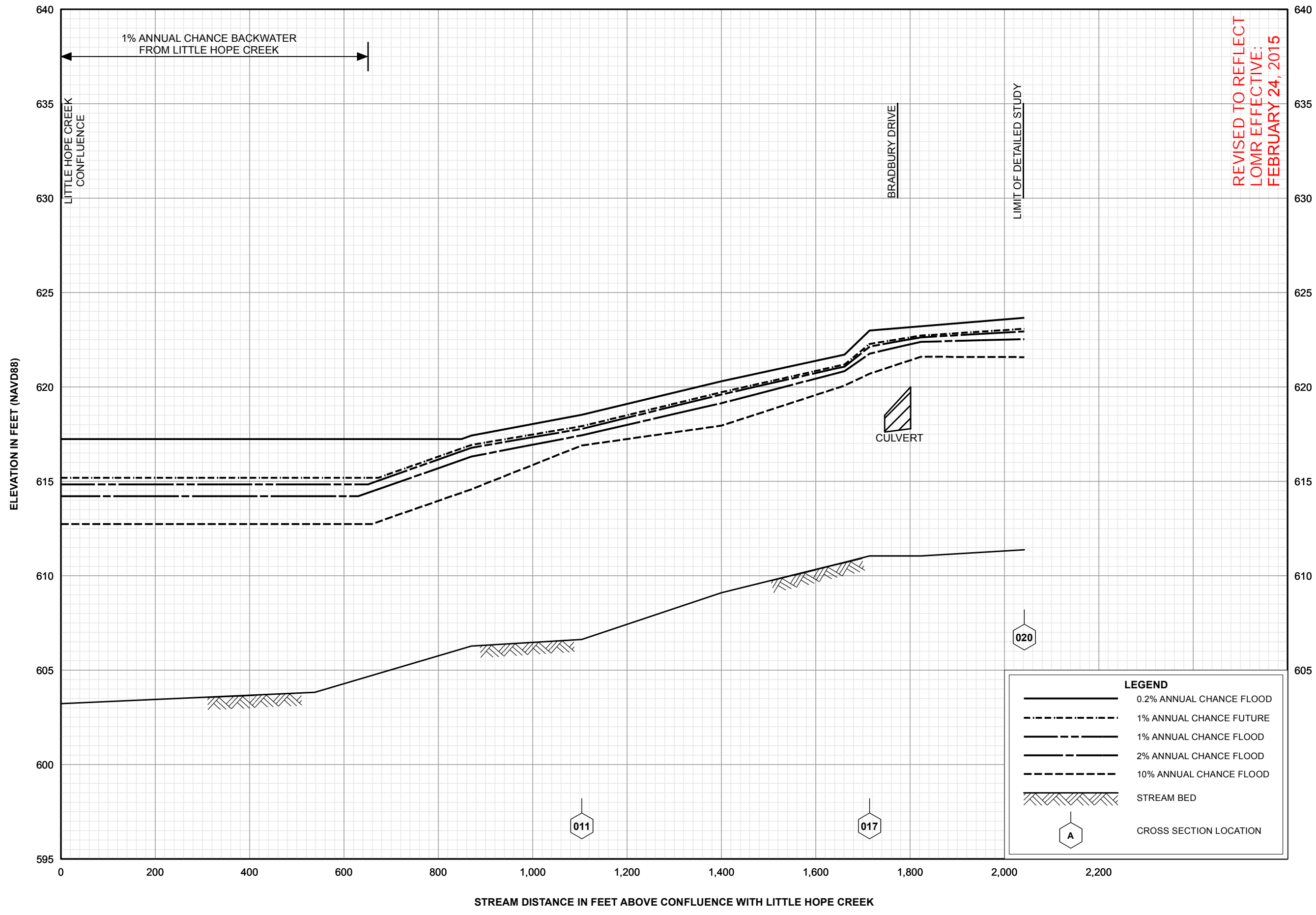
LITTLE HOPE CREEK –  
LITTLE HOPE CREEK TRIBUTARY





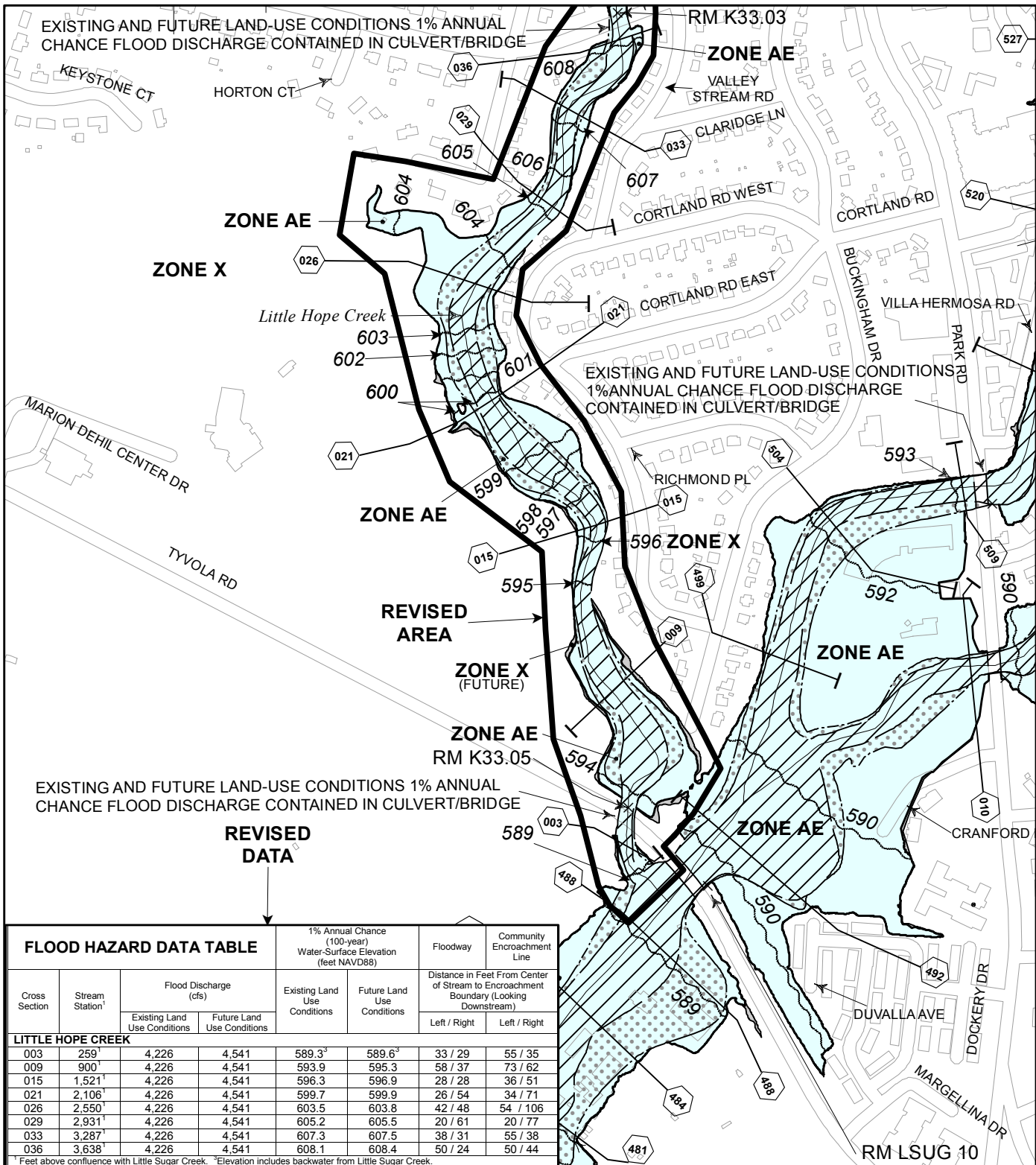
**FLOOD PROFILES**  
**LITTLE HOPE CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MECKLENBURG COUNTY, NC**  
AND INCORPORATED AREAS







**FLOOD PROFILES**  
**LITTLE HOPE CREEK TRIBUTARY**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MECKLENBURG COUNTY, NC**  
AND INCORPORATED AREAS



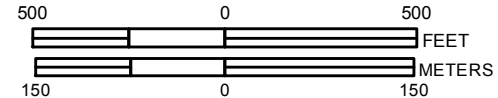
**Legend**

-  1% annual chance (100-Year) Floodplain
-  1% annual chance (100-Year) Floodway
-  Community Encroachment Areas (Mecklenburg County)
-  1% annual chance Future conditions



GRID NORTH

MAP SCALE 1" = 500' (1 : 6,000)



**NFIP**  
**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 4541K**

**FIRM**

**FLOOD INSURANCE RATE MAP  
NORTH CAROLINA**

**PANEL 4541**

(SEE LOCATOR DIAGRAM OR MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<b>COMMUNITY</b>	<b>CID No. PANEL SUFFIX</b>
CHARLOTTE, CITY OF	370159 4541 K
MECKLENBURG COUNTY	370158 4541 K

REVISED TO REFLECT  
LOMR EFFECTIVE: **FEBRUARY 24, 2015**

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP REVISED**      **MAP NUMBER**  
**FEBRUARY 19, 2014**      **3710454100K**



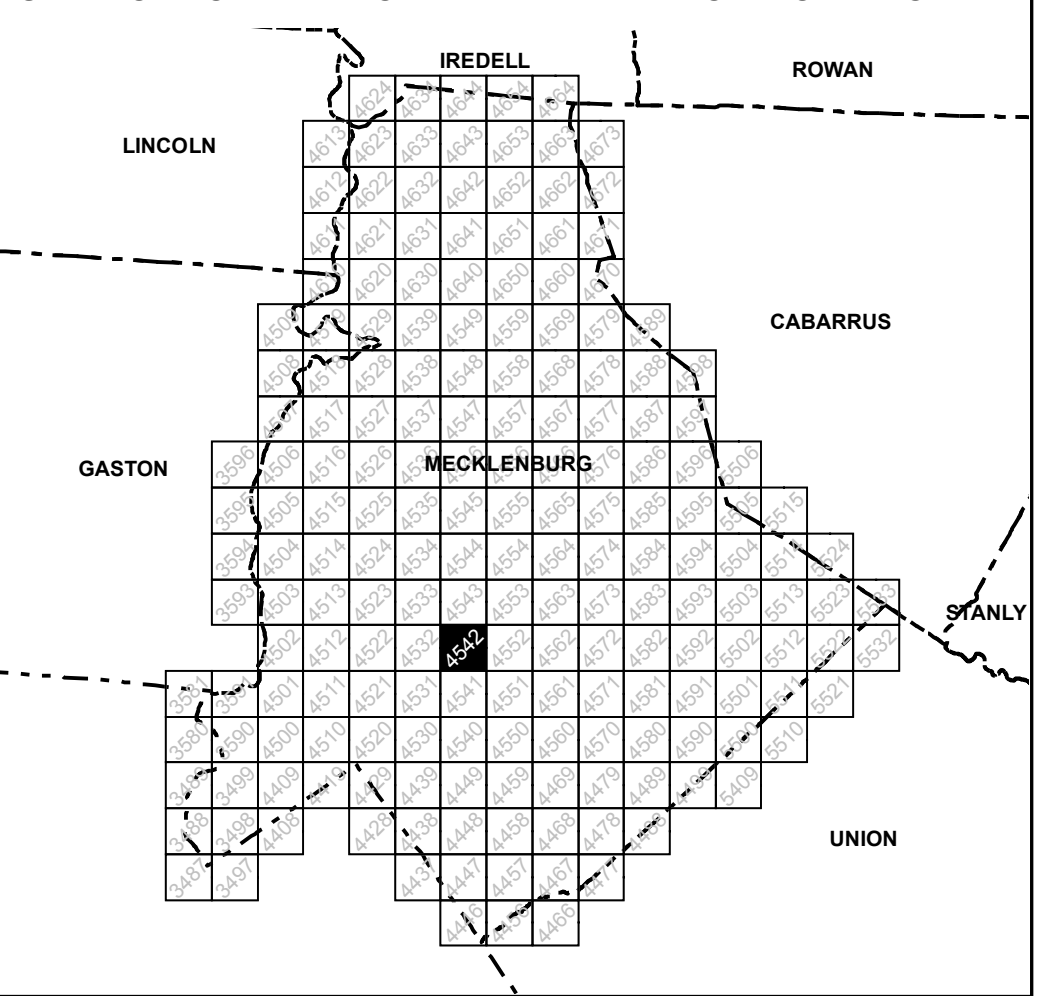
State of North Carolina  
Federal Emergency Management Agency

**FLOOD HAZARD DATA TABLE**

Cross Section	Stream Station <sup>1</sup>	Flood Discharge (cfs)		1% Annual Chance (100-year) Water-Surface Elevation (feet NAVD88)		Floodway		Community Encroachment Line
		Existing Land Use Conditions	Future Land Use Conditions	Existing Land Use Conditions	Future Land Use Conditions	Distance in Feet From Center of Stream to Encroachment Boundary (Looking Downstream)		
						Left / Right	Left / Right	
<b>LITTLE HOPE CREEK</b>								
003	259 <sup>1</sup>	4,226	4,541	589.3 <sup>2</sup>	589.6 <sup>2</sup>	33 / 29	55 / 35	
009	900 <sup>1</sup>	4,226	4,541	593.9	595.3	58 / 37	73 / 62	
015	1,521 <sup>1</sup>	4,226	4,541	596.3	596.9	28 / 28	36 / 51	
021	2,106 <sup>1</sup>	4,226	4,541	599.7	599.9	26 / 54	34 / 71	
026	2,550 <sup>1</sup>	4,226	4,541	603.5	603.8	42 / 48	54 / 106	
029	2,931 <sup>1</sup>	4,226	4,541	605.2	605.5	20 / 61	20 / 77	
033	3,287 <sup>1</sup>	4,226	4,541	607.3	607.5	38 / 31	55 / 38	
036	3,638 <sup>1</sup>	4,226	4,541	608.1	608.4	50 / 24	50 / 44	

<sup>1</sup> Feet above confluence with Little Sugar Creek. <sup>2</sup> Elevation includes backwater from Little Sugar Creek.

**STATE OF NORTH CAROLINA FIRM PANEL LOCATOR DIAGRAM**



**DATUM INFORMATION**

The projection used in the preparation of this map was the North Carolina State Plane (FIPSZONE 3200). The horizontal datum was the North American Datum of 1983, GRS80 ellipsoid. Differences in datum, ellipsoid, projection, or Universal Transverse Mercator zones used in the production of FIRMS for adjacent jurisdictions may result in slight positional differences in map features across jurisdictional boundaries. These differences do not affect the accuracy of this FIRM. All coordinates on this map are in U.S. Survey Feet, where 1 U.S. Survey Foot = 1.2003837 Meters.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988 (NAVD 88). These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. An average offset between NAVD 88 and the National Geodetic Vertical Datum of 1929 (NGVD 29) has been computed for each North Carolina county. This offset was then applied to the NGVD 29 flood elevations that were not revised during the creation of this statewide FIRM. The offsets for each county shown on this FIRM panel are shown in the vertical datum offset table below. Where a county boundary and a flooding source with unrevised NGVD 29 flood elevations are coincident, an individual offset has been calculated and applied during the creation of this statewide FIRM. See Section 6.1 of the accompanying Flood Insurance Study report to obtain further information on the conversion of elevations between NAVD 88 and NGVD 29. To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the North Carolina Geodetic Survey at the address shown below. You may also contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

North Carolina Geodetic Survey  
121 West Jones Street  
Raleigh, NC 27601  
(919) 733-3836  
<http://www.ncgs.state.nc.us>

County	Vertical Datum Offset (ft)
MECKLENBURG	-0.74

Example: NAVD 88 = NGVD 29 + (-0.74)

All streams listed in the Flood Hazard Data Table below were studied by detailed methods using field survey. Other flood hazard data shown on this map may have been derived using either a coastal analysis or limited detailed Riverine analysis. More information on the flooding sources studied by these analyses is contained in the Flood Insurance Study report.

Stream Name	Cross Section	1% Annual Chance Flood		0.2% Annual Chance Flood		Distance of Flood From Center of Stream to Encroachment Boundary (feet)	Distance of Flood From Center of Stream to Encroachment Boundary (feet)	
		Flow	Depth	Flow	Depth			
BRUIK CREEK	047	4,852	5.047	520.0	522.3	185	1,217	
DARY BRANCH	000	1,710	1.514	520.4	520.8	135	1,220	
LITTLE HOPE CREEK	042	4,207	4,256	4,541	613.0	613.5	80	78
	046	4,601	4,256	4,541	613.0	613.5	138	81
	052	5,184	1,643	1,878	615.0	615.4	23	147
	058	3,900	1,643	1,878	617.1	617.2	12	150
	063	6,301	1,643	1,878	620.0	620.2	14	146
	068	6,784	1,643	1,878	620.9	621.2	23	154
	070	6,971	1,643	1,878	625.8	627.1	62	158
LITTLE HOPE CREEK TRIBUTARY	011	1,104	2,671	2,833	617.8	617.9	21	229
	017	1,744	2,671	2,833	622.3	622.3	38	126
	020	2,000	2,671	2,833	622.9	623.1	35	84
LITTLE HOPE CREEK	036	53,555	7,426	7,769	596.4	596.9	49	49
	043	54,255	7,426	7,769	597.1	597.5	49	62
	051	56,055	7,426	7,769	597.8	598.1	39	36
	056	58,579	7,369	7,734	598.5	598.9	137	132
	061	60,007	7,369	7,734	602.2	602.5	39	36
	069	58,807	7,369	7,734	604.5	604.7	31	30
	073	57,308	7,369	7,734	608.2	608.6	472	53
	078	52,865	7,369	7,734	608.3	608.7	350	47
	085	56,555	7,369	7,734	608.5	608.8	92	43
	082	58,189	7,410	7,769	611.5	611.6	257	38
	087	59,692	7,410	7,769	612.4	612.5	214	339
	008	60,556	7,410	7,769	612.6	612.7	240	140
	116	61,597	7,880	8,250	613.3	613.3	53	126
	021	62,109	7,484	7,860	613.9	614.0	60	36
	026	60,844	7,484	7,860	618.9	617.1	103	235
	030	62,965	7,484	7,860	617.2	617.3	43	244
	038	63,565	7,484	7,860	618.8	618.8	54	67
	042	66,101	7,950	7,954	619.2	619.4	44	44

\* Elevation includes subsidence with Little Sugar Creek. \*\* Field elevation only.



**NOTES TO USERS**

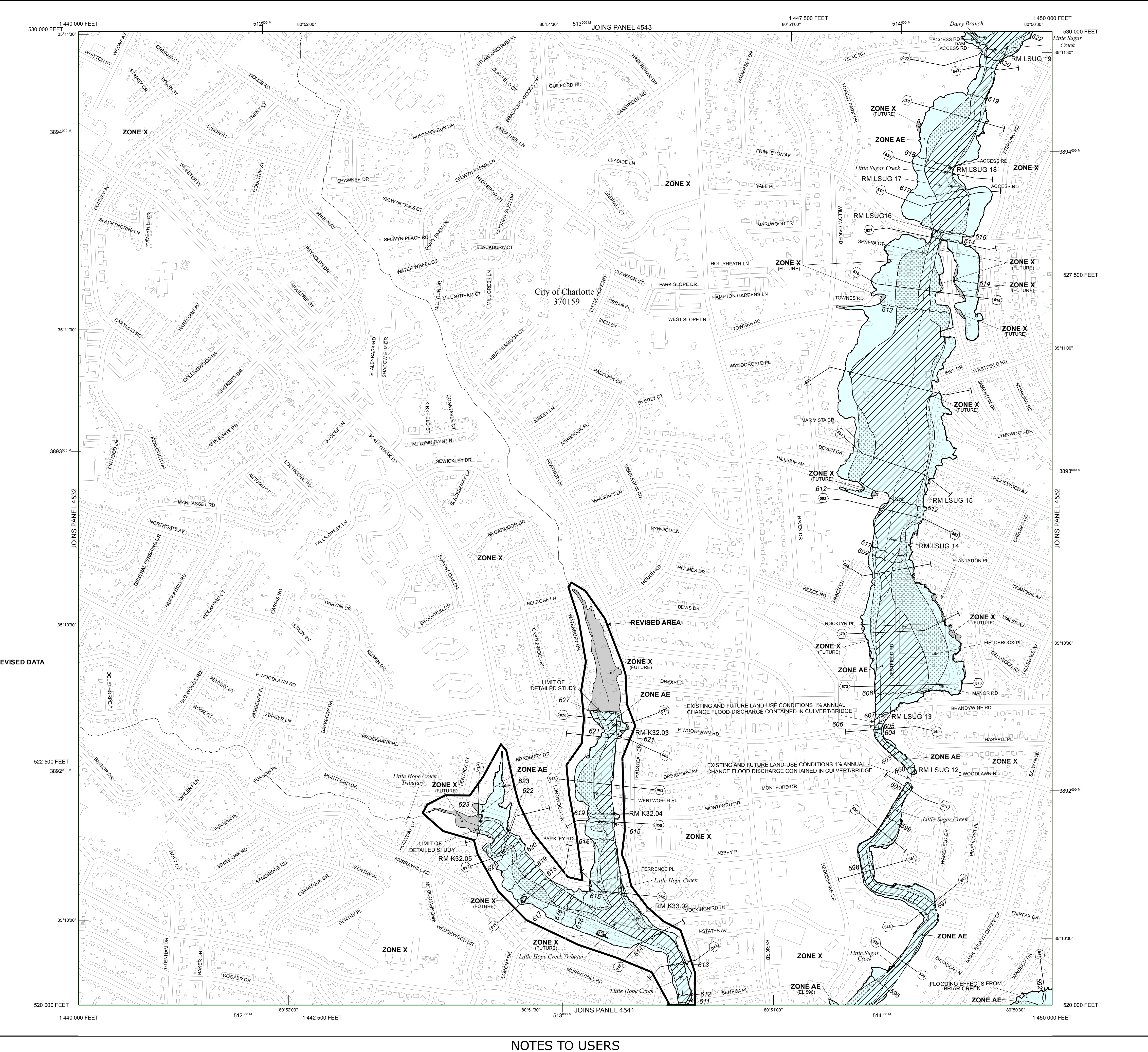
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles, Floodway Data, Limited Detailed Flood Hazard Data, and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of regulatory floodways shown on the FIRM for flooding sources studied by detailed methods were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data for flooding sources studied by detailed methods as well as non-encroachment widths for flooding sources studied by limited detailed methods are provided in the Flood Insurance Study (FIS) report for this jurisdiction. The FIS report also provides instructions for determining a floodway using non-encroachment widths for flooding sources studied by limited detailed methods.

**www.ncfloodmaps.com**  
<http://stormwater.charmeck.org>

Cooperating Technical State  
FEMA and a partnership with the NCFMP to produce and maintain this digital FIRM.



**NOTES TO USERS**

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

Base map information and geospatial data used to develop this FIRM were obtained from various organizations, including the participating local community(ies), state and federal agencies, and/or other sources. The primary base for this FIRM is planimetric base map information obtained from and maintained by Mecklenburg County GIS Department and is current as of 2011. Information and geospatial data supplied by the local community(ies) that met FEMA base map specifications were considered the preferred source for development of the base map. See geospatial metadata for the associated digital FIRM for additional information about base map preparation.

Base map features shown on this map, such as corporate limits, are based on the most up-to-date data available at the time of publication. Changes in the corporate limits may have occurred since this map was published. Map users should consult the appropriate community official or website to verify current conditions of jurisdictional boundaries and base map features. This map may contain roads that were not considered in the hydraulic analysis of streams where no new hydraulic model was created during the production of this statewide FIRM.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

If you have questions about this map, or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/ifip>.

An accompanying Flood Insurance Study report, Letter of Map Revision (LOMR) or Letter of Map Amendment (LOMA) revising portions of this panel, and digital versions of this FIRM may be available. Visit the North Carolina Floodplain Mapping Program website at <http://www.ncfloodmaps.com> or contact the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or its website at <http://www.floodmaps.fema.gov/firm/main.html> for information on all related products associated with this FIRM.

To determine if flood insurance is available in this community, contact your insurance agent, the North Carolina Division of Emergency Management or the National Flood Insurance Program at the following phone numbers or websites:

NC Division of Emergency Management (919) 773-6000  
<http://www.ncdems.state.nc.us>

Charlotte-Mecklenburg Storm Water Services (704) 336-3714  
<http://stormwater.charmeck.org>

National Flood Insurance Program (800) 352-7672  
<http://www.fema.gov/business/ifip>

**LEGEND**

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

**ZONE A** No Base Flood Elevation determined.  
**ZONE AE** Base Flood Elevations determined.  
**ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.  
**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.  
**ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.  
**ZONE A99** Areas to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.  
**ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**  
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**COMMUNITY ENCROACHMENT AREAS (Mecklenburg County)**

**OTHER FLOOD AREAS**  
**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.  
**OTHER FLOOD AREAS (Mecklenburg County)**  
**ZONE X** Areas of future conditions 1% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot 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 floodplain; areas outside future conditions 1% annual chance floodplain.  
**ZONE D** Areas in which flood hazards are undetermined, but possible.  
**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**  
**OTHERWISE PROTECTED AREAS (OPAs)**  
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary (Mecklenburg County)  
1% annual chance floodplain boundary  
1% annual chance future conditions floodplain boundary (Mecklenburg County)  
0.2% annual chance floodplain boundary  
Floodway boundary  
Community encroachment boundary (Mecklenburg County)  
Zone D boundary  
CBRS and OPA boundary  
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.  
Base Flood Elevation line and value; elevation in feet\*  
Base Flood Elevation value where uniform within zone; elevation in feet\*  
513 (EL 987)  
\* Referenced to the North American Vertical Datum of 1988

Cross section line  
Transsect line  
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)  
97°07'30" 32°22'30"  
427500 M  
1 477 500 FEET  
1000-meter Universal Transverse Mercator grid ticks, zone 17  
2500-foot grid values: North Carolina State Plane coordinate system (FIPSZONE 3200, State Plane NAD 83 Feet)  
North Carolina Geodetic Survey bench mark (for more information visit <http://www.ncgs.state.nc.us>)  
National Geodetic Survey bench mark (for more information visit <http://www.ngs.noaa.gov>)  
NCS-S8 GPS 2.5 cm Vertical Control Marks or Contractor-Installed NCFMP Bench Marks (for more information visit <http://www.ncgs.state.nc.us>)  
Mecklenburg County bench mark (for more information visit [http://www.mecklenburg.org/usa/usa/stormwater/IRM/Reference\\_Mark](http://www.mecklenburg.org/usa/usa/stormwater/IRM/Reference_Mark))  
River Mile  
M1.5

**GRID NORTH**  
MAP SCALE 1" = 500' (1 : 6,000)

250 0 250 500 750 1,000 METERS

**PANEL 4542K**

**FIRM**  
FLOOD INSURANCE RATE MAP  
NORTH CAROLINA

**PANEL 4542**  
(SEE LOCATOR DIAGRAM OR MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:  
COMMUNITY CID No. PANEL SUFFIX  
CHARLOTTE, CITY OF 370159 4542 K  
MECKLENBURG COUNTY 370158 4542 K

**REVISED TO REFLECT LOMR EFFECTIVE: FEBRUARY 24, 2015**

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP REVISED FEBRUARY 19, 2014** **MAP NUMBER 3710454200K**

State of North Carolina  
Federal Emergency Management Agency