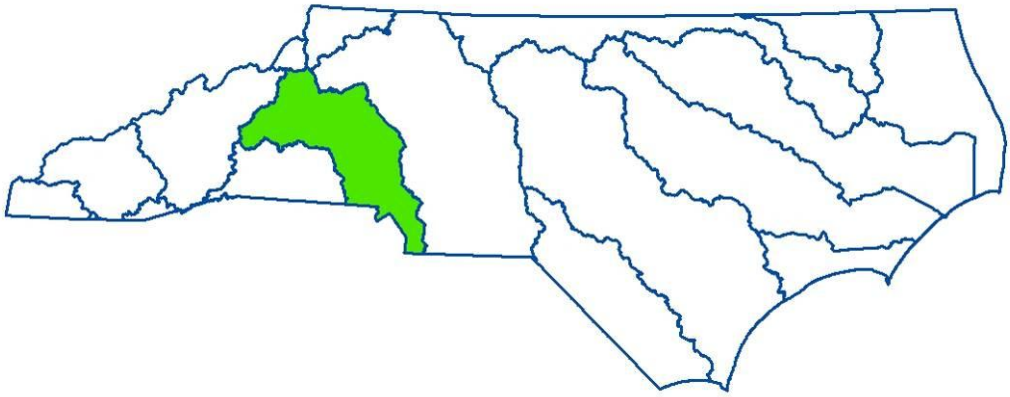
Catawba River Basin
Restoration Priorities

July 2007

Amended March 2013



Ecosystem Enhancement PROGRAM

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Amended by Hal Bryson, EEP Western Region Planner – March 2013.

EXECUTIVE SUMMARY

In North Carolina's portion of the Catawba Basin, there are 94 14-digit watersheds covering an area of 3,300 square miles. Improving and protecting these watersheds is a multi-program effort of the State. The Ecosystem Enhancement Program (EEP) has produced this report to identify its watershed restoration and protection priorities that incorporate input at the federal state, and local level. With this input, the restoration and protection blueprint presented should reflect broader watershed improvement efforts across the Catawba Basin.

Population growth in the basin threatens to impact the regions natural resources. According to the North Carolina's Population Data Center, between the years 2006 and 2030, population for counties in the Catawba Basin of North Carolina is expected to grow from 1.8 million to 2.7 million residents, nearly a 50 percent increase. Over 90 percent of this growth is expected to be concentrated around the Charlotte Metropolitan area. The housing, roads, and other infrastructure needed to accommodate this growth will put a strain on the environment and impact streams and wetlands.

To help protect the river basin's important resources, EEP has prioritized 38 watersheds, an area of 1,500 square miles, as targeted local watersheds (TLWs). TLW designation means that the watershed will receive priority for implementation of EEP restoration and protection activities along with added weight for restoration and protection efforts by other State programs. These priorities seek to achieve the following:

- Protection of drinking water supplies including the reservoirs of Mountain Island Lake, Lake Norman, and Lake Rhodhiss;
- Restoring impaired biology on creeks impacted by stormwater runoff including Clark, Sugar, Little Sugar, McAlpine, Fourmile, Catawba, and Crowder creeks;
- Protecting important species and significant natural and cultural resources in Dutchman, Lyle, and Waxhaw creeks;
- Continuing restoration and protection efforts on Muddy, Long, McDowell and Lower creeks; and
- Improving agricultural Non-point source pollution impacts on rural Indian and Howards creek.

Based on this update, six hydrologic units have been added to the TLWs identified in the last River Basin Restoration Priorities report published in 2004. The reasons for these additions include feedback from resource professionals, consideration of new information, and the need for watershed restoration and protection. Two TLWs identified in 2004 have been removed due to development activities making restoration and protection efforts prohibitive.

The restoration priorities for North Carolina's portion of the Catawba River Basin are captured in this report. This document, however, only updates the "Lower" Catawba River Basin (USGS Catalog Units 03050103, 03050102, and lower portions of 03050101) instead of the entire river basin. This focus on the Lower Catawba stems from EEP's effort to satisfy the mitigation needs of the expanding Charlotte Metropolitan area. Efforts to assess the remaining potions of the Catawba Basin will occur in 2008.

OVERVIEW OF THE CATAWBA RIVER BASIN

The River Basin Restoration Priorities (RBRP) addresses the three 8-digit Catalog Units (CU) illustrated in Figure 1 that comprise North Carolina's Catawba River Basin:

- Catawba CU 03050101 that includes a series of lakes on the Catawba (James, Rhodhiss, Hickory, Lookout Shoals, Norman, Mountain Island, and Wylie);
- The South Fork Catawba, CU 03050102, that includes parts of Hickory and Gastonia; and
- Catawba CU 03050103, a mostly urban and suburban CU that includes the Charlotte Metro area.

The Charlotte Metro area is located in CU 03050103. Land in the Charlotte area is heavily developed, making it challenging to find stream and wetland resources where there are landowners willing to participate in projects that meet EEP's criteria for restoration or preservation. Additionally, land scarcity and demand has appreciated the cost of completing projects. The result of these circumstances in the CU is that EEP has experienced difficulty finding mitigation sites that meet its criteria for project cost and size located where there are landowners willing to partner with EEP.

Based on these conditions, EEP requested and received permission from State and federal regulators in 2006 to expand its service area for CU 03050103 (the area in which its restoration projects can earn mitigation credit) to upstream portions of the Basin. This document updates the "Lower" Catawba River Basin that fall into this service area, CUs 03050103, 03050102, and lower portions of 03050101 (See Figure 1).

Catawba Basin land cover from the National Land Cover Dataset (Homer et al. 2004) is summarized in Table 1. Much of the western Basin (i.e., upper 03050101) is mountainous and in protected forests. Moving east into the foothills, the Basin has more agricultural land, mainly corn, wheat and cattle farms. The southeast portion of the Catawba Basin (i.e., 03050103) contains the highest percentage of urban land of all Catalog Units in the Basin.

What is a River Basin Restoration Priority?

River Basin Restoration Priorities are plans that EEP develops to identify priorities for the protection and enhancement of water quality, fisheries, wildlife habitat, recreational opportunities and preventing floods. EEP uses the priorities to guide its stream, wetland, and riparian restoration and protection activities in the State's 17 major river basins. Priorities are identified as targeted local watersheds (TLWs). TLWs receive priority for EEP planning and restoration project funds. The designation can also benefit stakeholders seeking funding for watershed improvements (e.g., E.P.A Section 319 or Clean Water Management Trust Fund grants) by giving added weight to their proposals.

Table 1. Catawba Basin Catalog Unit 2001 Land Cover (Homer et al. 2004).

Cataloging Unit Code	Urban Area (mi^2)	Urban Area (%)	Forest/Wetland Area (mi^2)	Forest/Wetland Area (%)	Agricultural Area (mi^2)	Agricultural Area (%)	Total (mi^2)	Total (%)
03050101[a]	349	16.3%	1,435	67.1%	354	16.5%	2,137	100%
03050102	117	17.8%	346	52.6%	194	29.5%	657	100%
03050103	210	52.0%	136	33.7%	58	14.3%	404	100%
Basin Summary	676	21.1%	1,917	59.9%	606	18.9%	3,199	100%

[a] Land cover information presented is combined for the upper and lower CU.

Population statistics for the Catawba Basin are presented in Table 2. These show that portions of the basin expect to see dramatic population growth in the coming decades. The development and infrastructure demands accompanying this growth will challenge those seeking to protect, improve and restore streams, wetlands, and habitat.

Table 2. Population estimates and projections for Catawba Basin counties (Source: N.C. State Data Center 2007).

COUNTY	Population 2006	Estimated Population 2030	Population Change 2006-2030	Percent Change 2006-2030
ALEXANDER	36,296	47,997	11,701	32%
AVERY	18,174	20,819	2,645	15%
BURKE	88,664	99,765	11,101	13%
CALDWELL	79,297	84,762	5,465	7%
CATAWBA	151,126	196,477	45,351	30%
GASTON	197,232	214,920	17,688	9%
IREDELL	145,232	224,705	79,473	55%
LINCOLN	71,298	100,598	29,300	41%
MCDOWELL	43,636	52,521	8,885	20%
MECKLENBURG	826,897	1,335,182	508,285	61%
UNION	172,094	324,271	152,177	88%
TOTALS	**1,829,946**	**2,702,017**	**872,071**	**48%**

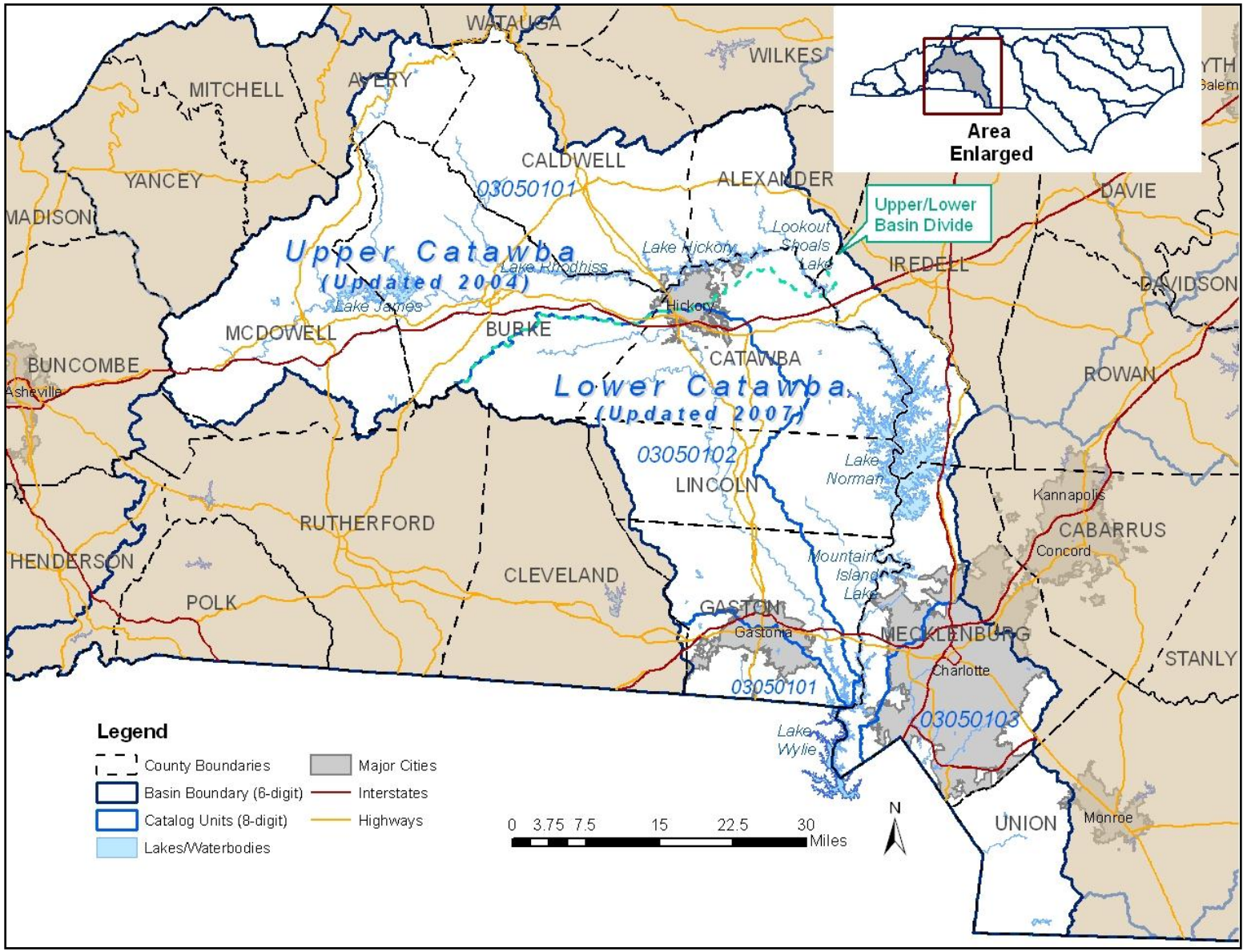

Figure 1. Catawba River Basin.

CATAWBA RIVER BASIN TARGETED LOCAL WATERSHEDS

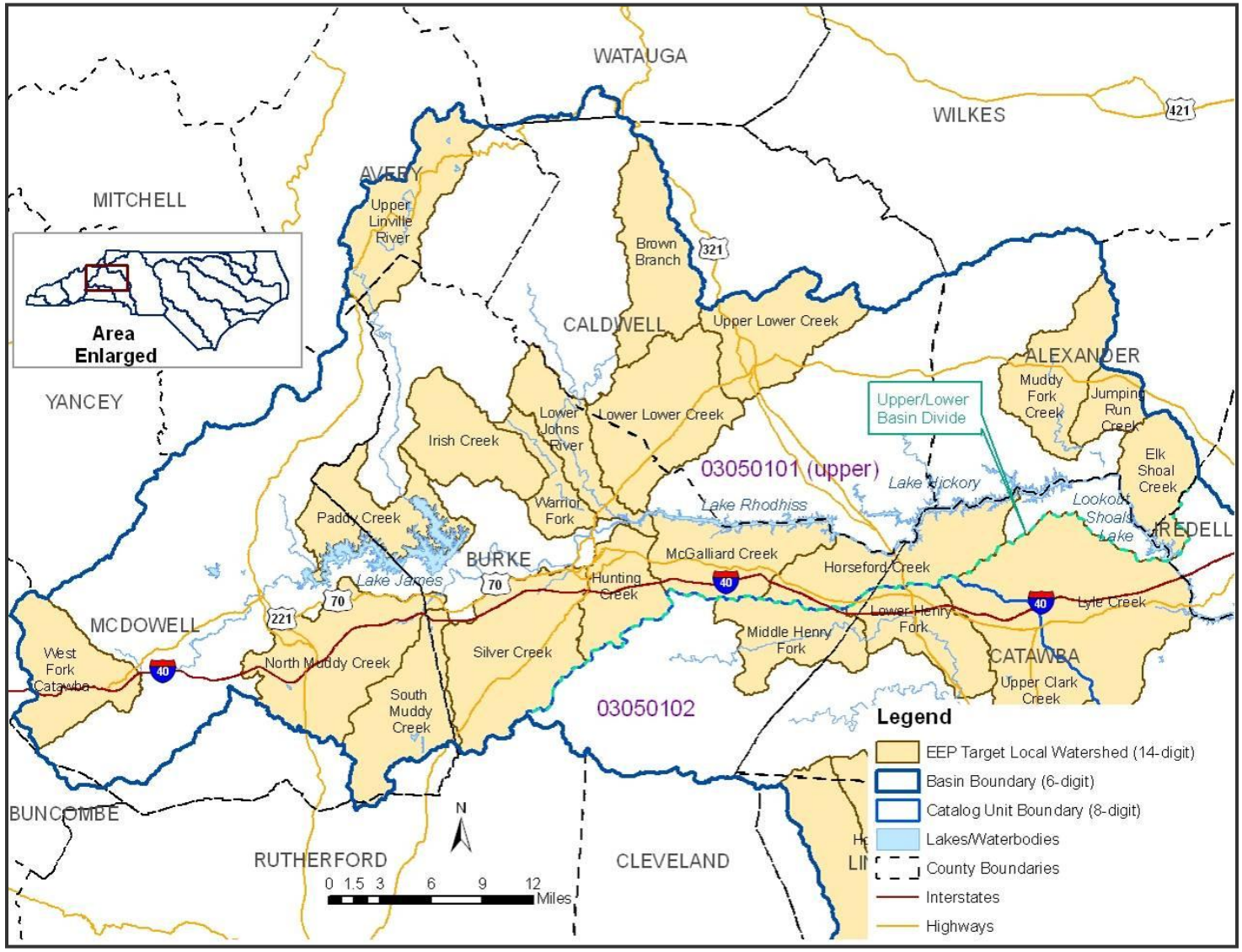

Figure 2. Targeted Local Watersheds-Upper Catawba River Basin.

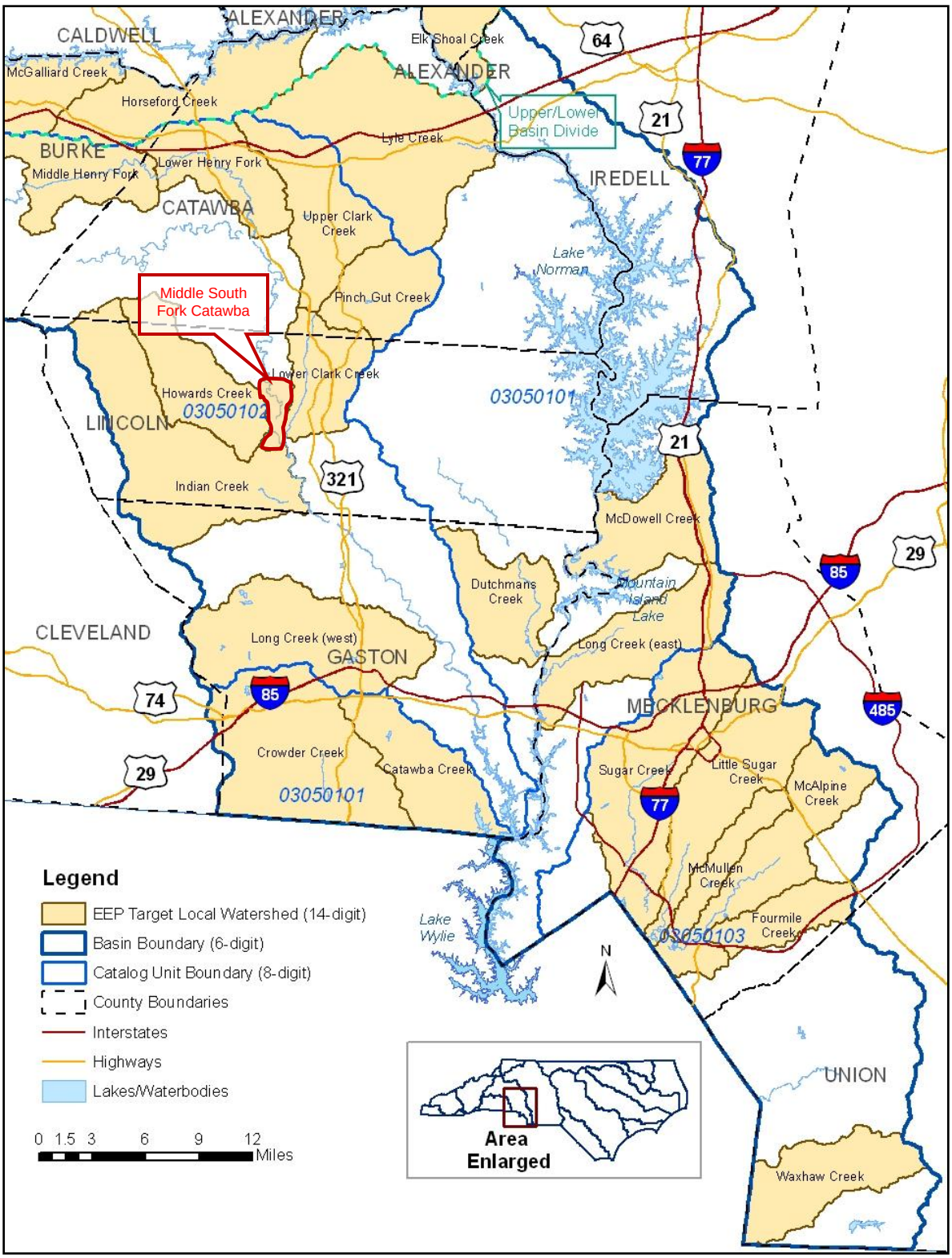

Figure 3. Targeted Local Watersheds-Lower Catawba. **Note addition of Middle South Fork Catawba as TLW in 2012.**

Priority Catawba Basin 14-digit hydrologic units (HUs), or TLWs, are shown in Figures 2 and 3. The selection of these watersheds means that they will receive priority from EEP to implement projects that protect and improve the habitat and other functions of streams, wetlands, and riparian areas.

Using guidance from a state focus group, TLWs should posses a mix of resources worth protecting along with degraded conditions that need improving (WNAT 2003). Appendix 1 contains further information on the application of the guidance in selecting 14-digit hydrologic units as TLWs.

Watershed Restoration is a Group Effort

Enhancement and restoration of degraded watersheds requires cooperation and effort at many levels. In addition to its implementation efforts, EEP seeks to partner with and support the work of others to complete projects and improve management activities that benefit water quality, hydrology and habitat in Targeted Local Watersheds. Often this support will occur through endorsement letters on grants, planning assistance, or "in-kind' contributions for grant proposals.

In North Carolina's Catawba Basin, there are 94 HUs covering an area of 3,300 square miles. Including the HUs updated in this report and those from the prior RBRP for the Upper Catawba, EEP is prioritizing 38 HUs, an area of 1,500 square miles, for improvement and protection. Appendix 2 contains a tabular list of the TLWs and highlights information used to identify their priority status.

The following sections summarize the restoration and protection needs of each catalog unit along with goals for achieving that restoration.

Catalog Unit 03050101-Upper (*Updated September 2004*)

This catalog CU is the largest in North Carolina's portion of the Catawba Basin (see Table 1), with more than double the area of the other two CUs combined. Lookout Shoals Lake marks EEP's programmatic division between the upper and lower portion of the CU.

In this upper CU, EEP is implementing its Lower Creek Local Watershed Plan (online at: www.nceep.net/services/lwps/Lower_Creek/NEW_Lower.pdf). Aside from that activity, details on the identification and justification for TLWs in the upper CU are contained in the prior River Basin Restoration Priorities plan completed in 2004 (online at www.nceep.net/services/restplans/catawba-04.pdf). Further documentation on TLW selections in the upper CU will occur when this area is updated in 2008.

Catalog Unit 03050101-Lower *(Updated July 2007)*

The lower portion of this CU includes lakes Norman, Mountain Island, and Wylie (see Figure 3). Six out of seventeen HUs in this portion of the CU are identified as TLWs. Dutchman and Catawba Creeks are two newly identified TLWs. No TLWs identified in the previous RBRP for this CU were removed.

Protection of Mountain Island Lake and Lake Norman is a priority for municipalities in the region (i.e., Charlotte Metro area), as it serves as a water supply.

Expansion of roads in the lower CU portends changing land use. New routes from Hickory to Charlotte and the proposed Gaston Connector (see www.ncturnpike.org/projects/gaston) are indicators of increased development in the region.

Figure 4. Cattle farm in Iredell County

Restoration goals for lower 03050101 CU include improved management of stormwater runoff to Crowder and Catawba creeks, which have impaired biology and high levels of fecal coliform bacteria according to the N.C. Division of Water Quality (NC DWQ 2004).

McDowell Creek and Long Creek (east) are part of an EEP Local Watershed Plan (online at www.nceep.net/services/lwps/Charlotte_LWP/Charlotte_LWP_summary.pdf). In addition to EEP work, Mecklenburg County has completed a more detailed planning process aimed at improving McDowell Creek and protecting the drinking water supply of Mountain Island Lake (online at http://www.charmeck.org/Departments/StormWater/Projects/McDowell+Creek+Watershed.htm). Implementation of these plans is a priority to better manage stormwater runoff and help restore biology in the watersheds.

Finally, protection of the critical water supply reservoirs in the region (Mountain Island Lake and Lake Norman) and their immediate riparian zones is an important management goal. In addition, land protection need to include important natural and cultural resources sites such as the Bunker Hill bridged over Lyle Creek (see Figure 5).

Figure 5. Bunker Hill Bridge over Lyle Creek.

Catalog Unit 03050102 *(Updated July 2007; Amended June 2012)*

This CU is the South Fork of the Catawba River and nine of its nineteen HUs have been identified as TLWs. Howards Creek and Middle and Lower Henry Creek are newly identified TLWs. Also, the Middle South Fork Catawba River is a new TLW that has been added due to its inclusion in the Indian and Howard Creeks LWP initiative. It was selected to be part of the LWP on the basis of three main factors: presence of City of Lincolnton's drinking water intake; hydrologically connection of Howards Creek to Indian Creek; and abundant stream restoration opportunities as shown by GIS data (% degraded buffers, % development, % agriculture) and windshield surveys. No TLWs identified in the previous RBRP for this CU were removed.

Much of this CU is covered in cattle farms and forest. The majority of development in the CU is in Gaston County.

Restoration goals for the CU include removing conditions causing sediment impairments on waterways in the CU (i.e., Henry Fork, Indian, and Clark creeks). Stormwater runoff from Hickory is a main stressor to Clark Creek and it has also been listed as impaired for copper and fecal coliform.

For agricultural areas such as Howard's and Indian creeks, the goal is to improve management practices on cattle farms to keep the cows from directly impacting the stream corridor.

Figure 6. Impacted stream in Indian Creek, a TLW in South Fork.

Finally, land protection should be emphasized in Long Creek (west) and Dutchmans Creek, where impairments have been improved or no longer exist. Protection and enhancement efforts in these HUs should build off the existing work that has been accomplished. Gaston County's Quality of Natural Resources Commission (QNRC) has been an active group seeking to improve those watersheds and the county's overall environment. More information on the QNRC can be found online at http://www.ces.ncsu.edu/gaston/Volunteers/QNRC.html.

Catalog Unit 03050103 *(Updated July 2007)*

This southernmost CU has the highest percentage of urban land of North Carolina's Catawba Basin CU's (52 percent). Six of twelve of its HUs are identified as TLWs. Sixmile and Twelvemile Creek have been dropped as TLW designation removed due to development activities making restoration and protection efforts prohibitive.

Population projections listed in Table 2 illustrate Mecklenburg and Union as the counties receiving most of the river basin's population growth in the coming decades, with respective growth projections of 508,000 and 152,000 by 2030. These two facts make restoration and protection activities in the CU a challenge.

Recognizing this challenge, EEP is engaged in many activities within the CU. EEP completed the Charlotte Area Local Watershed Plan in 2003 and is actively pursuing its implementation (online at www.nceep.net/services/lwps/Charlotte_LWP/Charlotte_LWP_summary.pdf). This watershed plan includes Sugar, Little Sugar, McMullen and McAlpine Creeks. These four watersheds collectively drain the metropolitan center of Charlotte and receive point and nonpoint pollution from the urban areas, severely impacting aquatic health in the hydrologic units. The State Division of Water Quality (DWQ) has found habitat conditions at sample sites within the watersheds similarly degraded (i.e., sand/silt substrate, severe bank erosion, and disturbed or

nonexistent riparian vegetation) and the waters are listed as impaired for elevated levels of fecal coliform bacteria and turbidity.

The main goal in the urbanized watersheds of this CU is to better manage stormwater runoff. To help with this, EEP has an ongoing effort to implement alternative forms of mitigation in the Sugar and Little Sugar Creek watersheds to mitigate for wetland impacts using stormwater best management practices (BMPs). Stormwater BMPs are being explored as a means of restoring lost hydrologic and water quality function in highly urbanized areas where traditional mitigation opportunities are lacking. Information on this effort can be found online at www.nceep.net/services/ lwps/Charlotte_LWP/old%20Charlotte%20LWP%20summary.pdf

At the southern end of this CU is Waxhaw Creek. Waxhaw Creek is a priority for land preservation because it faces development pressures from the Charlotte Metro area, and the HU is the only one in the Catawba Basin that supports a population of the federally endangered Carolina heel-splitter mussel (one of only six populations in the world). Stream water quality is critical to its survival and requires the use of forested buffers and prevention of siltation and other sources of pollution.

Figure 7. Better stormwater management is a goal for improving water quality in urban areas like Charlotte.

REFERENCES

Homer, C. C. Huang, L. Yang, B. Wylie and M. Coan. 2004. Development of a 2001 National Landcover Database for the United States. Photogrammetric Engineering and Remote Sensing, Vol. 70, No. 7, July 2004, pp. 829-840. Online at http://www.mrlc.gov/mrlc2k_nlcd.asp

North Carolina Wildlife Resources Commission. 2005. North Carolina Wildlife Action Plan. Raleigh, N.C. Pp577. Online at http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7c1_3.htm

N.C. Division of Water Quality. 2004. Catawba River Basinwide Water Quality Plan. Pp 345. Online at http://h2o.enr.state.nc.us/basinwide/catawba/documents/catawba.htm

N.C. State Data Center. 2007. County/State Population Projections. Online at http://sdc.state.nc.us/

Watershed Needs Assessment Team. 2003. Report from the Watershed Needs Assessment Team to the Mitigation Coordination Group. Pp. 51. Online at http://www.nceep.net/news/reports/WNAT%20Mit%20Group%20Final.pdf

For additional information regarding EEP or Catawba River Basin Restoration Prorities, please visit the EEP's website at: http://portal.ncdenr.org/web/eep/rbrps.

Or contact Hal Bryson, EEP Western Watershed Planner, at (828) 450-9408 or hal.bryson@ncdenr.gov.

APPENDIX 1. TARGETED LOCAL WATERSHED SELECTION FACTORS

The Watershed Needs Assessment Team published guidelines for use by EEP planning staff when designating areas as TLWs (Watershed Needs Assessment Team, 2003). Using this guidance, EEP evaluates a variety of data and information on water quality, hydrology, and habitat to select TLWs. Public comment and the professional judgment of local resource agency staff also play a critical role in targeting local watersheds. The published guidance used by EEP to select TLWs is available online (See http://www.nceep.net/abouteep/PPPM2/Section%20Covers/8.2.2_.htm).

The following paragraphs describe factors EEP considers to identify TLWs:

Water Quality: EEP targets watersheds with existing and potential water quality problems resulting from nonpoint source pollution. To make this determination, EEP evaluates the DWQ Use Support ratings, the 303(d) List, and DWQ Basinwide Assessment reports (available online at http://h2o.enr.state.nc.us/basinwide/). Also, EEP examines factors that threaten water quality such as transportation improvement projects and registered animal operations.

Watershed Functions: EEP planners evaluate three major functions when assessing the need for watershed restoration and preservation: habitat, hydrology and water quality. Of particular interest is the health of steams, wetlands, and riparian areas. Reports, maps, and input from resource professionals are all used to help assess whether or not streams, wetlands, and riparian areas are functioning well.

Figure A1-1. Candidate Site for Preservation on Waxhaw Creek

Partnership Opportunities: EEP's watershed approach advocates concentrating multiple improvement projects in relatively small watersheds to yield a greater cumulative benefit to water quality, hydrology, and habitat. EEP seeks to partner wetland and stream restoration projects with other efforts such as agricultural BMPs, stormwater controls, and riparian buffer preservation. This approach helps to protect the State's existing investment and improves chances for functional uplift in a watershed. For this reason, EEP reviews existing or planned Clean Water Management Trust Fund and Section 319 grants from DWQ. EEP also reviews reports that capture broader planning or protection initiatives, such as the Wildlife Resource Commission's Habitat Protection Plan (WRC 2005), that takes into account Natural Heritage data, inter-state initiatives, and local preservation efforts.

Land Cover: Water quality studies suggest that heavily forested watersheds better regulate stormwater runoff, thereby reducing the likelihood of stream bank erosion, nutrient runoff and sediment pollution. For this reason, EEP uses the percentage of "disturbed" land (i.e., farms, urban and suburban areas) in a watershed as an indicator of restoration need and opportunity. EEP also analyzes riparian land cover. Research has consistently shown that forested riparian habitat correlates with good aquatic and terrestrial habitat, as well as good water quality. Thus,

those streams lacking a well vegetated riparian buffer are at greater risk for degraded water quality and habitat. Watershed land cover is spot-checked during field tours of the watershed.

Local Resource Professional Participation: In selecting TLWs, EEP values the comments and recommendations of local resource and agency professionals. These include the staff of Soil & Water Conservation Districts, the Natural Resources Conservation Service, local government planning and stormwater departments, local or regional land trusts, and NCDENR regional staff (e.g., Wildlife Resources Commission, DWQ, Forestry, etc.). EEP relies on these Resource Professionals to provide specific and up-to-date information regarding the condition of local streams, wetlands and riparian buffers. Their input is taken into account in selecting the TLWs reflected in this document.

Figure A1-2. Resource Professional Workshops

APPENDIX 2. EEP TARGETED LOCAL WATERSHED HIGHLIGHTED DATA

(*Note: Gray-shaded rows indicate that the HU is a newly identified TLW;*
note addition of Middle South Fork Catawba HU -- part of Indian & Howards Creeks Local Watershed Planning initiative)

Local Watershed Name and HU Code	Area (mi^2)	Developed Land[1] (%)	Agricultural Land[1] (%)	Restoration & Planning Projects[2]	Impaired 303-D Streams[3]	NHP Element Occurrences[4]	NC Wildlife Action Plan[5]	Streams w/o Forested Buffer[6] (%)	Resource Professional Priorty[7]
W.Fork Catawba 03050101010010	37	5%	3%	CWMTF		30		12%	
Upper Linville River 03050101030010	44	15%	11%	CWMTF		80	Yes	32%	Yes
Paddy Creek 03050101030030	34	4%	6%	EEP, CWMTF		6		5%	
N.Muddy Creek 03050101040010	59	12%	21%	LWP, EEP, CWMTF, 319	Yes	21		32%	Yes
S.Muddy Creek 03050101040020	40	6%	19%	LWP, EEP, TU		30		20%	Yes
Silver Creek 03050101050050	61	18%	23%	EEP, CWMTF		54		31%	
Warrior Fork 03050101060020	16	13%	24%		Yes	3	Yes	29%	
Irish Creek 03050101060030	34	4%	10%		Yes	19	Yes	19%	
Hunting Creek 03050101060050	26	37%	19%		Yes	3		41%	
Brown Branch 03050101070020	42	3%	7%	EEP		1	Yes	20%	
Lower Johns River 03050101070040	27	3%	13%	CWMTF	Yes	8	Yes	13%	Yes
Upper Lower Creek 03050101080010	41	27%	14%	LWP, EEP, CWMTF	Yes	2		50%	Yes
Lower Lower Creek 03050101080020	58	14%	24%	LWP, EEP	Yes	3		36%	
McGalliard Creek 03050101090010	38	28%	15%	CWMTF	Yes	9		25%	

Local Watershed Name and HU Code	Area (mi^2)	Developed Land[1] (%)	Agricultural Land[1] (%)	Restoration & Planning Projects[2]	Impaired 303-D Streams[3]	NHP Element Occurrences[4]	NC Wildlife Action Plan[5]	Streams w/o Forested Buffer[6] (%)	Resource Professional Priorty[7]
Horseford Creek 03050101090020	45	54%	16%	CWMTF	Yes	6		48%	
Muddy Fork Creek 03050101120030	37	12%	41%		Yes	0		30%	
Jumping Run Creek 03050101120040	13	14%	51%	EEP		0		39%	
Elk Shoal Creek 03050101130010	26	5%	45%	EEP		1		26%	
Lyle Creek 03050101140010	79	24%	39%	EEP		1		34%	Yes
Dutchmans Creek 03050101160040	31	23%	19%	EEP, CWMTF		15		22%	
McDowell Creek 03050101170010	38	35%	25%	LWP, EEP, CWMTF	Yes	8		47%	Yes
Long Creek (east) 03050101170020	40	47%	14%	LWP, EEP	Yes	1		42%	Yes
Crowder Creek 03050101180010	72	26%	17%	CWMTF	Yes	25		24%	Yes
Catawba Creek 03050101180020	35	41%	16%	CWMTF	Yes	1		36%	Yes
Middle Henry Fork 03050102010020	30	10%	26%		Yes	13	Yes	20%	Yes
Lower Henry Fork 03050102010030	31	41%	23%			12	Yes	39%	Yes
Upper Clark Creek 03050102030010	40	40%	30%		Yes	4		43%	Yes
Lower Clark Creek 03050102030020	25	29%	42%		Yes	1		45%	Yes
Pinch Gut Creek 03050102030030	26	15%	49%	CWMTF	Yes	1		32%	
Middle South Fork[8] 03050102040030	5.3	32%	56%			0		72%	Yes (EEP LWP)
Howards Creek 03050102040040	34	7%	57%			0		32%	Yes (EEP LWP)

Local Watershed Name and HU Code	Area (mi^2)	Developed Land[1] (%)	Agricultural Land[1] (%)	Restoration & Planning Projects[2]	Impaired 303-D Streams[3]	NHP Element Occurrences[4]	NC Wildlife Action Plan[5]	Streams w/o Forested Buffer[6] (%)	Resource Professional Priorty[7]
Indian Creek 03050102050010	75	10%	49%	EEP, CWMTF	Yes	9		23%	Yes (EEP LWP)
Long Creek (west) 03050102070020	60	31%	29%	319, CWMTF	Yes	16	Yes	36%	
Sugar Creek 03050103020020	68	78%	5%	LWP, EEP, CWMTF	Yes	6		67%	Yes
Little Sugar Creek 03050103020030	51	95%	1%	LWP, EEP, CWMTF	Yes	3		88%	Yes
McMullen Creek 03050103020040	15	95%	0%	LWP		1		81%	Yes
McAlpine Creek 03050103020050	45	87%	1%	LWP, CWMTF	Yes	5		76%	
Fourmile Creek* 03050103020070	19	73%	4%	EEP, CWMTF		4		65%	
Waxhaw Creek 03050103030030	36	5%	27%			14	Yes	17%	

1 - Land Cover is estimated based on 2001National Land Cover Dataset (NLCD) developed by the USGS (Homer et al. 2004)

2 – EEP Local Watershed Plans and watershed planning done by other agencies or municipalities qualify as LWPs. Restoration project sites were identified using Clean Water Management Trust Fund's (CWMTF) grant awards database, EEP's Tier 1 Project sites (EEP), available data on projects from the State's 319 non-point source pollution reduction program (319), and Trout Unlimited projects (TU).

3 – Streams that do not support their designated uses are listed as impaired on the State's 2006 303-d list maintained by the Division of Water Quality.

4 – Natural Heritage Element Occurrences are important species, habitats, or community types that have been identified by the NC Natural Heritage Program.

5 – The Wildlife Resources Commission completed the State's Wildlife Action Plan in 2005 to support fish and wildlife conservation statewide (WRC 2005).

6 – The percentage of streams lacking a natural buffer (i.e., forest or wetlands) is estimated from the NLCD database using the streams that are drawn on 1:24000 scale topo maps.

7 – Workshops were held where local resource professionals provided (RP) feedback on where EEP should prioritize implementing mitigation work. RPs include municipal planners, public works officials, soil & water conservation district representatives, and representatives from state and federal resource agencies.

8 – The Middle South Fork Catawba HU was added as a TLW in early 2012 because it was part of an EEP LWP initiated after the 2007 RBRP was produced (Indian & Howards Creeks LWP, 2008-2010). Its selection as part of the LWP area was due to three main factors: presence of City of Lincolnton's drinking water intake; hydrologically connects Howards Creek to Indian Creek; and abundant stream restoration opportunities as shown by GIS data (% degraded buffers, % development, % agriculture) and windshield surveys.

*- Amended March 2013- This Hydrologic Unit was identified in error as part of an LWP in the previous RBRP version. This Hydrologic Unit was a newly identified TLW in the 2007 RBRP..