

## **REQUEST FOR BOARD ACTION**

### **CANE CREEK WATER AND SEWER DISTRICT BOARD**

**MEETING DATE:** September 8, 2009

**SUBJECT:** 2009 Drainage Basin Study (District Master Plan)  
Cane Creek Water and Sewer District

**ATTACHMENTS:** Yes

1. Executive Summary
2. Presentation William Lapsley and Associates

#### **SUMMARY OF REQUEST:**

At the Board's direction during the December 1, 2008 Meeting, William Lapsley and Associates have completed the subject study. The Cane Creek Water and Sewer District (CCWSD) Advisory Board and staff have been continually involved in the development of this study. Also, during the Advisory Board's meeting on August 11, 2009, the Board unanimously voted to recommend the study to the CCWSD Board.

The study's executive summary is attached as well as the meeting presentation.

#### **BOARD ACTION REQUESTED:**

For the Board's consideration, discussion and direction on the Cane Creek Water and Sewer District's 2009 Drainage Basin Study.

#### **Suggested Motion:**

I move that the Board approve the Cane Creek Water and Sewer District's 2009 Drainage Basin Study.

## Cane Creek Water and Sewer District FY 09 Drainage Basin Study

### **Executive Summary:**

The purpose of the Cane Creek Water and Sewer District FY 09 Drainage Basin study is to identify existing and future wastewater service areas, map locations for future sewer lines, estimate future wastewater flows generated from the District, evaluate treatment alternatives and prepare a financial analysis for the District.

The study maps the existing sewer lines within the existing District and identifies the areas within the District that do not have access to public sewer. Future service areas that naturally flow into the District are identified and discussed. The future service areas include Mills River north and west of NC 191, Mills River west of the current District boundary, the Etowah area and areas east of Hoopers Creek.

Future sewer extensions have been routed and planned in the sections of the District with no sewer service. The goal of the routing was to consider elimination of existing private wastewater discharges, elimination of existing sewer pump stations, provide sewer service to areas with documented septic failures and to limit the number of new sewer pump stations.

Sewer lines have been planned and routed throughout the district and detailed maps are included in the study. Several "backbone" projects have been identified within the District. Backbone projects are defined as priority projects that require County involvement in planning and design, will provide sewer service to a significant area, and will allow for future extensions throughout the District. The backbone projects have been divided into immediate needs, short-term and long-term projects. Following is a listing of each project:

#### Immediate Need Projects:

- Mud Creek Interceptor
- Mill Pond Creek Pump Station & Interceptors
- Mills River Extension

#### Short-Term Projects:

- Fletcher Warehouse Pump Station
- Howard Gap Pump Station & Interceptor

#### Long-Term Projects:

- French Broad River Interceptors & Boylston Creek Pump Station
- Shaw Creek Pump Station & Interceptor
- Boylston Creek Interceptor
- McDowell Creek Interceptor

Calculation of wastewater flows for the District has also been completed with this study. Currently the District sends approximately 750,000 gallons of wastewater per day to MSD for treatment and disposal. Over the next 20 – 25 years, the District will approach average daily flow of approximately 2 million gallons per day with normal projected growth.

A consideration of the existing facilities is also included in this study. Specific items discussed include an upgrade to the Johnson Farm pump station and elimination or relocation of the Snowball Lane pump station.

Since the current allocation for wastewater flow with MSD is 1.35 million gallons per day and projected flows will approach 2 million gallons per day over the next 20 – 25 years, wastewater treatment alternatives should be explored. The County will have to participate in the funding of an upgrade to MSD facilities at some point in the future to accommodate additional flows. Another option for wastewater treatment and disposal is construction of a new wastewater treatment facility in northern Henderson County in cooperation with MSD. The County should begin negotiations for a new allocation with MSD for these additional flows while also exploring the option of a treatment facility in Henderson County.

A financial analysis has been completed for the District as part of this study. The primary purpose of the financial analysis was to consider future expenditures and operational costs by the District and to evaluate the current fee structure. The current sewer rate for 4,500 gallons per month in the District is \$36.99. By comparison, the rate for the same flow for a Hendersonville Customer outside the city limits is \$35.99 and \$40.04 in Flat Rock. The MSD rate for the same flow is \$28.57. The current District rate is comparable to the rates charged by sewer providers in the surrounding area.

The financial analysis accounts for funding of several of the backbone projects over the course of the next 10 years. A placeholder budget number has been included for future treatment allocation expansion with MSD in year 2021.

***Selected financial recommendations and conclusions:***

- Use fund balance to help pay for needed capital projects
- Establish capital projects fund and allocate \$100k annually
- Match future MSD rate increases
- 2% rate increase beginning in FY2011

### **Summary Conclusions and Recommendations:**

Following are selected recommendations from the study for consideration by the District and the County. They are listed here in no particular order or priority:

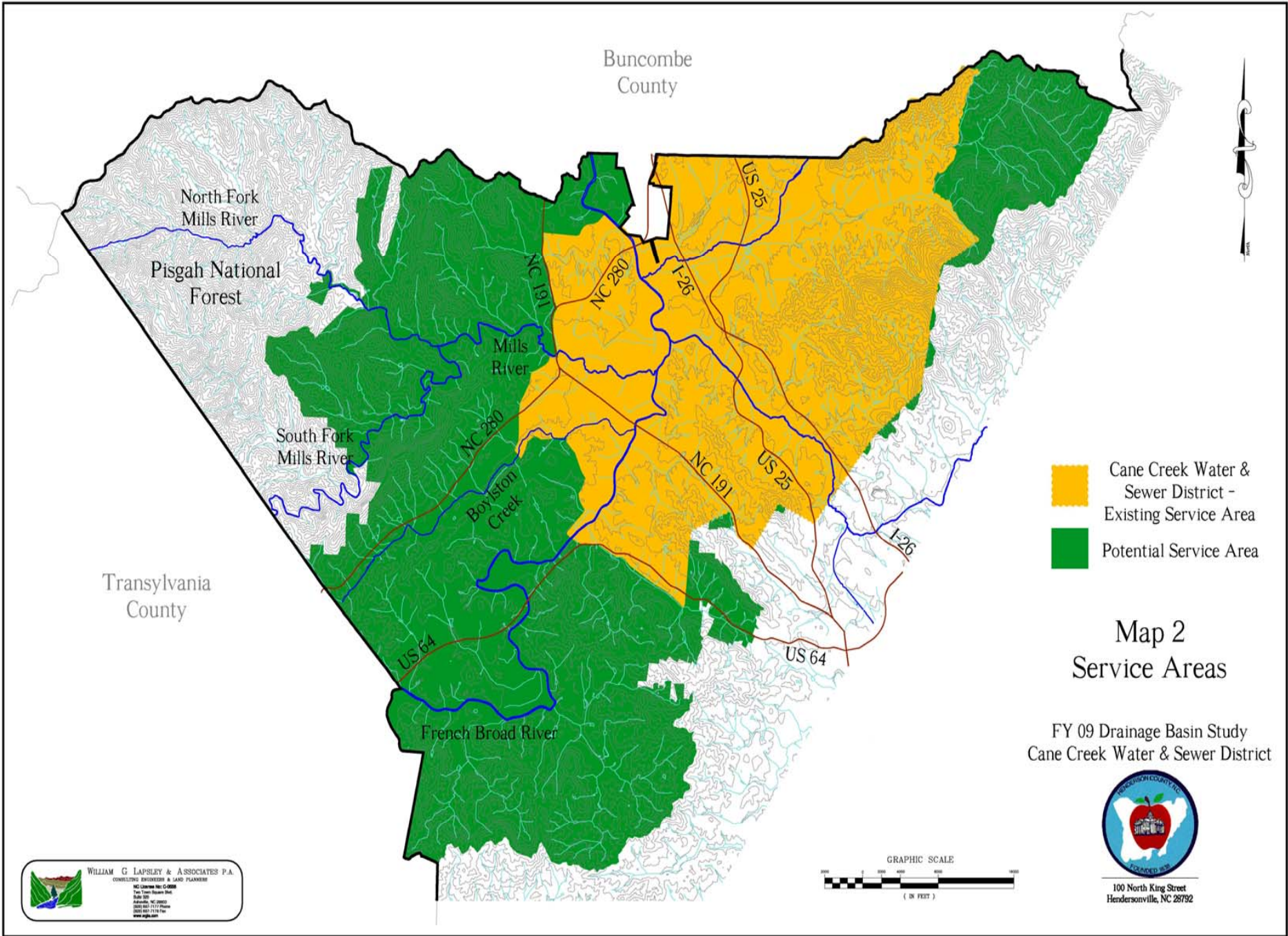
- Prepare and adopt a sewer extension policy that would govern new sewer extensions and provide guidance for Staff and Developers.
- Initiate securing an updated allocation for wastewater flow and treatment from MSD. As part of that allocation, the County should consider requesting a seat on the MSD Board.
- As part of the negotiation for a new allocation, consider further study of a new treatment facility in northern Henderson County as described in this study and discuss as an alternative with MSD.
- Aggressively pursue abandoning or relocating the Snowball Lane pump station.
- Look for opportunities to secure easements that will be necessary to construct the backbone projects listed in this study.
- Proceed with design, permitting and easement acquisition for the first two backbone projects.
- Pursue grant funding for the construction of the first two backbone projects through the Clean Water Management Trust Fund or other funding sources that may be available.
- Consider further study of extension of the Cane Creek Sewer District to the Etowah Area.



# Cane Creek Water & Sewer District Watershed Study

- Study Presentation





- Cane Creek Water & Sewer District - Existing Service Area
- Potential Service Area

## Map 2 Service Areas

FY 09 Drainage Basin Study  
Cane Creek Water & Sewer District



100 North King Street  
Hendersonville, NC 28792


**WILLIAM G LAPSLEY & ASSOCIATES P.A.**  
 CONSULTING ENGINEERS & LAND PLANNERS  
463 Lenoir Ave. Suite 200  
 Asheville, NC 28801  
 (828) 252-1111  
 www.wglas.com

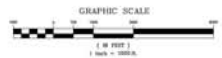
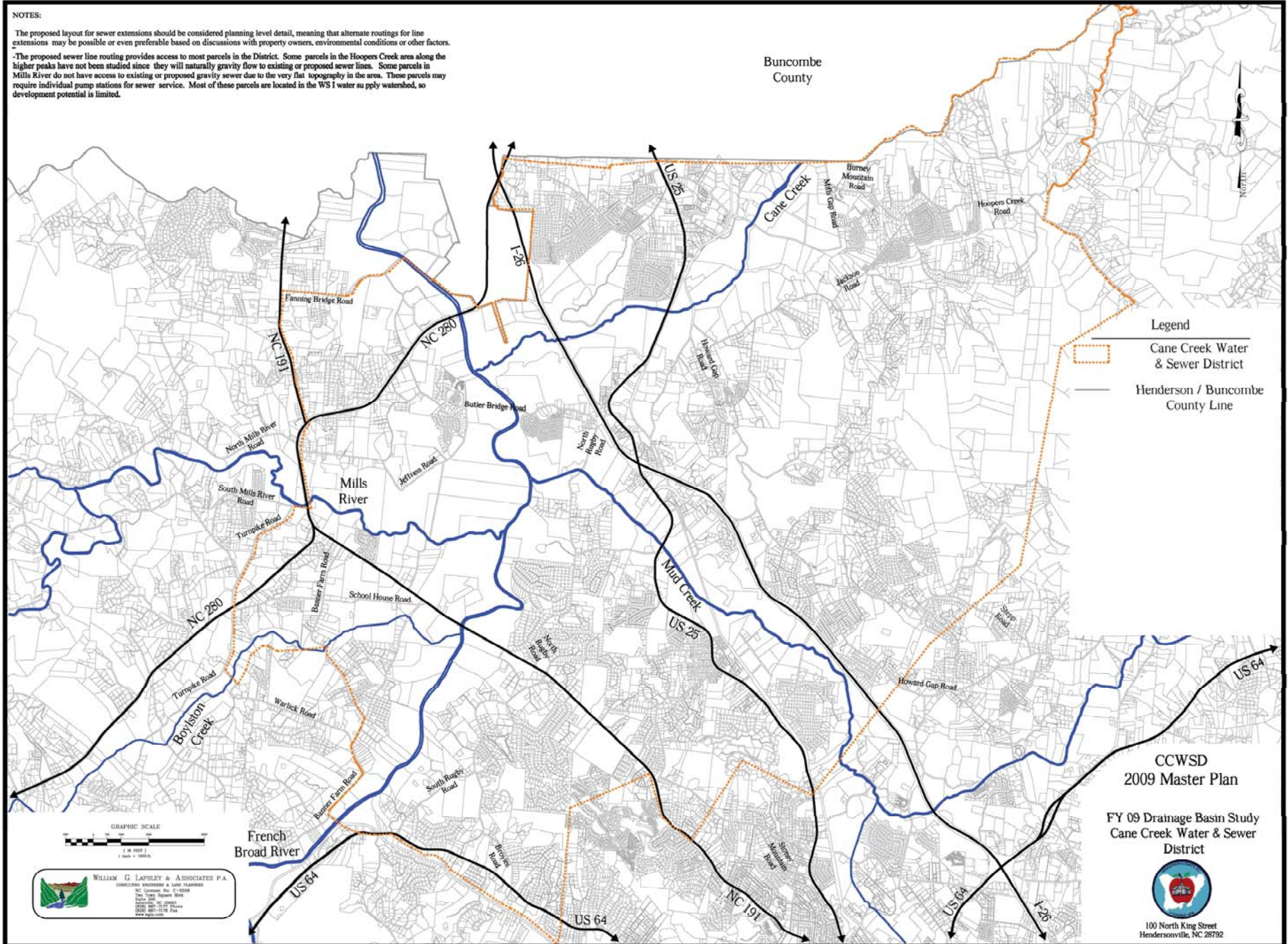




**NOTES:**

The proposed layout for sewer extensions should be considered planning level detail, meaning that alternate routings for line extensions may be possible or even preferable based on discussions with property owners, environmental conditions or other factors.

-The proposed sewer line routing provides access to most parcels in the District. Some parcels in the Hoopers Creek area along the higher peaks have not been studied since they will naturally gravity flow to existing or proposed sewer lines. Some parcels in Mills River do not have access to existing or proposed gravity sewer due to the very flat topography in the area. These parcels may require individual pump stations for sewer service. Most of these parcels are located in the WS 1 water supply watershed, so development potential is limited.



**WILLIAM G. LAPSLEY & ASSOCIATES P.A.**  
CONSULTING ENGINEERS & ARCHITECTS  
NC License No. 01-0503  
PA License No. 01-0503  
100 North King Street  
Hendersonville, NC 28732  
(704) 891-1178 Fax  
www.wglapsley.com

**CCWSD**  
2009 Master Plan  
FY 09 Drainage Basin Study  
Cane Creek Water & Sewer  
District



100 North King Street  
Hendersonville, NC 28732



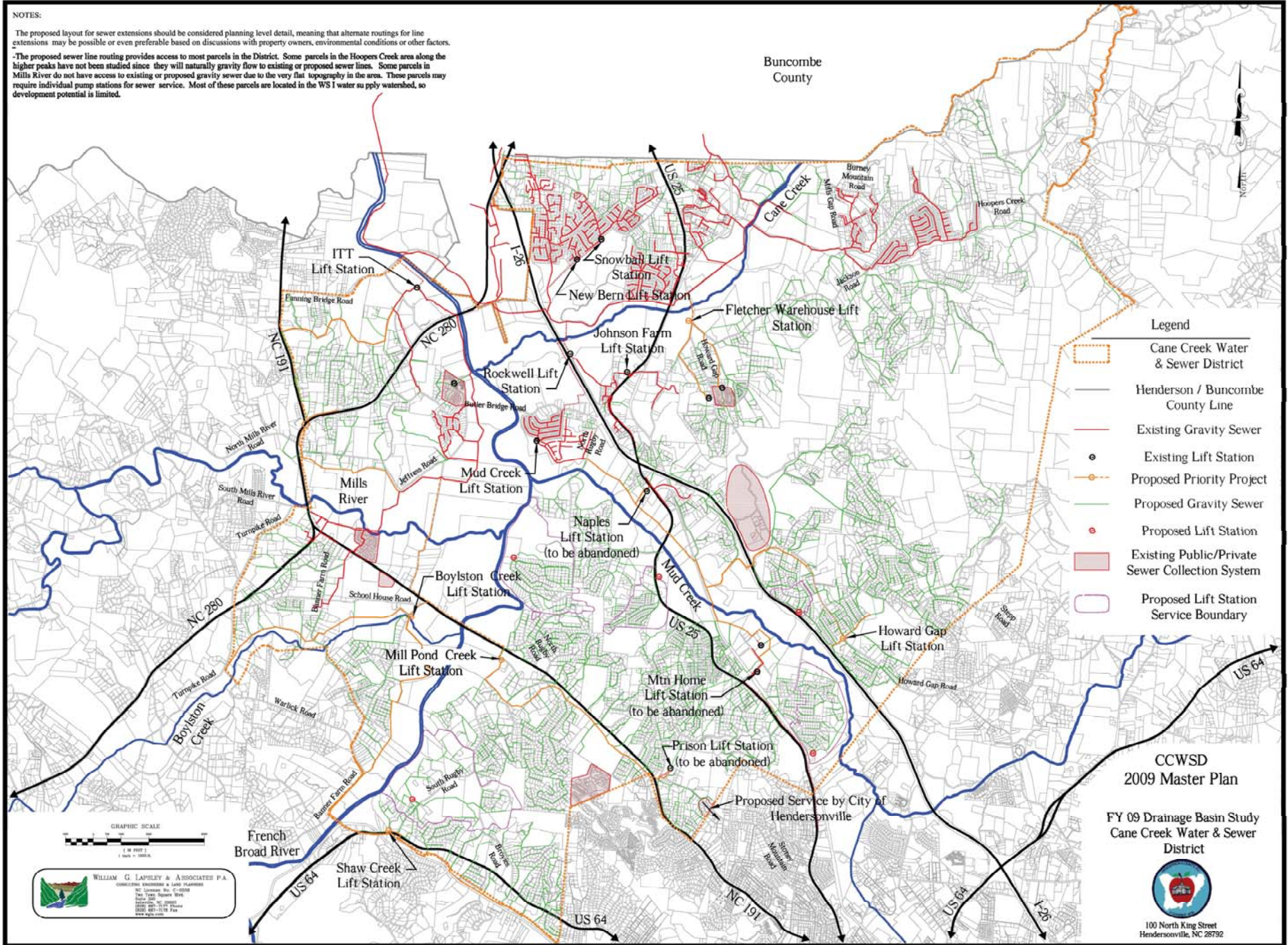




**NOTES:**

The proposed layout for sewer extensions should be considered planning level detail, meaning that alternate routings for line extensions may be possible or even preferable based on discussions with property owners, environmental conditions or other factors.

-The proposed sewer line routing provides access to most parcels in the District. Some parcels in the Hoopers Creek area along the higher peaks have not been studied since they will naturally gravity flow to existing or proposed sewer lines. Some parcels in Mills River do not have access to existing or proposed gravity sewer due to the very flat topography in the area. These parcels may require individual pump stations for sewer service. Most of these parcels are located in the WS 1 water supply watershed, so development potential is limited.



- Legend**
- Cane Creek Water & Sewer District
  - Henderson / Buncombe County Line
  - Existing Gravity Sewer
  - Existing Lift Station
  - Proposed Priority Project
  - Proposed Gravity Sewer
  - Proposed Lift Station
  - Existing Public/Private Sewer Collection System
  - Proposed Lift Station Service Boundary

**CCWSD  
2009 Master Plan**

**FY 09 Drainage Basin Study  
Cane Creek Water & Sewer  
District**



100 North King Street  
Hendersonville, NC 28792

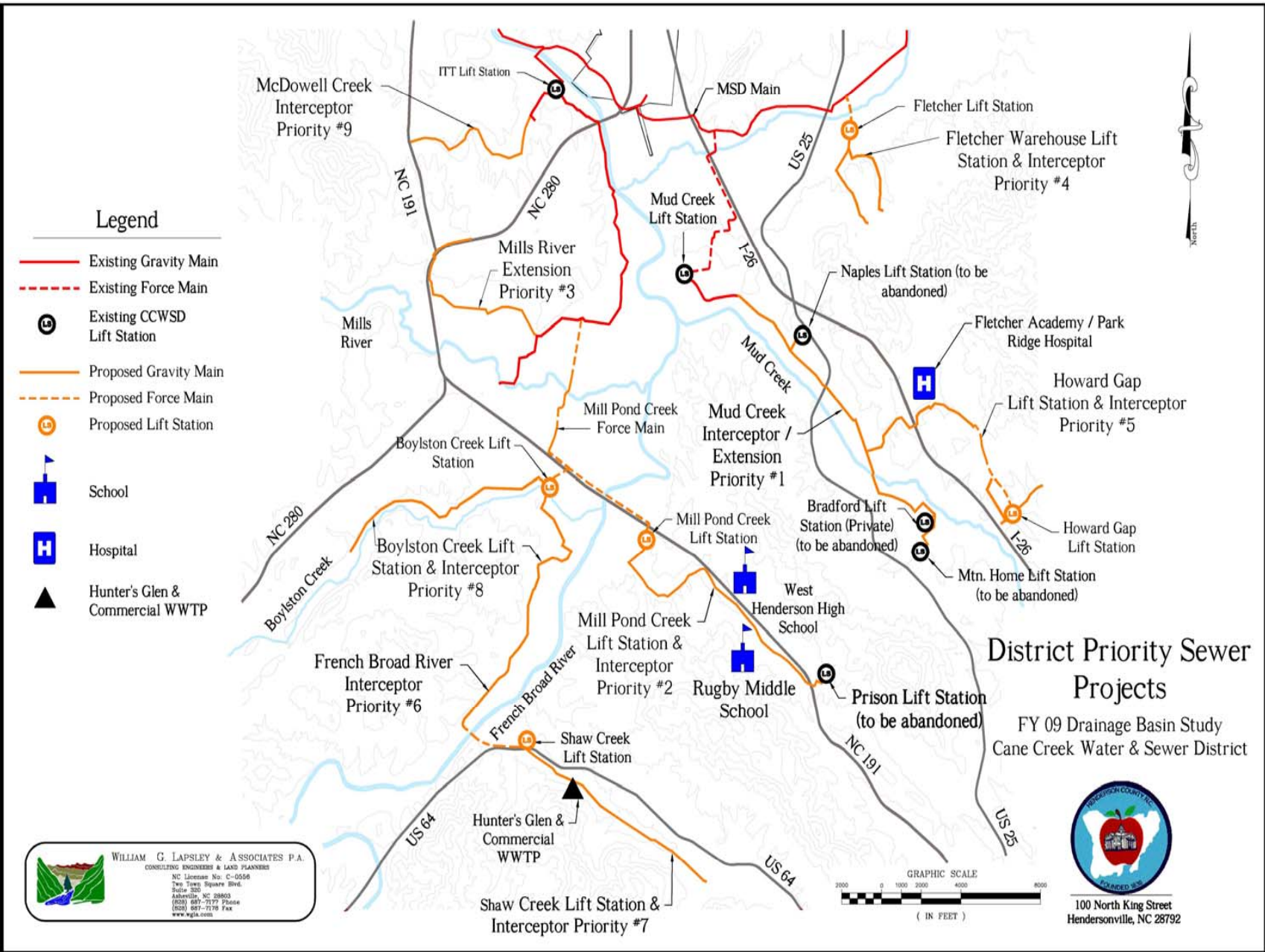
**WILLIAM G. LAPSLEY & ASSOCIATES P.A.**  
 CONSULTING ENGINEERS & LAND SURVEYORS  
 NC License No. 01-05059  
 PA License No. 0000000000  
 100 North King Street  
 Hendersonville, NC 28792  
 Phone: 828-639-1178 Fax: 828-639-1179  
 www.wglapsley.com



# Priority Projects

- Mud Creek Interceptor Extension
- Mill Pond Creek Pump Station & Interceptor
- Mills River Extension
- Fletcher Warehouse Pump Station & Extensions
- Howard Gap Pump Station & Extensions
- Boylston Creek Pump Station & French Broad Interceptor
- Shaws Creek Pump & Interceptor
- Boylston Creek Interceptor
- McDowell Creek Interceptor





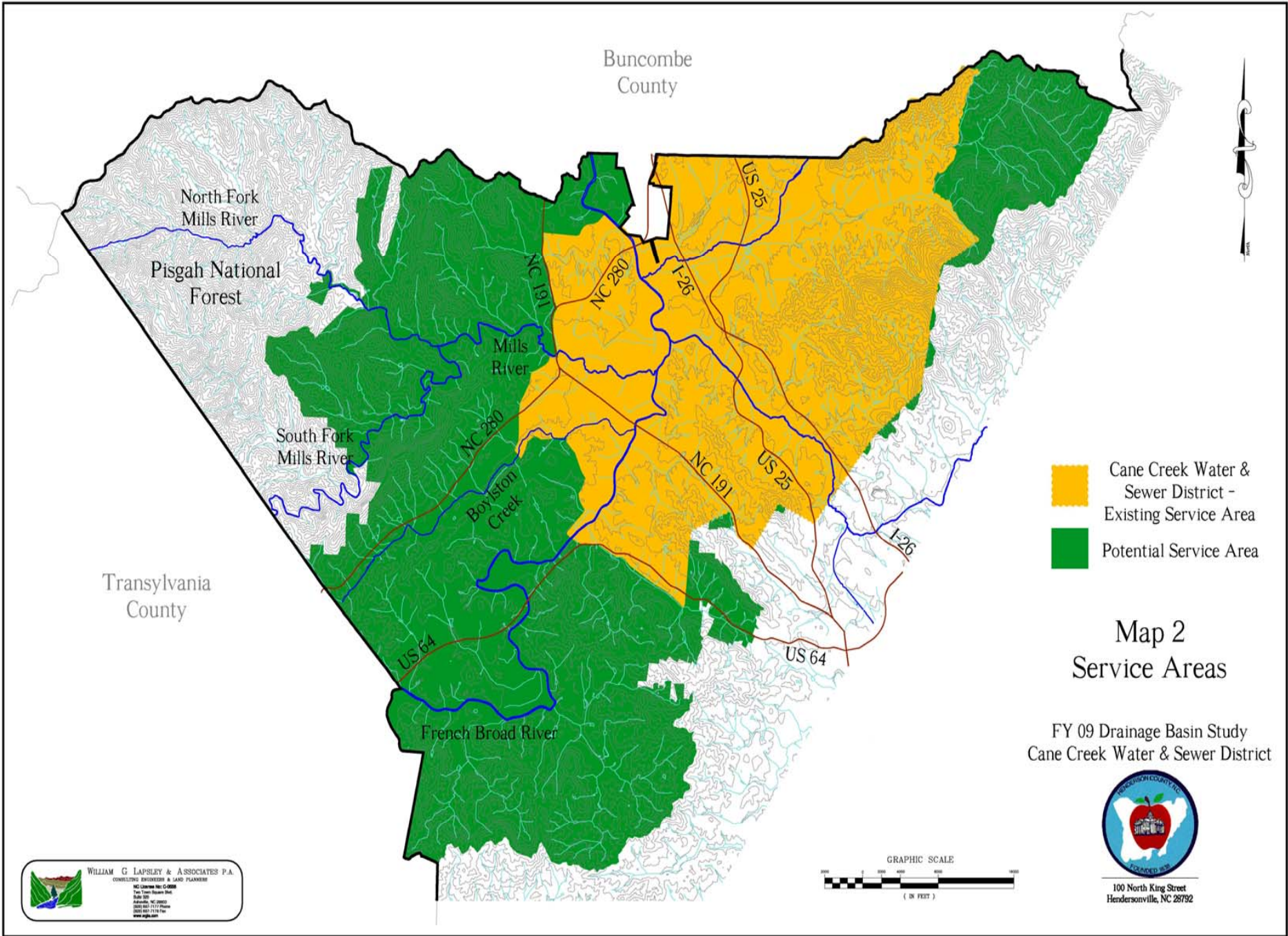
# Priority Projects

- Discussion of adjustment of priorities



# Consideration of Future Service Areas

- Mills River north and west of NC 191
- Mills River west of current District Boundary
- Areas east of Hoopers Creek
- Etowah Area



- Cane Creek Water & Sewer District - Existing Service Area
- Potential Service Area

## Map 2 Service Areas

FY 09 Drainage Basin Study  
Cane Creek Water & Sewer District



100 North King Street  
Hendersonville, NC 28732


**WILLIAM G LAPSLEY & ASSOCIATES P.A.**  
 CONSULTING ENGINEERS & LAND PLANNERS  
463 Lenoir Ave. Suite 200  
 Asheville, NC 28801  
 252.633.1111 Phone  
 252.633.1112 Fax  
 www.wglas.com





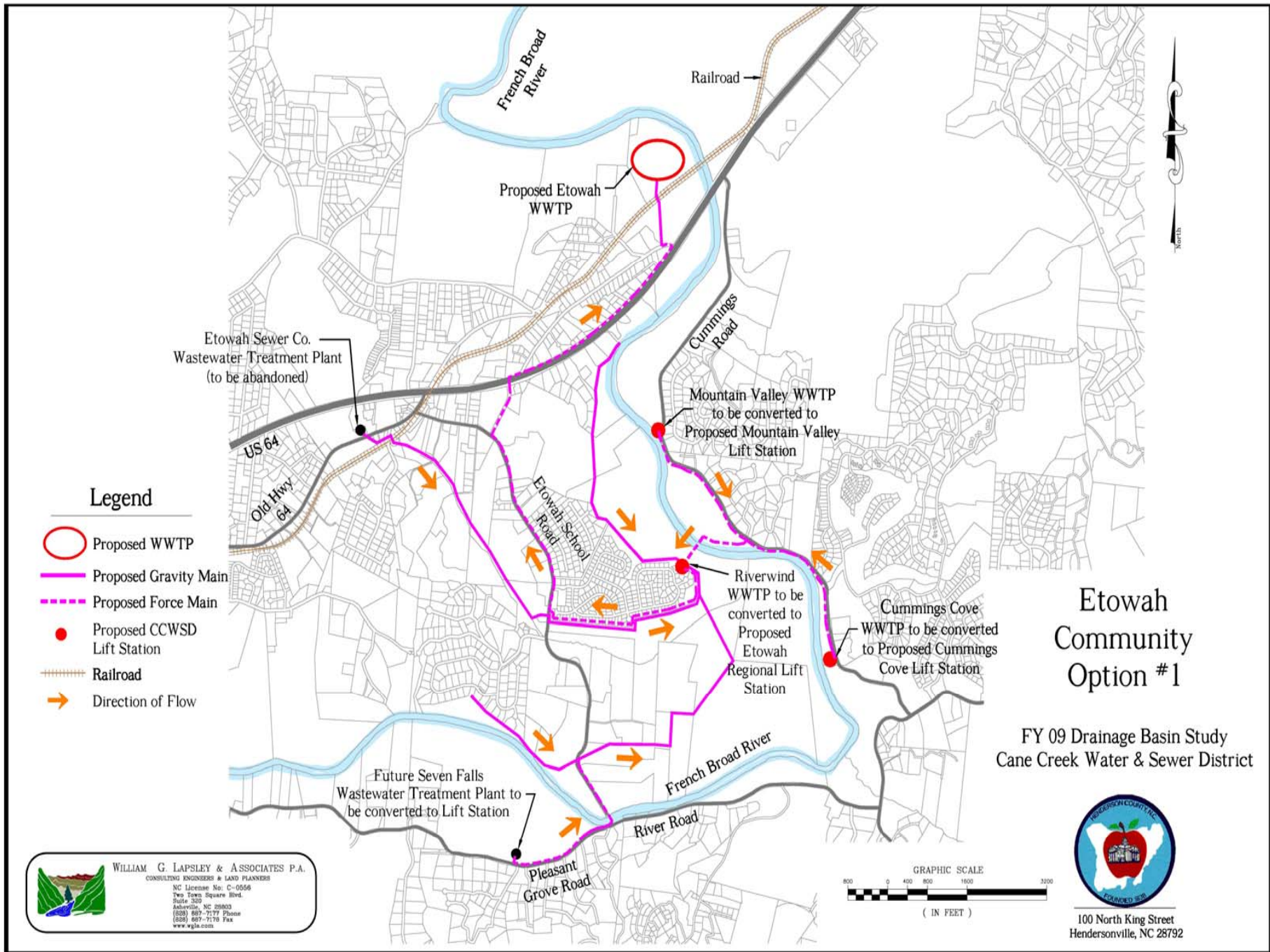
# Etowah Area

- Consolidation of private treatment systems
  - Mountain Valley
  - Cummings Cove
  - Riverwind
  - Etowah Sewer Company







# Etowah Area – Options for Service

- Construction of new treatment facility with discharge to French Broad River





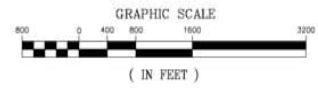
**Legend**

-  Proposed WWTP
-  Proposed Gravity Main
-  Proposed Force Main
-  Proposed CCWSD Lift Station
-  Railroad
-  Direction of Flow

# Etowah Community Option #1

FY 09 Drainage Basin Study  
Cane Creek Water & Sewer District

**WILLIAM G. LAPSLEY & ASSOCIATES P.A.**  
CONSULTING ENGINEERS & LAND PLANNERS  
NC License No. C-0556  
Two Town Square Blvd.  
Suite 200  
Asheville, NC 28803  
(828) 887-7177 Phone  
(828) 887-7178 Fax  
www.wgla.com










100 North King Street  
Hendersonville, NC 28792

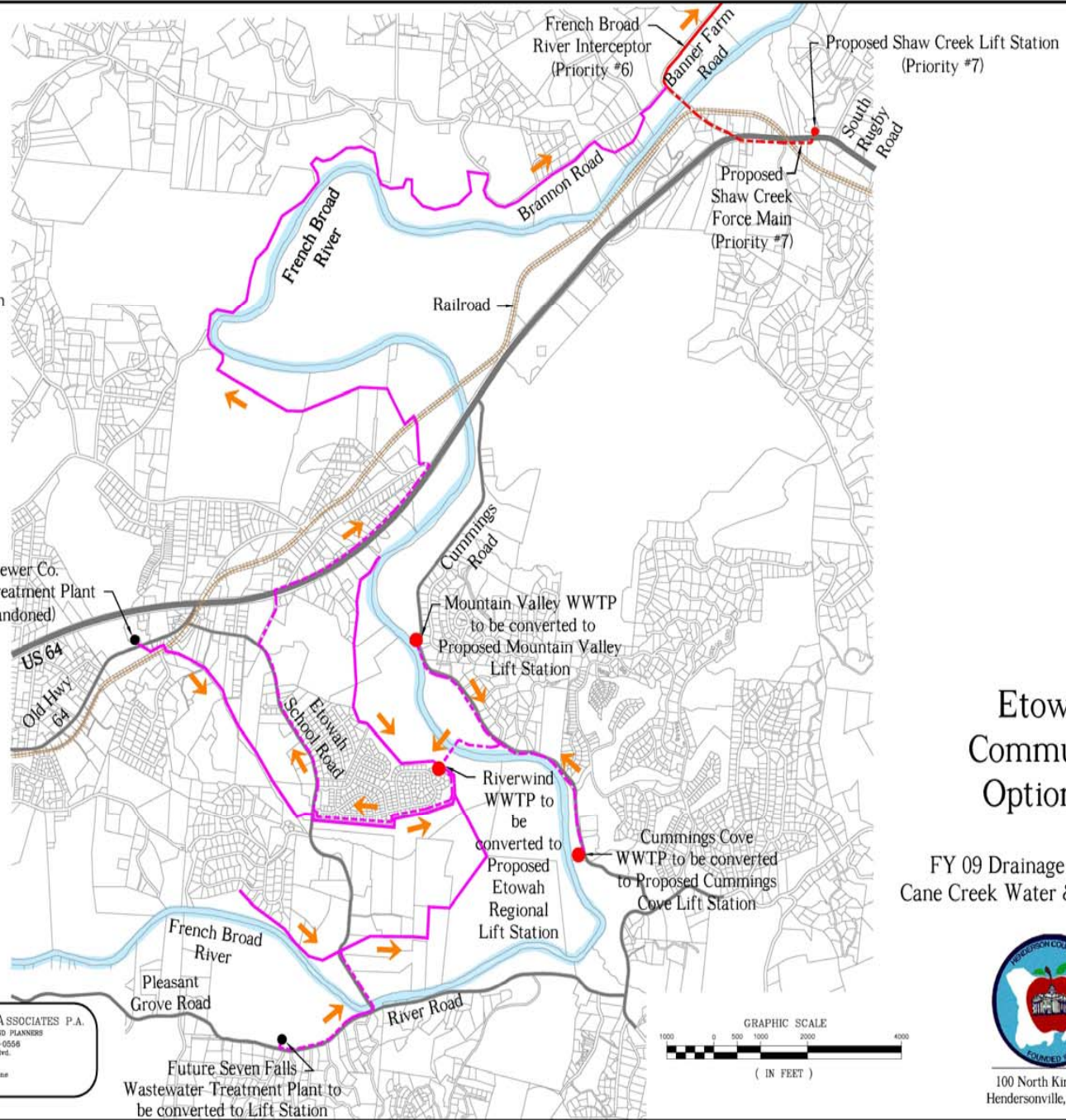
# Etowah Area – Options for Service

- Construction of gravity interceptor along French Broad to transport wastewater flows to District




### Legend

-  Priority #6 Gravity Main
-  Priority #7 Force Main
-  Proposed Gravity Main
-  Proposed Force Main
-  Proposed CCWSL Lift Station
-  Railroad
-  Direction of Flow

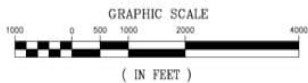


## Etowah Community Option #2

FY 09 Drainage Basin Study  
Cane Creek Water & Sewer District



WILLIAM G. LAPSLEY & ASSOCIATES P.A.  
CONSULTING ENGINEERS & LAND PLANNERS  
NC License No: C-0556  
Two Town Square Blvd.  
Suite 200  
Asheville, NC 28803  
(828) 837-7177 Phone  
(828) 837-7178 Fax  
www.wgla.com










100 North King Street  
Hendersonville, NC 28792

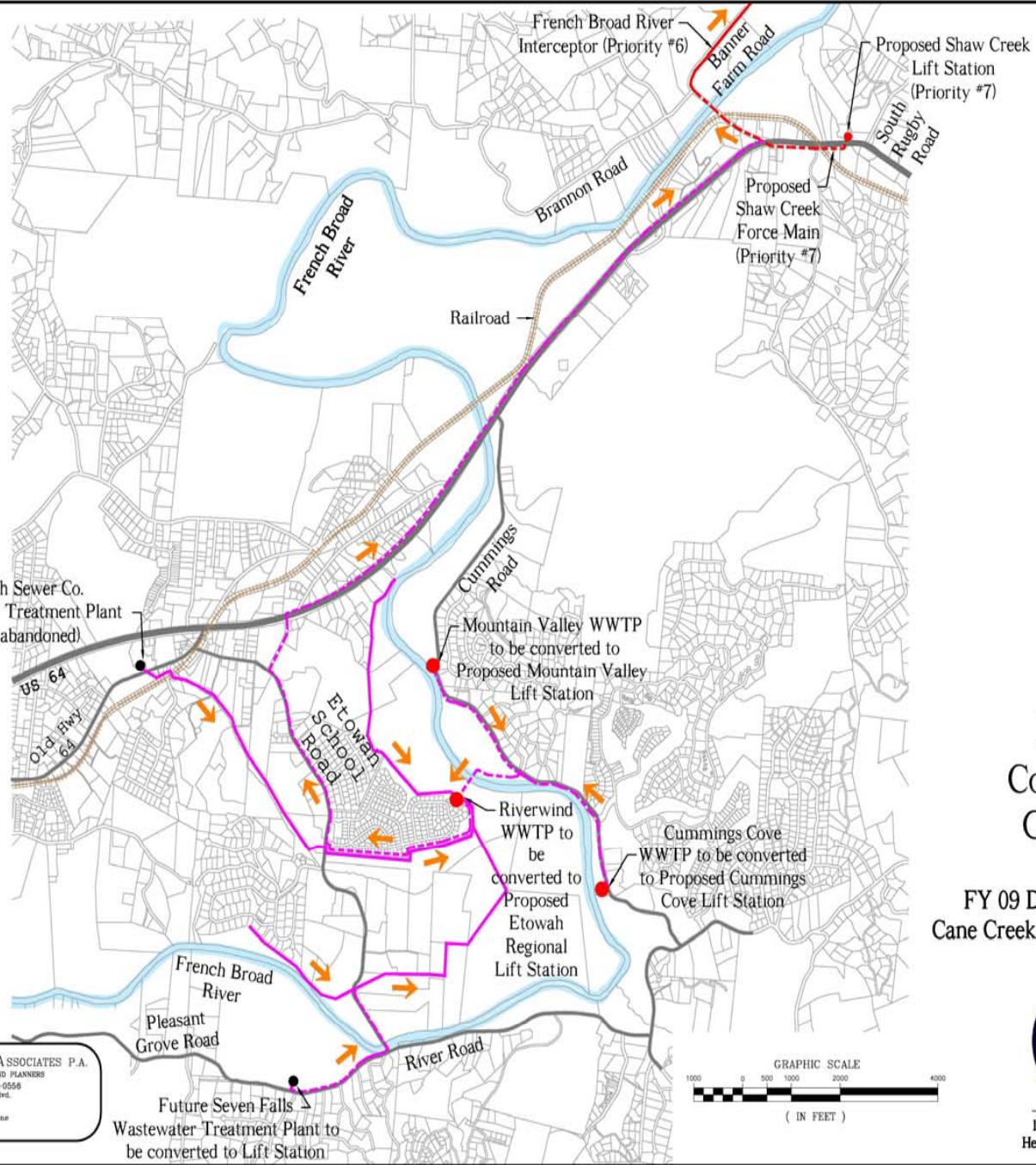
# Etowah Area – Options for Service

- Construction of regional pump station to transport wastewater flows to District




### Legend

-  Priority #6 Gravity Main
-  Priority #7 Force Main
-  Proposed Gravity Main
-  Proposed Force Main
-  Proposed CCWSD Lift Station
-  Railroad
-  Direction of Flow

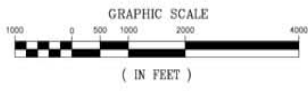


## Etowah Community Option #3

FY 09 Drainage Basin Study  
Cane Creek Water & Sewer District



WILLIAM G. LAPSLEY & ASSOCIATES P.A.  
CONSULTING ENGINEERS & LAND PLANNERS  
NC License No: C-0556  
Two Town Square Blvd.  
Suite 200  
Asheville, NC 28803  
(828) 857-7177 Phone  
(828) 857-7178 Fax  
www.wgla.com



100 North King Street  
Hendersonville, NC 28792

# Wastewater Flow Estimates

- Current Flow to MSD 770,000 GPD +/-
- Projected Flows from District – 1,950,000 GPD +/-
- Projected Flows from Etowah – 150,000 GPD +/-
- Contingency Flows



# CIP SUMMARY (10-YEARS)

■ Mud Creek Interceptor	\$ 3.5 million
■ Mill Pond Creek Interceptor	\$ 2.7 million
■ Mills River Extension	\$ 1 million
■ Fletcher Warehouse PS	\$ 1.1 million
■ Howard Gap PS	\$ 1 million
■ <u>Other Projects</u>	<u>\$ 1.6 million</u>

TOTAL \$ 10.9 million

# CIP SUMMARY

- System Will be Expanded To Serve Growing Needs of Henderson County
- System Needs More Users For Sustainability
- Capital Projects Create More Users, As Per Project Engineers



# NEW DEBT

<u>FY</u>	<u>AMOUNT</u>	<u>TERM</u>	<u>PAYMENT</u>
■ 2015	\$ 2,255,967	20 YRS	\$ 195,197
■ 2018	\$ 1,486,345	20 YRS	\$ 128,606

## OLD DEBT

- USDA Bond Is Paid In FY 2017, Adding Approximately \$350,000 Annually To Finance Future Capital Projects

# FINANCIAL ANALYSIS

- Projects Revenues and Expenditures
- Considers Capital Projects, Operating Costs, and System Growth
- Indicates Need For Increases In Revenues To Finance Future Improvements
- Average Increases of 2% Per Year After FY 2010 + MSD Increases



# FINANCIAL STATUS FY2008

Revenues	\$ 1,639,579
Transfers-Out (Salaries)	\$ 270,772
Operating Expenditures	\$ 303,096
Capital Outlay	\$ 152,428
<u>Debt</u>	<u>\$ 426,028</u>
Net Revenue *	\$ 487,255

\* This Will Begin To Diminish Because The Rate of Inflation Exceeds Anticipated Growth in Revenues Without Increasing The User Base

# OBJECTIVES

- Maintain Positive Net Income
- Provide Sufficient Funds To Implement Capital Projects
- Systematically Increase The User Base
- Serve Areas of Community That Will Need Wastewater Services In The Future



# CURRENT SEWER RATE STRUCTURE

## METERED

	RESIDENTIAL / COMMERCIAL	REDUCED RESIDENTIAL / COMMERCIAL
Minimum	\$16.42	\$10.09
Volume Charge per 1k gal	\$4.57	\$4.57
Over 4500 gal Overage Charge per 1k gal	\$3.67	\$0.65

## NOT METERED

### RESIDENTIAL / COMMERCIAL

1 BEDROOM	\$23.28 Monthly
2 BEDROOMS	\$30.13 Monthly
3 BEDROOMS	\$36.99 Monthly
4 BEDROOMS	\$49.35 Monthly

### REDUCED RESIDENTIAL / COMMERCIAL

1 BEDROOM	\$16.95 Monthly
2 BEDROOMS	\$23.80 Monthly
3 BEDROOMS	\$30.66 Monthly
4 BEDROOMS	\$38.49 Monthly

# RECOMMENDATIONS

- Use Fund Balance To Help Pay For Capital Projects Needed For Growth
- Establish Capital Projects Fund. Allocate \$100,000 Annually.
- Future MSD Rate Increases Should Be Matched By District Rate Increases To Prevent Revenue Loss. (Assumed Rate of 1.5% Per Year)
- 2% Annual Sewer Rate Increases, In Addition To MSD Increases, From FY 2011 – 2019.



# CONCLUSIONS

- Expenditures Growing Faster Than Revenues, Resulting In Need For Rate Increases
- Financing Capital Improvements Plan Is Dependent Upon Revenues From Sewer Charges
- Study Is a Living Document and Should Be Reviewed Annually To Reflect Changes in Usage and Economy

# GENERAL RECOMMENDATIONS

- Prepare & adopt a sewer extension policy



# RECOMMENDATIONS

- Prepare & adopt a sewer extension policy
  - Will govern new sewer extensions

# RECOMMENDATIONS

- Prepare & adopt a sewer extension policy
  - Will govern new sewer extensions
  - Provide guidance for Staff and Developers



# RECOMMENDATIONS

- Initiate securing an updated allocation from MSD

# RECOMMENDATIONS

- Initiate securing an updated allocation from MSD
  - Will increase capacity for District



# RECOMMENDATIONS

- Initiate securing an updated allocation from MSD
  - Will increase capacity for District
  - Request seat on MSD Board

# RECOMMENDATIONS

- Initiate securing an updated allocation from MSD
  - Will increase capacity for District
  - Request seat on MSD Board
  - At the same time, consider study of a treatment facility in northern Henderson County as an alternative

# RECOMMENDATIONS

- Aggressively pursue abandoning or relocating the Snow Ball Lane Pump Station



# RECOMMENDATIONS

- Look for opportunities to secure easements necessary for the backbone or priority projects

# RECOMMENDATIONS

- Proceed with design, permitting and easement acquisition for first two backbone or priority projects

# RECOMMENDATIONS

- Pursue grant funding for the construction of the first two priority or backbone projects



# RECOMMENDATIONS

- Consider further study of the extension of the District to include the Etowah Area

# Questions & Further Discussion