

Revenuesheds: An Essential Tool to Understanding How to Finance Watershed Protection



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Smart Growth Conference

Charlotte, North Carolina

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UNC

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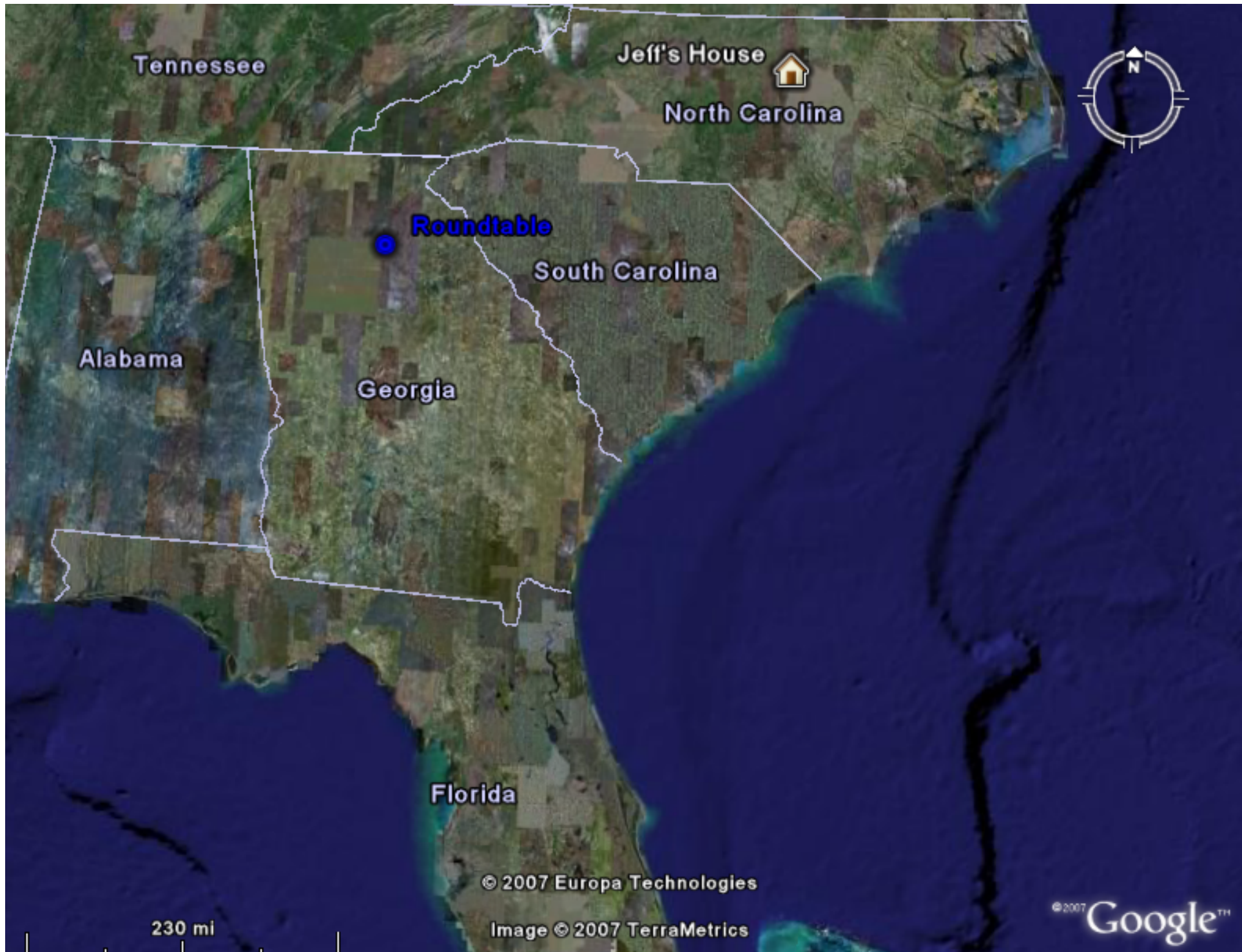
Topics

- Revenuesheds – what are they and why are they important
- Examples
- Tools



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Tennessee

Jeff's House



North Carolina

Roundtable

South Carolina

Alabama

Georgia

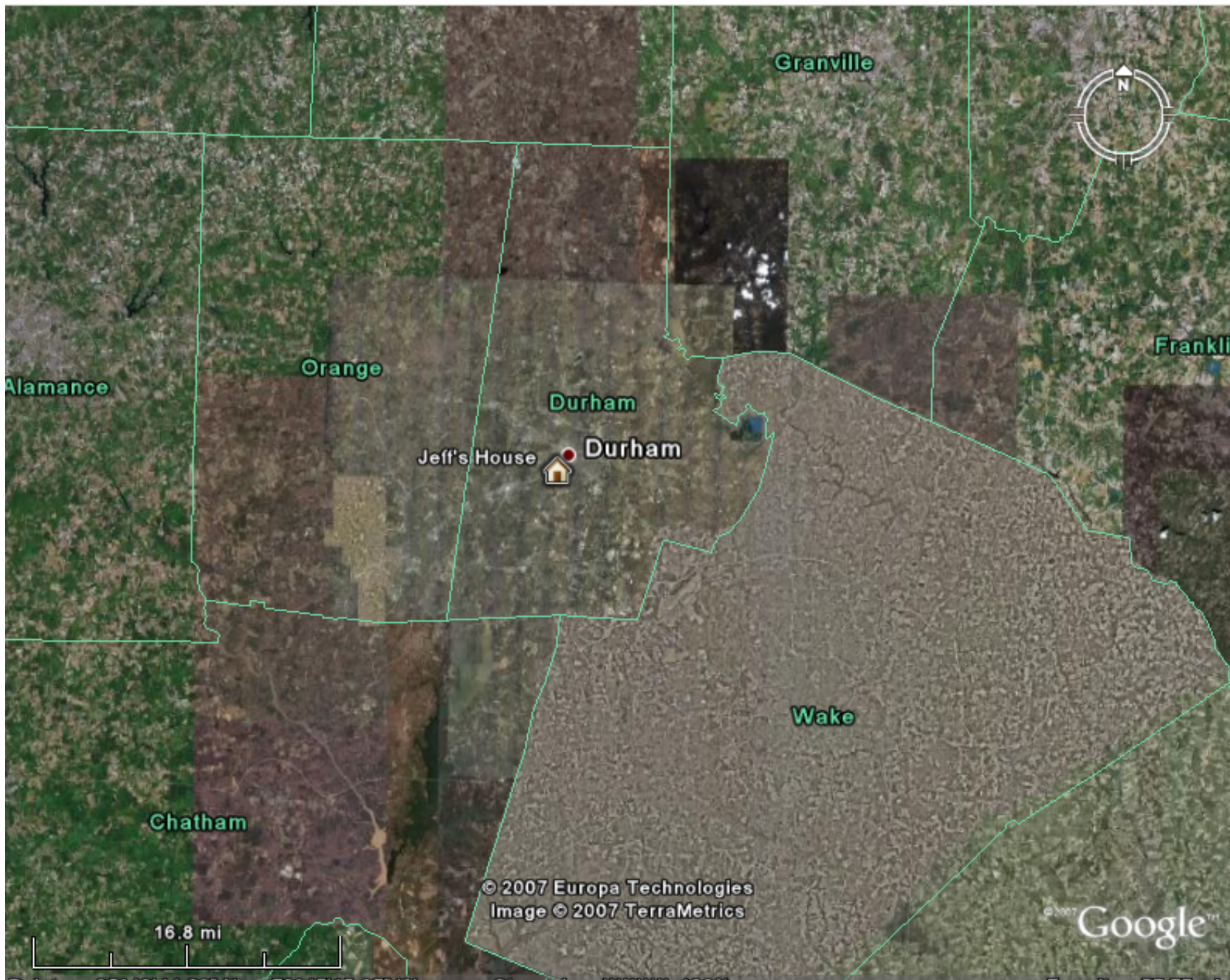
Florida

230 mi

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Granville



Franklin

Alamance

Orange

Durham

Durham

Jeff's House



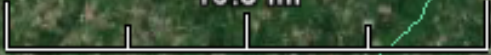
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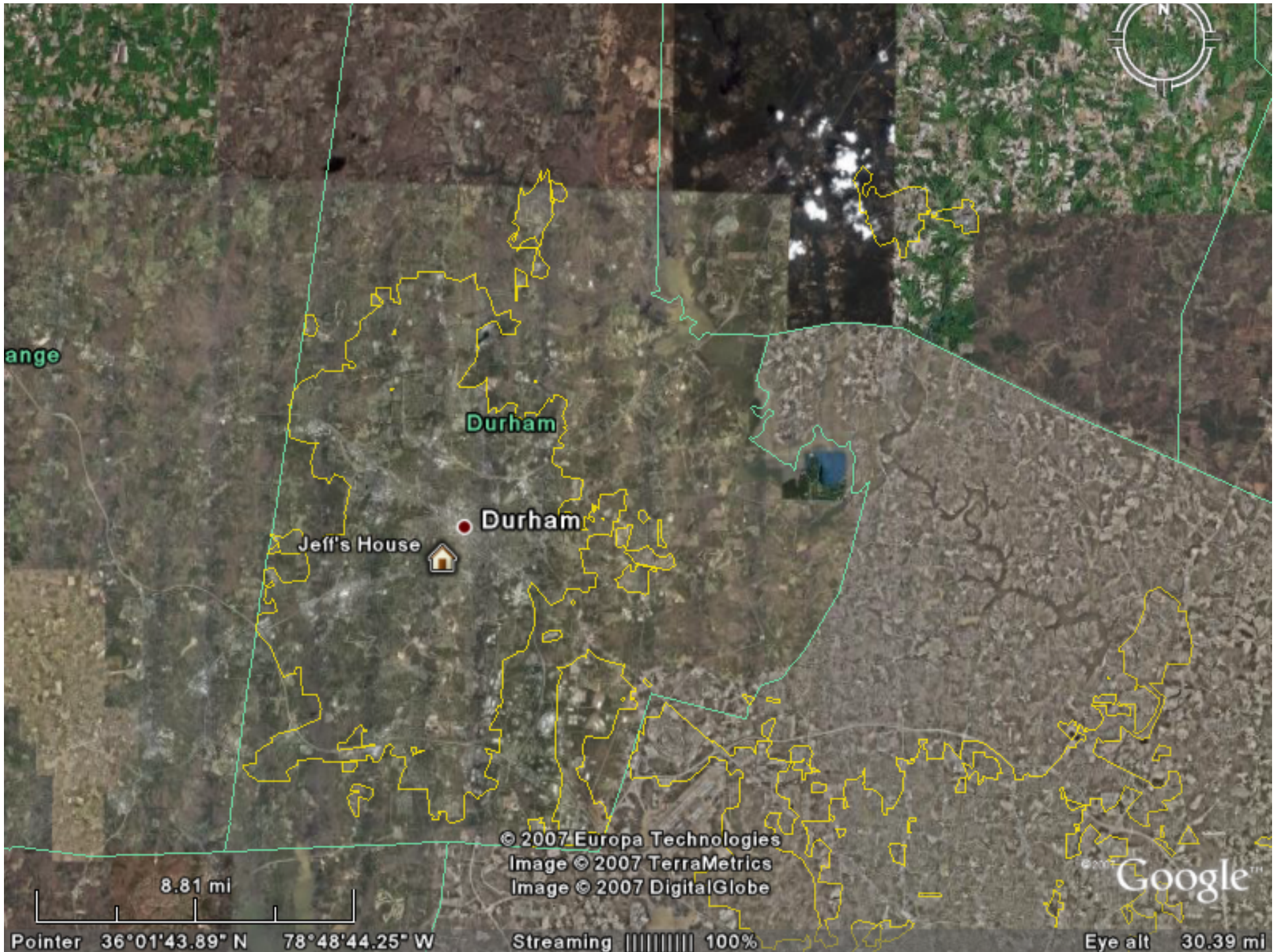
Chatham

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16.8 mi





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Durham

Durham

Jeff's House

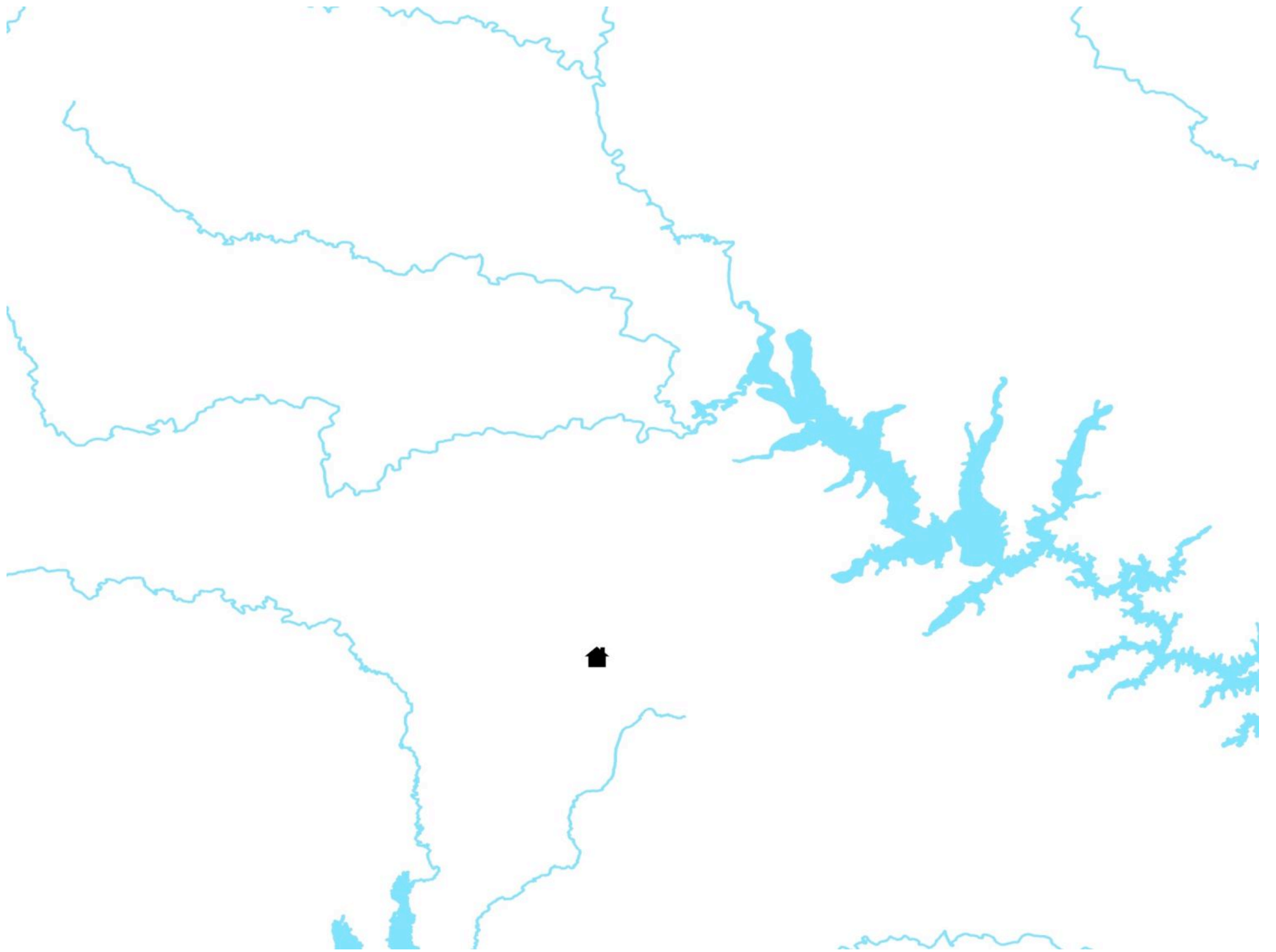
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8.81 mi
Pointer 36°01'43.89" N 78°48'44.25" W

Streaming ||||| 100%

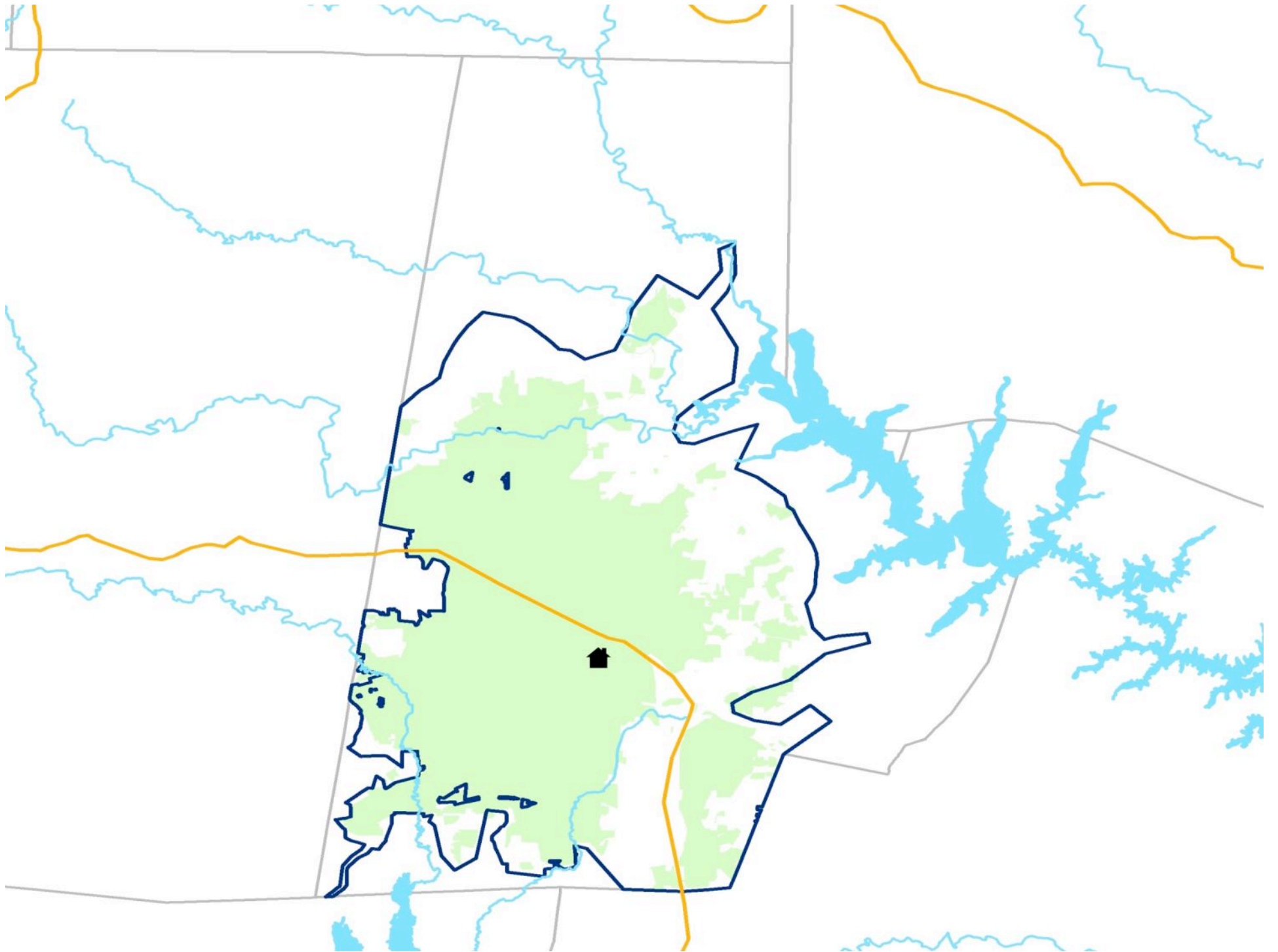
Eye alt 30.39 mi

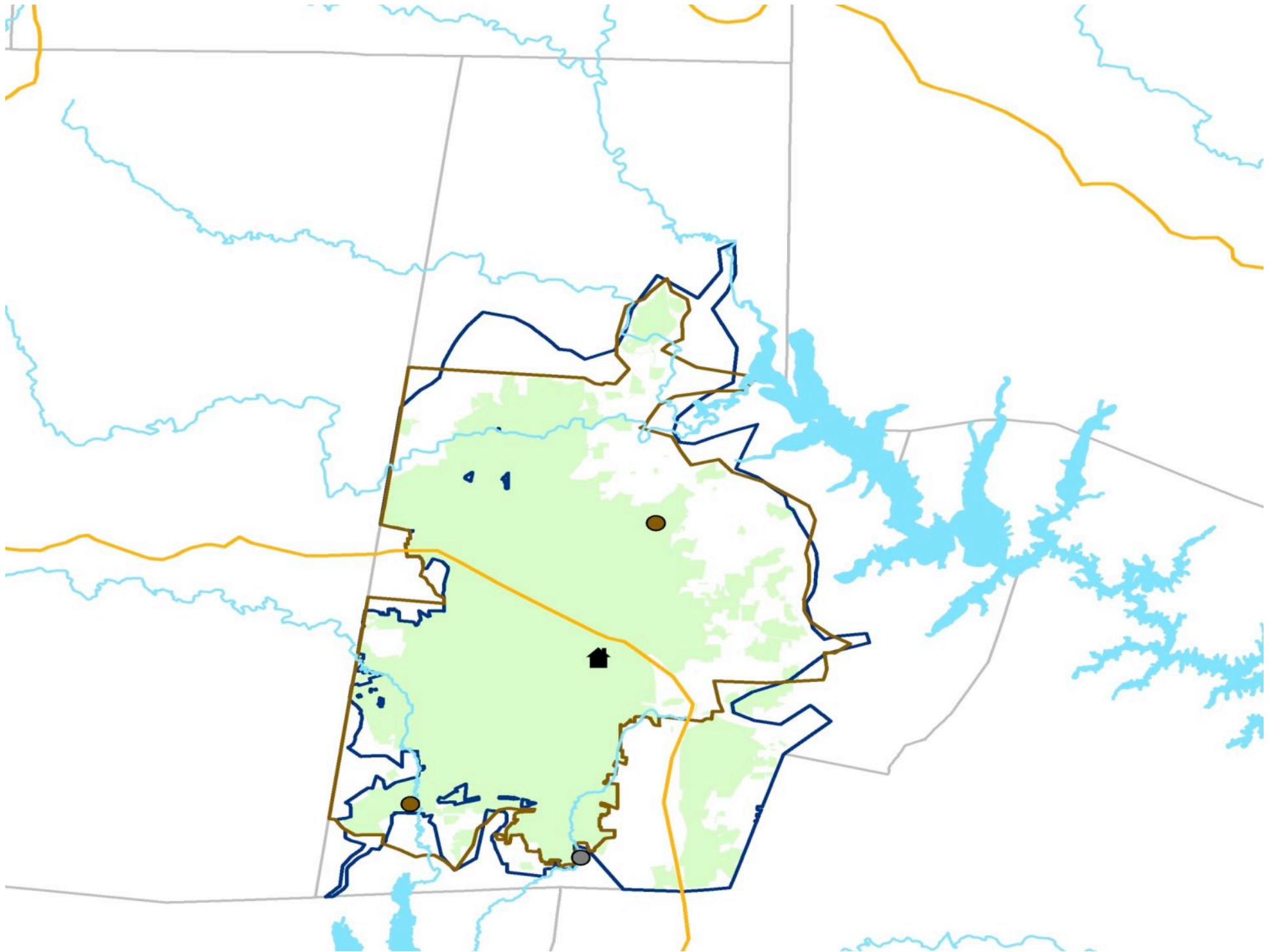


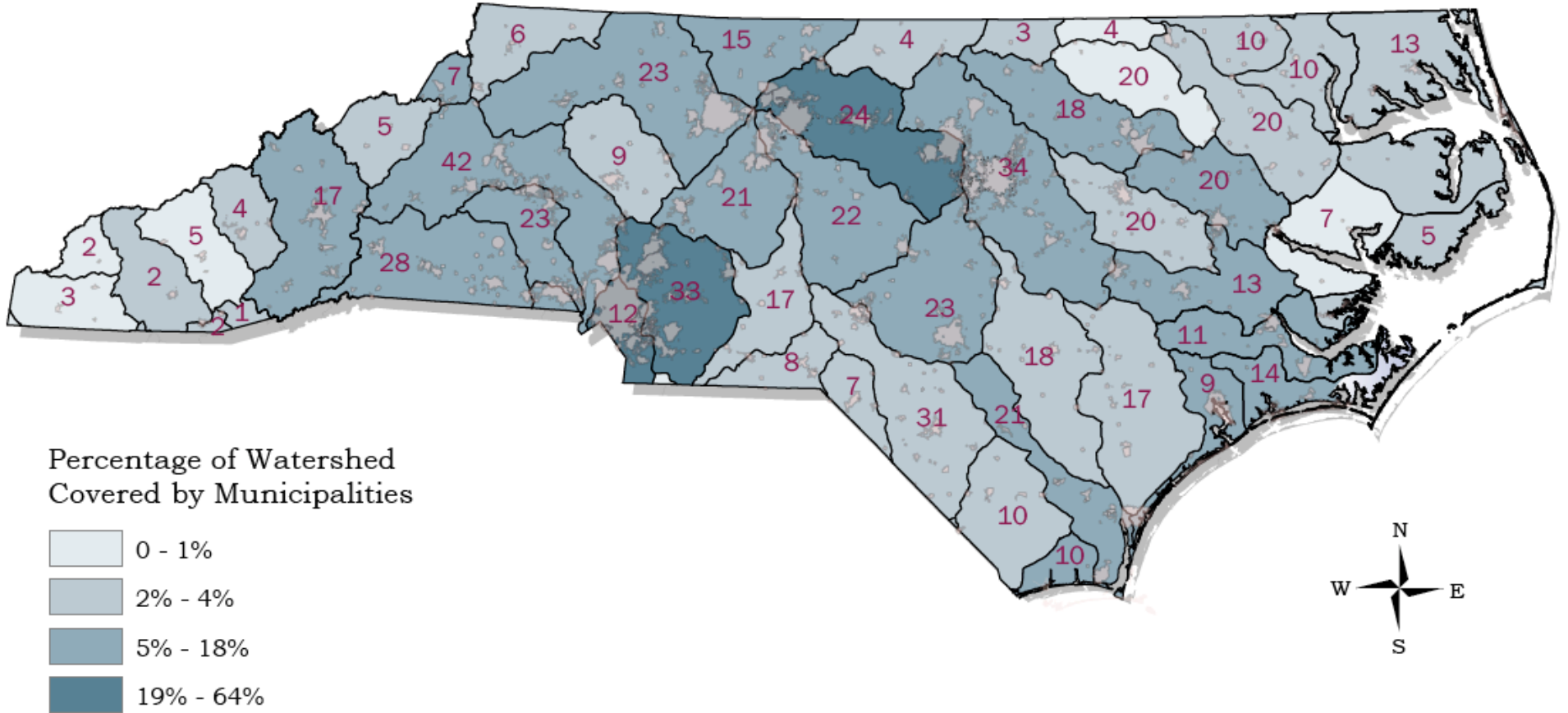




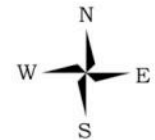
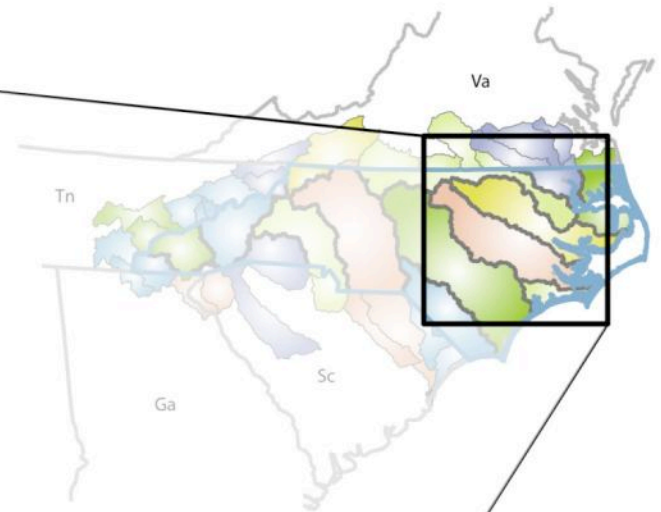
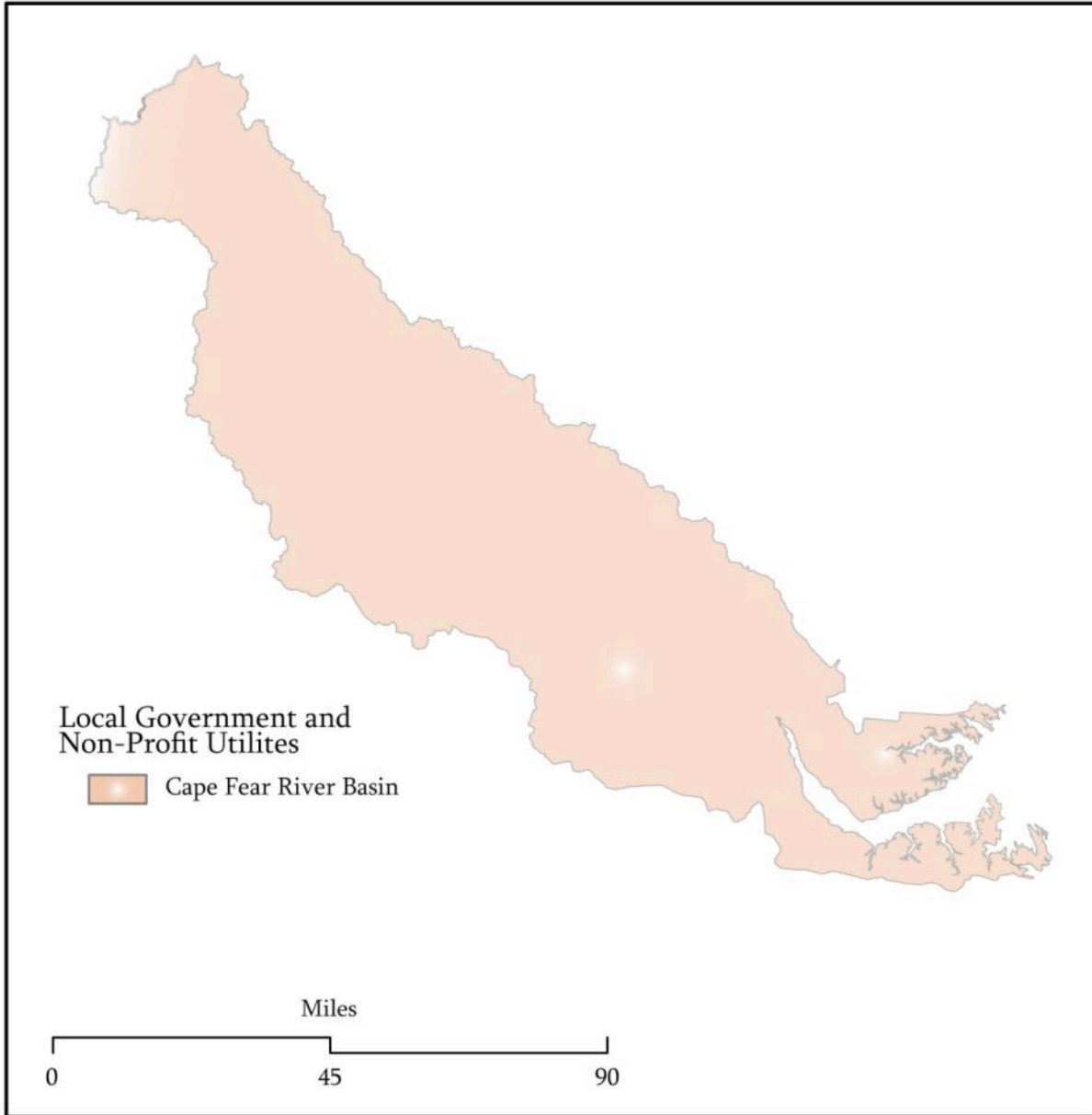




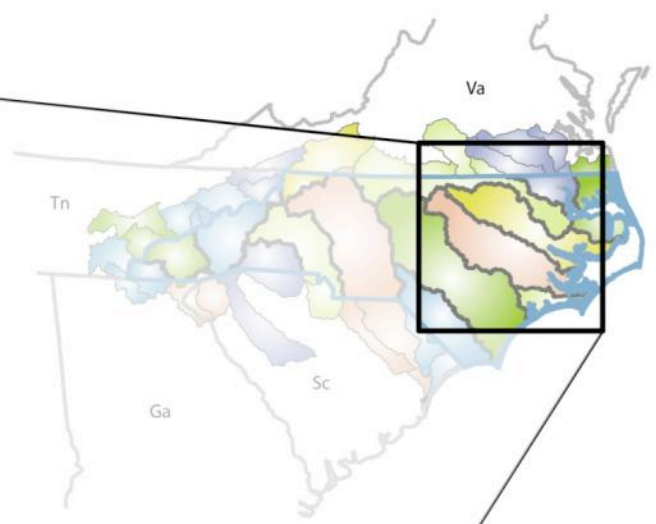
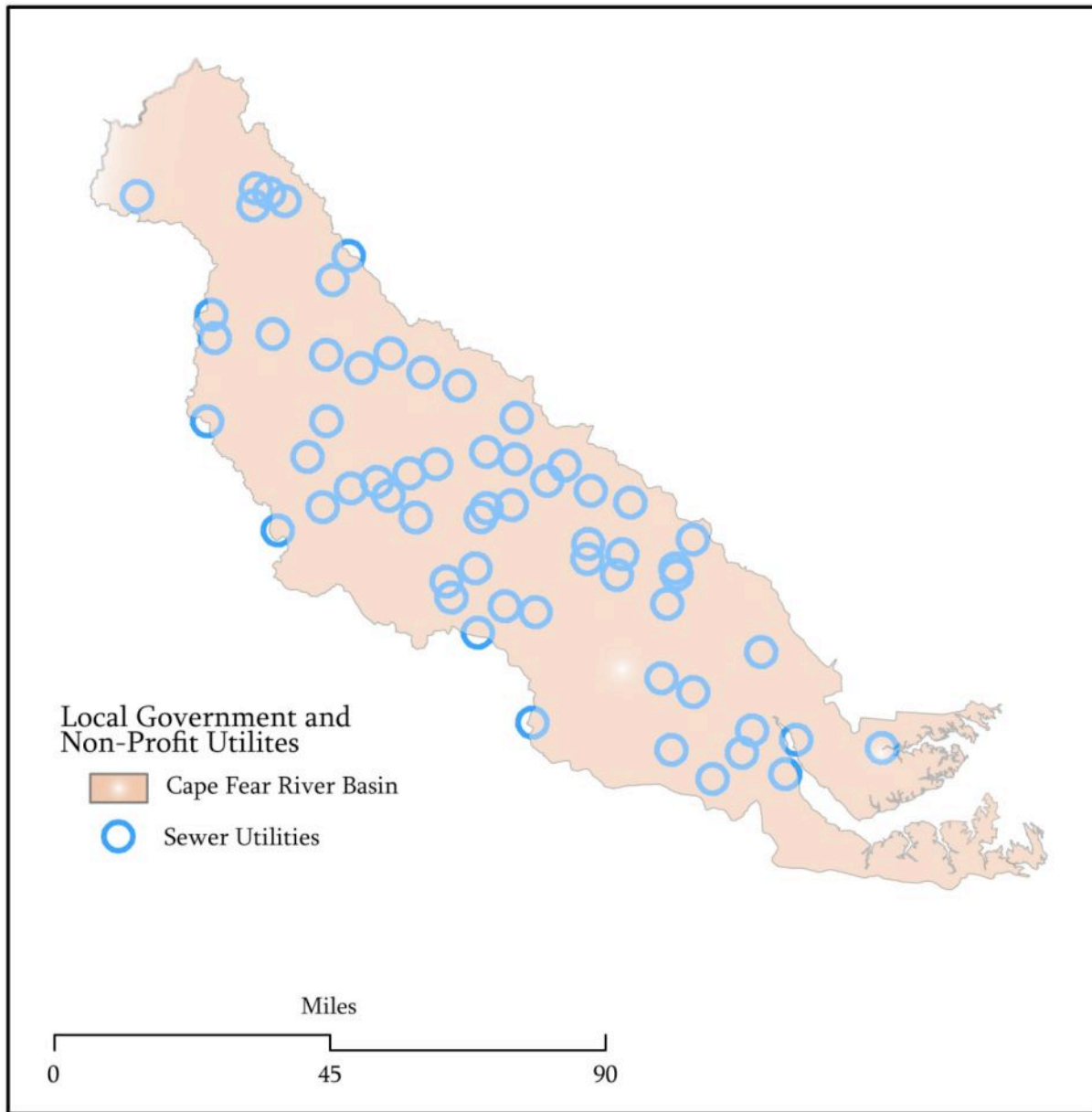




River Basin Name	Number of Local Governments	Square Miles Within North Carolina	Local Governments Per 1000 Square Miles
Broad	38	1,513	18
Cape Fear	145	9,271	15
Catawba	82	3,285	21
Chowan	25	1,309	13
French Broad	36	2,829	13
Hiwassee	7	643	5
Little Tennessee	17	1,796	6
Lumber	62	3,327	17
Neuse	98	5,657	13
New	12	753	8
Pasquotank	23	2,199	5
Roanoke	65	3,499	10
Savannah	6	171	6
Tar-Pamlico	70	4,625	11
Watauga	9	205	24
White Oak	23	1,048	20
Yadkin	118	7,221	13

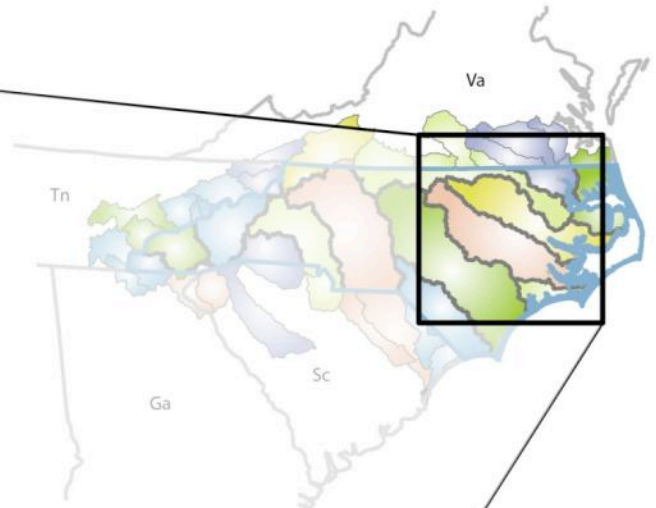
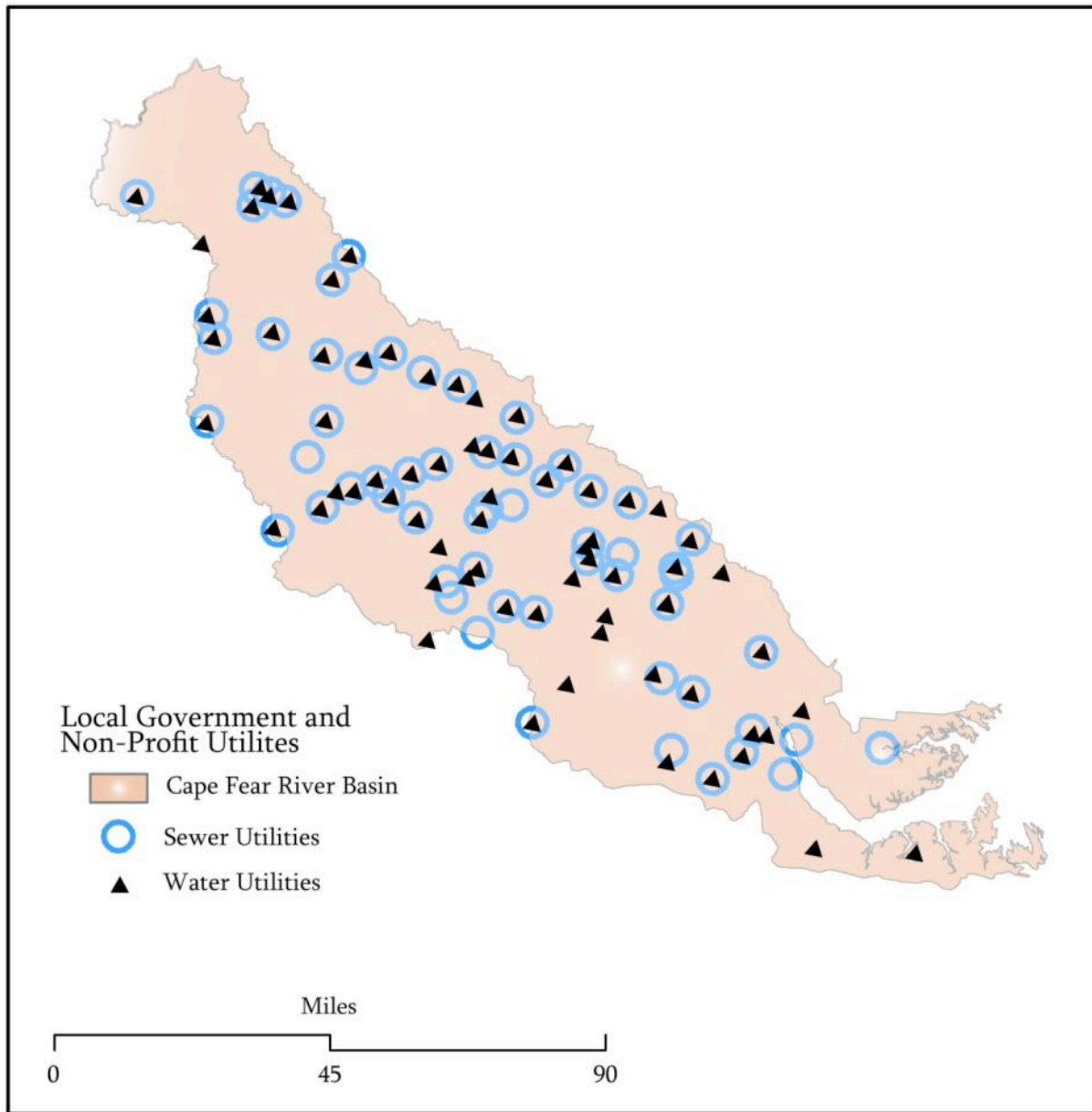


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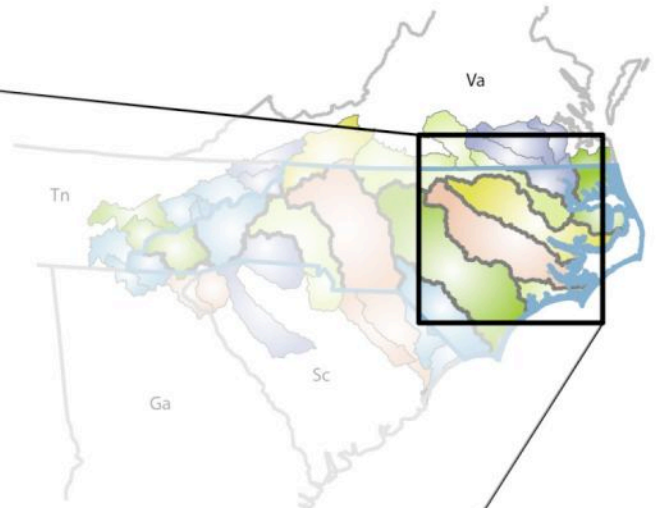
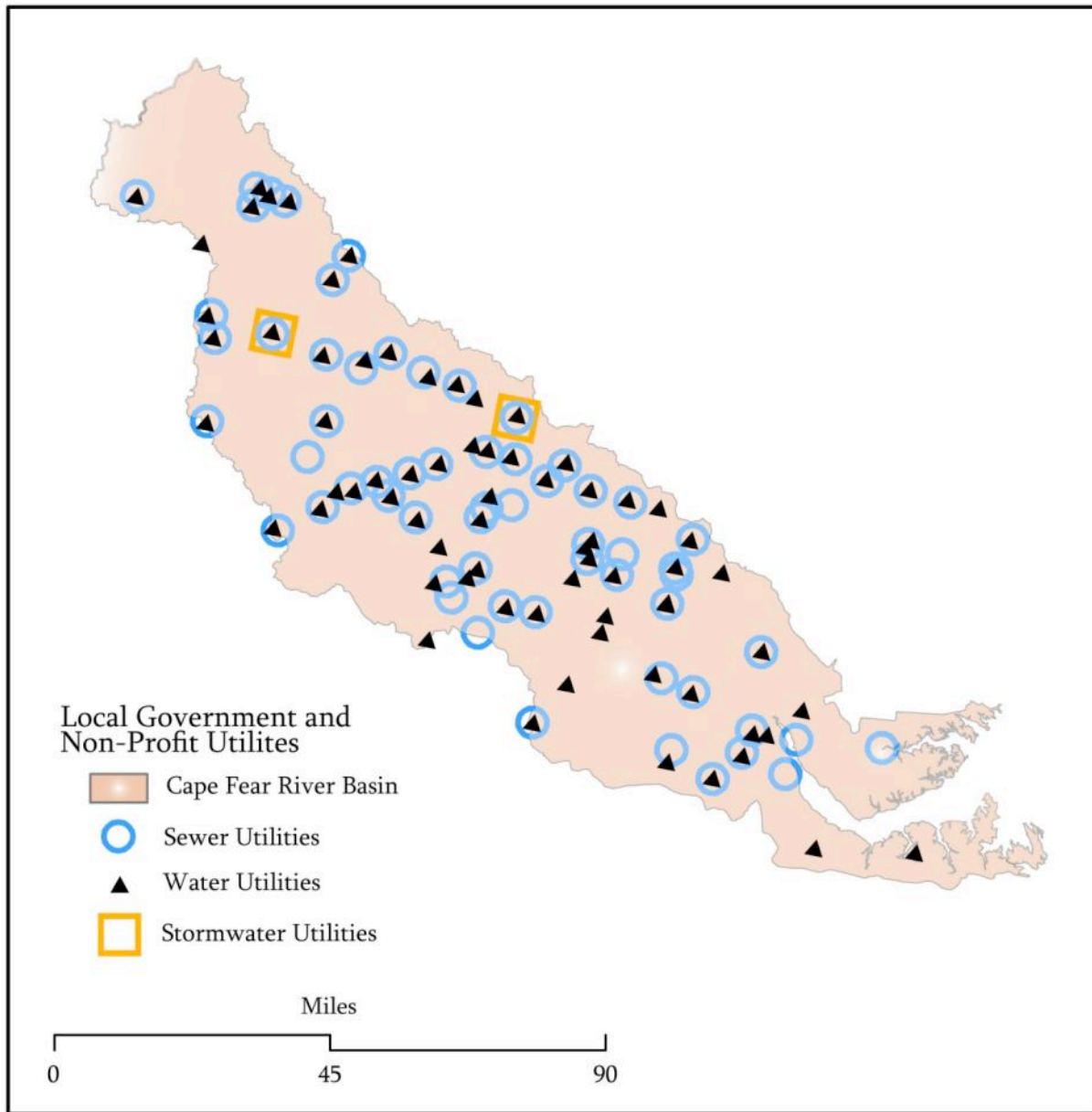
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Data Sources: USGS National Mapping Division, 2002; NC Center for Geographic Information Analysis, 2007



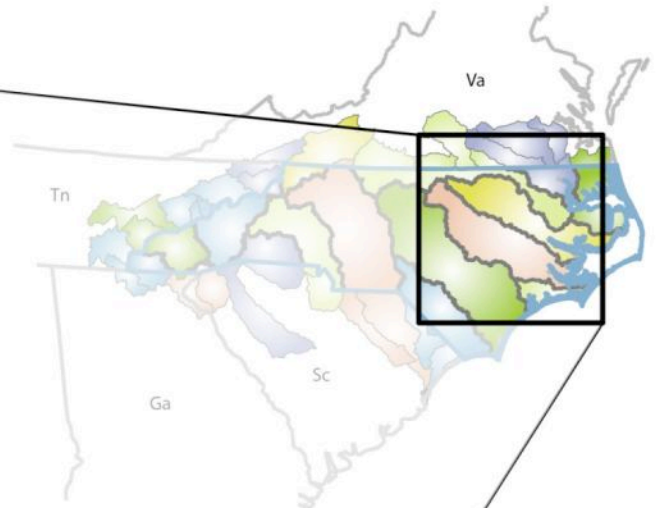
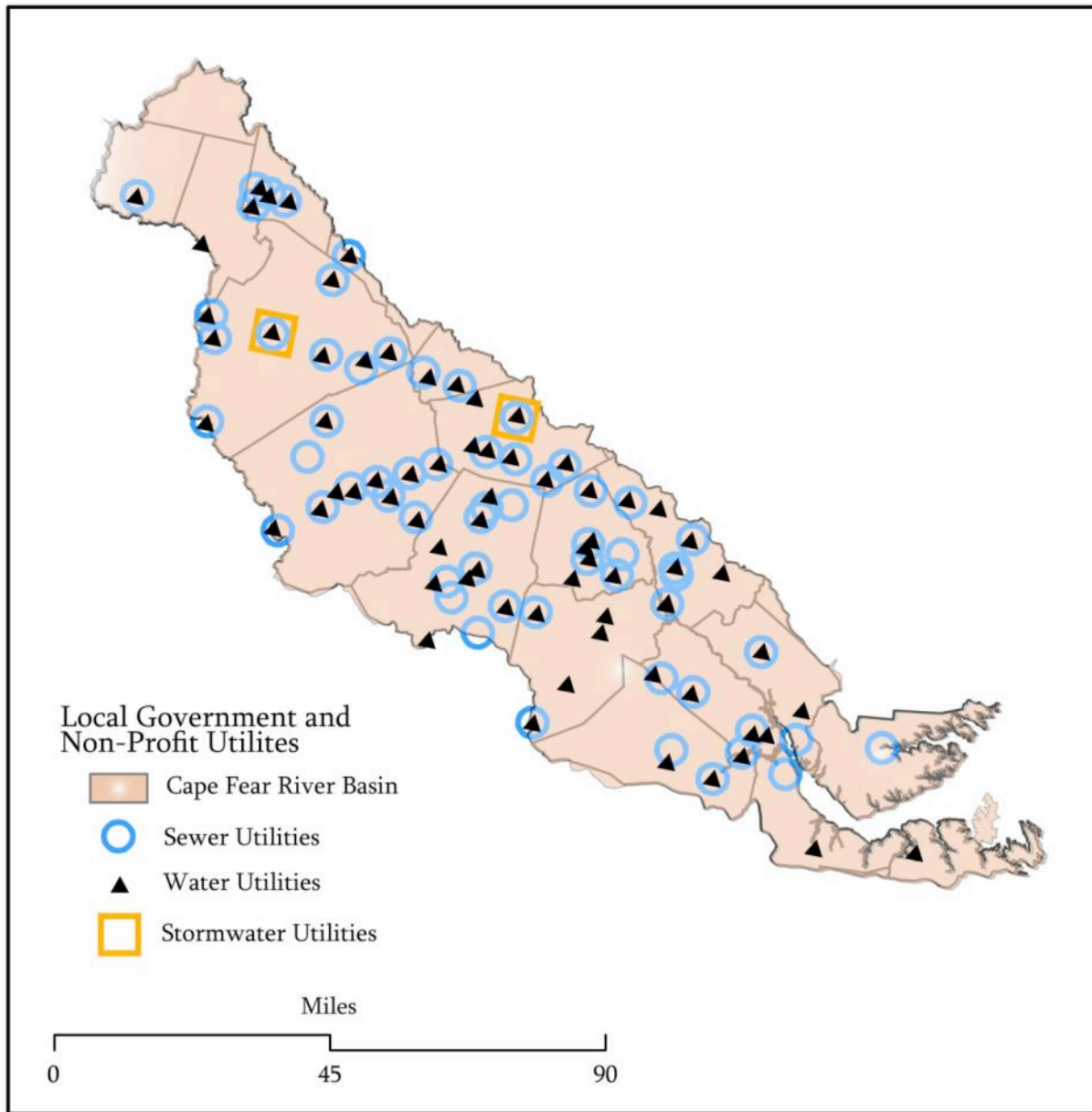
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What can be done?

- Watershed utility surcharges
- Watershed protection districts
- Inter-local agreements
- Revenue sharing

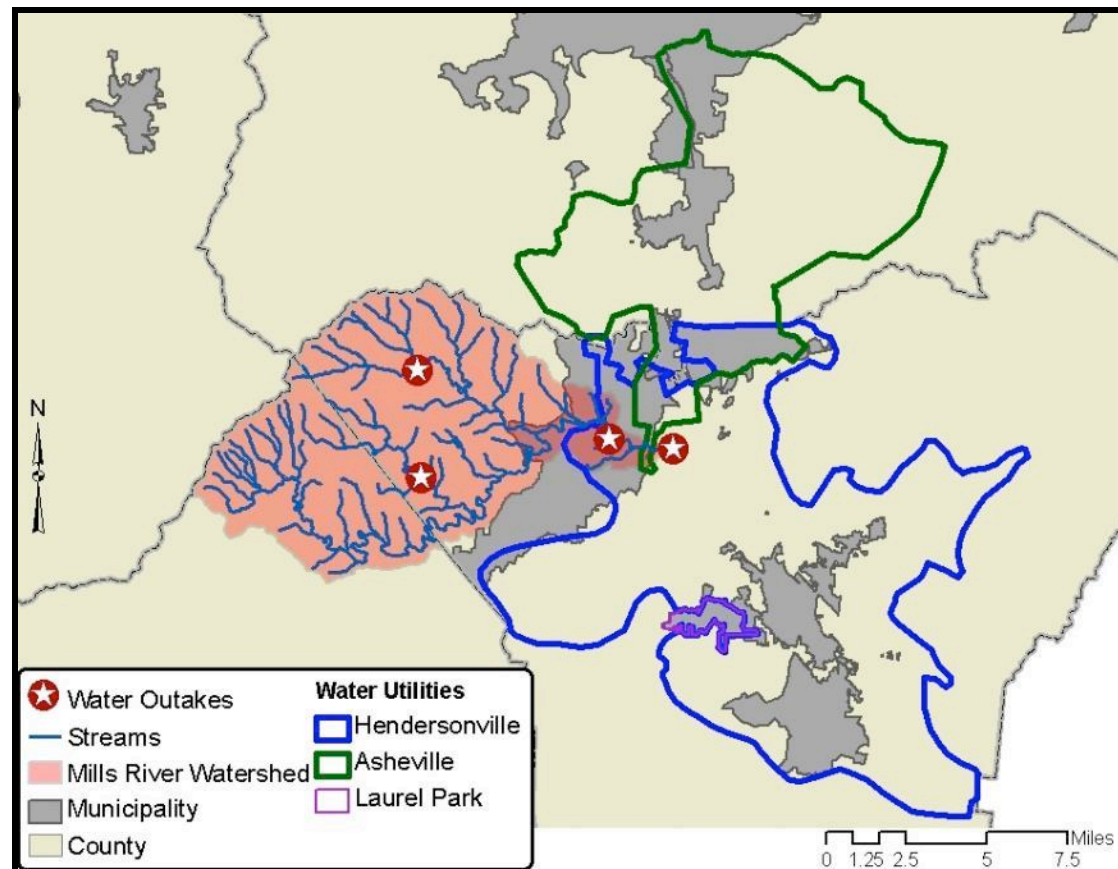
			Cape Fear Watershed		Neuse Watershed	
	Service Area (mi ²)	Total Revenue	% of Total Area	Revenue	% of Total Area	Revenue
Water	160	\$29,998,000	37%	\$11,099,000	63%	\$18,899,000
Wastewater	132	\$36,219,000	42%	\$15,212,000	58%	\$21,007,000
Stormwater	99	\$8,686,000	46%	\$3,996,000	54%	\$4,690,000
County Wastewater	-	\$8,147,000	100%	\$8,147,000	-	-
		\$83,052,000		\$38,455,000		\$44,690,562
Population (2000)		3,085,040		1,762,301		1,322,739
\$ Per Capita		\$27		\$22		\$34
Impaired Stream (Mi)		884		425		459
\$ Per Mile		\$94,000		\$90,000		\$97,000

Potential Source of Revenue: Water Utilities

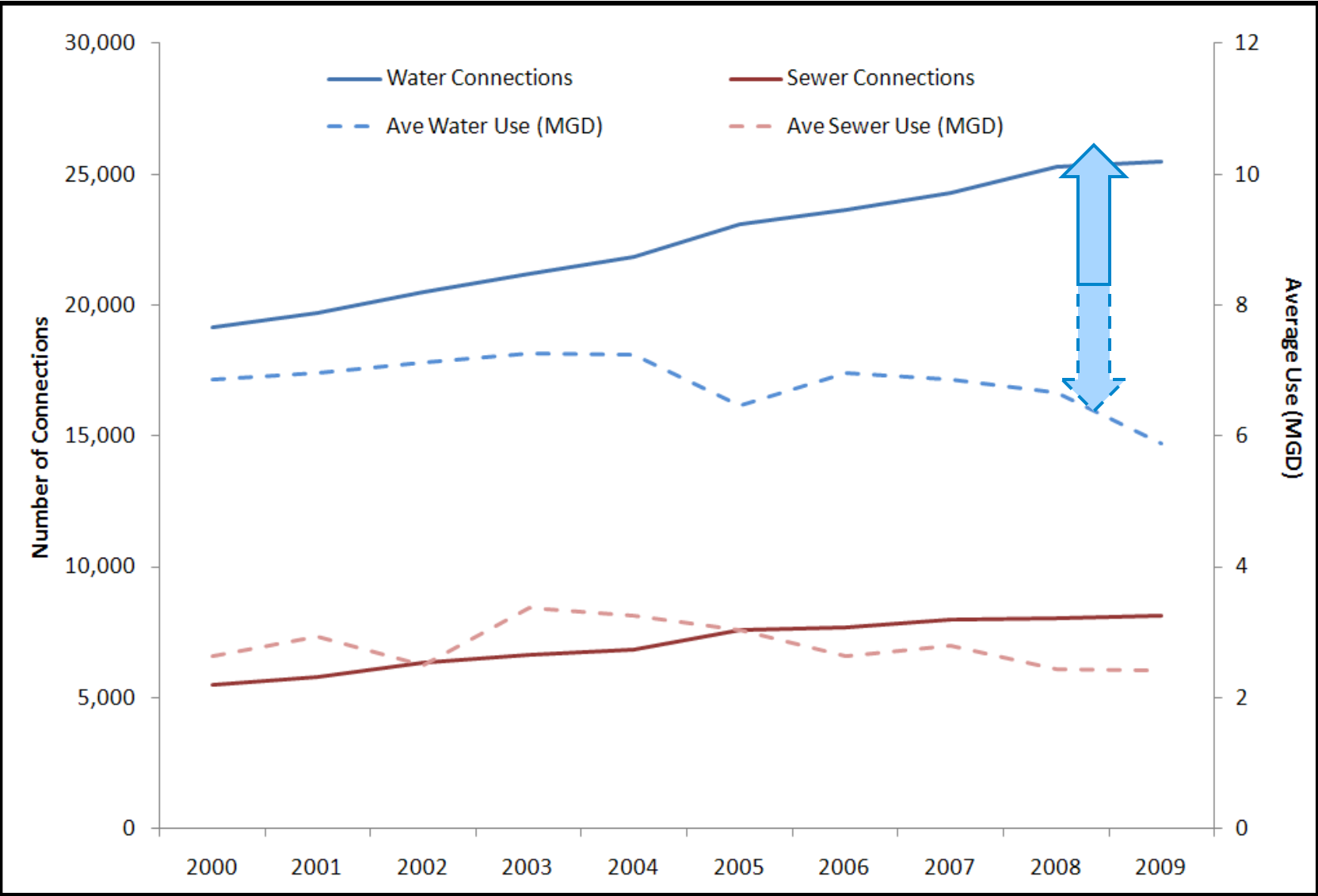
Mills River – median flow ~ 87 MGD

Hendersonville – average withdrawal = 7.13 MGD

Asheville – capacity to withdraw = 7 MGD – mix of Mills River and French Broad
and French Broad



Hendersonville Water Utility Trends



Watershed Protection Revenues: Mills River



Asheville
Hendersonville

Target Spending Year 1
\$7,500,000

Water Bill

Base Charge

\$0.00 | \$0.50 | \$2.00

Rate per kgal Increase

\$0.00 | \$0.00 | \$0.50

Annual Account Change

1.00%

Annual Water Use Change

-1.00%

Residential Bill Impact

Residential accounts	25,426
Average Use (kgal/month)	5.10
Average Bill Increase	\$0.50

Commercial Bill Impact

Commercial accounts	2,464
Average Use (kgal/month)	22.80
Average Bill Increase	\$0.50

Units: CCF kgal

% Bill Increase: 2.68%

% Bill Increase: 0.78%

Watershed Protection Revenues Year 1
\$277,264

Leveraging

Term (Years): 20

Interest Rate: 5.00%

Total Financing: \$2,772,641

Source of Amount Borrowed

- Asheville Revenue
- Hendersonville Revenue
- Continuing Cost Share

Watershed Protection Resources

Available for Upfront Investments

■ One-Time Cost Share ■ Financed

37.0% of Target

Surplus Revenues After Debt Service

Save/Load Scenario
Reset
Print

Cost Share to Mills River

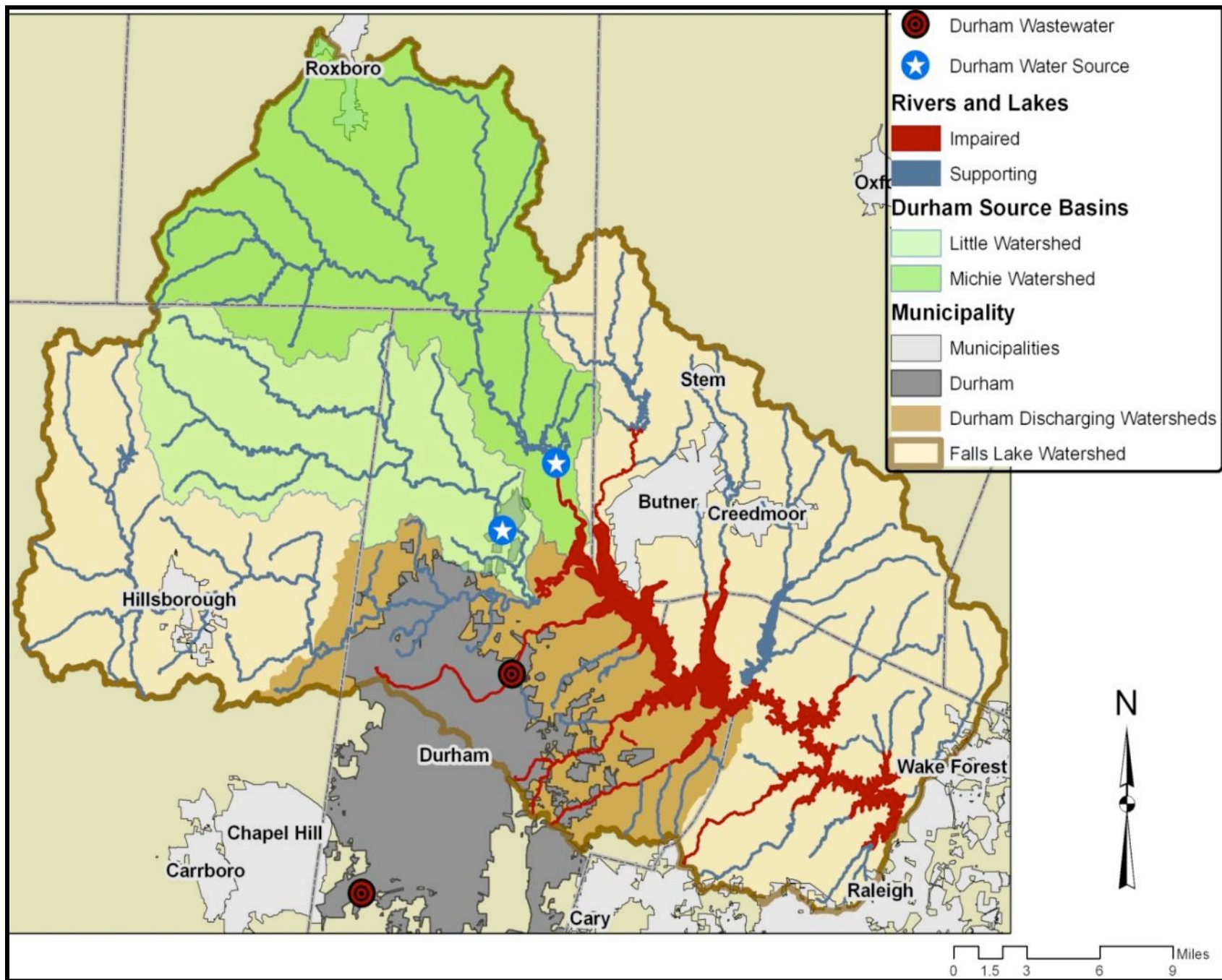
One-time cost share from another community or governmental function: \$0

Recurring cost share from another community or governmental function: \$0

Annual Growth in Recurring Cost Share: 0%

Example Scenarios

Scenario	Rate Change for Mills River consumers	Increased Revenues	Leveraged funds with 20-year loan at 5% interest	Leveraged funds with 20-year loan at 1.75% interest
A	\$0.50 increase in Base Rate	\$277,264	\$2,772,641	\$4,107,616
B	\$1.00 increase in Base Rate	\$554,528	\$5,545,282	\$8,215,232
C	\$0.05 increase in per ccf (Asheville) \$0.07 increase in per kgal (Hendersonville)	\$241,545	\$2,415,448	\$3,578,442
D	\$0.25 increase in per ccf (Asheville) \$0.34 increase in per kgal (Hendersonville)	\$1,186,661	\$11,866,607	\$17,580,158



Capacity for Watershed Protection Investment for Watertown

Instructions
Water
Wastewater
Stormwater
Other

Instructions:

This dashboard shows the impact of rate changes on the average customer's monthly bill, as well as the amount of money that can be generated for a dedicated watershed fund or a specific project.

Double click box to the right to enter the utility name.

Watertown

Enter Project Goals:

- 1) Select the dashboard goal:

Target project spending year 1
 Dedicated funding stream
- 2) Depending on whether the goal is to meet a target or to allocate a percentage of the revenue as a dedicated funding stream for watershed protection - enter the required information below.

Target Spending Year 1

\$250,000
- 3) Enter billing units for water / wastewater:

CCF
 kgal
- 4) Select years for loan:
- 5) Enter interest rate or percent allocated:

Enter Utility Rates and Changes:

- 1) Select tabs that apply to your municipality or utility.
- 2) Enter current average bill information (use the spinner or enter values directly).
- 3) Select the percent of accounts affected by rate changes (who is paying) and how those accounts are changing over time.
- 4) Use the sliders to increase the monthly base / rate charge.
- 5) Adjust rates until you reach the target goal or dedicated annual revenue stream.
- 6) Click the green help buttons for visual examples.

Total Revenue Generated
?

Loan Term (Years): 20

Interest Rate: 2.00%

Total Monthly Bill Increase

Residential **Commercial**

\$0.50 \$0.50

Total Financing

\$250,000

Watershed Protection Revenues Year 1: \$72,000

Funds Available for Year One Investment

■ One-Time Cost Share
 ■ Financed

Revenue Available for Ongoing Expenses
(After debt service payments are made)

Source of Amount Borrowed

■ Water
■ Wastewater
■ Stormwater

■ Other
■ Annual Cost Share

Save/Load Scenario
Year
Reset
Print

Dashboard Developed by the Environmental Finance Center at UNC www.efc.unc.edu

Capacity for Watershed Protection Investment for Watertown

Instructions
Water
Wastewater
Stormwater
Other

Data Entry

Current Base Charge (\$/month):
(Enter the base charge for the most common meter size)

Amount included in base charge (Kgal):

Current rate (\$/Kgal):
(If variable rates, enter the rate that applies to the average water use)

	Residential	Commercial
Average Use (Kgal/month):	<input type="text" value="4.5"/>	<input type="text" value="25.0"/>
Number of Accounts:	<input type="text" value="10,000"/>	<input type="text" value="2,000"/>

Change Fees and Demand

<p>Base Charge Increase: <input type="text" value="\$0.50"/></p> <p>Rate per Kgal Increase: <input type="text" value="\$0.00"/></p>	<p>Accounts to include in Bill Change: <input type="text" value="100%"/></p> <p>Annual Water Use Change: <input type="text" value="-1.00%"/></p> <p>Annual Account Change: <input type="text" value="1.00%"/></p>
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Customer Impact

Residential Bill	Commercial Bill
<p><small>Average Bill Increase:</small> \$0.50</p> <p><small>% Bill Increase:</small> 1.54%</p>	<p><small>Average Bill Increase:</small> \$0.50</p> <p><small>% Bill Increase:</small> 0.37%</p>

Total Revenue Generated

Loan Term (Years): 20
Interest Rate: 2.00%

Total Monthly Bill Increase

Residential Commercial

\$0.50 \$0.50

Total Financing: \$250,000

Watershed Protection Revenues Year 1:

Funds Available for Year One Investment

One-Time Cost Share Financed

\$250,000 100.0% of Target

Revenue Available for Ongoing Expenses

(After debt service payments are made)

Year: 1 2 3 4 5

Dashboard Developed by the Environmental Finance Center at UNC www.efc.unc.edu

For More Information

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