

1. Effectiveness

- A. The land conservation projects completed under the City of Durham's Water Supply Watershed Protection Program has a significant overall benefit to drinking water sources in N.C. (quality and quantity).

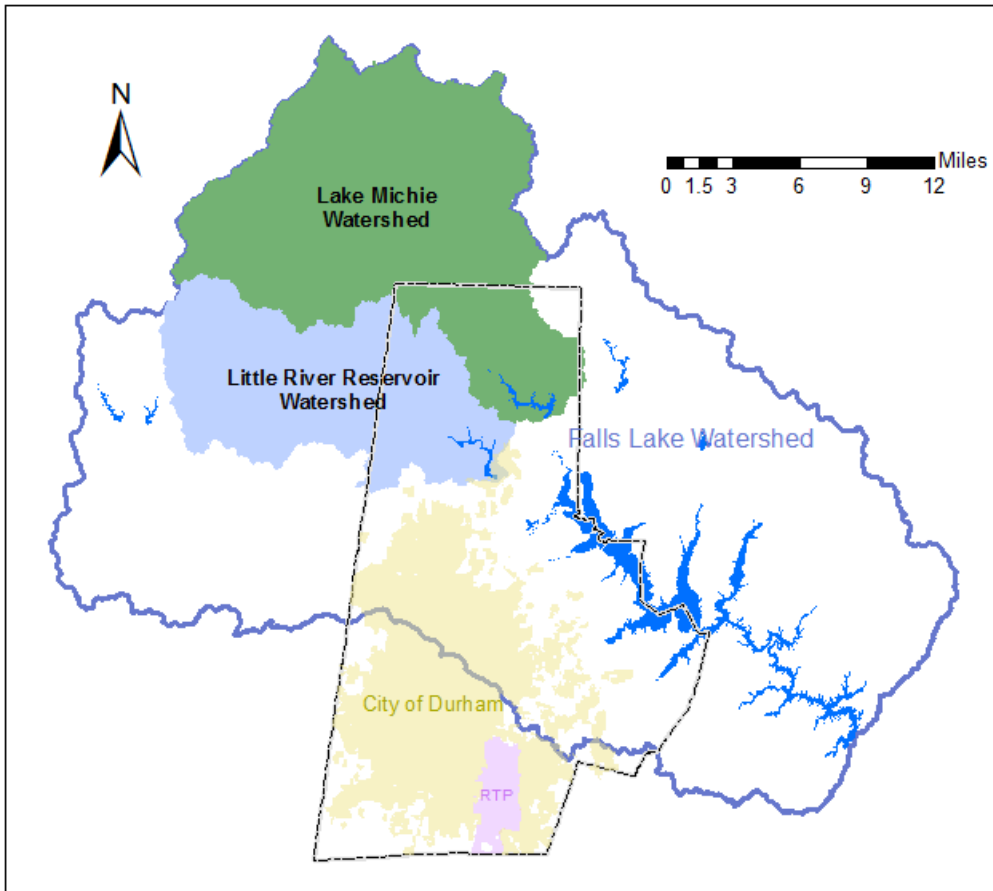
The City of Durham's drinking water is regularly sourced from Lake Michie (in the Flat River watershed) and Little River Reservoir (in the Little River watershed); both watersheds lie within the Falls Lake Watershed, also known as the Upper Neuse River Basin. The City is interested in protecting land in the Flat River and Little River watersheds in order to protect Durham's supply of high-quality drinking water.

The City works in partnership with the Upper Neuse Clean Water Initiative (UNCWI) to maximize the City's investment in land conservation. UNCWI, established in 2005, is a collaboration among local governments and land conservation organizations to protect land that contributes to the preservation of clean drinking water in the Upper Neuse River Basin. Collaboration with UNCWI facilitates the City's land conservation program by leveraging the land conservation organizations' land stewardship programs (conservation easement monitoring, maintenance and enforcement), and by extending the City's land conservation efforts beyond Durham County (the majority of the land area in the Lake Michie and Little River Reservoir watersheds is outside of Durham County). See Figure 1 on page 2.

While any opportunity to purchase land adjacent to Lake Michie or Little River Reservoir would clearly satisfy the purpose of protecting water supply, not all opportunities to purchase a conservation easement in the water supply watersheds would offer equal protection of the City's water supply. The Department of Water Management's Watershed Protection Plan identifies parcels in the City's water supply watersheds that if protected will help to protect the water quality of the City's water supplies.

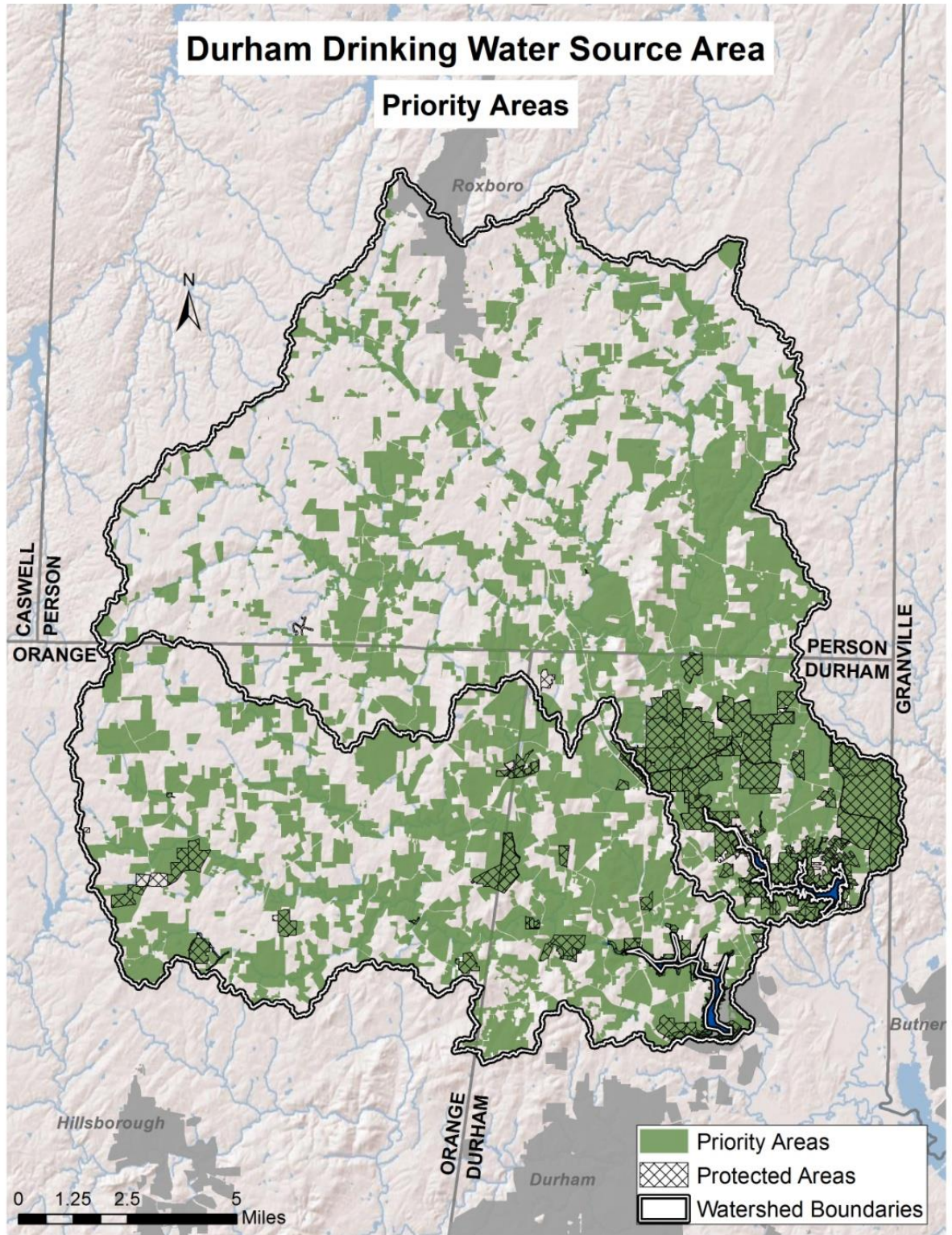
Parcels identified in the Watershed Protection Plan are considered eligible for conservation easements or acquisition partially or wholly funded by the City of Durham. The Plan includes a Geographic Information System (GIS) model for identifying and prioritizing parcels or portions of parcels that contribute significantly to the protection of the City's water supply water quality. See Figure 2 on page 3.

Figure 1. Durham Water Supply Watersheds and Falls Lake Watershed



Over the past two years, the City of Durham has funded land conservation projects with the Triangle Land Conservancy (Byerly, O'Neal, and Down 2 Earth Farms Projects) and the Eno River Association (Walker Project) that have resulted in the protection of 298 acres of land and 13,3085 linear feet of streams, land identified in the City's Watershed Protection Plan as contributing significantly to the protection of the City's water supply. More information about the TLC Byerly, TLC O'Neal, TLC Down 2 Earth Farms, and ERA Walker Projects is attached.

Figure 2. GIS Model



- B. The City of Durham’s Water Supply Watershed Protection Program has a mechanism in place for obtaining measurable results.

We determine progress by the amount of stream length protected and the number and area of priority parcels protected. Data included in the project applications submitted to the UNCWI Watershed Protection Review Board and to the Department of Water Management are: stream feet (length of center line of stream protected), linear feet of buffer protected (each side of the stream that is protected), average width of buffer protected, acres of buffer protected, and development potential (% of property that could feasibly be developed). Specific information about the TLC Byerly, TLC O’Neal, TLC Down 2 Earth Farms, and ERA Walker Projects is attached.

- C. The City of Durham’s Water Supply Watershed Protection Program demonstrates effective and efficient use of resources.

The program includes leveraging the City’s money with land conservation organization funding, City of Raleigh funding, and other funding. Further, we leverage funding by focusing on conservation easements rather than fee simple purchase for properties not adjacent to the City’s water supply reservoirs. To date, the City’s program has leveraged a total of \$1,433,791 in land conservation projects at a cost to the City of \$236,300.

Collaboration

- A. The City of Durham’s Water Supply Watershed Protection Program involves strong and appropriate project partnerships.

We are partnering with the Upper Neuse Clean Water Initiative¹, which includes the City of Raleigh, Triangle J Council of Governments (coordinator), Conservation Trust for North Carolina, Ellerbe Creek Watershed Association, Eno River Association, Tar River Land Conservancy, Triangle Greenways Council, Triangle Land Conservancy, and The Conservation Fund.

- B. The City of Durham’s Water Supply Watershed Protection Program included an element of community involvement.

We involved many stakeholders in the development of the criteria and standards used in the GIS model for prioritizing parcels for protection when developing the Watershed Protection Plan.

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| Jennifer Brooks | Durham County Soil and Water Conservation |
| Ed Buchan | City of Raleigh |

¹ <https://www.ctnc.org/assist/upper-neuse-clean-water-initiative>

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|-----------------|---|
| Caitlin Burke | Conservation Trust for North Carolina |
| Vickie Dudick | North Carolina National Guard |
| Derek Halberg | Tar River Land Conservancy |
| Bo Howes | Triangle Land Conservancy |
| Jane Korest | Durham County Open Space |
| Jordan Law | North Carolina National Guard |
| Kim Livingston | Eno River Association |
| Sydney Miller | City of Durham Department of Water Management |
| Lori Montgomery | City of Durham Department of Water Management |
| Braden Ramage | North Carolina National Guard |
| Hannah Rank | Tar River Land Conservancy |
| Mahima Rao | Ellerbe Creek Watershed Association |
| Mike Schlegel | Triangle J Council of Governments |
| Mike Stec | City of Durham Department of Water Management |
| Laura Stroud | Triangle Land Conservancy |
| Sandra Wilbur | City of Durham Public Works |

Further, every land conservation project that is recommended must be approved for funding by the Durham City Council, an elected body with seven members representing all of the residents in the City of Durham.

Relevance

- A. There is a strong, explicit connection between the City of Durham’s Water Supply Watershed Protection Program and source water protection.

“The best means for ensuring high-quality drinking water for public consumption is to use a multiple-barrier approach” such as “treating the water and maintaining quality in the distribution system” against threats.² Protecting source water quality is another of these barriers. Land acquisition and stream buffers were recommended as a means of protecting Durham’s source water in a 1989 watershed management study for Lake Michie and Little River Reservoir.³

- B. The City of Durham’s Water Supply Watershed Protection Program addresses known issues (e.g. community concern, impairment, etc.).

There is widespread public concern about source water contamination. Reference the recent Gen X contamination concern, as well as concerns about PFAS in general. There are also repeated public media articles and stories about emerging contaminants.

² Richard W. Gullick, “Source water protection: Perspectives of the past, present, and future,” *Journal - American Water Works Association*, 106:8 (August 2014), p. 164.

³ Camp Dresser & McKee, *Watershed Management Study: Lake Michie and Little River Reservoir Watersheds* (June 1989), pp. 14 and 23.

Sustainability

- A. There is a high likelihood of the City of Durham's Water Supply Watershed Protection Program being implemented or completed.

The probability of the City of Durham's Water Supply Watershed Protection Program being implemented is 100%. The Watershed Protection Plan was approved by City Council on April 17, 2017. The Agreement for Watershed Protection between the City of Durham and the Conservation Trust for North Carolina was executed on May 4, 2017. We have been coordinating with UNCWI and the land trust organizations and attending every UNCWI Watershed Protection Review Board meeting since July 13, 2017.

Over the past two years, the City of Durham has funded land conservation projects with the Triangle Land Conservancy (Byerly, O'Neal, and Down 2 Earth Farms Projects) and the Eno River Association (Walker Project) that have resulted in the protection of 298 acres of land and 13,3085 linear feet of streams, at a total cost to the City of \$236,300. The City continues to fund this program, and is recommending a land conservation project to the Durham City Council at its January 19, 2021 meeting.

- B. The City of Durham's Water Supply Watershed Protection Program goes above and beyond meeting existing regulations, guidelines or practices.

There is no regulatory requirement to implement this kind of watershed protection program.

Innovation

- A. The City of Durham's Water Supply Watershed Protection Program is innovative and creative.

We have joined the Upper Neuse Clean Water Initiative bandwagon, recognized as a model program nationwide. Not only does our program leverage funding by joining the UNCWI, we were able to work with the Triangle Land Conservancy in developing our GIS model.

- B. The City of Durham's Water Supply Watershed Protection Program addresses multiple interests and objectives.

Our City of Durham's Water Supply Watershed Protection Program protects our water supply quality and quantity, addresses potential erosion and sedimentation, addresses natural wildlife corridors, and addresses open space protection. Our Plan is consistent with the Little River Corridor Open Space Plan.⁴

⁴ Adopted by the Durham Board of County Commissioners on August 27, 2001 and the Durham City Council on November 19, 2001.

Transferability

- A. The City of Durham Department of Water Management has performed outreach activities.

We work with the Upper Neuse Clean Water Initiative and the Triangle J Council of Governments performs outreach to land trust organizations and the public as part of their responsibilities under that program. Furthermore, the Department of Water Management has given presentations to the general public about the City of Durham's Water Supply Watershed Protection Program.

- B. The City of Durham's Water Supply Watershed Protection Program is highly transferable.

The City's City of Durham's Water Supply Watershed Protection Program was itself transferred from the Upper Neuse Clean Water Initiative. Furthermore, the City participates in webinars and gives presentations to water resources professionals in promoting the program.