



## Effect of the Falls Lake Rules

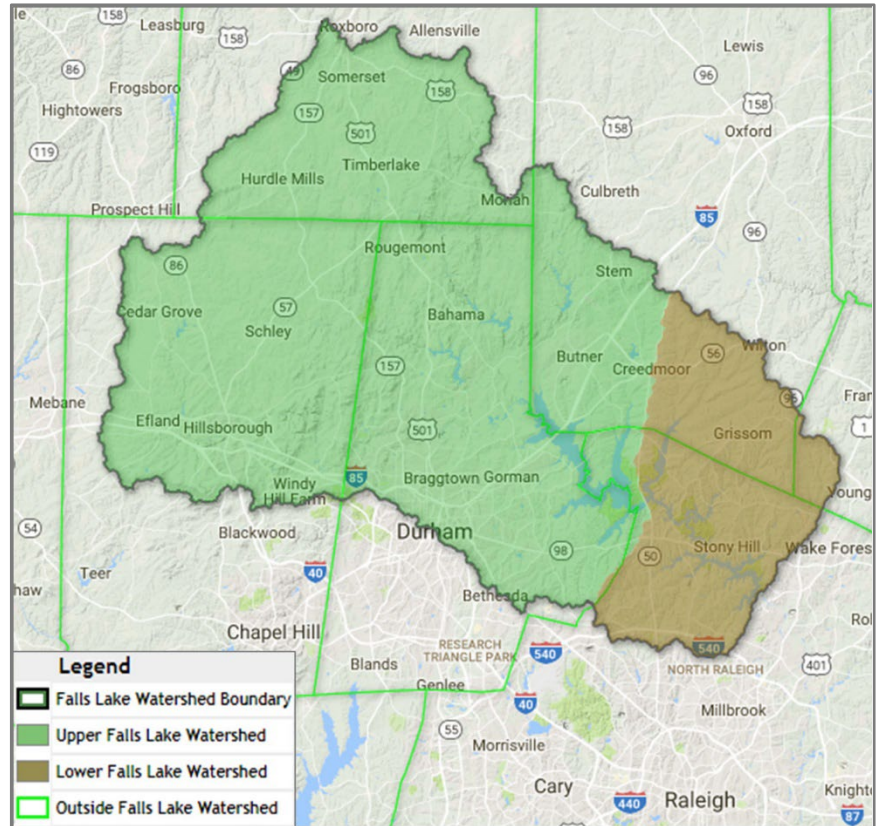
Hillsborough is required to treat its wastewater at higher and more expensive standards than other sewer systems because of state-mandated rules for protecting and restoring the water quality of Falls Lake. Hillsborough's watershed drains into that lake.

### Background

Falls Lake is a 12,000-acre reservoir in Durham, Wake, and Granville counties. It is on the EPA's list of impaired waters and has been designated nutrient-sensitive by the N.C. Division of Water Resources, which is part of the N.C. Department of Environmental Quality.

Through the Clean Water Act, the Environmental Protection Agency mandates that if more than 10% of samples from a water body violate any water quality standard, the water body is placed on a list of impaired water bodies and a total maximum daily load for pollutants must be developed. The daily loads focus primarily on the amount of nitrogen and phosphorus that wastewater treatment plants discharge into a watershed above an impaired water body.

Because of Falls Lake's inclusion on the list of impaired waters, the EPA required North Carolina to create and implement a plan to remove Falls Lake from the list. The state adopted the Falls Lake Rules in 2010, which includes more stringent rules for the release of treated wastewater. The first stage of these rules for wastewater went into effect in 2016, and the second stage is expected in 2036.



**“Other systems that don’t have such onerous permitting burdens to address environmental concerns and protect downstream drinking water quality are able to treat their wastewater to much lower standards. Because Hillsborough is a small system, this places an enormous burden on customers to fund the mandate imposed by the Falls Lake Rules.”**

— Hillsborough Town Manager Eric Peterson

## Effect on Hillsborough

Falls Lake's water source is the confluence of the Eno, Little, and Flat rivers. The Eno — upstream of Falls Lake — is where the Town of Hillsborough draws its raw water and releases its treated wastewater. As such, North Carolina's rules regarding wastewater discharge into Falls Lake affect the Town of Hillsborough and require an expensive and high level of treatment to meet the requirements. The North Durham Wastewater Reclamation Facility and the South Granville Water and Sewer Authority also are affected by the Falls Lake wastewater rules.

About 15,000 wastewater treatment plants exist in the United States. The nitrogen discharge limits imposed by the Falls Lake Rules are said to be the strictest across the country and required Hillsborough to spend substantially more on upgrading its wastewater treatment plant in 2014 from 1970s technology in order to comply with Stage 1 regulations. Additional upgrades likely will be required to meet the Stage 2 wastewater rules.

## Effect on rates

The debt on the Wastewater Treatment Plant's Phase 1 upgrades makes up a large portion of the expenses related to the sewer portion of customers' bills. The water and sewer payments that Hillsborough receives are used to cover the costs of providing the utility service, which includes the operation, maintenance and improvements of the system. The town does not make a profit from providing water and sewer service nor does it use water and sewer revenue for other purposes.



Hillsborough Wastewater Treatment Plant following upgrade in 2014

### Phase 1 —

Phase 1 upgrades to the Wastewater Treatment Plant cost about \$18.9 million. Much of the upfront costs — primarily for design — was funded from operating revenues and capital facility fees paid by new development. The town borrowed \$17.8 million to pay for the construction, resulting in yearly debt payments of about \$1.2 million over 20 years. The annual debt payments represent about 20% of the town's sewer expenses.

The original estimate for the upgrade was about \$30 million. Staff at the Hillsborough Wastewater Treatment Plant were able to reduce the costs by redesigning and building some upgrades on their own.

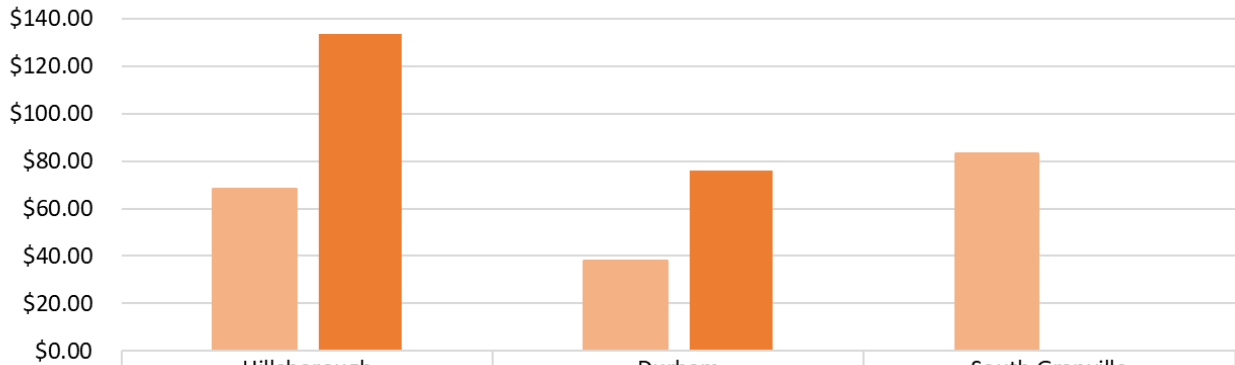
### Phase 2 —

A second phase of upgrades likely will be required to meet Falls Lake's Stage 2 wastewater rules. A cost estimate is not available yet, but the Phase 2 upgrades are expected to be more expensive.

Because Hillsborough operates a small utilities system, it does not benefit from the economies of scale of a larger system, which also can spread the cost of a higher standard of treatment among more customers. The City of Durham had lower sewer rate structures than Hillsborough as of January 2021, the most recent data of rate structures across North Carolina. But Durham also has a service population of 282,343 compared to Hillsborough's service population of 16,697. The South Granville Water and Sewer Authority, which has a

greater daily wastewater treatment capacity than Hillsborough, also is a small utilities system — serving 19,216 people in Butner, Creedmoor, Stem, and South Granville County.

### Sewer Rates: Hillsborough Compared to Other Systems Affected by Falls Lake Rules *January 2021 — 4,000 Gallons per Month*



	Hillsborough	Durham	South Granville
In-town sewer	\$68.46	\$37.99	\$83.32
Out-town sewer	\$133.46	\$75.99	
Daily wastewater treatment capacity	3 million gallons	40 million gallons	5.5 million gallons
Service population	16,697	282,343	19,216

Source: UNC School of Government’s Environmental Finance Center and North Carolina League of Municipalities