



The Rocky River Heritage Foundation
Protecting the Social & Natural Heritage Of The Rocky River
Through Research & Education
PO Box 314, Pittsboro, NC 27312; www.rockyriverchatham.org

Economic Development That Protects the Rocky River

Summary

Economic activity in Siler City & much of western Chatham County is dependent on the Rocky River as a source of water & as a disposal site for wastewater. Given both the biological decline of the Rocky River & the reality of rapid global warming & climate change, we need to rethink our strategy for both the Rocky River & water in general. This is especially true if we expect the small flows in the upper Rocky River - which actually is a large creek - to be able to support new businesses in the megasite & elsewhere.

Over the past four years, the North Carolina Division of Water Resources has cut back efforts to both enforce the Clean Water Act & clean up the Rocky River. In the near term, unless pressured by the U.S. Environmental Protection Agency, this situation probably will continue. As such, protecting the Rocky River will require five initiatives on the part of Siler City, Chatham County, private landowners in the watershed, the Chatham County Economic Development Corporation & nonprofit groups able to undertake education & litigation.

According to the NC Division of Water Resources (NCDWR), Siler City needs to take four steps to protect the Rocky River. It needs to (1) make extensive repairs to its failing sewer lines so that untreated sewage is not discharged into the Rocky River; (2) repair the wastewater treatment plant that - due to equipment failures - can now operate only at 1,500,000+/- gallons per day (GPD) rather than the permitted 4,000,000 (GPD); (3) install nitrogen removal technologies before accepting waste from newly opened chicken processing plants or other industries that discharge high levels of nitrogen; & (4) ensure adequate flows in the river between the Charles Turner Dam & Varnell Creek below US Hwy. 64. This latter action is necessary because this section of this river has been designated "impaired" by the NCDWR due to extremely low dissolved oxygen levels that damage fish & other aquatic populations.

In addition, (5) both Chatham County and Siler City need to take initiatives to improve water quality in the upper Siler City reservoir. The NCDWR has designated this water supply reservoir as being "impaired" - meaning it does not meet drinking water standards. This is due to high levels of "chlorophyll a" that is caused, in part, by stormwater runoff placing excessive amounts of phosphorus & nitrogen into the reservoir. As such, Chatham County & Siler City need to work with landowners & help them minimize nutrients flowing into the river.

Failure to protect the river will promote the rapid biological decline observed in a 2010 Rocky River study undertaken by Alderman Environmental Services. In our age of rapid global warming & climate change this failure will result in a river that is unable to support needed economic activities in Siler City & western Chatham County including the megasite. For this reason, Chatham citizens need to step up & help protect the Rocky River before it is too late.

Chatham County and Siler City

Should Promote Economic Development

That Protects the Rocky River.

Economic development efforts in western Chatham County -- especially the Siler City Megasite and the proposed reopening of the Townsends chicken processing plant by Carolina Premium Foods -- should include actions now that will protect and improve water quality and stream flows in the Rocky River. As discussed below, this involves (1) repairing Siler City sewer lines and wastewater treatment plant, (2) installing nitrogen removal technologies, (3) increasing flows in the section of the Rocky River below the Charles Turner Dam, and (4) encouraging landowners to adopt practices that will reduce nutrient flows into the upper Siler City reservoir.

Water Quality & Siler City Sewage System Repairs:

According to NC Division of Water Resources (NCDWR) compliance reports (e.g. 6.14.12) Siler City sewer lines and the wastewater treatment plant have been in a continual state of disrepair. So as to minimize problems caused by this failing sewer treatment system, NCDWR, in a 9.25.13 letter to the Siler City Town Manager noted that Siler City needed to make three types of repairs to the system.

(1) The first is an "upgrade of the emergency backup generator at the wastewater treatment plant so as to prevent releases of untreated waste to Loves Creek" that flows into the Rocky River. As of September 12, 2014, the Siler City Public Works Department reports the needed generator upgrades have been made.

(2) The second includes repairs to "Basins 4A & B at the WWTP that are locked out of service and isolated due to structural damage". As of September 12, 2014 the Siler City Public Works Department reports needed repairs have not been made. Until these repairs are made, the WWTP cannot process the permitted 4,000,000 gallons per day.

(3) The third problem concerns sewer line inflow and infiltration (I&I) problems that result in stormwater entering, and often overwhelming, the WWTP. In this regard, the 9.25.13 NCDWR letter noted, "A review of NCDWR records from June and July of 2013 seems to indicate a severe I & I problem. Between June 5 and June 7, 2013, flow jumped from 1.625 to 6.365 MGD". Eliminating this ongoing problem will require major and expensive repairs to sewer lines throughout Siler City.

While the discharge permit for the wastewater treatment plant regulates I&I outflows on a monthly average basis, the NCDWR in a 1.10.14 letter to Mr. John Runkle, Attorney at Law, noted that "...there have been many short term excursions of flow" ... based on one day spikes. In other words, "spike" discharges of poorly treated wastewater from the Siler City Wastewater Treatment Plant remain a chronic (if legal) problem that leads to the degradation of water quality in the Rocky River.

Wastewater Discharged Into The Rocky River Violates The Clean Water Act:

Siler City wastewater is discharged into Loves Creek that empties into a section of the Rocky River which the NCDWR has designated as "impaired" because of very low dissolved oxygen levels. This section extends from the Charles Turner Dam to Varnell Creek below US Hwy. 64 and below Loves Creek.

This release of wastewater (especially inadequately treated wastewater) reduces oxygen levels even further than they already are. Thus, this discharge is a violation of the Clean Water Act provision which states that a river receiving wastewater discharges must have assimilative capacity sufficient so as to be able to absorb the wastewater discharges without being degraded below established standards.

Years of data show that dissolved oxygen levels in the Rocky directly above the section receiving the discharge from the Siler City WWTP are chronically below the required 4 mg/l. These dissolved oxygen levels represent a serious lack of assimilative capacity. As such, Siler City wastewater that is discharged into the Rocky River often results in chronic violations of NC Administrative Code 15A NCAC 02B .0211.(3)(b), The Clean Water Act, and the 401 Water Quality Certification No. 3482.

Excessive Nitrogen Discharges From the Siler City Wastewater Treatment Plant:

An additional water quality problem concerns elevated nitrogen levels in the Rocky River below Siler City. Nitrate-nitrite levels have declined approximately 90% since the closure of the Pilgrims Pride and Townsends chicken processing plants. However, in a 9.25.13 NCDWR letter addressed to the Siler City Town Manager, the NCDWR noted "... excess nitrogen is still affecting water quality in Loves Creek and [the] Rocky River. Any process changes you can make to reduce Total Nitrogen will help improve water quality".

This observation has been documented by a major three year nitrogen study undertaken by the NC State University Department of Marine, Earth and Atmospheric Sciences released in draft form on August 28, 2014. This study notes: "These data show that the Siler City Waste Water Treatment Plant is the only major nitrogen source in the Rocky River Drainage Basin during times of base flow."

While the NCDWR has not, yet, placed limits on nitrogen discharges from the Siler City Wastewater Treatment Plant, a reopening of chicken processing activities and similar industrial activities is very likely to raise nitrogen levels in the Rocky River below Siler City to levels even farther above the current unacceptable levels. This will cause the Rocky River down to the Deep River to again be clogged with algae. This will result in the river failing to meet designated Class C secondary recreational standards that require water quality sufficient to allow wading, boating, fishing and healthy fish populations.

The section of the Rocky River below Siler City at the Woody Dam already fails to meet Class C standards because of elevated levels of "chlorophyll a" - an indicator of excessive nutrients including phosphorus and nitrogen. As a result, this section of the river has been listed by

NCDWR as being impaired. This impaired status is the result of excessive nitrogen discharges from the Siler City WWTP.

In an effort to reduce these nitrogen discharges, the NCDWR has signaled that Siler City should prepare itself for tight nutrient limits. According to a 2.17.14 letter to Mr. Runkle, the NCDWR stated it is "starting to work on a nutrient TMDL (Total Daily Maximum Load) for the Cape Fear River ...". This effort has been encouraged by the U.S. Environmental Protection Agency. Also, according to a 4.30.14 letter to the Siler City Manager the NCDWR stated "...the Middle Cape Fear River has been identified as a site-specific high priority waterbody ... which will result in additional ... future nutrient management strategies." In addition, according to a 9.25.13 letter to the Siler City Manager, the NCDWR stated that the TMDL "...may require very strict TN (Total Nitrogen) limits" – one that will hold nitrogen discharges to, at least, those levels that materialized after the Pilgrims Pride and Townsends chicken processing plants closed.

Low Dissolved Oxygen Levels below the Charles Turner Dam:

The NCDWR has determined the Rocky River from the Charles Turner Reservoir down to Varnell Creek below U.S Hwy. 64 is "impaired" due to low oxygen levels. Low oxygen levels are caused, in large part, by inadequate releases of water from the Charles Turner Dam, and by inadequate oxygenation of the releases that are made. The result is damage to aquatic life forms that depend on adequate levels of oxygen ... such as fish.

This impaired status exists even though Siler City is withdrawing from the river 50% or less of the 4,000,000 gallons a day (GPD) permitted by the NCDWR. If the megasite is developed, water withdrawals will increase and likely reach the permitted 4,000,000 GPD level. Once this occurs, flows will decrease and oxygen levels in the Rocky River between the Charles Turner Dam and Varnell Creek probably will decline further.

Sooner or later, through either administrative action or through citizen litigation, this impaired status of the river will need to be acknowledged and the provisions of the Clean Water Act will need to be enforced. This means permitted water withdrawals will need to be reduced below the 4,000,000 GPD level. So as to avoid this situation, Siler City should find sources of water for the megasite other than the Rocky River.

Upper Siler City Reservoir Is "Impaired":

The NCDWR has designated the upper Siler City reservoir as being "impaired" due to excessive levels of "chlorophyll a" – an indicator of excessive nutrients including phosphorus and nitrogen. As such, the reservoir fails to meet state water quality standards for drinking water supplies. This problem results from stormwater runoff from area lawns, fields and pastures carrying nutrients such as organic nitrogen into streams that feed the reservoir. Remedies for this problem include the use of best management practices such as stream buffers and fencing livestock so they cannot wade into streams. Both Chatham County and Siler City should take actions to encourage these types of practices.