• **Pamlico-Tar River Foundation • Clean Water for North Carolina** •

June 23, 2011

Honorable Darryl Moss
City of Creedmoor
P.O. Box 765
111 Masonic Street
Creedmoor, NC 27522

Dear Mayor Moss,

The Pamlico-Tar River Foundation (PTRF) and Clean Water for North Carolina (CWFNC) would like to share with you our concerns over the City of Creedmoor's proposal to construct a new wastewater treatment plant and new 1.15 MGD discharge to the upper Tar River. While we recognize the City is exploring its options and any new facility, if ultimately considered for permitting by the State, would allow for significant comment opportunities, we wanted to be up front and transparent with you and the City Commissioners regarding our concerns and opposition to a new upper Tar River discharge.

PTRF, in its 30th year, is a grassroots environmental organization representing 1900 members and is a licensed member of Waterkeeper Alliance, Inc. Our mission is to enhance and protect the Pamlico-Tar River watershed through education, advocacy, and research.

Clean Water for North Carolina (CWFNC) is a statewide non-profit environmental justice organization with offices in Asheville and Durham. CWFNC promotes clean, safe water and environments, and empowered just communities for all North Carolinians through organizing, education, advocacy and technical assistance. As an Environmental Justice organization CWFNC works primarily with low-income communities, rural communities and communities of color.

Upper Tar River

The upper Tar River watershed supports a diverse aquatic population and is the source of drinking water for the majority of communities located downstream. The area of the Tar River where the City is proposing to add a new wastewater treatment facility and discharge has been characterized as having good water quality, but that growth in the region has led to an increase in stressors that require additional management efforts and protections in order to maintain the integrity of the River system.

The Upper Tar River Basin is nationally recognized for the number of rare and endangered aquatic species that reside in this watershed. This section of the Tar River basin supports a very diverse and abundant aquatic population of fish, mussels and insects, all excellent indicators of a healthy river system. In the vicinity of the City's proposed discharge (both upstream and downstream) the Tar River and its tributaries support critical populations of two federally listed endangered species of mussels; the dwarf wedgemussel and tar spinymussel. The Tar River in Granville County supports the largest known population of the dwarf wedgemussel species in North Carolina (USFWS). There are also many aquatic federal species and state species of concern.

The largest threat to the quality of the upper Tar is the rapid growth the region is experiencing. Research regarding the protection of aquatic species and water quality point to the threat of zinc and chlorine, both highly toxic to aquatic species.[1] The 2010 Basinwide Water Quality Plan[2] notes that while water quality is good in this region, downstream of the proposed discharge point the river has shown signs of stress due to an increase in organic nitrogen, turbidity, fecal coliform, copper and zinc.

Concerns over flow

We are also concerned that at 7Q10 flows, a new discharge to this area of the Tar River would result in a very high percentage of the river flow being the wastewater discharge. Flows as low as 0.05 cubic feet per second (approximately 29,000 gallons per day) have been recorded as recently as 2007 at the USGS gauging station at highway 96, downstream of the proposed discharge.

The current predictions for climate change impacts to precipitation indicate that this region of North Carolina will begin to experience greater frequencies of drought and when it does rain, at higher intensities that will lead to a greater frequency of flooding. The current moderate, but worsening, drought settled in the Upper Tar basin more quickly than all but the southeastern counties of NC, and conditions are not expected to improve in the near future. These factors, along with greater stormwater runoff due to urbanization and increase demand for water supply in the watershed combine to create another concern that the Tar River cannot assimilate the waste from an additional source (due to low flows) and the greater frequency of flooding increases the probabilities of sewer overflows and/or threatens the integrity of the treatment plant itself.

Pharmaceuticals and Water supply

The sources of organic waste compounds (OWCs) and pharmaceuticals includes outflow from wastewater treatment plants, which are not designed to eliminate these compounds from the waste stream . Current guidelines used by the health care industry recommends flushing of unused or expired pharmaceuticals, leading to 250 million pounds flushed annually in the US.[3] Furthermore, application of biosolids is also recognized as a potential pathway of pharmaceuticals and OWCs to the environment and surface waters.

An USGS study of treated wastewater, raw and finished water in the Tar River basin from 2003-2005 found numerous pharmaceuticals and organic waste compounds. The compounds found include flame retardants, antibiotics, heart medicines, herbicides, plasticizers, pesticides, BPA, caffeine, nicotine, allergy medicines, seizure drugs and others.[4]

We are genuinely concerned about the ecological and human health effects associated with exposure to low concentrations of pharmaceuticals via drinking water. Studies have linked reproductive problems and lowered immune response in fish and frogs to pharmaceutical hormone exposure. In a nationwide study, the occurrence of intersex fish was most prevalent in the Southeastern US. I particular, 91% of

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[1] US Fish and Wildlife Service. 1993. Dwarf Wedgemussel Recovery Plan. Hadley, Massachusetts. 52pp.

[2] 2010 Tar-Pamlico Basinwide Water Quality Plan.
http://portal.ncdenr.org/web/wq/ps/bpu/basin/tarpamlico/2010

[3] Donn J, et al. AP Impact: Health care industry sends tons of drugs into nation's wastewater system." April 2010. Retrieved April 2010 from:
http://hosted.ap.org/specials/interactives/pharmawater_site/sept14a.html

[4] USGS. 2009. Occurrence of Selected Pharmaceutical and Organic Wastewater Compounds in Effluent and Water Samples from Municipal Wastewater and Drinking-Water Treatment Facilities in the Tar and Cape Fear River Basins, North Carolina, 2003-2005. Open-File Report 2009-1046.

largemouth bass tested in the Yadkin-Pee Dee basin in North Carolina and South Carolina showed intersex characteristics.[5] The human health effects have been less studied to date, but from what we have learned in the past, biological indicators can provide good warning signs and signal potential negative consequences to the public's health. As noted above, a significant percentage of communities in the Tar River basin utilize surface water as their source of drinking water, including the Town of Louisburg whose water intake would be located within 25 miles of the discharge point.

City's Current Wastewater Provider

Currently we understand the City is served by the South Granville Water and Sewer Authority (SGWASA) and is allocated up to 0.550 MGD of wastewater discharge. The most recent local water supply plan available for review by the Division of Water Resources shows that in 2008 the City's wastewater discharge to SGWASA was an average daily discharge of 0.280 MGD. Population projections for the city and average per capita wastewater use suggest the City has about 10 years until its current allocation to SGWASA is exceeded. This projection is based on the status quo, and as we mention below, several options exist for the city to reduce its wastewater capacity demand before that date.

IBT

The City's proposal also brings with it yet another interbasin transfer of water, in this case treated wastewater, to the Tar River basin. PTRF is opposed to IBTs since they have the great potential to fundamentally and irreversibly alter natural water flows in our rivers and streams and can harm endangered, threatened, and sensitive species that depend on specific water flows. The pending Kerr-Lake IBT only complicates this issue further.

Nutrient Allocation for Tar River

As the City is aware, the Tar-Pamlico River system is designated a Nutrient Sensitive Water (NSW) since 1989. More than a decade's worth of nutrient management efforts have unfortunately not improved the Pamlico estuary, as nutrient impairment continues. Management efforts include reduction of nitrogen and phosphorus from wastewater discharge, new development and agricultural sources. Even with these management and regulatory efforts in place, the Tar River has experienced an increase in organic nitrogen concentrations. Furthermore, the expansion of unregulated sources of nutrients, such as ammonia from industrial animal operations and an unregulated poultry industry, only further threaten the integrity of the river system. It is clear that more efforts are needed to reduce nutrient inputs to the river basin. The Division of Water Quality has recognized this fact in their recently finalized 2010 Basinwide Water Quality Plan.

Under the NSW rules for the Tar –Pamlico, wastewater dischargers must reduce their N and P inputs relative to 1991 levels. We understand that the City of Creedmoor proposes to utilize the nutrient allocation from the closure of National Spinning Industry in Washington. We argue that the any allocation of National Spinning is no longer available as the Division recognized that the allocation cap set for the Basin Association was set too high. Once National Spinning closed, those allocations permanently reduced the nutrient cap to its existing level.

> [b] *National Spinning ceased discharging at the end of 2004, resulting in a permanent point source load reduction that measured 31,177 kg/yr in 1991.*

[5] Hinck J, et al. Widespread occurrence of intersex in black basses (*Micropterus spp*.) from U.S. rivers, 1995–2004. *Aquat. Toxicol.*. 2009. 95:60–70.

Furthermore, under the current language of the Phase III agreement, there is no methodology that has been approved by the Division or the signatories for nutrient allocation of new dischargers to the basin that wish to join the TPBA. Therefore the Phase III agreement would need to be amended pending agreement among the stakeholders prior to any permitting decision.

> *"For additions that are proposed new dischargers to the basin, the parties shall establish a method, as needed, in keeping with the loading goals of the Agreement." (Phase III, Section III(D))*
>
> *Amendments related to subsection D above shall require consent of all parties.*

PTRF also argues that the language "in keeping with the loading goals of the Agreement," means the load allocation of the Association established in Section IV: subsection C, Table 2 which is 404,274 kgN/y. It is our opinion that the Division of Water Quality erroneously approved of a portion of National Spinning's allocation for the purpose of a new treatment plant in their correspondence to the city dated April 29, 2011. We will be submitting a letter to the Division and EPA outlining those concerns and will copy the City.

Direct, Indirect and Cumulative impacts
We have many other concerns regarding this proposal that we will not go into detail about at this time. Such concerns include but are not limited to:

- Direct and cumulative impacts to waters from the more than 9 miles of piping proposed and construction of the treatment facility;
- Growth and development as a result of the new wastewater allocation
- Growth along hwy 15/85 corridor which will result in increased stormwater threats as well as an increase in water supply demand.

Potential Alternatives
We believe the city may have several potential alternatives that would be superior choices not only for the protection of our water resources, but for the citizens and rate-payers as well. Possible solutions include but are not limited to a non-discharge system utilizing created wetlands, or clustered progressive on-site wastewater treatment and subsurface irrigation, or flow reduction via greywater reuse and reclamation systems.

All indications are that the cost of a new WWTP would substantially exceed both a non-discharge approach or continued service wastewater service by SGWASA, coupled with cost-effective conservation and reclamation efforts. We sincerely believe that these options would leave open the opportunity for continued moderate economic and residential development in and near Creedmoor and would be consistent with values articulated by you and several other members of the NC Environmental Management Commission, in its extended work to improve the health of NC's waters.

Conclusion
We believe that other alternatives should be considered first and that the City would have a difficult time defending a position that a new discharge to the Tar River would be the least environmentally damaging alternative. Alternatives may include but are not limited to remaining with SGWASA,

construction of a state of the art, non-discharge facility within the Neuse River Basin, and projects that include wastewater reuse/recycling to reduce capacity demand.

We appreciate your consideration of these comments. We would further like to request a meeting with you and any City staff or other interested council members to discuss these concerns as well as the City's future wastewater needs. It is our hope that our open communication will result in the best results for the City as well as the water resources of the region.

Sincerely,

Heather Jacobs Deck
Pamlico-Tar RIVERKEEPER®
Pamlico-Tar River Foundation

Hope Taylor
Executive Director
Clean Water for North Carolina

cc: Coleen Sullins, NC DWQ
Alan Clark, NC DWQ
John Huisman, NC DWQ
Larry Thomas, President, TPBA
Mark Warren, Town Administrator, Town of Louisburg
Alissa Bierma, Neuse Riverkeeper Foundation