



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue  
Governor

Dee Freeman  
Secretary

11 March 2010

MEMORANDUM

TO: Melba McGee, Environmental Projects Officer  
Office of Legislative and Intergovernmental Affairs

FROM: Sarah McRae, Freshwater Ecologist *SBM*  
NC Natural Heritage Program

SUBJECT: Comments on Scoping Document for Creedmoor Wastewater Treatment  
Plant Improvements, Granville County, NC; Project #10-0307



The City of Creedmoor proposes to construct a new 1.15MGD wastewater treatment plant (WWTP) and force main running from a new pump station (separate project) with a discharge to the Tar River near Highway 15. This project has the potential to impact significant natural heritage areas as well as several rare and endangered species.

A significant natural heritage area is an area of land or water identified by the NC Natural Heritage Program (NHP) as being important for protection of the State's biodiversity. Significant natural heritage areas contain one or more Natural Heritage elements – high-quality or rare natural communities, rare species, and special animal habitats. The nationally significant Upper Tar River Aquatic Habitat will be directly impacted by this project, and the state significant Tar River/Wilton Slope and regionally significant Tar River/Triassic Basin Floodplain are directly downstream of the proposed discharge.

NHP is concerned about impacts to sensitive and rare species. Rare aquatic species likely to be impacted by this project include the federal and state endangered Dwarf wedgemussel (*Alasmidonta heterodon*); the federal species of special concern and state endangered Yellow lance (*Elliptio lanceolata*), Atlantic pigtoe (*Fusconaia masoni*), Yellow lampmussel (*Lampsilis cariosa*), and Green floater (*Lasmigona subviridis*); the federal and state species of concern Carolina madtom (*Noturus furiosus*) and pinewoods shiner (*Lythrurus matutinus*); the federal species of concern and state significantly rare Roanoke bass (*Ambloplites cavifrons*); the state threatened Triangle floater (*Alasmidonta undulata*), and Creeper (*Strophitus undulatus*); the state species of special concern Notched rainbow (*Villosa constricta*) and NC Spiny crayfish (*Orconectes carolinensis*).

NHP is concerned about direct water quality impacts of project construction and maintenance. We would like to see the following issues addressed:

- an alternatives analysis that includes a thorough evaluation of alternative wastewater discharge methods;

- the proposed ammonia permit limits as well as the anticipated amount of copper to be discharged (freshwater mussels are sensitive to both ammonia and copper), including measures to reduce ammonia and copper from the discharge;
- discussion of the measures that will be used to minimize impacts to water quality and stream habitat should a WWTP upset occur;
- description of the disinfection system (we prefer UV disinfection rather than chlorine because chlorine is acutely toxic to aquatic organisms).

In addition, recent studies have shown that endocrine disrupting chemicals (EDC) in treated wastewater can inhibit reproduction and cause feminization of mussels and fish. If the preferred alternative is a discharge to Tar River, additional studies should be conducted to document the levels of EDC's in Tar River pre- and post-discharge. NHP would also like to see a discussion of any measures that would be implemented to reduce or eliminate EDC's from wastewater prior to discharge should post-discharge studies show increases in EDC levels.

Due to the presence of the federally endangered Dwarf wedgemussel, aquatic surveys should be conducted on perennial streams prior to any instream work (e.g., utility or forecmain installations). Surveys should be performed 100 meters upstream of the proposed crossing, within the proposed crossing, and 300 meters downstream from the proposed crossings. Surveys should be conducted by biologists with both state and federal endangered species permits. Qualitative mussel sampling should be conducted by visual (snorkel, SCUBA, or view scope) and tactile surveys and should be conducted during the period 1 April to 31 October. These surveys should be timed to provide catch-per-unit effort (CPUE). Specimens should be documented for identification confirmation with color digital photographs in JPEG format. The resource agencies should be provided a complete compilation of the results of the survey. If species with federal protection status are encountered, sampling activities should cease and findings should be immediately reported to the USFWS at (919) 856-4520 and Rob Nichols with NCWRC at (919) 896-6254.

NHP is also concerned about the potential secondary impacts of the project, particularly since improved wastewater treatment can facilitate growth within the service area. If portions of the Tar River basin are included in the service area, we have major concerns about the encroaching urbanization within that area (maps depicting where the service area would be helpful to help this determination). Strong mitigation for the secondary and cumulative impacts associated with growth is essential for the continued survival of rare species throughout the affected watersheds. We are particularly interested in a detailed description of measures related to riparian buffer, floodplain and open space protection; impervious surface limits and stormwater management; and sediment and erosion control.

In light of the potential impacts from this project, NHP would like to see the environmental document detail strong mitigation for direct, cumulative and secondary impacts to rare and endangered species. We strongly recommend that the applicant adhere to the recommendations

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for waters containing federally endangered species, set forth by the NC Wildlife Resources Commission: "Guidance memorandum to address and mitigate secondary and cumulative impacts to aquatic and terrestrial wildlife resources and water quality" (August 2002), located on the web at: [http://www.ncwildlife.org/pg07\\_WildlifeSpeciesCon/pg7c3\\_impacts.pdf](http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7c3_impacts.pdf).

Please let me know if I can provide more information. The North Carolina Natural Heritage Program looks forward to a collaborative effort to help protect the State's natural diversity. If I can be of assistance, please do not hesitate to call me at 919-715-1751.

CC via email: Shari Bryant, WRC  
Rob Nichols, WRC  
Tom Augspurger, USFWS