United States Department of the Interior

FISH AND WILDLIFE SERVICE
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13 February 2013

Mr. Bruce Pleasant
Acting Director, Community Programs
USDA – Rural Development
4405 Bland Road, Suite 260
Raleigh, NC 27609

RE: Environmental Assessment and Preliminary Engineering Report for Creedmoor Wastewater Project

Dear Mr. Pleasant:

The US Fish and Wildlife Service (Service) has reviewed the NEPA Environmental Assessment (EA) and Preliminary Engineering Report (PER) for the City of Creedmoor's Wastewater Collection and Treatment System Improvement project, prepared for the US Department of Agriculture, Rural Development Program (USDA-RD). The applicant, the City of Creedmoor (City), is applying for $27M in funding from the USDA-RD and the Infrastructure Finance Section (formerly Construction Grants and Loans) of the NC Division of Water Quality (NCDWQ). The project consists of providing a wastewater transport system, a new 1.15 MGD wastewater treatment plant, and a discharge of effluent to the Tar River at Cannady Mill Road. The Service has identified the Upper Tar River ecosystem as a significant resource for the protection of federally listed endangered species as well as several other rare and endemic species. Federal goals for the conservation of trust species depend explicitly on the sustained integrity of the Upper Tar River ecosystem. These comments are submitted in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 USC 661-667d). Comments related to the FWCA are to be used in your determination of compliance with environmental requirements (7 CFR 1779.9, 7 CFR 1794) and in your water and wastewater loans and grants review (7 CFR 1780, 7 CFR 1783). Additional comments are provided regarding the USDA's determination of project impacts pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 USC 1531-1543). Note that we have submitted comments to USDA-RD on the Biological Assessment (BA) for this project under separate cover (USFWS 2013).

The Service has a significant interest in the conservation of globally and nationally-significant aquatic resources in the Upper Tar River. One of our office's overarching goals is to recover populations of federally listed species (including the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and harperella (*Ptilimnium nodosum*)) and conserve at-risk species such that their listing is unnecessary (USFWS 2012). The Upper Tar River has been explicitly identified as essential to the survival and recovery of both the dwarf wedgemussel and harperella (USFWS 1990, 1993). In addition, the NC Natural Heritage Program (NCNHP) characterizes

the Upper Tar River as having "Outstanding" significance for aquatic biodiversity, and it is in the top 3% of the most highly significant natural heritage sites in NC. In fact, the Upper Tar River is one of the best locations in NC for the dwarf wedgemussel, Atlantic pigtoe (*Fusconaia masoni*), and Chameleon lampmussel (*Lampsilis* sp.); and it supports 18 species identified as imperiled by NCNHP (NCNHP 2013). Of these species, three (Carolina madtom (*Noturus furiosus*), Neuse River waterdog (*Necturus lewisi*), and the NC spiny crayfish (*Orconectes carolinensis*)) are endemic to only the Neuse and Tar-Pamlico drainages and occur nowhere else on the planet.

Page 50 of the EA states: "Creedmoor and the consulting engineers and biologists are presently coordinating with federal and state wildlife agencies and water quality agencies to develop effective design and operational strategies to minimize impacts to these species." And pages 57-58 claim: "The WWTP design team is coordinating with federal and state wildlife agencies and water quality agencies to ensure appropriate effluent limits, effective treatment design, and an appropriate effluent and instream monitoring program to ensure protection of the river's designated 'best uses' including propagation of aquatic life and conservation of protected species." While the Service has submitted comments on the BA for this project under separate cover (USFWS 2013), our concerns related to listed species have not yet been addressed, and we do not feel that there has been adequate coordination with the resource agencies. In order to provide a complete review of the potential impacts of the proposed project, the "design and operational strategies that will minimize impacts to species" (as mentioned above) must be detailed in the EA. In addition to this lack of information, the Service has identified many issues and inconsistencies that also need to be addressed in the EA and PER.

Endangered Species Issues

While USDA-RD indicated that the EA and PER were supporting documentation to the BA, the Service did not receive the EA in adequate time to use it as such (in fact, we never received a copy of the PER, but were able to locate it on the City's website). Thus, the Service has provided the majority of our listed species concerns in separate comments on the BA to USDA-RD, dated 24 January 2013.

Section 3.5.7 (p.57) of the EA makes it seem like the selected discharge location at Cannady Mill Road was acceptable because the listed species were not known from this location. However, there was no "consultation" with resource agencies (as was done through the scoping process for the previous Hwy 15 location) to verify this. A current query of existing databases (not information from 2004, as presented in the EA) as well as informal communication with resource agency staff would have indicated that there was reason for possible concern regarding presence of rare species, and a re-scoping for the new location could have indicated early on the magnitude of concerns raised by the Service and others.

Both the EA and PER attempt to minimize the importance of the federally listed species that may be affected by the proposed project. "The Tar River…was found to support small populations of two federally endangered species that were not previously reported from this segment" (EA-

p.50). Despite this, the preferred location was selected because it "avoids the major known population areas of dwarf wedgemussel and harperella" (EA-p.2). In fact, the proposed discharge will be directly in the middle of a known metapopulation of dwarf wedgemussel. This metapopulation is part of a greater population in the upper Tar River headwaters (including the mainstem and tributaries upstream of the confluence with Tabbs Creek). The EA incorrectly states that there are "no records [of harperella] in the mainstem of the Tar River downstream of Fishing Creek" (EA-p.48). In fact, surveys for this project located a population just downstream of the proposed discharge location, and this metapopulation is part of the only natural (and best) population of harperella in NC. The Service does not agree with the claim that the rise in flows due to the discharge "will have negligible impact on the river's hydrograph and is unlikely to adversely affect the Harperella plants" (EA-p.55). The recovery plan for the species states that it is extremely sensitive to fluctuations in water levels (USFWS 1990), and it has not been adequately demonstrated that the fluctuations caused by the discharge would in fact be negligible.

The Service feels that the cost analysis presented in Section 6.1 of the PER is inadequate. In our comments on the BA, we detailed our concerns about the design and operation of the plant as they relate to impacts to listed species, and we also detailed the necessary considerations to help mitigate those impacts (e.g., treatment levels for several of the constituents, contingency planning, watershed protection, etc.). Those considerations have not been factored into the analysis, and therefore conclusions about the true cost of the proposed project are inaccurate. This is important because it affects the cost component of alternatives analyses and there are alternatives with less impact to listed species.

Significance of Natural Resources in Upper Tar River watershed

The significance of the rare species and their habitat in the Upper Tar River is under-emphasized in both the EA and PER. In fact, the PER claims that "all of the natural areas and natural communities are located outside of the project area" (PER-p.6). There is no indication of the Upper Tar River Significant Natural Heritage Area (SNHA) or the Wilton Slopes SNHA in either the EA or PER, and neither the Upper Tar River SNHA nor the rare species locations are provided in Exhibit 5 or any other map/exhibit. As mentioned previously, the Upper Tar River is one of the most highly significant sites in NC for aquatic biodiversity (NCNHP 2013), and omitting it from the discussion leads to incomplete impact assessment and inaccurate conclusions about impacts to the aquatic system. This inaccuracy may be a result of using old NCNHP data (references in the EA/PER indicate data were from 2004). The Service believes that a more recent review of data, as well as more detailed project area maps, would allow for a better review of the overall impacts to rare species and habitats.

Apparent inconsistencies between Creedmoor and Southern Granville Water and Sewer Authority (SGWASA)

There are several discrepancies that are presented in the EA and PER that need to be resolved. These include: 1) how SGWASA will meet Stage 1 and Stage 2 of the Falls Lake nutrient rules,

and whether they will have the capacity to continue to treat Creedmoor's wastewater, 2) what are the limits of technology for nutrient reductions, and 3) whether or not SGWASA has the capacity and willingness to meet Creedmoor's future sewer needs.

Both the EA and PER claim that in order for SGWASA to comply with Stage 1 nutrient limits by 2016 and Stage 2 limits by 2036, "SGWASA would [only] be able to operate its wastewater treatment system at significantly lower average daily flows…than the currently permitted flow" (EA-p.1; PER-p.1). We would offer that reducing flow is not the only way to reach these limits, and that additional treatment options (e.g., tertiary treatment via membrane filtration, reverse osmosis, activated carbon adsorption, wetlands, etc.) do exist. Regardless of tertiary treatment options, SGWASA has presented information (in their EA comment letter, 17 January 2013) that they currently maintain levels that already comply with some of the nutrient limits, and it is currently undergoing an upgrade in the existing system to further reduce nutrients in the existing discharge. Furthermore, on pages 2-3 and in the attachments to their comments, SGWASA presents the argument that they can continue to treat Creedmoor's wastewater, despite Creedmoor's assertions otherwise (EA-p.14).

The limits of technology presented in the EA and PER are 3.0 mg/l TN and 0.2 mg/l TP. However, SGWASA has indicated (in their comments on the EA, 17 January 2013) that those limits are "no longer the lower sustainable limits for conventional treatment system[s]. The new limits that are sustainable are 2.0 mg/l TN and 0.1 mg/l TP." Apparently these levels of treatment have been reached at existing WWTPs in NC.

The PER states: "Considering the intent of the Optimization Plan and Facilities Analysis and Reuse Evaluation to optimize plant performance in terms of reduction in nutrient discharge levels in effluent and reduction in quantity of effluent discharge by implementing all viable levels of effluent reuse, SGWASA will not be able to entertain acceptance of any more wastewater flow from the City of Creedmoor and the City will be required to evaluate alternative options for its long term wastewater treatment and disposal need" (PER-p.43). Further conclusions of SGWASA's inability to meet Creedmoor's future needs are presented in the EA (pp.6, 8, 12 and 14). In their comments on the EA (17 January 2013), SGWASA claims that they "can serve all the citizens of southern Granville County for at least the next 20 years with the proposed Wastewater Treatment Plant Improvements that have already been approved for funding and construction."

These apparent inconsistencies must be resolved. The result of this clarification could ultimately help solve Creedmoor's wastewater needs, and thus possibly alleviate the need for the proposed project. At a minimum, resolution of the discrepancies is needed for an accurate and transparent alternatives analysis.

Water Quality Concerns

The Surface Water Quality section of the PER (p.66) claims that "the proposed project…will have minimum direct impacts on the Tar River water quality" yet the Tar River (including the river segment from Fishing Creek to the Granville/Franklin County line) is classified as "Nutrient Sensitive Waters" (NSW) (EA-p.59). The EA notes that "biologically or chemically impaired waters (303(d) listed waters) identified… include… upper Fishing Creek near Oxford. Problems noted in these stream segments include low biological diversity (benthos or fish), low dissolved oxygen, high fecal coliform bacteria, high turbidity, and elevated copper and zinc levels" (EA-p.58). Fishing Creek joins the Tar River upstream of the proposed discharge location, therefore there may be existing water quality issues that need to be addressed before another wastewater discharge is added to the system. And, despite its "benign" appearance, the "clear, odor-free, non-foaming effluent, disinfected with UV light" may still contain chemicals at concentrations that are harmful to aquatic species. The description of the BNR type wastewater treatment plan in the PER (pp.60-63) should include explicit details on how effluent constituents of concern to freshwater mussels (e.g., ammonia, copper and other metals, or organic compounds from pharmaceuticals and household products) would be treated/processed.

The Service believes that adding 56% (and up to 100% at times) effluent to the system may directly impact surface water quality in the Tar River at Cannady Mill Road. The EA correctly notes that "the WWTP effluent limits assigned by DWQ are calculated to meet NC water quality standards and protect most forms of aquatic life. Because this river segment supports endangered species, the speculative limits issued in 2010 may need to be adjusted if these species are found to require more stringent limits to ensure adequate protection" (EA-p.56). Note that our comments on the BA (USFWS 2013, pp.4-6) indicate what those more stringent limits should consider. Also note that NCDWQ has not yet issued speculative limits for the proposed discharge location. While the PER (p.54) "anticipate[s]…better assimilative capacity and subsequently… lesser stringent effluent limits," the Service cautions that assumptions of greater assimilative capacity (EA-p.20) may be erroneous. The proposed location is downstream of the confluence of Fishing Creek which already receives permitted effluent discharge from Oxford's 3.5 MGD WWTP. Further, mixing and assimilation of waste effluent are not possible during extremely low flow events. The EA indicates that 27-56% of the instream flow will be comprised of effluent when the proposed WWTP is operating at full capacity however, there is no discussion of the concentration of effluent during extreme low flow events (i.e., those flow periods below the 1.4cfs 7Q10 estimate). As mentioned by the Pamlico-Tar River Foundation (comment letter on BA, 25 January 2013), calculated effluent concentrations would be greater than 56% for 19% of the time, given calculations derived from the 5-year span from 2007-2012. This poses a considerable direct threat to sedentary species (i.e., species that cannot readily move out of the way), like freshwater mussels.

In addition, the Service would like to point out that this area of the Tar River basin has been considered under efforts by NCDWQ to develop sites-specific management strategies under the provisions of 15A NCAC 2B .0225 or 15A NCAC 2B .0227. The Service encourages dialogue

with NCDWQ as they consider their obligations under 15A NCAC 2B .0110 for procedures to assign water quality standards with considerations for federally-listed threatened or endangered aquatic species, and how this project fits in with their planning and regulatory efforts in the Tar River basin.

Based on the aforementioned water quality issues, it appears that nearly all of the warnings identified in Step 1 – "Determine if the proposed discharge will be allowed" of NCDWQ's Engineering Alternatives Analysis (EAA) Guidance Document (NCDWQ 2005a) would indicate potential restrictions to a wastewater discharge to surface waters at the proposed Cannady Mill Road crossing.

Tar-Pamlico Basin Association (TPBA) Membership

The ES and PER should contain additional information about how Creedmoor became a member of the TPBA, and how the logistics of acquiring "unused" nutrient allocations were figured out. None of the documentation about the transfer of nutrient allocation is provided in Appendix III of the PER. The PER (p.57) indicates these should be available, but they are not included in the document. According to Phase III of the Tar-Pamlico Nutrient Sensitive Waters Implementation Strategy (NCDWQ 2005b, p.7), under Table 1, Section III- Association Members there is an indication that there was a permanent removal of the sole industrial discharge from National Spinning. It is not clear in the Phase III document that this discharge would be made available for future allocation.

Interbasin Transfer (IBT) Issues

The EA and PER should contain additional information provided on all potential interbasin transfers that the City plans to engage in. The PER indicates that "initially the water flow to be transferred [from the Neuse basin to the Tar basin] is less than 2 MGD and therefore IBT is not required" (PER-p.71), however the PER also indicates that "construction of the treatment units should be arranged in logical stages with flexibility so that future upgrading and/or expansion can be implemented at lower cost" (PER-p.59). While it is true that the initial request for 1.15 MGD is under the 2 MGD threshold for an IBT certificate, it appears that future expansions of the wastewater infrastructure are planned. Furthermore, it appears that Creedmoor plans to obtain up to 2 MGD of water from the Roanoke basin via Oxford (NCDWR 2009). This additional need for water will likely result in an increased need for more wastewater discharge capacity.

It is not clear whether the NC Division of Water Resources (NCDWR) would allow an interbasin transfer into a Nutrient Sensitive Watershed. The PER states that "the project area lies in the Nutrient Sensitive Falls Reservoir watershed and discharging of effluent into the Tar River will have beneficial impacts on the water quality of the Falls Reservoir, a Nutrient Sensitive Water in Neuse River Basin" (PER-p.66). What the PER fails to discuss is that the Tar River is also a Nutrient Sensitive Water, and this project would result in simply moving nutrients from one NSW to another. Despite receiving nutrient allocation through the TBPA, details of this