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TESTIMONY OF DR. STEVEN DANZER, PhD

I am Steven Danzer, principal and founder of Steven Danzer PhD and Associates LLC, a wetlands and natural resource consulting firm located in Stamford, Connecticut. My CV is attached to this pre-filed testimony for your reference.

I have been retained by the Intervenor in this docket to review the Application and provide testimony on the application of Homeland Towers and New Cingular Wireless PCS, LLC ("Applicant") to construct a proposed cellular tower facility near Old Stagecoach Road in Ridgefield, Connecticut.

I have provided testimony before the Connecticut Siting Council on behalf of Intervenors before, including a relatively recent matter on behalf of the City of Danbury. I am a soil scientist, a professional wetlands scientist, a professional in erosion and sedimentation control, a CT Licensed Arborist, and a municipal wetlands agent. I have extensive experience as an environmental planner for the Town of Stratford, as an environmental analyst for the Town of Greenwich, as a consulting expert for the City of Danbury Environmental Impact Commission since 2002, and have conducted independent expert reviews on behalf of several other municipalities including Newtown, Hamden, West Hartford, Westport, Norwalk, and Greenwich.

I am very familiar with the eco-region of northwestern Fairfield County due to my experience on behalf of the City of Danbury, and due to my professional work during the course of my career on behalf of numerous private clients for sites located throughout the Town of Ridgefield and adjoining northern Westchester County.

My review of the Application materials and various databases reveals the following concerns and issues regarding the Environmental assessment statement and the bog and box turtle mitigation plan:

1. The Application does not adequately analyze bog turtle habitat, nor consider the implications of suitable habitat occurring in proximity off site.

The bog turtle is a federally endangered species whose habitat is found at or near the proposed site. The US Fish & Wildlife Service has promulgated a Recovery Plan specifically for the bog turtle. The Recovery Plan is a 109-page document which can be found at http://www.fws.gov/northeast/nyfo/es/bogturtle.pdf. The habitat of the bog turtle described on p.12:

" Bog turtles inhabit a variety of wetland types throughout their range, but generally these are small, open-canopy, herbaceous sedge meadows and fens bordered by more thickly vegetated and wooded areas Throughout the bog turtle's northern range, seepage or spring-fed emergent wetlands associated with streams are the primary habitat (S. Smith, in litt. 2000). These are often at or near the headwaters of streams or small tributaries. "

Furthermore, geology is also important to defining the extent of bog turtle habitat. Suitable bog turtle habitat consists of calcareous (containing calcium carbonate, calcium, or lime) wetlands.

The site is on the southwestern exposure of Ridgebury Mountain, in the Titicus watershed, a tributary of the Croton Watershed. This watershed is identified in the Recovery Plan as within the Housatonic/Hudson Recovery Unit (p38), (p42). This recovery unit is noted for having an extant population of bog turtles, especially in areas that are underlain with calcareous sediments. The Titicus River system was noted in the CT DEEP NDDB letter as an area of concern as well.

A review of the bedrock geology map from CT ECO (http://www.cteco.uconn.edu) indicates that calcareous sediments are located within relatively close proximity to the site.

The site is roughly 2900 feet from Lake Naraneka, which is listed on the geology map as being underlain by schist derived from marble (i.e. derived from calcareous sediments), a geology relatively rare in Connecticut.

The site is also roughly 1000 feet from Shadow Brook, a river that serves as the outlet to Lake Narameka. According to the geology map this river system is underlain by schist derived from marble (i.e derived from calcareous sediments). Shadow Brook flows westerly into a wide floodplain, where it eventually is underlain by marble (i.e. a calcareous sediment).

Site hydrology is also important to defining the extent of the habitat. Page 13 of the Recovery Plan, quoted below, discusses the significance of site hydrology on habitat:

"All New England bog turtle sites drained directly into a riparian system. In addition, Lowenstein (in fitt. 2000) noted that at several Massachusetts, Connecticut, and New York-bog turtle sites, "hydrology is driven by extensive recharge from high bedrock ridges, with such recharge temporarily stored by stratified glacial drift deposits on the lower slopes of the ridges and then gradually discharged to wetlands below that include bog turtle sites."He noted that this hydrologic system could be affected by changes in imperviousness and water withdrawal extending for more than a mile from wetlands inhabited by Bog Turtles."

Within the application materials, the discussion of site hydrology is insufficient with regard to potential bog turtle habitat. The discussion is limited to the immediate site environment only, and does not include mention or consideration of the greater landscape context, nor potential hydrological impacts to off site habitat.

2. By neglecting the landscape context, the Application is in conflict with the Recovery Plan.

The Recovery Plan identifies the neglect of landscape context during the review process as an actual threat to bog turtles and their habitat, as stated on p.21 (emphasis added).

"Inadequacy of Existing Regulatory Mechanisms

This threat is closely tied to loss of habitat. It is the inadequacy and conflicting nature of regulations and screening mechanisms that, in many instances, are failing to halt the loss of bog turtle habitat. The actions of a multiplicity of federal, state, and local agencies that deal with land-use and development issues often have competing purposes, resulting in the incremental loss and destruction of bog turtle habitat as well as the larger, dynamic ecosystems upon which the mosaic of wetlands used by bog turtles depend. **Review of site-specific projects and permit applications frequently does not fully consider their landscape scale cumulative impacts**."

Furthermore, the Recovery Plan, p. 13, states (emphasis added):

"…Moreover, the Recovery Plan anticipates precisely the kind of inexact documentation which derives from heavy reliance on the CTDEEP Natural Diversity Data Base….Screening mechanisms and environmental reviews that use the presence/absence data contained in various state Natural Heritage data bases are often confined to the point of occurrence, **without considering connected or adjacent habitat**, resulting in approval of projects that do not take into account the potential occurrence of bog turtles or other rare species…"

Regarding the state's NDDB program, page 29 of the Recovery Plan notes that (emphasis added):

"States vary in their effectiveness in incorporating ecosystem and landscape-scale factors in project reviews….All states except Massachusetts and Pennsylvania employ this most critical conservation factor less than half the time. **Connecticut and New Jersey rarely include these factors in their reviews**…"

By neglecting consideration of the greater landscape context, and relying solely on site specific mitigation (as encouraged by the approach of the NDDB), without first analyzing landscape patterns, the Application suffers from some of the very shortcomings warned about in the Recovery Plan.

The Application defines only the conditions within the limited confines of the subject site without any additional larger context, other than conclusory statements. For example, Appendix

A of the Recovery Plan defines Conservation Zones for the bog turtle. The Application fails to delineate any of these zones.

According to Appendix A of the Recovery Plan, the zones which should be delineated in any adequate review of impact are:
Zone 1 – the wetlands themselves,
Zone 2 – 300 feet of upland buffer, and;
Zone 3 – out to .5 miles out from Zone 2 – Activities in these areas have the potential to adversely affect bog turtles and their habitat. Activities occurring within this zone should be carefully assessed in consultation with USF&WS.

The Application also proposes a number of activities which pose a potential for degradation of the habitat such as road construction involving substantial cutting and filling and the use of heavy machinery in an area which has not fully been characterized with respect to potential impact pathways. The Application provides no evidence that the Recovery Plan methods are being employed at this location. A mitigation plan is offered, but it is founded upon insufficient site characterization (as documented above).

Furthermore, the Recovery Plan (p45) specifies an outline of Recovery Tasks for the bog turtle. The Application, providing insufficient detail (including but not limited to the lack of delineation of the Conservation Zones), conflicts with several of these tasks.

Task 1.3 (p45, p51) specifies:

"Avoid and minimize direct and indirect adverse effects to bog turtles and their habitat….Of critical importance is evaluating the potential direct and indirect effects of projects proposed to occur in wetlands and/or in upland areas adjacent to bog turtle habitat…"

Task 6.3.3 (p.45, p.60) specifies:

"Identify methods to prevent adverse hydrological changes to bog turtle habitat, and restore hydrology at altered sites…Also worthy of investigation aer storm water management practices that would minimize direct ("point-source") discharge to wetlands and maximize site recharge and pre-development runoff patterns."

Task 1.2 (p45, p 50) specifies the need for projects like this to be compatible with larger planning initiatives such the Recovery Plan:

"Improve the effectiveness of regulatory reviews in protecting bog turtles and their habitats, specifically to address agencies working at cross purposes when permitting activities in wetlands. Partnering and gaining trust among organizations will be extremely important to ensure a successful recovery program. However, agencies at various levels of government often have competing purposes. Although some of these issues may be addressed at the local level, there needs to be better interagency coordination at the higher tiers of government, especially between those federal and state agencies that affect wetlands through project implementation (e.g., state departments of transportation, water allocation authorities, sewer system permitting authorities), those that permit wetland encroachments (e.g., Army Corps of Engineers, state wetland regulatory agencies), those that work with agricultural interests (e.g., Farm Bureau, NRCS), and those charged with resource protection (e.g., Environmental Protection Agency, U.S. Fish and Wildlife Service, state wildlife agencies)."

In conclusion, by insufficiently characterizing the habitat and therefore the potential for environmental impact, it is my opinion the Application fails to provide the Council with an adequate basis to determine whether the bog turtle is being protected adequately. Moreover, by failing to adequately analyze landscape level dynamics, the Application suffers from many of the shortcomings warned about in the Recovery Plan, and therefore conflicts with the objectives of the Recovery Plan.

3. The application materials provided does not address the potential for the Northern Slimy Salamander, a Connecticut listed Threatened Species.

The Northern Slimy Salamander, an upland salamander, is found within this region. The CT DEEP website characterizes their habitat as "Steep, moist, rocky slopes in mature, second growth deciduous or hemlock forests; rotting logs and a thick layer of leaf litter should be present". In Danbury it has been long assumed that this salamander exists whenever habitat is suitable, and I

have recommended surveys on similar sites located nearby, during application reviews on behalf of the City of Danbury. The mitigation plan does not address this potentiality, nor has the site plan been designed to consider and/or avoid the existence of these salamanders, if habitat is found suitable.

Respectfully submitted,

Dr. Steven Danzer
April 16, 2014