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May 31, 2022

Town of Cromwell
Cromwell Inland Wetlands & Watercourses Commission
Town Hall
41 West Street
Cromwell, CT 06416

RE: PRELIMINARY APPLICATION REVIEW
“Proposed Warehouse Facility,” Scannell Properties, LLC
210 Shunpike Road, Cromwell, CT

REMA Job #: 22-2499-CRO49

Dear Chairman Whitney and Commissioners:

At the request of the Intervenor, REMA ECOLOGICAL SERVICES (“REMA”) has been asked to review the plans and other supporting documentation for an application for a 1,042,849 square foot warehouse on a 250-acre property in Cromwell, in the Mattabesset River watershed.

The application materials reviewed include, but are not limited to:

- 1) A 17-sheet set of plans dated 5/3/22 prepared by Langan Engineering & Environmental Services, Inc. (Langan).
- 2) Wetland Assessment Report, dated May 2022, prepared by All Points Technology
- 3) Third Party Review by Land Tech, with responses, dated May 25, 2022.
- 4) Application, 210 Shunpike Road, dated 5-3-22.



We have reviewed the application for completeness and consistency with the Town's Inland Wetlands and Watercourses Regulations, based on Sections 22a-36 to 45 of the Connecticut General Statutes. We were not able to observe the site first hand, but hereby request permission of the applicant to do so. We found the application to be thorough in several areas, namely the vernal pool study, but deficient in data and analysis in other important regards.

1.0 PROJECT OVERVIEW

Scannell Properties, LLC seeks a permit from the Cromwell Inland Wetlands and Watercourses Commission, to fill 21,054 square feet (0.51 acres) of regulated wetlands, including a highly productive vernal pool for spotted salamanders and assorted other aquatic wildlife (i.e., Vernal Pool 7). A permit is also needed for 195,253 square feet of encroachment within the 100-foot upland review area (URA). Impacts to the 200-foot URA of multiple vernal pools will total 272,445 square feet. Direct permanent impacts of 1,387 square feet are required for the entry road crossing of a perennial stream corridor (Wetland 4) parallel to Shunpike Road. The crossing will be a 16-foot wide open bottom box culvert.

The site includes a major complex of vernal pools and forested wetlands traversed by three perennial watercourses, all tributaries to the Mattabesset River. Off-site forested wetlands immediately to the east and to the north are ecologically and hydrologically connected to this wetland ecological system. The footprint of the rectangular warehouse building will be 23.94 acres. There will be associated parking, stormwater facilities, mitigation earth-work, and a very long 36-foot wide entry road from Shunpike Road (almost half a mile to the west). Parking will consist of 518 spaces for trailers, 369 car spaces, and 163 loading docks.

2.0 APPLICATION INSUFFICIENCIES

2.1 ANALYSIS OF IMPACTS TO ECOLOGICAL INTEGRITY OF VERNAL POOL COMPLEX

Appropriate data was collected on the vernal pools, including two years of egg mass counts and information on maximum water depth and hydroperiod. However, impacts to the vernal pool complex as a whole, were not adequately analyzed. Connectivity among pools is key for long term sustainability; it allows recolonization after local extinctions, and creates a



large, genetically diverse metapopulation, able to adapt in response to ecological change. Unfortunately, this application calls for filling of Vernal Pool 7, located approximately midway between Vernal Pool 4 and Vernal Pool 6. This pool was excavated about 70 years ago, as an irrigation pond. It is deep, with highly successful spotted salamander breeding, and serves as a reservoir for recolonization of other pools with less reliable hydroperiods. Distances between Vernal Pool 7 and the two nearest pools are about 700 to 800 feet, which falls within the migration range of spotted salamanders. However, post-construction the connection between Pools 4 and 6 will be severed, occupied by the massive facility and adjacent pavement. The fact that this is an interconnected complex of vernal pools, raises its ecological and functional value to an unusually high level, with statewide and regional significance.

Of grave concern is the nearly half mile-long, 36-foot wide long entry road, which will impede connectivity between multiple pools in the northwestern and north-central portion of the site. It will increase mortality, not only for recently metamorphosed amphibians, but also for an important suite of vernal pool predators: garter snake, water snake, ribbon snake, spotted turtle, painted turtle, and Eastern box turtle. These species are all active during daytime, and vulnerable to roadkill, as are wood frogs.

Conversion of open habitat into wooded habitat, as terrestrial mitigation, is expected to result in loss of needed nesting and basking habitat for these reptiles, which prey on tadpoles, and are an important component of a balanced vernal pool food web, which helps maintain good water quality in the pools.

The dry soil conditions in the 100-foot envelope of Vernal Pool 7 were cited as a drawback, lessening the impact of its loss. This is certainly the case for wood frogs - which barely breed in the pool (a single wood frog egg mass in 2022), but not for spotted salamanders.

2.2 INCOMPLETE WETLAND AND URA CHARACTERIZATION

Only one component of the on-site wetlands has been adequately characterized: amphibian breeding pools. Stream corridors and wooded swamps/shrub swamps have been mapped but not characterized or inventoried. Cromwell's inland wetland regulations do call for ecological characterization of wetlands. We note that one of the undersigned reviewers, that



is, George Logan, helped conduct a town-wide inventory and functions and values assessment of all wetlands in Cromwell in the late 1980's, providing all these characterization elements. This readily available data and analysis should have been consulted and part of the application. Moreover, the town-wide study mapped all of the wetlands within the municipality, at a much higher accuracy than the typically used USDA-NRCS Soil Survey mapping. At a minimum a comparison between this higher resolution mapping of wetlands and those provided by the applicant should have been undertaken.

The application lacks narrative or descriptive information on the three perennial stream corridors, including instream habitat, bank condition, aquatic fauna and riparian vegetation: Wetlands 4, 5, and 8. The multiple wooded swamps areas (including Wetlands 12, 6, and 3) have also not been characterized, in terms of plant diversity, vegetation structure, herbaceous diversity, proportions of seasonal versus semi-permanent flooding, clearings, semi-permanent seepage areas, and invasive status.

2.2.1 Areas most Vulnerable to Air Pollution Fallout

The wetland areas with the most diverse plants and aquatic insects would be most vulnerable to toxic /teratogenic compounds in air pollution fallout from diesel truck traffic along the entry road; a 100 foot swath on both sides of a road, has been found to be subject to the highest fallout concentrations. Roadside buffer plantings of dense evergreens, also serving as noise abatement, could be warranted in some areas, but without baseline vegetation data, such as an assessment cannot be accomplished. We note that mugwort-infested portions of the former nursery would not be vulnerable to toxicants in air-pollution fallout.

2.2.2 Need for Reference Data for Wetland Mitigation

Especially when substantial forested wetland creation and terrestrial mitigation is proposed, planting plans and grading for the mitigation wetlands should be based on nearby reference wetlands, including the plant species composition, vegetation structure, and other physical/hydrologic characteristics. Species already present on the site are likely to do well on the soils at the site and support existing insects. The same limited list of woody species (3 trees, 2 open site shrubs, and 4 forest shrubs) is proposed for each terrestrial enhancement and the upland roadside matrix seed mix consists mostly of herbs of dry, open habitats. The New England Wetmix is an expensive "shotgun mix" of many species adapted to different



light and hydrologic regimes. Native seed vendors will also provide custom wetland seed mixes with a small number of species that are actually found in a comparable reference wetland.

The fauna occupying a large forested ecosystem such as this one is closely tied to the flora the flora, for example insects with obligate host plants. The USACE functions and values assessment methodology calls for lists of both fauna and flora.

2.2.3 Need for Wetland Functions and Values Characterization

Without detailed wetland characterization data, and some data on the URAs, it is not possible to properly assess wetland functions and values, using the set of rationales provided for each function. Even if the full detailed forms are not filled out, a substantive narrative needs to describe the wetland characteristics that influence each function.

2.2.4 Planning Project Layout

This data should also have been part of the planning process for the project layout. Direct impact for a road segments or parking area are more appropriate for portions of upland review areas with a concentration of invasive species, than those with high understory diversity or a high proportion of diameter large trees.

2.2.5 Invasive Data to Minimize On-Site Invasive Spread

Project notes do call for washing trucks arriving at the site, to remove invasive propagules, and they caution against using infested soil. However, there is no mention of collecting approximate baseline information as to existing locations of invasive concentrations, which is important for planning mitigation work. Such infestations should not be allowed to set seed. Construction vehicles should not drive through dense infestations, as their tires will pick up invasive seeds and rhizome fragments. The soil with dense mats of invasive rhizomes or seed banks can be excavated and buried on areas of existing site disturbance. Such depressions could be used as wetland creation areas or replaced with clean topsoil from under the proposed warehouse before planting and seeding. The former nursery was reported to be infested with mugwort (*Artemisia vulgaris*), which is very difficult to control



with herbicide. The dense mugwort areas should have been mapped. Soil and rhizomes in those areas would be best excavated.

2.2.6 Lack of Characterization of Terrestrial Mitigation Sites

Almost three (i.e., 2.79) acres of terrestrial mitigation is proposed in non-forested, open areas, but very little information is provided as to the existing vegetative cover in these areas. Many wildflowers with high pollinator value are early colonizers of bare soil. So are grasses and forbs of with high seed production, of value to birds; rare plant species with poor competitive ability; and seedlings of nearby trees and woody vines in the forest. Some terrestrial areas in the 100-foot URA will be less suitable than others for conversion to wooded habitat. Each terrestrial habitat area should be roughly mapped, and vegetation to preserved should be noted and flagged. Also, as discussed above, reptile predators of vernal pools need open habitat. During vegetation surveys, the remains of turtle nests, or basking snakes are often observed.

2.3 DELAYED RARE AND LISTED SPECIES ASSESSMENT

The application states that the NDDDB rare species survey is in progress and that assessment will be forthcoming, but does not provide the CTDEEP list of the target NDDDB rare species. It makes reference to the usual protection measures for rare herptiles often found on Connecticut sites, but these differ depending on the species.

In fact, NDDDB information is very important for project planning and design. For example, if spotted turtle (*Clemmys guttata*), a wetland-dependent (CT Special Concern) species, is present on this site, it needs to be able to move overland among multiple vernal pools, and streams, feeding in different ones in succession. Spotted turtle travels during daylight hours and is very vulnerable to roadkill, such that the proposed entry road becomes a major issue.

We are also aware of a recent smooth green snake (*Opheodrys vernalis*) (CT Special Concern) record nearby in Rocky Hill. If this snake is on the CT NDDDB list for this site, terrestrial habitat mitigation should also include areas with meadow cover types and long term meadow maintenance plan



A localized rare plant population may be found, often not a species on the CTDEEP NDDDB list. It would be avoidable, if its location is known prior to site plan and road alignment finalization.

The large acreage of open land at this site increases the likelihood of rare grassland birds such as kestrel, savannah sparrow, meadowlark; also, of rare butterflies associated with field habitat, especially now that it is fallow. They would likely colonize cropland areas planted with hay grasses. Leaving substantial areas as managed field habitat would be an appropriate design goal, especially if any birds in this suite of rare species have been observed in the vicinity.

Regardless of rarity, the open field habitat supports a suite of raptors, both hawks and owls, according to residents along Geer Street. By controlling white-footed mouse populations, the raptors prevent high densities of deer ticks (Lyme disease carriers) in the larger vicinity. This is a largely public health and Planning & Zoning issue, but Lyme disease does affect wildlife, including wetland-dependent wildlife, as well as humans. Dense tick populations do reduce wetland functions and values for example Recreational Value for trail users in Watrous Park, including forested wetlands, just east of the site.

2.4 INCOMPLETE MITIGATION IMPLEMENTATION NOTES

The proportions of target cover types, seasonal windows for seeding and planting, and the duration and all the components of follow-up care are not provided in the wetland mitigation implementation notes. Will it continue for three years after the year of installation? Sufficient detail on invasive control methods are lacking, just the statement that herbicides will be used to control invasives.

Will invasive seedling pulling and cut-stump treatment be used to reduce the volume of herbicide use? Will the more selective triclopyr (Garlon) herbicide be used so as not to harm graminoid species? Will competing weeds be pulled or cut, and will invasives be controlled, throughout the entire wetland and terrestrial mitigation areas? Will watering as needed be done throughout the first growing season? These questions, at a minimum, would need to be addressed.



3.0 CONCLUSION

Aside from the substantial direct adverse impacts to wetlands and vernal pools, this project will diminish the ecological integrity of the overall wetland complex. Insufficient data was collected to formulate a plan that minimizes adverse impacts; the plan lacks data on wetland characteristics, (other than vernal pools), rare species, and on-site invasive species distribution. It also fails to provide enough detail on follow-up measures, to provide reasonable assurance of success for the proposed mitigation. In our professional opinion, as currently proposed, there is a reasonable likelihood that the proposal will result in unreasonable impacts to regulated wetlands and watercourses.

Respectfully submitted,

Rema Ecological Services, LLC

A handwritten signature in black ink that reads "Sigrun N. Gadwa". The signature is written in a cursive style.

Sigrun N. Gadwa, MS, PWS
Ecologist, Professional Wetland Scientist
Registered Soil Scientist

A handwritten signature in black ink that reads "George T. Logan". The signature is written in a cursive style.

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