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Town of South Windsor
Inland Wetlands Agency
Town Hall
1540 Sullivan Avenue
South Windsor, CT 06074

RE: UPDATED REPORT AUGUST 12, 2025
WETLAND EVALUATION PREPARED FOR:
90 OAKLAND ROAD ASSOCIATES LLC
PROPOSED RESIDENTIAL DEVELOPMENT
"ESTATES AT 100 OAKLAND ROAD"
100 OAKLAND ROAD
SOUTH WINDSOR, CONNECTICUT

Dear Chairperson Kelly and Commission Members:

I am the Soil Scientist of record for the proposed residential development to be constructed at 100 Oakland Road in South Windsor. I completed the delineation of the jurisdictional wetland and watercourse boundaries on the Project Site in October of 2024. On behalf of the Applicant, I have completed an updated site evaluation to describe the existing on-site wetlands and ecological community, provided a wetland function and value analysis, and I have reviewed the current plans to provide a wetland impact assessment. I also coordinated efforts with the design team to minimize environmental impacts associated with the proposed regulated activities while maintaining the holistic functions and values of the wetland resources. I offer the following comments for the Town of South Windsor's Inland Wetland Agency (IWA) consideration related to assessing impacts to the regulated areas.

Proposed Activities

The Applicant is proposing the development of two adjoining parcels a, 12.89± acre lot located at 15 Peterson Way and a 21.51± acre lot at 100 Oakland Road, in South Windsor. The development includes the clearing of existing vegetation and infrastructure to facilitate the construction of a 69-unit Estate dubbed the "Estates at 100 Oakland

Road". The development is specially designed for Senior citizens, The community-oriented layout of the Estate incorporates common areas throughout the site with associated appurtenances and site improvements in the form of concrete walks, retaining walls, site lighting as required, sanitary sewer pumping station, a bridge and associated stormwater best management practices (BMP's).

The site development envelope will encompass approximately 20-acres and will fully utilize the upland areas available, with the bulk of the development concentrated on the east side of the project site. To access the development the project will install a 60-foot bridge to span (*the maximum span size available*) the wetlands/brook that flows through the middle of the site. The project will introduce a new robust stormwater management system to renovate stormwater from impervious surfaces. The site will be serviced by public water and sewer. An erosion and sediment control plan has been developed for the site to mitigate short term construction related impacts. A landscaping and dark-sky compliant lighting plan is included as part of the final site restoration following construction.

Due to the position of the regulated wetlands proximal to the proposed construction of the bridge will result in the nominal permanent filling of approximately 1,182 SF, which will be replaced in the newly created wetland area totaling 5,324 SF; over a 4:1 ratio. Additionally, there will be temporary wetland disturbance of 3,702 SF of wetlands that will be replaced in situ. The proposal will mitigate this wetland impact by creating an additional 4,141 SF of wetland than what currently exists by converting an adjacent upland area into a mitigation wetlands and will include planted wetland vegetation that will beneficially help mitigate impacts by providing a high functioning self-sustaining wetland system.

For more information, please refer to the subject site plans prepared by Design Professionals, Inc. and dated June 3, 2025, as amended.

General Site Description

The +/- 32-acre project site is characterized as an undeveloped forested parcel. There is an existing residential development at 15 Petersen Way that is excluded from the survey/project area. There are two additional dwellings at 90 and 100 Oakland Road (both which will be removed) located in the southern extent of the project site. The site will be accessed from Route 30. The site is located between Ellington Road (intersection of Petersen Way & Rte. 74) and Oakland Road (Rte. 30). New Wapping Cemetery borders the west side of the site and the Scott Road neighborhood; a single-family residential subdivision abuts the eastern side of the site. The site is within walking distance of town.

The project site was previously partially farmed, with fields located in the northern and eastern extents of the property. A tobacco barn was previously located in the northeast corner of the site through the 1950's as illustrated on Connecticut Department of Energy and Environmental Protection (CTDEEP) Air Photo Archive (1934, 51, 70 & 90's Air Photos available on-line). Post agricultural abandonment, the fallow agriculture fields

have reverted into a patchwork of early pioneer field habitat in various stages of re-growth succession. As such the forest understory could generally be described as a monoculture stand of Burning Bush (*Euonymus alatus*), infilled with other various invasive shrub and vine species including but not limited to Honeysuckle species, bittersweet, and Japanese barberry. These are similar conditions to the land behind the South Windsor Town Hall which has undergone extensive invasive shrub removal.

Generally, the site drains to the middle of the site where there is a notable unnamed intermittent watercourse that flows south to Oakland Road. The watercourse historically was impounded at several locations, all of which have long been breached. The relic farm ponds have reverted into vegetated wetland systems as described below.

Wetland and Watercourse Description

The site drains to the center of the property where there is a deeply incised unnamed intermittent watercourse that flows south towards a culvert at Route 30 bifurcating the site into two development envelopes, creating one upland area west of the brook where there is a white pine forest and one larger contiguous upland area in the east of the Brook where there is a mixed hardwood forest (Predominately Maples and Oaks) with dense understory of burning bush shrubs. The watercourse forms the main body of the regulated wetland feature and is classified as a highly eroded intermittent watercourse particularly in the upper reaches where the topography is steeper and the soils are silty making them highly susceptible to erosion. The flagged wetlands cover approximately 4.37-acres or 13.5% of the overall site.

At the time of my field delineation in October 2024 the watercourse was for the most part dry with exception of the lower segments near Oakland Road, which are still somewhat impounded from the relic foundations of a dam which used to impound the brook creating a series of farm ponds throughout the drainageway, which can be seen on archival air photos dating back to the 1930's, 50's and 70's. The dam is breached, and those impounded areas have revegetated by two separate, but equally notable monoculture stands of Japanese knotweed (located above the proposed bridge) and a Phragmites patch (located below the proposed bridge). Additionally, along the southern boundary of the site is a wetland finger that is comprised of two drainage outlet structures that issue from storm culverts originating from the Scott Road neighborhood and discharge onto the southeast corner of the site. Both of these drainage features extending from the Scott Road subdivision are highly eroded and in need of inspection and likely repairs.

The remainder of the property consists of a mixed hardwood upland forest, with a heavy near monoculture stand of burning bush that thickly vegetates large patches within the forest shrub stratum. Efforts to clear the understory of burning bush have been on-going and have improved site conditions.

The wetland community of the flagged wetlands includes the following noted wetland vegetation species:

Trees: Cottonwood, Sycamore, Silver Maple, Red Maple.

Shrubs: Burning Bush, Honeysuckle, Dogwood, Common Winterberry, Spicebush, Multiflora Rose, Japanese barberry.

Herbaceous: Knotweed, Phragmites, Skunk Cabbage, False Hellebore, Tussock Sedge.

The above is not an exhaustive list, but a sample of commonly encountered vegetation that characterizes the on-site wetland community.

Watershed

The site is located within the Podunk River Subregional Drainage Basin (4004). The unnamed watercourse is a tributary to Plum Gully Brook.

Soil Types

The soils identified on-site are a refinement of the Natural Resources Conservation Service (NRCS) Websoil Soil Survey. The on-site soils formed from parent material that consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits.

Wetland Soils

The wetlands soils are classified as Saco silt loams. These very poorly drained soils occur in level outwash areas of sands and gravels and are found on the broad flat areas where tributaries spread out, deenergize, and allow fine-textured sediments and organics to accumulate creating mucky conditions.

A typical soil profile along the wetland boundary consists of approximately 3"-0" of intermediately decomposed organic material (Oi), followed by 0"-6" of a thick dark topsoil horizon (A), underlain by 6-18" of a wet weakly developed grayish subsoil horizon (Bg) with common redoximorphic features (Common medium distinct strong brown mottles, masses) ranging from fine sandy loam to very fine sandy loam. This subsoil is underlain by a saturated sandy loam to fine sandy loam gray substratum (2Cg).

Upland Soil

The upland soils were not examined in great detail except as necessary to delineate the wetland boundary which is very well-defined. The majority of the upland soils in center of the property and in the southern half are mapped and characterized as belonging to the sandy gravel Manchester soil complex. These well-drained soils consists of sandy loams mixed with gravel and are generally well suited to support development projects.

The soils in the northern undeveloped wooded portion of the site are mapped primarily as Tisbury and Narragansett silt loams. These fine textured soils are associated with perched high seasonal water tables and slow permeability in the upper silty horizons underlain by rapidly draining sands and gravels that are fee-draining underneath the subsoil. Generally, these soils are well suited to support development projects.

Lastly, minor inclusions of man-made Udorthent soils can be found along the peripheral of the property where disturbances from adjacent developments have encroached.

Rare Species Habitat

Consultation with the Connecticut Department of Energy and Environmental Protection Natural Diversity Data Base program (December 2024 mapping) indicated that the site does not contain any historic records of state-listed species at or nearby the subject site. Due to the extensive invasive vegetation the ecological integrity of the forest is degraded. However, the development will provide opportunities to improve the wetland corridor habitat and will introduce a landscaping plan that includes pollinator gardens, wildflower seed mixes, native shrubs and trees and rain gardens, all of which will be beneficial to wildlife habitat.

VERNAL POOL EVALUATION

I have been on-site throughout various times of the year including the peak vernal pool breeding season from the end of February through the beginning of May. Over the course of many site investigations extending from 2024 through June 2025 I found no evidence of facultative or obligate vernal pool organisms such as but not limited to wood frog, spotted salamander, fairy shrimp or fingernail snails on-site. It is my professional opinion that on-site wetlands are too shallow and ephemeral and do not hold water deep enough or for a duration long enough to provide viable vernal pool habitat and/or sustainable a vernal pool populations.

Wetland Functions and Values

The assessment of wetlands and watercourses functions and values is based on the US Army Corps of Engineers' (USACE) *The Highway Methodology Workbook, A Descriptive Approach* (1995) methodology, and on best professional judgment.

The functions and values of the wetland corridor is summarized in Table 1. The *Highway Methodology* recognizes 13 separate wetland functions and values. The degree to which a wetland provides each of these functions is determined by one or more of the following factors: landscape position, substrate, hydrology, vegetation, history of disturbance, and size. Each wetland may provide one or more of the listed functions at significant levels. The determining factors that affect the level of function provided by a wetland can often be broken into two categories. The effectiveness of a wetland to provide a specified function is generally dependent on factors within the wetland whereas the opportunity to provide a function is often influenced by the wetland's position in the landscape as well as adjacent land uses. For example, a depressed wetland with a restricted outlet may be considered highly effective in trapping sediment due to the long residence time of runoff water passing through the system. If this wetland is located in gently sloping woodland, however, there is no significant source of sediment in the runoff therefore the wetland is considered to have a small opportunity of providing this function.

Wetland Functions and Values	Groundwater Recharge/Discharge	Sediment/Shoreline Stabilization	Floodflow Alteration	Fish & Shellfish Habitat	Sediment/Toxicant/ Pathogen Retention	Nutrient Removal/Attenuation	Production Export	Wildlife Habitat	Recreation	Educational/Scientific Value	Uniqueness/Heritage	Visual Quality/Aesthetics	Listed Species Habitat
WETLAND #1	P	U	S	U	P	P	S	P	U	U	U	U	U

Suitability
P = principal function
S = secondary function
U = function unlikely to be provided at a significant level
N/A = not applicable or unknown

Table:1 Wetland Functions and Values

The wetland system provides groundwater discharge and recharge at the principal level. Generally, the wetlands are high gradient with exception of where the farm ponds once impounded the watercourse creating topographic benches providing some low gradient (i.e., will have longer retention times) conditions having a man-made constricted topographic outlet, which helps attenuate and retain runoff from the steep hillside. These former ponded areas provide a wetland area that improves water quality by retention and renovation through the thick growth of wetland plants and organic based soils. Other functions and values are limited due to the narrow confines of the wetland, prolific growth of invasive species reducing the ecological integrity of the wetlands, and private ownership of the site.

The planned mitigation and enhancement plantings will be densely vegetated with new wetland shrubs and emergent vegetation which would enhance sediment trapping and pollutant attenuation capabilities (effectiveness). The holistic functions will be re-created with the better performance of the mitigation wetland. Additionally, the development will provide new passive recreation opportunities which will increase the socio-economic value of the wetlands.

Wetland Impact Evaluation

Due to the requirements of the development and the juxtaposition of the wetland resources, crossing the wetland in the middle of the site. The crossing location was chosen to reduce both direct wetland and overall environmental impacts. The project is proposing to use the widest available span and located the crossing site at a narrow point

in the wetland system which was previously disturbed by creation of an earthen dam that previously impounded the stream.

The construction of the bridge will result in the permanent filling of approximately 1,182 SF of on-site wetlands. This impact will be mitigated by creating a new wetland replacement area adjacent to the existing wetland. The new mitigation area will provide an opportunity to create a better functioning wetland system through the introduction of a diverse and thickly vegetated wetland in conjunction with the overall stormwater design. In total, the mitigation package to off-set impacts will include a combination of newly created wetlands and mitigated wetlands for a total of 5,324 SF of a new self-sustaining well-functioning wetland system.

Short term impacts will be mitigated with standard construction best management practices and adherence to the erosion and sediment control plan. The development respects the watershed hydrology and will not direct discharge to the wetland features. The proposed site plan includes an erosion and sedimentation control plan designed following the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control. Silt fencing, anti- tracking pads, temporary sediment basins, traps, and other E&;S measures are proposed to control sediment from construction activities.

For the overall site restoration and maintenance of the property the project will follow the protocols promulgated by the Connecticut Invasive Plant Working Group (CIPWG). The removal methods may include excavation, smothering with black plastic /tarp, and/or targeted herbicide treatments. The removal of invasive species will commence with construction activities.

All runoff from proposed impervious surfaces will be conveyed to one of three water quality infiltration basins and 1 underground storage unit for detention and treatment. All contributing flows from proposed roadways will be treated via a hydrodynamic separator prior to discharging to the infiltration basins. Two infiltration basins are proposed along Oakland Road. They will accept all the runoff collected on the west side of the watercourse. The other infiltration basins and underground infiltration system will be located on the east side of the watercourse and will accept runoff from the bulk of the development. GEI conducted extensive geotechnical investigations across the site to demonstrate and validate the site's suitability for stormwater management and constructability.

The stormwater management system has been designed to match pre and post development peak stormwater runoff rates up to a 100 year storm event. The site has been designed so there will be no increase in runoff from the proposed development. In accordance with Stormwater Management Standard 1 of the 2024 Connecticut Stormwater Quality Manual, the proposed water quality basins were designed to detain over 100% of the determined WQV for the areas draining to them as required. Lastly, rain gardens are also proposed at the front of each unit. No credit was taken for the storage volume provided in each rain garden, but the areas were considered as shrubs in the lieu of grass in determining the curve number for the watersheds.

The project engineer has certified for the record that the proposed stormwater management system as discussed herein and shown on the referenced plans is appropriate for the proposed development on the subject site, is consistent with Town and State requirements, and should not pose any detrimental impacts to the surrounding stormwater conditions.

The proposed activities are not likely to have a significant effect on the environment for the following reasons:

1. The proposed activities will mitigate impacts, so the project does not substantially change the natural channel or negatively inhibit the natural dynamics of the wetland system.

2. The proposed activities will be mitigated and therefore will not diminish the capacity of the wetland. The wetland creation and replacement areas will provide a functional wetland system.

3. The erosion and sediment controls will protect the environment from the proposed activities and if appropriately installed, monitored and maintained will not likely cause or have the potential to cause substantial turbidity, siltation or sedimentation in a wetland or watercourse.

4. The proposed stormwater treatment system will collect and renovate stormwater quality generated from the site development and therefore is unlikely to cause or have the potential to cause pollution of the wetland.

5. The wetland features are not unique, nor do they provide demonstrable scientific or educational value.

The activities required to facilitate the development will provide an opportunity to increase the size of the on-site wetland features. Post development the newly created wetland will have increased performance over the existing wetland functions currently provided. As a result, environmental effects will be minor, temporary, and highly localized. A final site restoration plan will include a landscaping plan that has been coordinated to match the adjacent properties.

In considering feasible and prudent alternatives, the current proposal respects the integrity of the environment, provides meaningful mitigation to offset minimal wetland impacts to a pre-disturbed portion of the wetlands, and implements best management practices that will protect the adjacent resource areas. It is the most feasible and prudent alternative for the development of this property, giving due consideration to balancing the protection of the inland wetlands and watercourses while fostering reasonable development and use of the site as a professional commercial / industrial business as intended for this development zone.

In my professional opinion there will be no significant adverse impacts resulting from the redevelopment of the project as currently proposed. The design has minimized wetland impacts by:

1. Providing wetland mitigation
2. Providing and maintaining erosion and sediment controls during construction.
3. Providing stormwater management and treatment.
4. Commitment to adhering to permit conditions and construction industry standard BMPs.
5. Compliance with all regulatory standards.

If you have any questions or comments, please do not hesitate to contact me at itcole@gmail.com or (860) 514-5642.

Sincerely,

Ian T. Cole
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Professional Wetland Scientist #2006