Carya Ecological Services, LLC

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April 17th 2026

Received
APR 20 2026
Derby, CT Town Clerk's Office

City of Derby Planning and Zoning Commission
City Hall
1 Elizabeth Street
Derby, CT 06418

Re: Need for an Inland Wetlands Commission Review of the Proposed Summit Hill Extension Residential Subdivision on Telescope Mountain

Dear Commissioners:

Carya Ecological Services (CARYA) has been asked by the neighbors to the site of the proposed quarry and subdivision to explain why this application must go before the Inland Wetlands agency, before an application is submitted to the Planning & Zoning Commission. SLR's Engineering review of the Rose-Tiso Stormwater Analysis was submitted to the City prior to the October 8th, 2025 Inland Wetlands Public Hearing on this matter, and it raised multiple serious issues. CARYA had also been prepared to testify at that meeting, which did not take place, due to SLR's findings. Carya has reviewed the plan set prepared by Rose, Tiso, and Associates for the current proposal, dated 3-5-26 and the Site Engineering Design Report dated 3-3-26.

Note that a project falls within the jurisdiction of an Inland Wetlands Commission *if it will result in harmful discharges into the wetland, or if a needed water supply is reduced, not* just if there is a proposed activity within the limits of the wetland or the upland review area.

The excavation plan for this application is nearly identical to the plan submitted in Fall 2025. l Again a large hillside stormwater basin is proposed in shallow-to bedrock soil at the south end of the project, upgradient of the linear wetland adjacent to Coon Hollow Road. The linear, slopebase wetland is again vulnerable to discharge from the South Basin. A level spreader (52 linear feet) will discharge overflow towards the Summit Hill entry road, which is fifty feet upslope of the wetland. There are still no test pits under the south basin, and infiltration is expected to be negligible due to shallow bedrock. Poor basin drainage and frequent overflows are expected to result from back-to-back rain events and from clogging of soil pores by stone dust, from the extensive quarrying operation. The stormwater narrative does not address the expected flow path of discharge from the level spreader or

the extent to which overflow will reach the wetland, versus the street drainage system under differing conditions. CARYA observed severe soil erosion below the outfall structure into the wetland close to the mailboxes, from an existing pipe that passes under the road (not shown on the plan.)

It is clear that the proposal includes a massive quarrying operation, from the proposed and existing contours and the elevation of the rear cliff. Because a large volume of rock is to be removed, the Sedimentation & Erosion plan should, but does not, include the details of best management practices including flocculants and rigorous phasing. Multiple specialized controls are needed to minimize stone dust pollution of air and water resources, including the Housatonic and Naugatuck Rivers, as well as the linear western wetlands.[1] Pollutant concentrations in road runoff will increase on city streets as well as on the site due to the high volume of truck traffic needed for the quarry operation, also adversely impacting watercourses. The SLR review covered deficiencies in water pollution attenuation by stormwater BMP's, which remain issues. There is already evidence of wetland degradation down-gradient of the existing outfall from the entry road into Summit Commons. The wetland has been colonized by Phragmites. Note that the southern section of the linear wetland functions at a lower level than the northern part, upgradient of the road crossing. During construction of the south basin, will dump truck traffic use the entry road into Summit Commons?

In late summer of 2025 Carya found out, through field Investigations and laboratory soil analyses that the wetland on the north side of the Summit Commons entry road has three feet of peat (black soil with 16% organic matter, and low nutrient status) based on the UConn soil analysis. This wet meadow wetland is ~230-foot-long, and 8-10-foot-wide. It supports a stand of uncommon bulrush: *Scirpus polyphyllus*. This type of organic matter build-up occurs only when a wetland receives a steady supply of groundwater discharge, not just occasional inputs of surface runoff. Proposed grading is expected to deprive the interesting and sensitive peat wetland of the steady water supply it needs. Of concern is the proposed grading in the proposed open space area on the upper western hillside, which will redirect runoff and seepage: southerly rather than westerly, towards the peat wetland.

In the northern portion of the residential project, rock removal will extend up to 100 feet westerly from the ridge crest, onto the west-facing and west-draining slope, eliminating that portion of the wetland's watershed. This is not mentioned as part of "Existing Conditions" in the drainage narrative. Excavation of the broad level summits will also reduce infiltration into the crevices and fissures that characterize the metamorphic rock on

[1] A wedge, about 650 feet wide, will be removed from the east-facing hillside, leaving a forty to fifty-foot cliff on the west side. For example, at station 10.75, a local summit is 297.2 feet. At this location, the elevation of "pad" for the proposed homes is about 240 feet, and the top of the cliff is 280 feet. A rough estimate of volume of rock to be removed is roughly about 650,000 cubic yards (about 50.000 dump truck loads. depending on truck size)

Telescope Mountain. The thick peat deposit in this wetland is evidence that such crevices convey seepage water to the base of the western slope. Depriving a wetland of its water supply is an adverse impact under the jurisdiction of the wetland commission. Note that the bank-top strip of tall invasive Japanese Knotweed along Coon Hollow Road helps maintain the low nutrient status of the central, linear wet meadow because this species efficiently assimilates excess nutrients and converts them to biomass. However, the swale itself is too wet for the Japanese knotweed.

As in last fall's application the current plans include no map (with boundaries) showing the limits of drainage areas under existing conditions (Sheet C1 is inadequate).The lower corner of the site that currently drains southeasterly is also ignored in the drainage narrative and unmapped/unmodeled. Tree-clearing on the southern site perimeter will worsen local flooding long-term in addition to increasing air temperatures and decreasing air quality along the base of the mountain. There will be less desynchrnoization of flooding from moisture storage in the forest soils, and within bedrock cracks - for slow, later release, and to sustain lower hillside vegetation during droughts .

Respectfully submitted,

Sigrun N. Gadwa

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

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iculum vitae

Curriculum vitae

Sigrun N. Gadwa, MS, PWS

Ecologist/Botanist/Wetland Scientist

EDUCATION: M.S., Plant Ecology, University of Connecticut, Storrs, CT, 1997. B.A., Biology, Brown University, Providence, R.I., 1975.

Continuing Education

16 credit hours in Soil Science and Geology, 1993 – 2001
University of Connecticut, Storrs
Five Plant Pathology courses, Cook College, Rutgers University, New Brunswick, N. J. 1978 - 1979
Graduate Phycology course. Pan American U. Brownsville, Texas, 1982
Arboriculture course, Quinnipiac College, Hamden, CT, 1984
CT DEEP training workshop Series: Rapid Bioassessment Techniques, & Stream Ecology Workshops. Bethany.1996 & 7.
Marking, Measuring & Planning Turtle Surveys. H. Gruner, CT Science Museum, workshop for QRWA Turtle Crossing Program. 1998.
Riparian Buffer Function, Performance & Limitations. Urban Riparian Buffers Conference & Technical Training Session. April 1999.
Sedimentation and Erosion Control Review Session. USDA Natural Resource Conservation Service and CPESC (Certified Professionals in Erosion Control), Concord, NH, September, 2001.
Freshwater Mussel Workshop. New Hampshire Department of Environmental Conservation. August 2004.
Moss Identification & Ecology,1-week course; Eagle Hill Institute. 2019
Grass Identification In Depth: 1-we ek course: Eagle Hill Institute 2025

CERTIFICATIONS: Registered Soil Scientist,
Society of Soil Scientists of Southern New England since 2001
Certified Professional Wetland Scientist
Society of Wetland Scientists since 2001

EXPERIENCE: As a plant ecologist Ms. Gadwa inventories, assesses, photographs, and monitors ecological communities, often in support of open space

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acquisition initiatives and Town NRI's (Natural Resource Inventories). She plans & guides control programs for invasive plants and conducts surveys for rare, Connecticut-listed plant and turtle species. Botanical specialties include vascular plant identification and winter botany. She is experienced with third party reviews of development projects, assessments of functions & values, delineation of wetland and watercourse jurisdictional boundaries (CT and U.S. Army Corps of Engineers), planning wetland mitigation and restoration, vernal pools studies, water quality testing and data analysis, and in-stream bio-assessments.

Curriculum vitae: *(continued)*

Sigrun N. Gadwa, MS, PWS

Ecologist/Botanist/Wetland Scientist

EMPLOYMENT HISTORY:

1999 to present **Carya Ecological Services, LLC, Principal**
Ecological and wetland assessments, botany & habitat inventories, Vegetation planning. CTDEEP surveys for rare plants and turtles.

Recent **Carya** clients include the Berlin Land Trust, Hamden Land Conservation Trust, Town of Groton, Town of Colebrook, Avalonia Land Conservancy, East Lyme Land Trust, Black & Veatch for the Town of West Haven, Mumford Cove Association, Town of Colebrook, SCS Bethmour Rd., and private landowners.

1999 to present **Carya Ecological Services, LLC, Principal,** *subcontractor* to **Rema Ecological Services**, LLC, Vernon, CT, an environmental science collaborative; Ecological fieldwork, planning, reporting, and expert testimony.

2015 to 2022 **Post University, Waterbury Campus**
Adjunct Professor of Botany & Ecology.

2013 to 2018 **K & W Construction,** Southbury, CT, *subcontractor* Erosion & Sediment Control Inspections, Turbidity testing for CT DEEP

2014 to 2019 **South Central CT Regional Water Authority,** New Haven, CT Responsible for long term vegetation monitoring each fall, and reporting for compliance with CT DEEP Wellfield Diversion Permit.

2001 to 2004 **CT DEEP Wildlife Division,** *subcontractor*
Vegetation and wetland inventories & mapping of large Wildlife Management Areas (WMAs).

2003 to May 2016 **Ships' Hole Farm Partnership,** Smithtown, Long Island, NY Responsible for vegetation management & invasive control; growing seed of native species on family farm, advised turtle monitors.

1995 to 2000 **Quinnipiac River Watershed Association Meriden, CT** Executive Director/Staff Scientist
Led botany hikes and a volunteer monitoring program, including stream bio-assessments, turbidity

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testing, and bird/turtle surveys; site plan
reviews of projects impacting the watershed; wrote testimony, grants, publicity, and educational materials; liaison with officials. Chair of Habitat Work Group of the **Watershed Partnership**, which identified and documented Quinnipiac watershed habitats in need of protection or restoration until 2003.

Curriculum vitae: *(continued)*

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EMPLOYMENT HISTORY: (continued)

Coordinator for **QRWA Turtle Crossing** monitoring program for Eastern box & wood turtles, which continued until 2018. Instructed citizens on preparing detailed accurate record forms for the Natural Diversity Database. Outreach on turtle behavior through the seasons, habitat usage, & conservation needs. > 50 records.

1991 to 1995 **De Leuw-Cather, Inc.,** East Hartford, CT
Environmental Planner/Field Ecologist
Field data collection, analysis, & report preparation, mostly for high-way projects; specialties included listed plant searches, assessment of wetland functions, mitigation design, & wetland delineation (ACOE method).

1987 to 1991 **Univ. of Connecticut Department of Civil Engineering,** Storrs, CT Wetlands Researcher
Part of an interdisciplinary team, studying man-made replication wetlands and natural reference wetlands. Took part in research design; collected vegetation, soils, & hydrologic data; literature searches; data analysis. Research used for wetlands mitigation-related manual for the Connecticut Department of Transportation and for master's thesis.

1974 to 1975 **Brown University,** Providence, RI
Teaching Assistant, Plant Systematics

1968 to 1975 **Long Island Nature Conservancy,** Stewardship Volunteer Nature trail development & maintenance, botanical inventories, wrote preserve descriptions & self-guided nature trail brochures.

PROFESSIONAL AFFILIATIONS:

Connecticut Botanical Soc. (Board Member, Chair of Ecology & Conservation Committee)
Connecticut Invasive Plant Working Group (CIPWG)
Connecticut Association of Wetland Scientists
Society of Soil Scientists of Southern New England
Connecticut Ornithological Society
Connecticut Entomological Society
Ecological Society of America
Connecticut State Board of Landscape Architects (Public Member) Native Plant Trust (PCV -

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Plant Conservation Volunteer Program)

Curriculum vitae: *(continued)*

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PUBLICATIONS: Lefor, M.W. Barklay, J.S. Cooke, R.S. Craig, S.N. Gadwa, T.S. Murray, April 1990. *Annotated Bibliography for Wetland Mitigation.*

August 1990. *Patterns of Herb Layer Species Association.* In Lefor, M.W. et al *Wetland Mitigation: Interim Report* No. CT-RD-JHR-90-8, The Transportation Institute, Storrs, Conn. 97 pp.

1994. *Forests.* In Chesanow et al. *Trails.* The Cheshire Land Trust and the Cheshire Environment Commission, Cheshire, CT 96 pp.

May 1995. *Wetland Mitigation: Botany.* Volume 1 of 6. Lefor, M.W. and S.N. Gadwa. Report No. JR95-241. Dept. Civil Engineering, Joint Highway Research Council, Transportation Institute, Storrs, Conn. 259 pp.

December 1997. *Plant Colonization Processes and Patterns along Shorelines of Man-made Mitigation Basins in Relation to Reproductive and Life History Traits.* MS Thesis. Dept. Ecology & Evolutionary Biology. Univ. of Connecticut, Storrs, CT. 181 pp.

River Resources Education Series, Quinnipiac River Watershed Association, Meriden, CT. May 1995 *New Haven Oysters;* June 1996 *What Good are Streamside Woods?* August 1996 *Taking a Close Look at Streamside Woods;* June 1997 *Foraging in the Quinnipiac Estuary;* March 1998 *Stream Bio-surveys* (G.T. Logan & S. Gadwa) ; September 2000 *Muddy Waters.*

Logan, G.T. & S.N. Gadwa. *Quinnipiac River Watershed Assoc. Stream Study.* Water Quality in the Quinnipiac River. Proceedings of a Symposium on the Impact of Nonpoint Source Pollution in the Quinnipiac River Watershed, pp. 66-70.

October 2000. *A Report on the Water Quality of the Quinnipiac River.* M. Tyrell, C. Cappannari, D. Galt, S. Gadwa, L. MacMillan, R. Walters. Report to the Steering Committee of the Quinnipiac River Watershed Partnership. Q.R.W.P. Water Quality Workgroup, New Haven, CT. 19 pp.

Winter 2003. *Management of Invasive Plants: On-Site Open Space Management.* The Habitat 15(2):3-4 Connecticut Association of Conservation and Inland Wetland Commissions, Inc.

Spring 2003. *Management of Invasive Plants: Protecting Open Space and Wetlands, Tools for Land Use Boards and Town Staff.* The Habitat 15(3):4-5. Connecticut Association of Conservation and Inland Wetland Commissions, Inc.

July 2003. Interpreting Quinnipiac Songbird Surveys: Effects of Landscape Setting on Avian Community Composition. *The Connecticut Warbler.* 23(3): 81- 114.

Curriculum vitae: *(continued)*

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PUBLICATIONS, cont. :

June 2004. *Connecticut Turtles of Special Concern.* Quinnipiac River Watershed Association. 4-page pamphlet. (illustrations by Tony Ianello)

Fall 2005. S. N. Gadwa. *Preliminary Assessment of the Habitat & Historic Resources in North Cheshire, West of Route 10 & Recommended Protection Measures.* Cheshire Land Trust & Quinnipiac Watershed Partnership.

October 2011 S. N. Gadwa & G.T. Logan. *The Scientific Basis for Wetland & Watercourse Buffer Zones.* 23 pp. White Paper. Rema Ecological Services, LLC.

Spring 2014. Sigrun N. Gadwa. *The Invasive Threat to Connecticut's Upland Critical Habitats.* 3pp. Connecticut Botanical Society Newsletter 41: 1.

Spring 2020. Sigrun N. Gadwa. *Gabbro Habitats in Southeastern Connecticut.* Connecticut Botanical Society Newsletter 47: 1.

Fall 2020. Connecticut Botanical Society Ecology and Conservation Committee. *Recommendations for Electrical Utility Right-of-Way Vegetation Management* . See also website: www.caryaecological.com.

WORKSHOPS & SA Mid-Atlantic Chapter Symposium, Blacksburg Virginia CONFERENCES

Lessons for Mitigation Design from Shoreline Seedling Colonization (selected): Patterns April 12-14. 2012. *(Poster presentation based on MS thesis)*

New England Invasive Plant Summit, Framingham Massachusetts: Wetlands permitting – a potentially powerful tool to control invasive plants. September 19-20. 2003. (*Poster Presentation).*

Environmentally Sensitive Development along the Ten Mile River. Riverside Landscaping Conference. June 1998. Rivers Alliance of CT. (*Guest Lecturer*)

Water Quality in the Quinnipiac River: A Symposium on the Impact of Non-Point Source Pollution in the Quinnipiac River Watershed. Nov. 1998. *(Presenter)*

October 2014. Documenting and Conserving Eastern Box Turtles in Central Connecticut: 19 years of Citizen Monitoring. Berlin Land Trust and Nature Center. Evening Membership Program. (*Guest Lecturer)*

October 2016 Connecticut Invasive Plant Working Group (CIPWG) Symposium, UConn College of Agriculture, Health, & Natural Resources. *Artemisia vulgaris* (Mugwort): Overlooked Infiltrator of Meadow Habitats. *(Poster Presentation, with Todd Mervosch, PHD.*) .

March 21, 2026. CT Land Conservation Council Conference. Landscaping and Restoring with Native Plants. *(Workshop Presenter, with Gail Reynolds.)*

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