



**John A. Acampora**  
**Managing Shareholder**  
(t) 203.467.7337  
(f) 203.468.7865  
jacampora@uks.com

formerly practicing as  
**COHEN & ACAMPORA**  
established in 1937

January 25, 2021

Town of North Haven  
Inland Wetlands Commission  
Memorial Town Hall  
18 Church Street  
North Haven, CT 06473

***Re: IWC Application No.: 120-06***  
***The Slate Upper School***  
***5100 Ridge Road***  
***North Haven, CT***

Dear Chairman Bumsted and Commissioners:

In advance of the IWC Hearing scheduled on January 27, 2021. Please be advised with reference to the above captioned matter, the undersigned represents adjoining property owners with the exception of Gary de Simone and Elizabeth Knope who are represented by Attorney John A. Parese. In addition to submissions made by Attorney Parese, find enclosed herewith 14 copies of a Memorandum of excerpts from the North Haven Plan of Conservation and Development. In addition, we are also submitting 14 copies of an overlay (24''x 36'') of the site plan provided by the applicant depicting proposed development of the site showing areas of disturbance and impervious areas in addition to the 100 foot non-disturbance line requested by the Town of Hamden and the 200 foot upland review area from the Town of Hamden Wetlands Regulations.

We would be happy to provide any additional information upon request.

Very truly yours,  
UPDIKE, KELLY & SPELLACY, P.C.

By   
John A. Acampora

**Updike, Kelly & Spellacy, P.C.**

8 Frontage Road ■ East Haven, CT 06512-2101 (t) 203.467.7337 (f) 203.468.7865 [www.uks.com](http://www.uks.com)



**John A. Acampora**  
Managing Shareholder  
(t) 203.467.7337  
(f) 203.468.7865  
jacampora@uks.com

formerly practicing as  
**COHEN & ACAMPORA**  
established in 1937

## Memorandum

To: Inland Wetlands Commission  
From: John Acampora – Updike, Kelly & Spellacy, P.C.  
Date: January 25, 2021  
RE: IWC Application No.: 120-06  
The Slate Upper School  
5100 Ridge Road  
North Haven, CT

Please find attached 14 copies of excerpts from North Haven Plan of Conservation and Development, Adopted July 24, 2017. This submission is being made as an exhibit by opponents to the application for the public hearing scheduled for January 27, 2021.

1. Introduction: North Haven's Plan of Conservation and Development
2. Transportation, Infrastructure, and Community Facilities
  - a. Sewer Service, see as highlighted on page 33
  - b. Impervious surfaces, see as highlighted on page 36
  - c. Traffic Impact on Neighborhood specifically Outer Ridge Road, see as highlighted on page 37
  - d. Protect Town's Character, Scenic Road, specifically Outer Ridge Road, see as highlighted on page 38
3. Natural and Historic Resources and Open Space
  - a. Natural Resources Summary, see as highlighted on page 40
  - b. Where We're Going: Goals and Strategies, see as highlighted on page 49
4. Energy and Sustainability
  - a. Low Impact Development (LID), see as highlighted on page 53
  - b. Impervious surface reduction, see as highlighted on page 54
5. Action Agenda and Future Land Use Plan
  - a. See Pertinent highlighted items on Pages 55, 60, 61, 62, 63, 64, 66 and 67
  - b. Plan Consistency: Plan consistent with Connecticut General Statutes, Chapter 126, Section 8-23, see as highlighted on page 70
  - c. Growth Management Principles, see as highlighted on page 71

**Updike, Kelly & Spellacy, P.C.**

8 Frontage Road ■ East Haven, CT 06512-2101 (t) 203.467.7337 (f) 203.468.7865 [www.uks.com](http://www.uks.com)

North Haven  
Plan of Conservation and Development  
2017-2027



Adopted: July 24, 2017

Effective: September 1, 2017

*Prepared by:*



## Acknowledgements

### **Planning and Zoning Commission and TPOCD Steering Committee**

Vern E. Carlson, *Chairman*  
Ronald Penton, *Vice Chairman*  
Curtis D. Andrews Sr., *Secretary*  
James J. Giulietti  
Theresa Ranciato-Viele  
Edward M. Homa, *Alternate*  
Richard E. Wilson, *Alternate*  
Joseph M. Solimene, *Alternate*

### **Town Staff**

Alan Fredricksen, *Land Use Administrator*  
Jonathan Bodwell, P.E., *Town Engineer*  
Lynn Sadowski, *Director of Public Works*

### **North Haven Economic Development Commission**

Richard LoPresti, *Chairman*

### **Office of the First Selectman**

Michael Freda, *First Selectman*

**Consultant: Milone & MacBroom, Inc.**

# Contents **(Note: chapter headings are hyperlinks)**

Introduction: North Haven's Plan of Conservation and Development .....	4
Planning Process .....	4
Action Agenda, Future Land Use Map, and Plan Consistency .....	5
Chapter 1: Demographics and Housing .....	7
Where We Are.....	7
Where We're Going: Goals and Strategies .....	11
Chapter 2: Land Use and Zoning .....	13
Where We Are.....	13
Where We're Going: Goals and Strategies .....	20
Chapter 3: Economic Development .....	22
Where We Are.....	22
Where We're Going: Goals and Strategies .....	26
Chapter 4: Transportation, Infrastructure, and Community Facilities.....	29
Where We Are.....	29
Where We're Going: Goals and Strategies .....	35
Chapter 5: Natural and Historic Resources and Open Space.....	40
Where We Are.....	40
Where We're Going: Goals and Strategies .....	49
Chapter 6: Energy and Sustainability .....	52
Where We Are.....	52
Where We're Going: Goals and Strategies .....	54
Chapter 7: Action Agenda and Future Land Use Plan.....	55
Action Agenda.....	55
Future Land Use Map.....	69
Plan Consistency .....	70
Appendix A: Statistical and Geographical Context .....	72
Demographics .....	72
Housing .....	85
Land Use.....	87
Transportation and Community Facilities.....	90
Natural Resources and Open Space.....	98
Regional Recreational Trail Mapping Project (SCRCOG, 2016).....	102
Appendix B: Survey Results.....	107

## Introduction: North Haven's Plan of Conservation and Development

The Town of North Haven is a thriving suburban community in the Greater New Haven area. With accessible transportation linkages to New Haven, Hartford, and points beyond, North Haven enjoys a strong and diversified economic base; convenient residential neighborhoods; and easy access to commercial, educational, historic, and open space amenities.

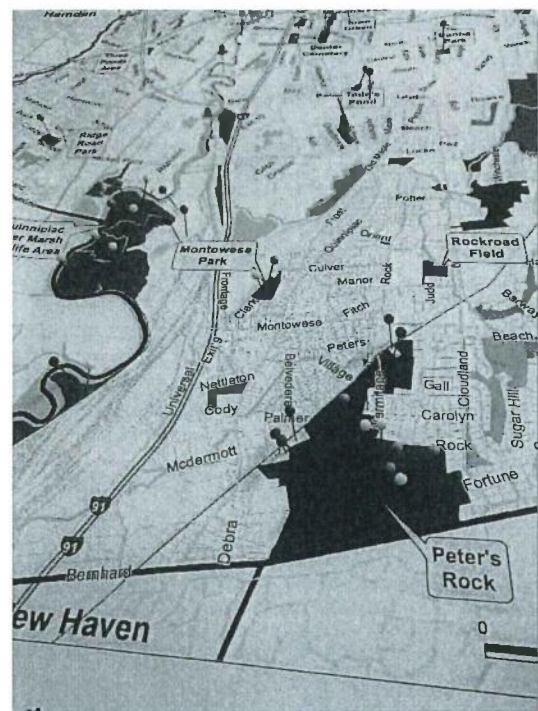
The purpose of this Plan of Conservation and Development (POCD) is to set forth an official account of the conditions in the municipality and to put forward the goals and aspirations of the community for its future land use, development, and environmental conservation. The plan includes information on the community's demographics, housing stock, public infrastructure, schools and community facilities, open space and recreational lands, and other resources and assets. Likely future trends in the size and composition of the community's population and how the impacts of those trends may be felt across the community are also outlined in the plan. Lastly, it lays out goals and strategies for how the town's features should be improved, maintained, or adapted over the coming decade and beyond and provides direction for both public and private development and conservation efforts.

This plan is an update to North Haven's previous POCD, which was prepared in 2005. Chapter 126, Section 8-23 of the Connecticut General Statutes requires municipal planning commissions to prepare and adopt a POCD once every 10 years and for the plan to address key aspects of the town's conditions, policies, and goals.

### Planning Process

In fall 2015, the North Haven Planning and Zoning Commission, in conjunction with consultant Milone & MacBroom, Inc., began preparing the foundation of data and analysis for the planning effort to follow. In line with the previous POCD, the initial phase of the planning process involved the development of a series of seven reports on the existing conditions in place across the community. Reports were presented to the Planning and Zoning Commission on the following topics:

- Existing land use
- Demographics and housing
- Zoning and underutilized land/buildout analysis
- Economic development
- Transportation, community facilities, and infrastructure
- Natural and historic resources and open space
- Sustainability



Outreach throughout the community was an important component of the planning process. In May 2016, a public workshop was held at the North Haven Community Center to present research and

information on all major elements of the plan and to gather feedback from the public on issues, ideas, and opportunities that should be addressed in the plan.

To broaden outreach for the POCD to those who may not have been able to attend the workshop, the planning team also developed a community survey addressing many of the same questions, with particular attention to neighborhood-level issues, as well as providing opportunities for respondents to weigh in on issues such as North Haven's sense of community, transportation and housing options, schools, and recreation facilities. The results of this survey were presented to the Planning and Zoning Commission and are summarized in Appendix B of this plan.



The plan is built around a set of goals and objectives that present a clear and concise direction to guide future development and redevelopment in a manner that is consistent with state and regional land use plans. These goals and objectives reflect past town plans, new information collected and analyzed throughout the planning process, topical reports presented during the POCD Update process, existing land use patterns, future projections, and community input. These goals and objectives will serve to guide North Haven's development and conservation activities over the next 10 years and beyond.

The POCD and its associated Generalized Land Use Plan serve to guide the Town's future conservation and development efforts as an advisory or policy-guidance document. Key to the successful implementation of the Plan is continued maintenance and updates of North Haven's Zoning and Subdivision Regulations, which directly implement many of the visions, goals, and policies described in this Plan.

#### Action Agenda, Future Land Use Map, and Plan Consistency

The POCD's most important and forward-looking element is the Action Agenda, which lays out concrete steps forward that will advance North Haven's collective goals and vision, as identified through the planning process, over the coming decade and beyond. The goals and strategies laid out in the Action Agenda are intended to build on the community's strengths, address current problems, and anticipate future needs. The Action Agenda includes measures to promote development and grand list growth, provide for changing housing needs, preserve and enhance open spaces for recreation and environmental protection, provide efficient mobility and improve transportation options, and promote sustainability in the town's operations.

The Action Agenda is presented in two formats in this plan. Each of the following topical chapters concludes with a list of Action Agenda items relevant to that section of the POCD, providing a compact list of goals and strategies relevant to a particular topic for stakeholders with an interest in that area. Many goals and strategies cut across multiple areas of the plan and may appear multiple times in these

topical sections. Chapter 7 presents the Action Agenda in a unified format, providing a comprehensive list of all recommended goals and strategies contained in the plan.

The Future Land Use Plan presented in Chapter 7 is a graphical illustration of how the Action Agenda is envisioned to be implemented in terms of land uses across the community. This map depicts current land uses envisioned to continue in place as well as areas suitable for particular types of development, redevelopment, reuse, or protection.

Just as North Haven exists in the context of the greater New Haven region and the state as a whole, its POCD also exists in the context of broader planning efforts for coordinating land use, housing, natural resources, and transportation across the state and region. The Plan Consistency section reviews the South Central Regional Council of Governments (SCRCOG) Regional Plan of Conservation and Development and the State Conservation and Development Plan and confirms this POCD's consistency with these documents.



Major public facilities across the town include the following:

- Educational facilities including four elementary schools (Green Acres, Clintonville, Montowese, and Ridge Road), North Haven Middle School, and North Haven High School; the system's rated capacity is 4,822 students.
- The North Haven Memorial Library, which is open 48 to 58 hours per week throughout the year, boasts over 113,000 volumes in circulation, and hosts more than 300 programs and story hours for children each year
- The North Haven Recreation Center, which is headquarters for a variety of community services and growing recreation programs, sees over 15,000 users each year.

### Sewer Service

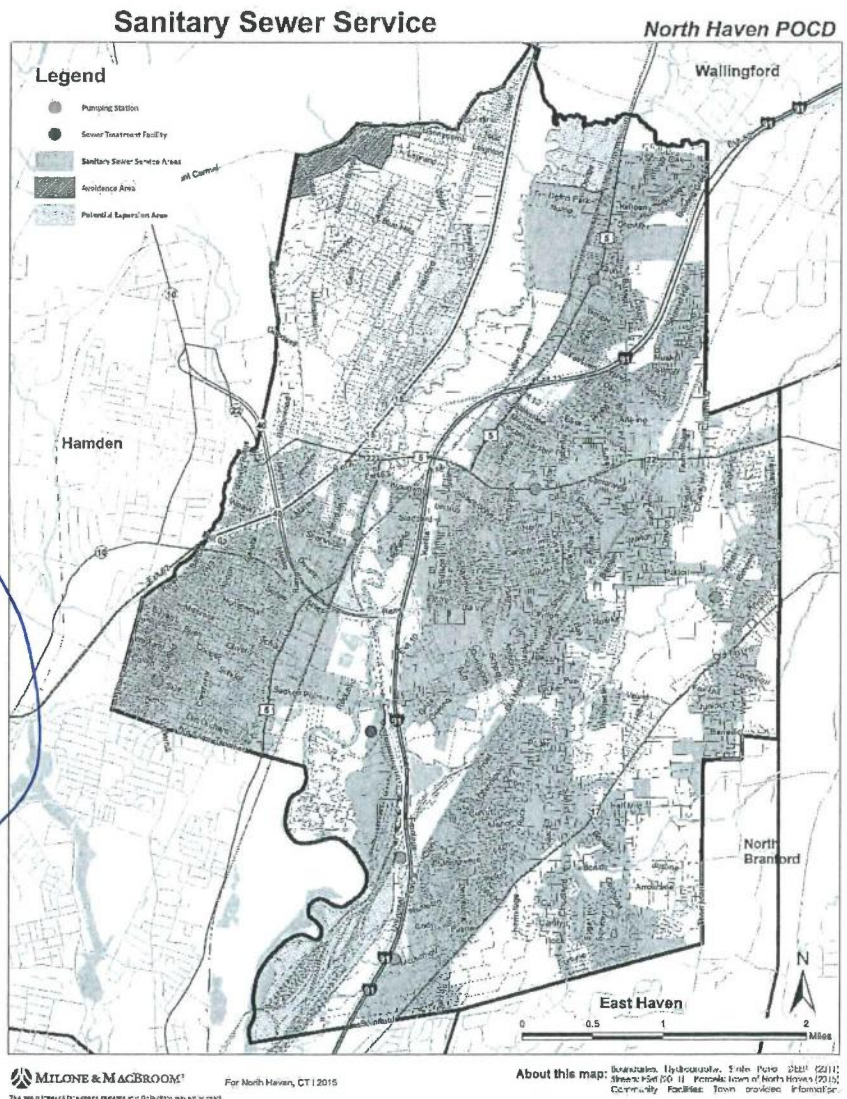
The majority of North Haven is served by sanitary sewer piping. Working with town staff, areas of potential sewer expansion and sewer avoidance were identified.

Potential sewer expansion areas were identified based on areas with soils poorly suited to septic systems: the east side of the Hartford Turnpike, Route 5 north of Defco Park Road, and Universal Drive North.

The area south of Mt. Carmel Avenue was identified as a sewer avoidance area. Development in this area is recommended to be limited to preserve the rural and pastoral nature of the area, which is also slated for future scenic road status.

### Public Safety

Policing and fire protection are central functions of North Haven's local government.



## Goals and Strategies: Transportation, Infrastructure, & Community Facilities

Goals	Strategies
<i>Provide suitable space for Town meetings</i>	Identify and outfit a permanent meeting space for Town meetings with appropriate AV equipment, seating, etc.
<i>Continue to maintain, improve, and remedy deficiencies in North Haven's storm sewer system</i>	<p>Support funding for the renovation, replacement, and addition of sewer pumping stations, as needed.</p> <p>Design engineering solutions to sanitary sewer system deficiencies.</p> <p>Review and update townwide storm drainage plan on an ongoing basis, and continue to implement needed provisions.</p> <p>Repair/replace catch basins and culverts as needed.</p> <p>Continue to work with the State on the maintenance of storm sewers along State routes.</p> <p>Implement regular storm drain cleaning plan.</p> <p>Correct areas identified in the Town's Master Drainage Study as storm drainage areas of concern, including the Spring Road to Old Maple and Sheffield Road to Patten Road sections of the Muddy River</p> <p>Support a continuing, systematic program to locate and eliminate sources of infiltration/inflow into the Town's sewer system.</p>
<i>Meet DEEP MS4 requirements to reduce connected impervious surfaces</i>	Take needed steps to comply with DEEP MS4 Permit mapping requirement, including mapping and calculation of impervious coverage and connectivity to outfalls and impaired waters, and documenting disconnection of impervious surface in 2020 and 2021.
<i>Continue to reduce energy consumption and waste in municipal operations</i>	<p>Ensure the efficient use of resources in carrying out the work of the town by reducing waste and recycling whenever possible.</p> <p>Continue to reduce unnecessary municipal waste generation.</p> <p>Fully power North Haven Water Pollution Control Authority (WPCA) facility and other suitable Town facilities with solar energy to provide stable energy costs and lower Town emissions.</p> <p>Continue the ongoing performance contract with Johnson Controls to reduce energy costs with no direct monetary outlays.</p>
<i>Improve and expand the municipal Center Block to meet current and future needs</i>	<p>Acquire the remaining private parcels in the civic block as they become available.</p> <p>As part of the larger study of the interior of the Center Block, develop and implement a Center Block Parking Plan to better accommodate the parking needs of patrons and employees, as well as increasing landscaping and enhancing the visual character and usability of this space.</p>

Goals and Strategies: Transportation, Infrastructure, & Community Facilities

Goals	Strategies
<p><i>Expand and enhance pedestrian connections in and around the Town Center</i></p>	<p>Incorporate new streetscape elements that enhance the quality of the pedestrian environment.</p>
	<p>Provide for the improvement and reorganization of the interior of the Center Block area to improve pedestrian access, promote foot traffic, reduce short vehicular trips, enhance surface parking and circulation (including unpaved areas), and increase pedestrian safety at busy intersections.</p>
	<p>Promote the development of a network of pedestrian paths that provide direct connections between various key destinations.</p>
<p><i>Maintain high-quality local roads</i></p>	<p>Provide for long-term maintenance of local roadways.</p>
	<p>Continue to provide annual funding for road repaving through bonding measures and auditing disagreements between local and state road listings to maximize state funding.</p>
<p>✓ <i>see 33</i></p> <p><i>Enhance the safety and smooth flow of traffic in residential areas, commercial corridors, and arterials</i></p>	<p>Evaluate traffic calming techniques and enhanced enforcement efforts to reduce the adverse impact of vehicular traffic on residential neighborhoods, especially in the following areas:                      Montowese Avenue, Buell Street, Spring Road, Kings Highway, Blue Hills Road, Sackett Point Road, Mount Carmel Avenue, Outer Ridge Road, Dixwell Avenue, State Street, Pool Road and its side streets, and Hartford Turnpike</p>
	<p>Conduct ongoing access management planning and implementation in an effort to promote traffic safety and maintenance of the "carrying capacity" of North Haven's arterial streets. Techniques such as combining driveways and/or restricting turning movements should be evaluated as opportunities arise.</p>
	<p>Work with DOT/property owners to improve sightlines at Middletown Avenue/Rimmon Road intersection.</p>

Goals and Strategies: Transportation, Infrastructure, & Community Facilities

Goals	Strategies
<p><i>Protect scenic roads that contribute to the Town's character</i></p>	<p>Convene a committee to study adoption of a Scenic Road ordinance to protect views along roadways that contribute to the Town's character, such as Upper State Street, Outer Ridge Road, and King's Highway.</p>
<p><i>Plan and coordinate funding and construction of major road improvements to improve access to key development parcels</i></p>	<p>Work with the Connecticut Department of Transportation to provide a southbound egress at Exit 11 on 1-91 and realign, if necessary, Exit 12 for better access to the Valley Service Road developments.</p> <p>Coordinate construction of roads and other necessary infrastructure improvements, through public and private sectors financing and grant funding, to provide access and facilitate redevelopment of vacant industrial land to the south and west of Universal Drive. Providing access through the rear of the present Target lot is a priority.</p> <p>Widen and install utilities along the length of Valley Service Road, extend the road to and through the Pratt &amp; Whitney site and Wharton Brook Industrial Park, and evaluate signalization of the Valley Service Road and Clintonville Road intersection. Seek funding for these improvements through public and private sources including grants and federal highway appropriations.</p>
<p><i>Enhance commercial streetscapes to improve appearance and functionality</i></p>	<p>Enhance the commercial area along Route 5 (Washington Avenue) between 1-91 Exits 11 and 12 through streetscape or "Main Street" type programs and provide facade upgrades, designed pedestrian walkways, new bus stops, and underground utility lines.</p> <p>As part of site plan submission or modification, ensure that trees and plantings improve the overall appearance of Washington Ave without detracting from the visibility of the commercial building. Provide better enforcement for replacement of trees that are removed or damaged.</p> <p>Enhance the commercial area centered at the intersection of Middletown Avenue and Quinnipiac Avenue including improved signage, facade upgrades, landscaping, and pedestrian walkways.</p>
<p><i>Improve traffic safety in new developments</i></p>	<p>Develop a comprehensive strategy and corresponding zoning &amp; subdivision regulations designed to reduce accidents. Evaluating traffic calming and access management techniques, along with other site-specific measures should be included.</p>
<p><i>Improve bicycle and pedestrian mobility options to connect key destinations, neighborhoods, and corridors</i></p>	<p>Conduct a sidewalk and bikeway improvement plan by appointing a subcommittee to study needs and recommend best practices and areas in which to focus improvements. This plan should build off prior work towards a bike/ped plan; include multiuse trails, sidewalks near schools, and designated priority areas.</p> <p>Extend sidewalks in and around the Town Center and adjacent residential neighborhoods.</p> <p>Further investigate the legality of adopting fee-in-lieu provisions for sidewalks within a designated area.</p>

## Chapter 5: Natural and Historic Resources and Open Space

### Where We Are

Natural landscapes provide a number of ecosystem and community services for the town of North Haven. Preserving these landscapes not only protects the environment for future generations but also maintains the quality of life that makes North Haven such a desirable place to live.

### Natural Resources Summary

The town has examined and mapped natural resources during the course of the planning process. These resources include the following:

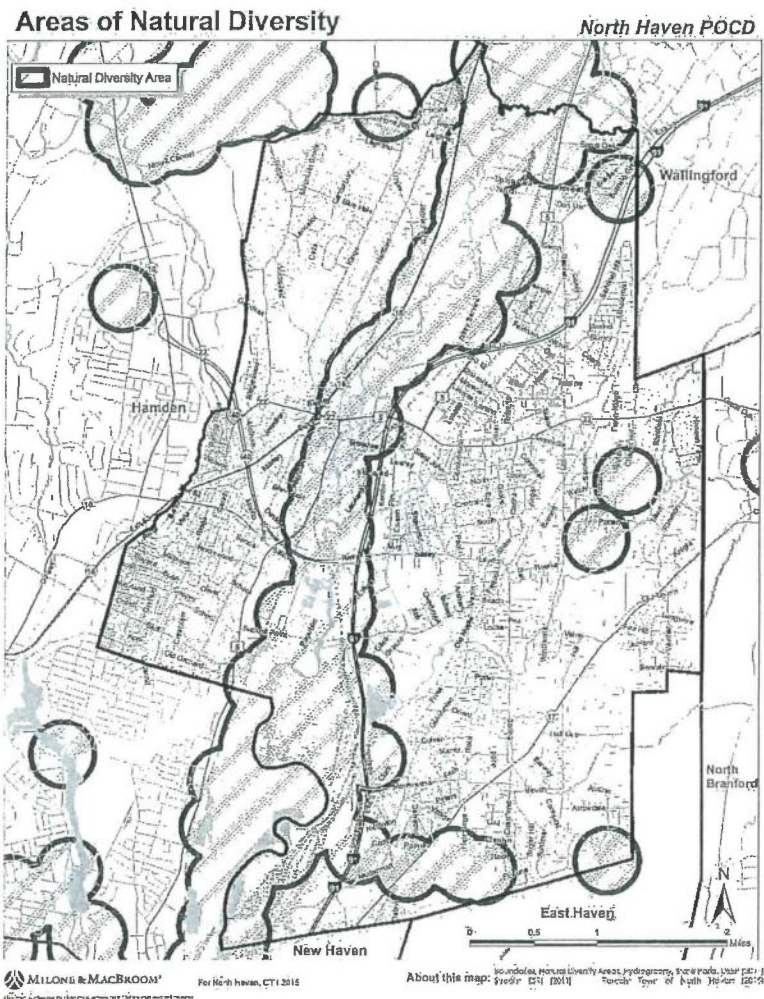
- Wetlands
- Slopes
- Soil conditions
- Watersheds and aquifers

The mapping indicated no significant changes in these resources since the last assessment.

North Haven's rivers and watercourses, particularly the Quinnipiac River, are its key natural resources in terms of public health, recreation, and animal habitats. Protection of the river as a resource should remain a priority for the town in cooperation with regional communities that share common boundaries. This collaboration will continue to facilitate greater access to the waterway as a mode for recreational activity and improved public health.

### Natural Diversity

There is an abundance of habitats for endangered and threatened species throughout the entirety of North Haven. Most of these ecosystems are concentrated in and around the Quinnipiac River and the town's other watercourses. Since the last update to the POCD, there have been several additional species and habitat located throughout town. A number of regulatory protections are in place to maintain the integrity of these habitats and other natural resources. These regulations are continuously reevaluated to determine best practices and effectiveness. Some of these protective measures include the following:



Where We're Going: Goals and Strategies

Goals and Strategies: Natural Resources and Open Space

Goals	Strategies
<i>Provide public access to recreational assets through development sites where feasible</i>	Utilize innovative land techniques as part of the developments near the Quinnipiac River including the formation of linear trails and river access points where appropriate. Request trail/sidewalk easements where appropriate to further townwide Trail Plan.
<i>Remediate and redevelop brownfield sites for economic development and/or open space use</i>	Support redevelopment of Upjohn site for manufacturing and industrial purposes as well as recreational trails; provide a connection to Sackett Point Road via Massimo Road improvements.
<i>Meet DEEP MS4 requirements to reduce connected impervious surfaces</i>	Take needed steps to comply with DEEP MS4 Permit mapping requirement, including mapping and calculation of impervious coverage and connectivity to outfalls and impaired waters, and documenting disconnection of impervious surface in 2020 and 2021.
<div style="text-align: center;">✓</div> <i>Reduce stormwater impacts of new development through land use regulations</i>	Revise land use regulations to encourage or require low-impact development techniques, such as impervious surface reductions and on-site retention/detention, where feasible. Consider specifying a goal of one regulatory revision per year to ensure progress is made.
	Review and revise surface and groundwater protection standards based on low-impact development techniques in the general review of zoning regulations.
	Review and enhance the regulatory standards for BMPs in the general review of zoning regulations to avoid significant adverse impacts on water quality.
	Review and revise stormwater drainage provisions in the zoning regulations to require "best practice" methods be utilized in site design.
	Periodically review existing development regulations and standards for opportunities to reduce or eliminate impervious surface requirements.
	Protect floodprone areas in the town through the use of floodplain protection measures and regulations of new development.
<div style="text-align: center;">✓</div> <i>Protect sensitive habitats and natural resources</i>	Continue to protect water quality by preserving watercourses, wetlands, and aquifers.
	Conserve steep slopes, talus, ledge and rock outcroppings, and other environmentally sensitive habitat areas.

## Public Engagement

Becoming a sustainable community is strongly dependent on the actions of the community as a whole, not just town officials. The Conservation Commission has taken on a leadership role in the community by hosting and organizing environmental outreach activities over the course of each year designed to engage and inform the public on sustainability and conservation. In addition to educational activities aimed at youth audiences, the commission has also hosted events on topics including reducing the use of pesticides, growing organic produce in home gardens, and household waste reduction.

## Waste Management

The town's single-stream recycling plan has improved significantly since the POCD was developed in 2007. To date, the amount of municipal solid waste recycled has increased to 50%, well above the state's goal of 40%. Part of this success is attributed to the diversion of organic waste, such as food scraps and yard refuse, to the town's free composting and farm donation programs. These methods are an emerging area of organic waste diversions by utilizing it as nutrients for growing plants and feeding farm animals. By doing so, the town has the potential to divert upwards of 750,000 tons of waste to landfills annually.

Green technology is becoming increasingly popular to solve community waste management issues. The Cedar Hill Area's proposed anaerobic digester project is designed to convert food waste to a biogas energy source. This project is one of five of the permitting/construction projects in the state. Once created, biogas can be used to heat homes, power public transportation, and generate electricity.

## Low Impact Development (LID)

Nationwide, there is a growing understanding that land development methods have an enormous impact on the health of the environment; North Haven is no different. The implementation of LID techniques is a method designed to minimize the environmental impact associated with land development. Techniques include minimizing site disturbances, reducing impervious surfaces, and installing bioretention ponds. Through ongoing updates to zoning and subdivision regulations, North Haven may promote these techniques and ensure that new development occurs with reduced environmental impacts.

Where We're Going: Goals and Strategies

Goals and Strategies: Sustainability

Goals	Strategies
<p><i>Maintain safe and efficient public utility services and infrastructure capable of handling new growth.</i></p>	<p>Review and revise surface and groundwater protection standards based on LID techniques in the general review of zoning regulations.</p>
	<p>Review and enhance the regulatory standards for BMPs in the general review of zoning regulations to avoid significant adverse impacts on water quality.</p>
	<p>Review and revise stormwater drainage provisions in the zoning regulations to require "best practice" methods be utilized in site design.</p>
	<p>Continue to promote recycling by residents.</p>
<p><i>Coordinate parks, recreation, and open space planning efforts between municipal departments and commissions.</i></p>	<p>Wherever possible, existing parks and open space should be linked together with a network of trails to form interconnected greenways.</p>
<p><i>Maintain and support recreational facilities.</i></p>	<p>Maintain and enhance existing pedestrian trail networks.</p>
<p><i>Reduce stormwater impacts through LID.</i></p>	<p>Revise land use regulations to encourage or require LID techniques, such as impervious surface reductions and on-site retention/detention, where feasible.</p>
<p><i>Build and enhance sidewalks and bicycle facilities to encourage safe and healthy active travel.</i></p>	<p>Extend sidewalks in and around the Town Center and adjacent residential neighborhoods.</p>
	<p>Work with DOT to add a marked bike line and signage to increase cyclist safety on Hartford Turnpike.</p>
	<p>Develop town cycling network to connect the Town Center, commercial corridors, and the train station with safe and accessible bicycle routes.</p>
<p><i>Reduce energy costs and emissions from town facilities and operations.</i></p>	<p>Fully power North Haven WPCA facility and other suitable town facilities with solar energy to provide stable energy costs and lower town emissions.</p>
	<p>Continue the ongoing performance contract with Johnson Controls to reduce energy costs with no direct monetary outlays.</p>



## Chapter 7: Action Agenda and Future Land Use Plan

### Action Agenda

The Action Agenda is a comprehensive list of goals for the community over the coming decade and beyond as well as specific strategies to be pursued in order to achieve those goals. These goals and strategies incorporate both long-standing priorities and ongoing best practices as well as responses to new issues and priorities that have arisen since the previous POCD. Goals and strategies were formulated based on input from many sources, including outreach events and public meetings, the POCD online survey conducted in 2016, discussion with town departments familiar with specific topical areas, information volunteered by citizen-interest and nonprofit groups, and priorities from town commissions and leadership.

Each goal is associated with one or more strategies for its implementation, and each strategy is assigned to a particular town entity (department, commission, or town leadership) that is best suited to take responsibility for pursuing and implementing that strategy. In many cases, multiple departments, divisions, or commissions may have a role to play in fully implementing a given strategy; in these cases, the lead entity is designated as having primary responsibility for coordinating the combined efforts of all stakeholders. Some activities involve budget commitments and capital expenses; some require advocacy and promotion, and others call for administrative action.

Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Infrastructure	<i>Continue to maintain, improve, and remedy deficiencies in North Haven's storm sewer system</i>	Support funding for the renovation, replacement, and addition of sewer pumping stations, as needed.	Board of Selectmen
Infrastructure		Design engineering solutions to sanitary sewer system deficiencies.	Public Works
Infrastructure		Review and update townwide storm drainage plan on an ongoing basis and continue to implement needed provisions.	Public Works
Infrastructure		Repair/replace catch basins and culverts as needed.	Public Works
Infrastructure		Continue to work with the state on the maintenance of storm sewers along state routes.	Public Works
Infrastructure		Implement regular storm drain cleaning plan.	Public Works
Infrastructure	<i>Continue to maintain, improve, and remedy deficiencies in North Haven's storm sewer system</i>	Correct areas identified in the town's Master Drainage Study as storm drainage areas of concern, including the Spring Road to Old Maple Avenue and Sheffield Road to Patten Road sections of the Muddy River.	Public Works
Infrastructure		Support a continuing, systematic program to locate and eliminate sources of infiltration/inflow into the town's sewer system.	Public Works
Land Use, Housing	<i>Balance housing growth against commercial, industrial and open space needs</i>	Continue to maintain a balance between residential subdivision growth, commercial and grand list growth, open space conservation, and natural resource protection.	Planning & Zoning Commission
Land Use, Housing, Economic Development		Control types and sizes of development through active use of zoning controls, attracting desirable businesses, and protecting residential and recreational areas.	Land Use
✓ Land Use, Natural Resources, Sustainability	<i>Reduce stormwater impacts of new development through land use regulations</i>	Revise land use regulations to encourage or require LID techniques, such as impervious surface reductions and on-site retention/detention, where feasible. Consider specifying a goal of one regulatory revision per year to ensure progress is made.	Engineering, Land Use, and Planning & Zoning Comm.
✓ Land Use, Natural Resources, Sustainability		Review and revise surface and groundwater protection standards based on LID techniques in the general review of zoning regulations.	Land Use

Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Land Use, Natural Resources, Sustainability		Review and enhance the regulatory standards for BMPs in the general review of zoning regulations to avoid significant adverse impacts on water quality.	Land Use
✓ Land Use, Natural Resources, Sustainability	<i>Reduce stormwater impacts of new development through land use regulations</i>	Review and revise stormwater drainage provisions in the zoning regulations to require "best practice" methods be utilized in site design.	Land Use
Land Use, Natural Resources, Sustainability		Periodically review existing development regulations and standards for opportunities to reduce or eliminate impervious surface requirements.	Land Use
Land Use, Natural Resources, Sustainability		Protect floodprone areas in the town through the use of floodplain protection measures and regulations of new development.	Land Use
Natural Resources, Land Use		<i>Avoid adverse impacts of development in Coastal Area Management boundary</i>	Continue judicious implementation of coastal site plan review within the coastal boundary as delineated by DEEP.
Natural Resources, Land Use, Sustainability	<i>Manage coastal development</i>	Where feasible, focus on coastal development to maximize existing predeveloped or upland parcels.	Land Use
Natural Resources, Land Use, Sustainability	<i>Protect water quality and coastal resources</i>	Identify potential adjacent undeveloped parcels that could be Open Space grant application targets for expansion of the state's Quinnipiac River State Park, especially if subject to future sea-level rise impacts and if not in a targeted Economic Development area.	Conservation Commission
Natural Resources, Land Use, Sustainability		Maintain and update as needed North Haven's Stormwater Management Plan to reduce the direct discharge of stormwater to the Quinnipiac River corridor's tidal marshlands.	Public Works

Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Natural Resources, Land Use	<i>Improve coastal access</i>	Develop a strategy to connect, expand, and improve public access locations (including kayak and canoe launch areas) and to secure additional public parking for these public access points, including any potential linear expansion areas for the Tidal Marsh Trail behind Universal Drive.	Conservation Commission
Natural Resources, Land Use, Sustainability	<i>Anticipate sea-level rise</i>	Explore instating a prohibition on basements in all new commercial development projects in the 500-year floodplain and require utility installation above adjacent AE flood heights. This would allow for less expensive wet or dry floodproofing in the future.	Land Use
Natural Resources, Land Use, Sustainability		Consider future flooding and sea-level rise projections for any special planning initiatives for the TOD area surrounding the proposed NHHS North Haven station, including special development standards for flood protection and future sea level rise accommodation.	Planning & Zoning Commission
Natural Resources, Land Use, Sustainability		Consider establishing a future sea-level overlay zone to require alternate development standards within this overlay zone.	Planning & Zoning Commission
Natural Resources, Land Use, Sustainability		Consider allocating funds to the acquisition of storm-damaged properties and conversion to open space to allow for tidal marshland advancement where possible.	Board of Selectmen
Natural Resources, Land Use, Sustainability		Review all roadway replacement projects within the Quinnipiac River corridor with potential elevation in mind as needed to keep up with projected sea-level rise impacts.	Public Works
Natural Resources, Land Use, Sustainability		Review bridge replacements as identified in POCD to be designed to accommodate future sea-level rise projections wherever they cross the Quinnipiac watershed such as Sackett Point Road.	Public Works
Natural Resources, Land Use		<i>Protect high-quality wetlands and their ecosystem services while encouraging appropriate use</i>	<b>Develop a strategy to identify high-quality wetlands and explore mitigation measures to allow for future economic development along the Quinnipiac River corridor.</b>
Natural Resources, Land Use		Work with DEEP to develop educational programs and materials for developers, builders, and residents to increase understanding of the value and nature of wetlands and of the wetland regulations.	Conservation Commission

## Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Natural Resources	<i>Protect high quality wetlands and their ecosystem services while encouraging appropriate use</i>	In order to determine the location of sensitive or "high quality" wetlands within the town, it is recommended that a wetland inventory be established that differentiates between high, average, and low quality wetlands.	Conservation Commission
Open Space	<i>Pursue opportunities to preserve and acquire open space properties to benefit the town</i>	Continue to provide funding for open space acquisition through annual bonding to preserve key undeveloped lands across the town.	Board of Selectmen
Open Space		Coordinate and continue to protect open space that is accessible to all with linkages between open spaces.	Conservation Commission
Open Space		Work with neighboring municipalities to advance joint preservation projects.	Conservation Commission
Open Space		Continue to coordinate the efforts of the Finance Department and state, federal, and private granting and fund-raising sources.	Board of Selectmen
Open Space		Empower Open Space Committee to designate and maintain 'Top Ten' list of priority open space acquisitions, with purchase of open space in all areas of the community as a priority.	Conservation Commission
Open Space		Identify and designate areas as open space that provide historical significance.	Conservation Commission
Natural Resources, Infrastructure	<b>Meet DEEP MS4 requirements to reduce connected impervious surfaces</b>	<b>Take needed steps to comply with DEEP MS4 Permit mapping requirement, including mapping and calculation of impervious coverage and connectivity to outfalls and impaired waters and documenting disconnection of impervious surfaces in 2020 and 2021.</b>	Public Works
Open Space, Land Use	<i>Protect high quality wetlands and their ecosystem services while encouraging appropriate use</i>	Review zoning, subdivision, and Inland Wetland regulations and revise as necessary to facilitate construction of trail systems, open space linkages, and recreational use of wetlands and open space as long as such uses do not have an adverse impact on wetland and watercourse resources.	Planning & Zoning Commission
Open Space, Land Use	<i>Set aside open space in new development</i>	Consider establishing an open space requirement for all residential subdivisions.	Planning & Zoning Commission

Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Open Space, Natural Resource	<i>Protect sensitive habitats and natural resources</i>	Continue to protect water quality by preserving watercourses, wetlands, and aquifers.	Conservation Commission
Open Space, Natural Resource		Conserve steep slopes, talus, ledge, and rock outcroppings and other environmentally sensitive habitat areas.	Conservation Commission
Open Space, Transportation	<i>Provide for pedestrian access to and between open space parcels</i>	Wherever possible, existing parks and open space should be linked together with a network of trails to form interconnected greenways.	Conservation Commission
Sustainability	<i>Maintain North Haven's high rate of recycling</i>	Continue to promote recycling by residents.	Conservation Commission
Sustainability, Community Facilities	<i>Continue to reduce energy consumption and waste in municipal operations</i>	Ensure the efficient use of resources in carrying out the work of the town by reducing waste and recycling whenever possible.	Selectman's Office
Sustainability, Community Facilities		Continue to reduce unnecessary municipal waste generation.	Selectman's Office
Sustainability, Community Facilities		Fully power North Haven WPCA facility and other suitable town facilities with solar energy to provide stable energy costs and lower town emissions.	Board of Selectmen
Sustainability, Community Facilities	<i>Continue to reduce energy consumption and waste in municipal operations</i>	Continue the ongoing performance contract with Johnson Controls to reduce energy costs with no direct monetary outlays.	Selectman's Office
Town Center, Community Facilities	<i>Improve and expand the municipal Center Block to meet current and future needs</i>	Acquire the remaining private parcels in the civic block as they become available.	Board of Selectmen
Town Center, Community Facilities		As part of the larger study of the interior of the Center Block, develop and implement a Center Block Parking Plan to better accommodate the parking needs of patrons and employees, as well as increasing landscaping and enhancing the visual character and usability of this space.	Public Works

Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Town Center, Housing	<i>Maintain and enhance a range of housing options in and around the Town Center</i>	Promote residences as a desirable use on upper floors throughout the Town Center district, as well as professional office uses as appropriate.	Land Use
Town Center, Housing		Strive to guide senior housing toward center of town, walkable/transit oriented, service adjacent, and buffered from adjacent uses.	Land Use and Planning & Zoning Commission
Town Center, Housing		Encourage the conservation of the residential neighborhoods surrounding the Center Block and resist actions to convert residential structures to commercial uses that would compete with Center Block's existing commercial space.	Planning & Zoning Commission
Town Center, Housing		Study the potential expansion of mixed uses allowed by the CA-20 Zone north to include Broadway and the Drazen Shopping Center (Stop & Shop Plaza).	Planning & Zoning Commission
Town Center, Transportation	<i>Expand and enhance pedestrian connections in and around the Town Center</i>	Provide for the improvement and reorganization of the interior of the Center Block area to improve pedestrian access, promote foot traffic, reduce short vehicular trips, enhance surface parking and circulation (including unpaved areas), and increase pedestrian safety at busy intersections.	Public Works
Town Center, Transportation		Promote the development of a network of pedestrian paths that provide direct connections between various key destinations.	Planning & Zoning Commission
Transportation	<i>Maintain high-quality local roads</i>	Provide for long-term maintenance of local roadways.	Public Works
Transportation		Continue to provide annual funding for road repaving through bonding measures and auditing disagreements between local and state road listings to maximize state funding.	Board of Selectmen
Transportation	<i>Enhance the safety and smooth flow of traffic in residential areas, commercial corridors, and arterials</i>	Evaluate traffic-calming techniques and enhanced enforcement efforts to reduce the adverse impact of vehicular traffic on residential neighborhoods, especially in the following areas: Montowese Avenue, Buell Street, Spring Road, Kings Highway, Blue Hills Road, Sackett Point Road, Mount Carmel Avenue, Outer Ridge Road, Dixwell Avenue, State Street, Pool Road and its side streets, and Hartford Turnpike.	Public Works

Plan of Conservation and Development: Goals & Strategies

Topic Area(s)	Goals	Strategies	Lead Entity
Transportation	<i>Enhance the safety and smooth flow of traffic in residential areas, commercial corridors, and arterials</i>	Conduct ongoing access management planning and implementation in an effort to promote traffic safety and maintenance of the "carrying capacity" of North Haven's arterial streets. Techniques such as combining driveways and/or restricting turning movements should be evaluated as opportunities arise.	Planning & Zoning Commission
Transportation		Work with DOT/property owners to improve sight lines at Middletown Avenue/Rimmon Road intersection.	Land Use
Transportation	<b><i>Protect scenic roads that contribute to the town's character</i></b>	<b>Convene a committee to study adoption of a Scenic Road ordinance to protect views along roadways that contribute to the town's character, such as Upper State Street, Outer Ridge Road, and King's Highway.</b>	Board of Selectmen
Transportation, Sustainability	<i>Improve bicycle and pedestrian mobility options to connect key destinations, neighborhoods, and corridors</i>	Develop town cycling network to connect the Town Center, commercial corridors, and the Train Station with safe and accessible bicycle routes.	Planning & Zoning Commission
Transportation, Economic Development	<i>Plan and coordinate funding and construction of major road improvements to improve access to key development parcels</i>	Work with CTDOT to provide a southbound egress at Exit 11 on 1-91 and realign, if necessary, Exit 12 for better access to the Valley Service Road developments.	Selectman's Office
Transportation, Economic Development		Coordinate construction of roads and other necessary infrastructure improvements, through public and private sector financing and grant funding, to provide access and facilitate redevelopment of vacant industrial land to the south and west of Universal Drive. Providing access through the rear of the present Target lot is a priority.	Public Works
Transportation, Infrastructure, Economic Development		Widen and install utilities along the length of Valley Service Road, extend the road to and through the Pratt & Whitney site and Wharton Brook Industrial Park, and evaluate signalization of the Valley Service Road and Clintonville Road intersection. Seek funding for these improvements through public and private sources including grants and federal highway appropriations.	Selectman's Office



## Plan Consistency

### Regional Plan

Section 8-23 of the Connecticut General Statutes requires that municipalities take into account the relevant regional POCD, which in North Haven's case is the SCRCOG. North Haven's POCD is fully consistent with the SCRCOG POCD.

### Connecticut General Statutes

Chapter 126, Section 8-23 of the Connecticut General Statutes, as amended, provides the standards and legal requirement for creating or updating a municipal POCD. This update to the North Haven POCD is consistent in all respects with the governing state statute.

### 2013-2018 Conservation and Development Policies: The Plan of Connecticut

Section 8-23 of the Connecticut General Statutes requires that municipalities take into account the State POCD and note any inconsistencies. The State Plan is centered on six Growth Management Principles with which municipal POCDs should be consistent. The State Plan notes that "the statutory mandate for consistency with the State C&D Plan only applies to state agencies, as outlined in CGS Section 16a-31. The State C&D Plan is advisory to municipalities, due to the fact that there is no statutory requirement for municipal plans, regulations, or land use decisions to be consistent with it." Nevertheless, the areas of consistency between North Haven's POCD and the State Plan extend across all Growth Management Principles and are outlined below.

Growth Management Principle 1: *Redevelop and Revitalize Regional Centers and Areas with Existing or Currently Planned Physical Infrastructure.*

North Haven's POCD aligns with this priority in its emphasis on the revitalization of North Haven's Town Center, redevelopment and enhancement of existing commercial corridors and centers, and reuse of major industrial properties proximate to major transportation infrastructure. Continued mixed-use development focused on medical uses and age-restricted housing in the vicinity of the planned NHHS train station further align with this principle.

Growth Management Principle 2: *Expand Housing Opportunities and Design Choices to Accommodate a Variety of Household Types and Needs.*

North Haven's POCD recognizes that the town's population is changing in its age profile and other key demographic characteristics, and with these changes comes new demands on the community's housing stock. The plan's recommendations acknowledge not only the need for affordable options for the retirees and aging seniors but also contain recommendations for expanding housing options suitable for young professionals and those seeking residences in mixed-use and walkable settings.

Growth Management Principle 3: *Concentrate Development Around Transportation Nodes and Along Major Transportation Corridors to Support the Viability of Transportation Options.*

North Haven's POCD is strongly aligned with funneling new development toward accessible locations well served by existing and planned transportation infrastructure. As mentioned above, the plan supports further infill and redevelopment in the vicinity of the North Haven Train Station. Prior to adoption of the updated POCD, the town adopted a unique TOD zone, the MEERZ district, focused on co-location of a variety of medical uses and age-restricted residential. Expansion of these uses is encouraged in the plan, and North Haven will be well positioned to take advantage of NHHS rail service when the station is complete. It also continues to emphasize growth and development in the vicinity of major highway and arterial corridors (I-91, Route 40, and Route 5) while directing the preservation of land in more outlying and less-developed areas of the community.

*Growth Management Principle 4: Conserve and Restore the Natural Environment, Cultural and Historical Resources, and Traditional Rural Lands.*

North Haven's POCD reflects the community's ongoing emphasis on the preservation of open space, natural resources, and working lands. The Future Land Use Plan and Action Agenda recognize the desirability of ongoing open space acquisitions through town bonding and state funding sources as well as the continuation of agricultural activities currently occurring in North Haven. Additionally, it reflects ongoing cooperation between the town and the North Haven Historical Society in coordinating the documentation of homes and properties that are historically significant and contribute to the town's overall historic character.

✓ *Growth Management Principle 5: Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety.*

The North Haven POCD recognizes the importance of protecting the community's critical environmental assets and preserving the quality of its watersheds, coastal areas, air, and lands. It emphasizes the remediation of brownfield sites to reduce soil and groundwater contamination, continued adoption of LID techniques to reduce stormwater impacts, and planning for energy efficiency in municipal operations and transportation options.

*Growth Management Principle 6: Promote Integrated Planning across all Levels of Government to Address Issues on a Statewide, Regional, and Local Basis.*

**North Haven's POCD strongly supports regional cooperation to address issues with impacts beyond its borders as well as providing local services in the most efficient manner possible.** The plan urges continued participation in entities such as the Quinnipiac Valley Health District and the Regional Economic Xcelleration partnership as well as pursuing new opportunities for cooperation with neighboring towns on regional solutions to solid waste disposal, animal control, and enhancing open space connectivity.



- Soil & Wetland Studies
- Ecology • Application Reviews
- Listed Species Surveys • GPS
- Environmental Planning & Management
- Ecological Restoration & Habitat Mitigation
- Expert Testimony • Permitting

January 25, 2021

VIA E-MAIL

Town of North Haven  
Inland Wetlands Commission  
Memorial Town Hall, 18 Church Street  
North Haven, CT 06473

**RE: PRELIMINARY APPLICATION REVIEW**

The Slate Upper School, 5100 Ridge Road  
IWC Application No.: 120-06

*REMA Job #: 20-2352-NHA12*

Dear Chairman Bumsted and Commissioners:

At the request of adjacent property owners, REMA ECOLOGICAL SERVICES (“REMA”) has been asked to review the application for the above-referenced development proposal, 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.

The original application materials were reviewed, including the *Wetland and Watercourse Delineation Report* by Milone & MacBroom, Inc. (MMI), dated October 26<sup>th</sup>, 2020, as well as the more recently revised plans by MMI (15 sheets), and the MMI *Drainage Report*, both revised through December 10<sup>th</sup>, 2020. REMA also reviewed secondary-source information, mostly available on-line, such as from Town of North Haven GIS, and the Connecticut Environmental Conditions Online (CTECO), and both archival and recent aerial photographs (e.g., UConn MAGIC, CT State Library, Google Earth, etc.).

A REMA soil and wetland scientist conducted a site visit on January 10<sup>th</sup>, 2021, documenting conditions at the off-site wetland and watercourse corridor, and viewing the subject property



from its perimeter. Several illustrative figures (i.e., Figures A to D) and a few annotated photographs taken during the field visit are attached to this report (i.e., Photos 1 to 7).

It should be noted that this application review is preliminary in nature, since in our professional opinion the application is deficient in many respects. Should the applicant attempt correct such deficiencies and revise the submitted plans, REMA will provide its final review.

Following are comments and concerns regarding the application as currently presented in the record:

1. Wetland Delineations: A MMI wetland/soil scientist delineated wetlands off-site and to the north, on a neighboring property. Setting aside at this juncture the fact that permission had not been granted for wetland delineations or for survey by the property owner, REMA reviewed the wetland boundary and found it wanting in several areas.

Each of the wetland boundary flags were evaluated in the field. To those flags that were found to be substantially correct a green survey ribbon was added (see attached photo). Additional pink and/or pink & blue survey flags were added upgradient at those locations where the wetland delineation was incorrect.

With one notable exception only a handful of flags were found to be incorrect and additional wetland boundary markers were added, typically 6-8 feet or more above the existing wetland boundary markers. However, in the segment bracketed by wetland boundary markers "wl13a" to "wl16a," the actual wetland boundary is up to 24 feet further upgradient, and may even extend onto the property that is the subject of the application (see Figure A, attached). This would substantially change the activities within the 50-foot wide upland review area (URA).

We recommend that MMI's soil scientist(s) should inspect the wetland boundary with REMA's soil scientist(s) and jointly perform the wetland delineations at the off-site property, and within the subject property if the wetland boundary extends further upslope. Moreover, we would suggest that any new wetland boundary markers, be surveyed using conventional survey methods.

2. Wetland Characterizations/Inventory: While a *Wetland and Watercourse Delineation Report* was produced by MMI, a report that would characterize the wetlands and



watercourses or provide an inventory of at least flora if not also fauna is missing from the record. Also, a wetland functions & values analysis is absent as well as an analysis of potential short-term and long-term impacts to the regulated resources. Such data and analysis is of paramount importance in analyzing the potential for adverse and or significant impacts to these resources.

At first glance the wetland corridor and its intermittent watercourse immediately adjacent to the site may not seem highly functioning or comprised by diverse wetland communities. However, just the fact that these resources are situated in an area dominated and influenced by the underlying bedrock geology (i.e., New Haven arkose) changes this initial assumption. It is widely understood that wetlands and uplands influenced by red Triassic age materials are more likely to harbor rare and uncommon flora and fauna, leading high functionality.

Moreover, the forested wetland complex immediately downgradient of the subject property is relatively large, diverse, and is headwaters to a perennial stream, tributary to the Mill River.

3. Aquifer Protection Zone: The subject property, as well as its associated wetlands and watercourse are found within a Class AA watershed, and with a Class GAA groundwater classification (see Figures B and C, attached). In fact, the property is within a Level A, Aquifer Protection Area (APA). The State has an “antidegradation policy” (see CGS Section 22a426-8) that gives the highest priority to protecting Class AA and GAA, surface and groundwaters, respectively. While the location of the subject site within an APA is mentioned in the *Wetland and Watercourse Delineation Report* and in the *Drainage Report*, discussion of how the water quality of the receiving waters will be maintained and not degraded in view of that fact, is not put forth with any clarity. As will be explained below, degradation of surface and groundwaters *will* take place, given the current design of the proposed school.
  
4. Soil Erodibility: The soils associated with the site are classified as being highly erodible (see Figure D, attached). The primary upland soil mapping unit, as seen on the State of Connecticut Soil Survey, is the Yalesville (69) fine sandy loam, on 8 to 15 percent slopes. Many of the soil test pits documented on the site appear to verify the Yalesville soils series, with even finer substrata (i.e., fine silty loam), as well as a “hardpan” which



refers to the typical massive to firm restrictive layer associated with these soils. It should be noted that Yalesville soils, within 30 inches of the surface have a typical silt content of 36% and a clay content of 9.7%. The size range of silt particles is 2 to 50 microns, while for clay particles it is less than 2 microns. The majority of these particles will pass through a standard silt fence and haybale combination.

The combination of slope (8 to 15 percent), the magnitude of proposed earthwork, and the high erodibility of the soils, lead us to conclude that the probability of erosion and sedimentation of the receiving waters is *high*, even if additional measures were included on the plans.

5. Water Quality: The revised plans show two interconnected stormwater management systems. One system conveys and treats stormwater runoff from the parking field to a below-ground detention system, which includes an isolator row for water quality purposes. A second system treats the balance of the site's impervious surfaces by conveying runoff to an above-ground basin, with a dewatering underdrain. The discharges from both these systems are combined to final discharge point, a rip-rap level-spreader at the far western section of the site, immediately above the off-site wetlands, that is, within 30 feet.

First, given the overall sensitivity of the receiving surface waters (i.e., Class AA), the below-ground detention system with an isolator row is not efficient enough to protect water quality. While these systems purportedly achieve over 80% TSS (total suspended particles) removal, they are not efficient in attenuating other runoff constituents, especially the soluble forms of nitrogen, phosphorus, and heavy metals. This is the primary reason why CT DEEP's 2004 Stormwater Quality Manual ("the Manual"), does not consider underground systems as "primary treatment systems," as would be, for example, a properly designed and sized above-ground extended detention basin or stormwater wetland. They are considered "secondary systems" since they cannot achieve superior stormwater renovation.

In addition to the less than stellar runoff renovation efficiency of the below ground detention system, which will release the majority of dissolved constituents such as nitrogen, the final discharge is taking place at the level-spreader, which is situated just downgradient of the proposed septic system.



It is widely understood, that while septic systems are designed to attenuated nitrate-nitrogen to below 10 mg/L, per the CT Health Code, most natural streams and watercourses have nitrate-nitrogen concentrations of less than 0.5 mg/L. In addition to this, above-ground detention basins, if they are property sized and designed, which the one proposed is not as will be explained below, only take out 50 to 60 percent of nitrogen. In the case of the proposed stormwater system discharge, nitrate-nitrogen from the septic system will combine with soluble nitrogen from the below ground detention system, and with nitrogen from the detention basin discharge, and flow either as surface flow, or as shallow groundwater flow downgradient to the wetlands and watercourse. The intervening uplands soils below the discharge do not have enough denitrification capacity or uptake capacity to reduce nitrogen concentrations to background levels, resulting in pollution of the wetland, and more importantly the watercourse, *a significant and adverse impact.*

Because of the proposed underdrain in the detention basin, this basin also does not qualify as a “primary treatment system” per the CT DEEP Manual. The residence time of stormwater in this basin is not sufficient for water renovation mechanisms to work, and because of the inherent permeability of the underdrain system, stormwater will exit relatively quickly. While this design may be sufficient in reducing peak flow rates, it is not sufficient for water quality purposes.

6. Hydrologic Sizing Criteria: In Chapter 7 of the CT DEEP Manual, hydrologic criteria for stormwater practices are presented and discussed. Over the years, most practitioners have focused on the Water Quality Volume (WQV), but often do not pay much attention to other important criteria. The MMI Drainage Report presents WQV calculations but does not discuss other pertinent criteria, such as the Groundwater Recharge Volume (GRV), and the Stream Channel Protection. The GRV is described as:

“The groundwater recharge criterion is intended to maintain pre-development annual groundwater recharge volumes by capturing and infiltrating stormwater runoff. The objective of the groundwater recharge criterion is to maintain water table levels, stream baseflow, and wetland moisture levels.”



The wetland and watercourse downgradient of the proposed development is fed both by surface flows, within its drainage area, and shallow groundwater flows. The latter is rainwater that infiltrates into the ground and reaches the less permeable “hardpan” described in the soil test pit data, which is a massive and firm layer. In areas such as this one where slopes are at least moderate, the infiltrated rainwater runs along the restrictive layer and discharges to the wetlands and watercourse below. That is why the GRV should have been calculated for this site. Furthermore, as discussed below, the proposed stormwater management system will starve the wetland and watercourse from the water that currently receives.

The Stream Channel Protection criterion is described as follows in the Manual:

“The stream channel protection criterion is intended to protect stream channels from erosion and associated sedimentation in downstream receiving waters and wetlands as a result of urbanization within a watershed. By restricting peak flows from storm events that result in bankfull flow conditions (typically the 2-year storm, which controls the form of the stream channel), damaging effects to the channel from increased runoff due to urbanization can be reduced.”

As can be seen in the attached photos of the wetland immediately downgradient of the discharge, the channel is quite narrow and diffuse, as water from the stream channel in the higher gradient segment to Ridge Road spreads out over the wide and nearly flat wetland. This narrow and shallow channel within the wetland is very susceptible to the increased volumes of water that it will receive from the proposed stormwater management system. One of the two methods prescribed in Manual for protecting against bank erosion and sedimentation states: “*control the 2-year, 24-hour, post-development peak flow rate to 50 percent of the 2 year, 24-hour pre-development level.*”

Based on the MMI *Drainage Report*, the 2-year, post-development peak flow rate is 4.5 cfs (cubic feet per second), while the 2-year, pre-development peak flow rate is 4.7 cfs. Therefore, in order to meet this criterion, the peak flow rate during a 2-year, post-development peak flow must not be higher than 2.35 cfs. If this is not achieved, then there will be *a significant and adverse impact* upon the downgradient regulated resources.





7. Impacts to Wetland Hydrology: Under existing conditions the hydrology of the off-site wetland and watercourse are supported in part by both surface flows and shallow groundwater flows associated with the subject site. This especially true of the wetland fringe along the watercourse, but the ecology of the watercourse itself is supported by discharge from the wetland, during the early portion of the growing season and also during low flow conditions. Under the proposed conditions the portion of the wetland associated with the watercourse upstream of the proposed level spreader, a distance of approximately 220 feet, is in the “shadow” or influence of the proposed detention basin.

It is estimated that the watershed (and ground-shed) to the wetland under proposed conditions and “upstream” of the level-spreader is at least 2.85 acres, but the great majority of this will be intercepted by the detention basin and its underdrain, and shunted to the level-spreader, thus by-passing the wetland. Even rainwater that would infiltrate into the ground above and to the east of the detention basin, will be intercepted by the underdrain which is well into the ground. The underdrain is at elevation of 153.0 feet, while the existing surface elevation is between roughly 161.0 and 164.0 feet. This will result in dewatering of the wetland fringe, *a significant adverse impact*.

To summarize, based on the review of the submitted revised plans and supporting documentation, and also supported by our inf-field view of the wetlands and watercourses, it is our professional opinion that the proposed development will result in significant adverse impacts to these regulated watercourses.

The primary categories of the significant, adverse, “physical” impacts to wetlands and watercourses are as follows:

- A. ***Impacts to the water quality of wetlands and watercourses***, through the design of an ineffective stormwater management system, which does comply with CT DEEP’s guidelines found in the Connecticut Stormwater Quality Manual (2004). Impacts are exacerbated by the “stacking” of the septic system above the stormwater management system’s discharge.
- B. ***Impacts from erosion and sedimentation***, through the discharge of additional volumes of water, generated on impervious surfaces, which will result in the erosion of the



downgradient stream through bankfull events, and subsequent sedimentation of wetlands and downgradient aquatic habitats (i.e., stream habitat).

C. ***Impacts to wetland hydrology***, through the diversion of both surface and shallow groundwater flows that feed wetlands to off-site wetlands.

Finally, we should note that the above described adverse impacts to regulated wetlands and watercourses, will occur both in the Town of North Haven (hydrology impacts) and in the Town of Hamden (water quality and erosion/sedimentation impacts). The Town of Hamden Inland Wetlands Commission (IWC), in a letter to the North Haven Inland Wetlands Commission, dated December 11<sup>th</sup>, 2020, has asked the North Haven IWC to consider a non-disturbance buffer zone to wetlands of 100-feet. The letter cites The Town of Hamden Inland Wetlands & Watercourses Regulations (i.e., 10.2.k), in which factors to be considered in the determination of a sufficient buffer include, but are not limited to, “intensity of adjacent land use” and “soil erodibility.” We concur with Hamden IWC’s request and would recommend a *minimum* non-disturbance buffer of eighty (80) feet.

Respectfully submitted,

**REMA ECOLOGICAL SERVICES, LLC**

A handwritten signature in black ink, appearing to read "George T. Logan".

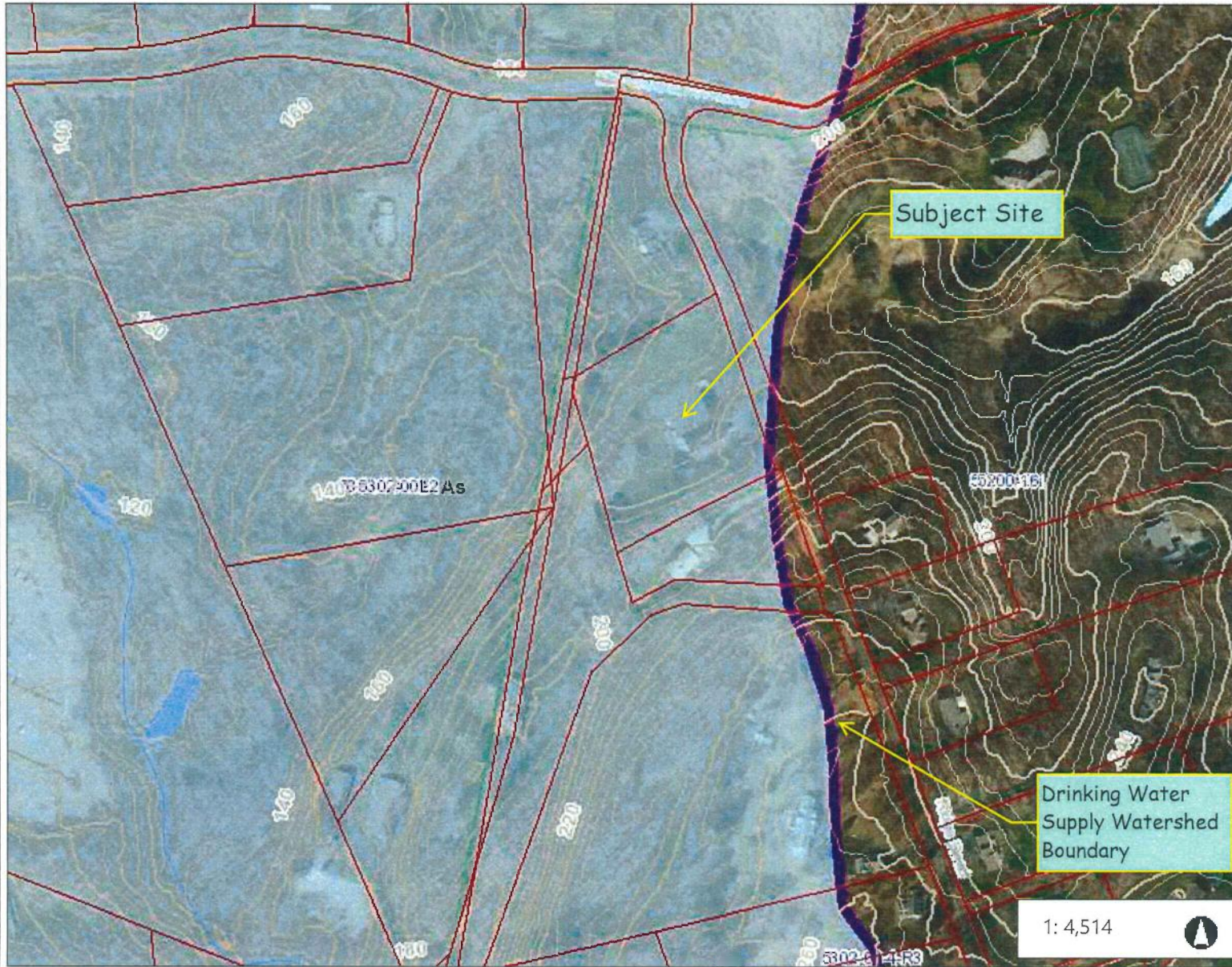
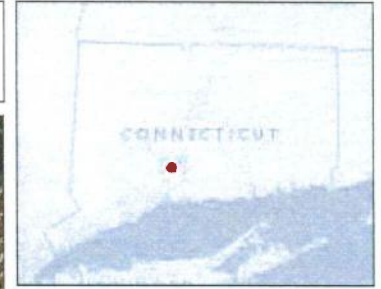
George T. Logan, MS, PWS, CSE  
Professional Wetland Scientist, Registered Soil Scientist  
Certified Senior Ecologist (ESA)

Attachments: Figures A through D; Photos 1 to 7

cc: Joan F. Lakin, Chair, Hamden Inland Wetlands Commission (via email to Tom Vocelli)



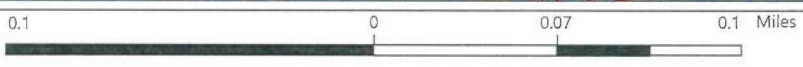
FIGURE B: Proposed Slate Upper School, 5100 Ridge Road, N. Haven, CT showing site within Class AA and Class GAA watershed



**Legend**

- Parcels for Protected Open Sp
- Local Basin Boundary
- Major Basin
- Regional Basin
- Subregional Basin
- Local Basin
- Local Drainage Basin Director**
- Outlet Direction
- Main Stem Direction
- Coastal Direction
- Basin Line**
- Major Basin
- Regional Basin
- Subregional Basin
- Local Basin
- Basin Reach
- Local Drainage Basin Director**
- Outlet Direction
- Main Stem Direction
- Coastal Direction
- Surface Water Quality Line**
- A
- AA
- B, B\*
- SA
- SB

1: 4,514



This map is intended for general planning, management, education, and research purposes only. Data shown on this map may not be complete or current. The data shown may have been compiled at different times and at different map scales, which may not match the scale at which the data is shown on this map.

Notes



Find address or place



Legend

Aquifer Protection Areas

- Final Adopted Aquifer Protection
- Final Aquifer Protection
- Preliminary Aquifer Protection

Towns



Parcels\_for\_Open\_Space\_Mapping

Parcels for Protected Open Space Mapping



FIGURE C: Proposed Slate Upper School, 5100 Ridge Road, N. Haven, CT showing site within Aquifer Protection Area

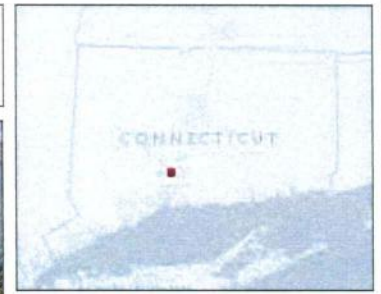
Subject Site



300ft

-72.887 41.424 Degrees

FIGURE D: Proposed Slate Upper School, 5100 Ridge Road, N. Haven, CT showing site with soils susceptible to erosion



**Legend**

**Erosion Susceptibility Sites**

- Minor
- Moderate
- Severe

**Erosion Susceptibility**

- Most Susceptible to Erosion
- Highly Susceptible to Erosion
- Surficial Materials Susceptible to E
- Soils Susceptible to Erosion

Light Gray Canvas Base

Notes



1: 2,257

This map is intended for general planning, management, education, and research purposes only. Data shown on this map may not be complete or current. The data shown may have been compiled at different times and at different map scales, which may not match the scale at which the data is shown on this map.



*Photo 1:* Large discrepancy in wetland delineation; blue flag (existing), pink/blue flag (correction); facing southeasterly.



*Photo 2:* Small correction in wetland delineation (pink vs. blue flags); along intermittent watercourse; facing northwesterly.



Photo 3: Small discrepancy in wetland delineations; facing southeasterly.



Photo 4: Example of alternate wetland delineation flag.



Slate Upper School, 5100 Ridge Road, North Haven, CT  
Photos taken on 1/10/2021, by REMA Ecological Services, LLC

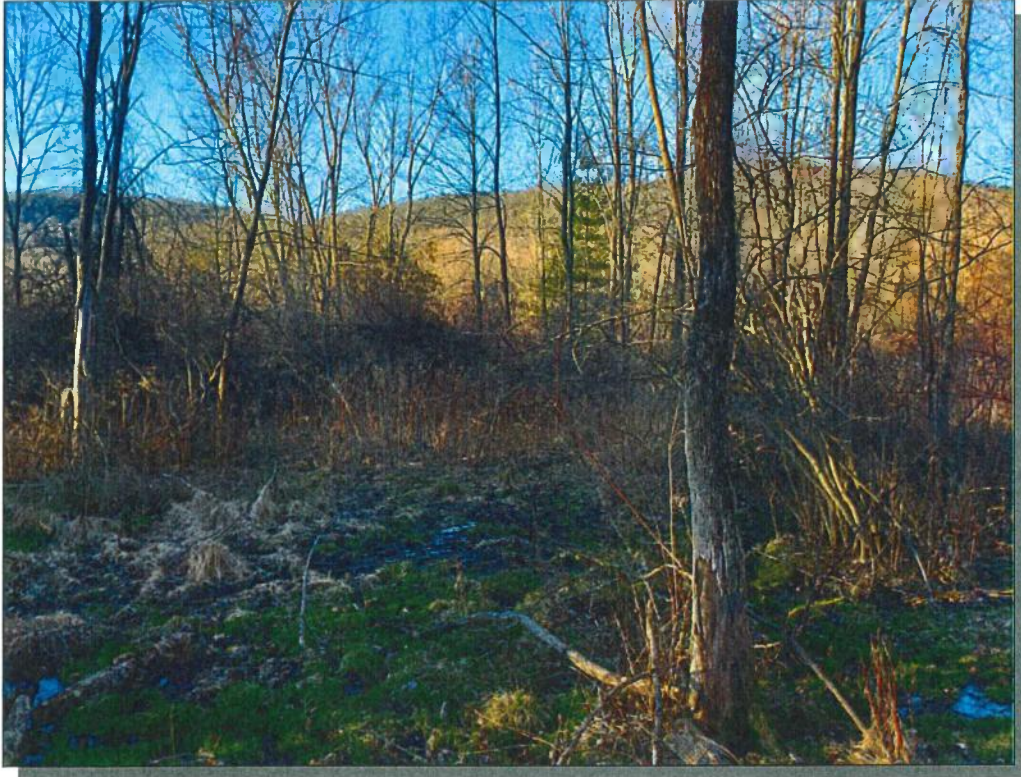


*Photo 5: Green flag indicating agreement of wetland delineation flag; facing southerly.*



*Photo 6: Immediately downgradient broad wetland corridor showing diffuse watercourse channel; facing westerly.*

Slate Upper School, 5100 Ridge Road, North Haven, CT  
Photos taken on 1/10/2021, by REMA Ecological Services, LLC



*Photo 7: Immediately downgradient forested wetland; facing northerly.*



**LEGEND**

-  PAVEMENT
-  SIDEWALK
-  EXISTING BUILDING
-  NEW BUILDING
-  RETAINING WALL
-  STORM WATER DETENTION BASIN
-  WETLANDS
-  WET LAND BUFFER
-  SEPTIC AREA
-  PROPERTY LINE
-  SET BACK LINE

NOTE:  
RENDERED SITE PLAN IS  
BASED ON MILONE  
MACBOOM IWC  
SUBMISSION  
FOR SLATE UPPER  
SCHOOL.

FOR CLARIFICATION OF  
SIGNICANT SITE AREAS  
ONLY.

**LEGEND**

-  PAVEMENT
-  SIDEWALK
-  EXISTING BUILDING
-  NEW BUILDING
-  RETAINING WALL
-  STORM WATER DETENTION BASIN
-  WETLANDS
-  WET LAND BUFFER
-  SEPTIC AREA
-  LEVEL SPREADER
-  PROPERTY LINE
-  SET BACK LINE
-  100' NON-DISTURBANCE LINE (HAMDEN)
-  200' UPLAND REVIEW AREA LINE (HAMDEN)

NOTE:  
RENDERED SITE PLAN IS  
BASED ON MILONE  
MACBOOM IWC  
SUBMISSION  
FOR SLATE UPPER  
SCHOOL.

FOR CLARIFICATION OF  
SIGNICANT SITE AREAS  
ONLY.



January 25, 2021

**Town of North Haven  
Inland Wetlands Commission  
Memorial Town Hall  
18 Church St.  
North Haven, Conn.06473**

**RE: Inland Wetlands Application # 120-06  
The Slate School-5100 Ridge Road**

Dear Commission Members;

On behalf of the residential property owners that adjoin this site, Loureiro Engineering Associates Inc. (LEA) has been requested to review this application as it relates to the requirements of the Wetlands Regulations and related considerations. We have reviewed the original application, the Wetland Scientist Report, the Revised Drainage Report (12/10/20) and the revised set of Plans (12/10/20). On the basis of that review, we want to call the following matters to your attention in your consideration of this application.

1. Wetlands Application-the wetland application form, under the item entitled "ANSWER ALL QUESTIONS APPLICABLE TO THE PROPERTY OR WRITE N/A", second item, requires applicant to indicate if the site lies within the Aquifer protection zone (must be shown on certified plan); there is no response provided but other documents submitted in support of the application allude to it being in the Zone. Review of aquifer protection mapping indicates that the site is in the Aquifer Protection Zone and therefore subject to the applicable provisions of the Aquifer Protection Regulations. Further, the Aquifer zone limits as they relate to this property are not shown as required. The application is incomplete in this regard.

Secondly, review of the plans indicates that while the location and amount of upland review activity have been shown, the creation of a new discharge to the wetlands for the new stormwater discharge has neither been identified or depicted on the plans as a regulated activity. The discharge of stormwater to a wetland or upland review area is a regulated activity above and beyond the disturbance and construction activity that must be disclosed, reviewed and permitted. So the application is incomplete in this regard.

Thirdly, as expressed by the town staff in their review comments, an alternative analysis needs be prepared that provides a basis for proposing the regulated activities. In particular, it should address why this location, why not other locations( such as the other Slate School Campus in town,

**Loureiro Engineering Associates, Inc.**

100 Fort Hill Road • Groton, CT 06340 • 860-448-0400 • Fax 860-448-0899 • [www.Loureiro.com](http://www.Loureiro.com)

AN EMPLOYEE-OWNED COMPANY

Affirmative Action / Equal Opportunity Employer



other locations in town, locations in other towns), possible modifications to the scope of the project to eliminate regulated activities associated with critical infrastructure, particularly stormwater and sewage, from being located in the upland review area and impacting nearby wetlands and use of other means to manage stormwater and sewage that do not require activities in the upland review area that could impact wetlands. Such an analysis is fundamental to the decision making process on this application.

2. Soils Erosion-The project requires that almost 83% of the site will be disturbed to accommodate the buildings, site improvements and infrastructure. The impervious surfaces will be nearly tripled and over 40 mature trees and shrubs will be removed. The site soils are mapped and listed as having high readability potential and existing site slopes are nearly 15 %. Given the substantial area and volume of earthwork required there is concern for potential wetland impact from erosion and sedimentation both during construction and operation as the wetlands are immediately downgradient of the site. There needs to be a far more proactive erosion and sediment control plan for this site that recognizes this condition and minimizes disturbance at all times and also provides several layers of management within and adjacent to all disturbed areas, including redundant erosion controls.

3. Sewage Disposal System-QVHD has indicated that to be compliant with the health code, two separate systems are required for the two buildings, if the applicant is going to comply with this requirement, the plans would have to be revised significantly; if they are going to pursue some alternative, they need to be transparent about it. In either event, QVHD needs to review and permit the systems(s). Until the applicant states their intentions, it is impossible to review or comment further.

The relationship between the sewage disposal system and the level spreader are also a matter of concern as to impact to the wetlands. The sewage system is located approximately 40' distant and up gradient of the level spreader and the level spreader is located approximately 30' from the wetland. As the bottom of the spreader basin is at the existing ground surface, and as there's 36" of silt loam beneath it, stormwater will likely infiltrate into this soils and the level spreader will act as a defacto infiltration measure. The health code SSDS technical standards require 75' separation from the SSDS to an infiltration system at a commercial site.

There is also the potential for unrenovated sewage effluent to migrate to the level spreader, mix with either ground or surface water and be discharged to the nearby wetlands with unknown impacts. Nitrogen, phosphorous and pathogens are of particular concern. The potential for this to occur should be evaluated using the modelling techniques in the 2006 DEEP guidance document for large scale sewage systems. In case there is any question about the applicability of the techniques, the publication (Sect 1-p.2 of 12) reads as follows: "While this document is directed toward design, construction, operation and maintenance of large scale OWRS having design flows of greater than 5,000 gpd, including associated wastewater collection systems, the underlying principles involved apply to all on-site system, regardless of size."

4. Stormwater Management-As indicated on the revised plans and drainage report, the project includes two drainage systems, both of which discharge to a level spread at the west property line



(and town line), just up-gradient of wetlands. One system uses Stormtech chambers for detention storage and presumably for infiltration. The other uses an open detention/retention basin. There are several concerns with system design that could impact wetlands.

- As applicable to the chambers and basin, test pit data indicates approx. 30" of silt loam underlain by hardpan (noted as a restrictive layer) throughout the site. Depth to mottling, groundwater and ledge are indicated as N/A for all test pits (not sure what this means) and perc tests of silt loam is 10-20 MPI. No perc test appears to have been performed within the footprints of the infiltration chambers or basin and the report is silent on undisturbed soil samples and permeability testing which is the protocol recommended in the Conn. Stormwater Design Manual.

- The drainage report indicates that the Water Quality Volume (WQV) for each system is treated prior to discharge but is silent on infiltration of the Groundwater Recharge Volume (GRV) requirements.

- The report indicates that the WQV treatment is achieved at the Stormtech chambers with an isolator row and an up-gradient in-line CDS (HydraFlow Model Node DET- 120). Treatment of WQV appears okay but the report is silent on infiltration.

- The report indicates that the WQV treatment at the basin (HydraFlow Model Node DET- 110) is achieved via retention of the WQV which enables vegetation filtering of the first flush and bio-uptake. The stormwater manual requires that a permanent pool be maintained to treat the WQV; however, this basin has a 6" underdrain that discharges through the outlet control structure to the outlet pipe, indicating that the basin will drain completely. This configuration is similar to a dry detention basin, which, per the stormwater manual, is not suitable for water quality treatment.

We appreciate the opportunity to present the neighbors' concerns to you and trust that you will give them the consideration that they deserve.

Sincerely,

**LOUREIRO ENGINEERING ASSOCIATES, INC.**

A handwritten signature in blue ink, appearing to read "Clinton S. Brown II".

Clinton S. Brown II PE AICP  
Director