



www.savetheriversavethehills.org

Deb Moshier-Dunn

President

P.O. Box 505
Waterford, CT 06385

(860) 444-9247 home

(914) 456-3069 cell

debm0727@sbcglobal.net

Find us on 

SAVE THE RIVER – SAVE THE HILLS

March 14, 2024

East Lyme Zoning Commission
East Lyme Town Hall
108 Pennsylvania Ave
Niantic, CT 06357

Dear Commission Members:

I am writing regarding the proposed development at 91 Boston Post Road, East Lyme. Save the River-Save the Hills (STR-STH), a local non-profit environmental organization, has concerns about any newly proposed developments within the Latimer Brook watershed, the largest tributary to the Niantic River Estuary.

As you know, the Niantic River Estuary and Bay remain on the Connecticut Department of Energy and Environmental Protection's (CT DEEP) "2022 List of Impaired Waters" for "impaired habitat for marine life, other aquatic life and wildlife". Latimer Brook itself is also listed as impaired for "recreation" due to "E-coli" in the brook. STR-STH has been testing water quality of the river in conjunction with Save the Sound in a program called the Unified Water Study, which is collecting water quality data on embayments throughout Long Island Sound. We are finding high nitrogen levels and very high bacterial level counts in the Niantic River after heavy rainstorms - levels of bacteria much higher than that which would close a beach if it was measured by the state. A recent report issued by the Niantic River Watershed Committee found that although Latimer Brook currently has water quality consistent with supporting desirable aquatic life forms, increasing water temperatures have made the brook less suitable for cool-water species such as trout. This study also demonstrated that nitrate-nitrogen concentrations increase when proceeding downstream from Latimer Brook's source to the dam just upstream of its entrance into the Niantic River. This increase in nitrate concentration was attributed to increasing septic and stormwater sources. As such, STR-STH is concerned about any developments having the capability of increasing nutrient and bacterial concentrations in the brook and river. These sources must be reduced to the maximum amount possible using state-of-the-art engineering designs and practices for both stormwater and septic discharges.

The old development and stormwater mitigation rules assumed "the solution to pollution is dilution". That is no longer feasible. The Niantic River Estuary is dealing with what could be a "death by 1000 cuts" as development continues to take down forest and other natural water cleansing areas within the watershed. As climate change increases the amount of rainfall in each rain event, more and more sources of pollution are entering tributary streams and the river downstream as they are carried along with stormwater. STR-STH is advocating that the Town of East Lyme ensures that stormwater from any new development is treated and cleansed BEFORE it enters any tributary to the Niantic River. We advocate that true Low Impact Development best practices are implemented, not hybrids or half-done "green washed" approaches to cleansing stormwater. And we ask that all development plans focus on the stormwater mitigation during all phases of development, not just the finished project. The construction phases are when major damages have been seen to happen on tributaries to the Niantic River. And, finally, after the development is up and running, we would like to see requirements for the upkeep of stormwater mitigation applications. Similarly, we urge that the most up-to-date septic system designs, including those that reduce nutrient discharges, be required for this and other developments proposed for locations near the Niantic River and its tributaries.

Specifically, in the area of this proposed development we have witnessed that with the recent blasting and current work for the re-construction of Interstate 95 after rain events the Niantic River has had silt flowing down from Latimer Brook, making the river brown for weeks at a time. The STR-STH board was alerted by one of its members, who took a video of this silt discharge. We notified CT DEEP, who responded and tightened up some of the stormwater mitigation by Latimer

Brook. But with the ongoing construction and major rain events of 2, 3, and even 4 inches of rain becoming more prevalent, it is more important than ever to maintain the Niantic River watershed forests that are protecting our waterways by cleaning the water before it hits the brooks, streams, and the river itself. The proposed development is on a property that is mostly forested, with its steep topography sending its stormwater directly into Latimer Brook.

Therefore, regarding this proposed development at 91 Boston Post Road, STR-STH asks the Commission to pay attention to the following:

- The proposed development is on a parcel that is designated #10 out of the 69 properties that the Town of East Lyme has determined within its Plan Of Conservation and Development as “Proposed Open Space” (Table 2), having a total of 13 “Natural Resource Points”, which include: 1) Water Access, 2) Active/Passive Recreation, 3) Forest Block/Greenway, 4) Unique Geological Features, 5) Cultural/Historical elements.
- The property appears on the town’s Open Space Vision as part of the 30% Open Space goal within the town and has a proposed footpath running right through it that connects up through the Route 11 Greenway.
- The property is identified as being on the Stratified Drift Aquifer on the Town of EL’s “Open Space Plan & Proposed Foot Paths” map.
- Each year Latimer Brook is stocked with trout by CT DEEP. Last year this agency released 1,965 trout into the Brook – including Brook Trout, Brown Trout, Tiger Trout and Rainbow Trout – just below this property near the Latimer Brook dam Fish Ladder, and just above it at Egret Road, among other locations along the Brook. Clean water with gravel bottoms, not silt, are necessary for keeping trout alive and thriving. Brook trout especially need well oxygenated waters to survive.
- According to CT DEEP, the portion of Latimer Brook a few miles up stream of the property was sampled (electrofishing) last year. The fish community was composed of American Eel, Bluegill, Brook Trout, Blacknose Dace, Brown Trout, Chain Pickerel, Largemouth Bass, Tesselated Darter , White Sucker, and Yellow Perch.
- The health of this stretch of the Brook is especially crucial for those species of fish that migrate upstream from the brackish and salt waters farther downstream in the Niantic River Estuary. This includes both the anadromous alewife and a sea-run strain of brown trout. CT DEEP installed and maintains the fish ladder just downstream from this property for these migrating fish, which spawn in upstream areas of Latimer Brook before returning to the Niantic River Estuary and then back to sea.
- The catadromous American eel has an opposite life history strategy from alewife, with very small young called elvers ascending freshwater streams in early spring. They remain as stream residents for a period of many years before migrating out during fall months to eventually spawn in the Sargasso Sea region of the Atlantic Ocean. Based on CT DEEP fishery surveys, American eels form a considerable portion of the fish biomass of Latimer Brook. Over its entire range in North America, the American eel has undergone severe reductions in population size and is being considered for listing as a threatened species by CT DEEP.
- The list of species that use Latimer Brook and its riparian areas as habitat is not limited to fishes, but also includes many amphibians and reptiles. We note that CT DEEP’s Natural Diversity Database Determination (NDDDB) for this property included the wood turtle, a species of special concern within our state. An adjoining property owner has photographic evidence that this species is present along this segment of Latimer Brook.
- The applicant must be required to follow the recommendations made in the NDDDB Determination and by its wetlands consultant for construction activities should this project go forward.

After our reading of Professional Engineer Steve Trinkaus’ review of the applicant’s conceptual plan, which is attached to this letter as further information for the Commission, STR-STH also has the following concerns:

- The number of bedrooms per unit are not clear in the documentation.
 - The number of parking spots, with all the pollutants that come from cars – antifreeze, windshield wiper fluids, oil and gasoline (except for electric vehicles) is dependent on the number of bedrooms proposed.
 - The size/type of the septic tanks – as well as who will be responsible for approving it (DEEP, Ledge Light or the State Health Department) are dependent on the number of bedrooms proposed in the conceptual plan. The town cannot evaluate this proposal properly without knowing the number of proposed bedrooms.

- The topography has the developer proposing the septic tanks on the west side of the proposed duplexes to be on the downhill side of a retaining wall. How will they be properly pumped out every three years with a pumpout truck, as they are supposed to be, if they are on the other side of a retaining wall, downhill towards Latimer Brook?
- If soil sampling has not been done, how can the developer design stormwater mitigation and know what they need to do to actually clean the water without knowing what soils the stormwater will run through?
- Why are six of the proposed septic systems within the AE Flood Zone? AE designation gives a 1% chance every year that the area will be flooded – that's a 26% chance over 30 years according to most flood insurance websites – that the area will be flooded and the septic systems compromised with all that contaminated runoff going directly into Latimer Brook below.
- We also expect that no additional nitrogen will be allowed to be added to the Niantic River from this property. The idea of a "sod farm" within the AE Flood Zone, with all the fertilizers and pesticides used in such a production, is simply horrifying to advocates for the health of the Brook and the River.
- The conclusion of Professional Engineer Trinkaus' review, which I have added to this letter for the Commission's analysis along with his CV, states "It is my professional opinion that the submitted plans and documents are not adequate to determine if this is an appropriate use of this site even on a conceptual basis."

The life of the Niantic River Estuary, and its tributaries, is in the hands of the Commissions of the towns within its watershed. STR-STH is asking that you make protecting the areas that produce clean water for the River and its tributaries a priority as you evaluate this application.

Thank you for considering our comments as you proceed in your examination of this proposed housing project. I have included the tables and maps that I have referenced in the packet that I am leaving with the Commission tonight. We remain available for any clarifications and further discussions about our comments concerning this application.

On behalf of the Board of Directors and our membership,

Sincerely,



Deb Moshier-Dunn
President, Save the River-Save the Hills, Inc.



Trinkaus Engineering, LLC
114 Hunters Ridge Road
Southbury, Connecticut 06488
203-264-4558 (office)
+1-203-525-5153 (mobile)
E-mail: strinkaus@earthlink.net
<http://www.trinkausengineering.com>

March 12, 2024

Ms. Deborah Moshier-Dunn
STR-STH
P.O. Box 505
Waterford, Connecticut 06385

RE: Conceptual 8-30g Site Plan
91 Boston Post Road
East Lyme, Connecticut

Dear Deb,

At the request of STR-STH, I have reviewed the following documents submitted for the above referenced project.

- a. Exhibit C – site plan by May Engineering, January 15, 2024
- b. Exhibit D – Soils Map, 1/13/24.
- c. Exhibit K – Design Report, 1/11/24.
- d. Exhibit P – Town Engineer letter, 3/5/24.
- e. Exhibit T – Drainage Report, 2/26/24.
- f. Exhibit W – Soil Report of 2/23/24.
- g. Exhibit Z – Conceptual Site Plan

Based upon the above information I have the following comments.

Exhibit C:

1. This plan shows a preliminary layout of a development under 8-30g. No soil testing has been done on the site for any of the proposed on-site sewage disposal systems, so it cannot be verified that the soils on the site are suitable for this type of development.
2. Some of the proposed sewage disposal systems are located within the limits of the AE flood zone. If the site flooded, these systems would be compromised and would potentially discharge untreated effluent into the flood waters.
3. It is not clear if the sizing of the proposed sewage disposal systems is based upon the single family or multi-family criteria found in the Technical Standards of the CT Public Health Code.
4. There are several proposed retaining walls proposed on the site, but no information as to the type and height of the walls has been provided.

5. Will all Town of East Lyme emergency vehicles be able to fully access all units and able to turn around on the site?
6. How many parking spaces are provided for each unit?

Exhibit D:

7. The soil mapping is taken from the Town of East Lyme GIS system but has not been verified by soil testing in the field.
8. This is a particular concern in the eastern portion of the site where Hollis-Chatfield Rock Outcrop soils are shown. These soils can have very shallow depths to bedrock.

Exhibit K:

9. How many bedrooms in total are proposed for the site?
10. This document discusses the use of rain gardens, but no other information on the design and location of the rain gardens has been provided.
11. The document states that the road will be constructed in phases, but no comprehensive erosion control plan has been provided.

Exhibit P: No comment.

Exhibit T:

12. The document discusses the Water Quality Volume, Water Quality Flow and pollutant reduction were evaluated for the site. No computations have been provided to support the claims in this document.
13. No soil testing has been performed so the claims of infiltration are not based on factual evidence.
14. It stated that detention basins will draw down water levels within 48 hours, but no analysis has been provided to support this claim.
15. NRCS soil data on infiltration rates are not accurate enough for the design of any infiltrative practices due to the wide range of data for a given soil type.
16. There is insufficient information on how stormwater will be addressed for this project.
17. Based upon the information in this document, it cannot be verified that the stormwater plan will follow the CT DEEP 2023 Storm Water Manual.

Exhibit W:

18. According to a letter from the CT DEEP, there are three stated listed species which could be impacted by this development. The species are the Northern long-eared bat, Wood turtle, and Smooth green snake. Has the wetland scientist inspected the site to determine if any of three species are present on the subject parcel?

Exhibit Z:

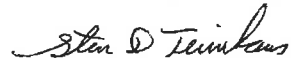
19. Two of the proposed sewage disposal system are located too close to the proposed stormwater detention pond and will result in effluent entering the stormwater basin.
20. The detention pond shown on this plan does not comply with any of the stormwater management practices found in the CT DEEP 2023 manual.
21. The second detail on the document shows other stormwater practices which are also not in compliance with the CT DEEP 2023 Manual.

Conclusion:

It is my professional opinion that the submitted plans and documents are not adequate to determine if this is an appropriate use of this site even on a conceptual basis.

Please contact me if you have any questions about the information contained in this letter. My CV is attached for the record.

Respectfully submitted,
Trinkaus Engineering, LLC



Steven D. Trinkaus, PE

Steven D. Trinkaus, PE

Trinkaus Engineering, LLC

114 Hunters Ridge Road Southbury, Connecticut 06488

Phone: +1-203-264-4558 (office), +1-203-525-5153 (mobile)

Website: <http://www.trinkausengineering.com>

Email: strinkaus@earthlink.net

Alternative Email: Trinkaus.korea.lid@gmail.com

Qualifications

B.S. / Forest Management/1980
University of New Hampshire

Licenses/Certifications

Licensed Professional Engineer- Connecticut (1988)

Professional Societies

American Society of Civil Engineers
Connecticut Society of Professional Engineers
International Erosion Control Association

Professional Awards

Steve was named an Industry Icon by Storm Water Solutions in July 2015 <http://editiondigital.net/publication/?i=263831&p=16> for his work in the Low Impact Development field.

International Experience

South Korea – July 2017, June 2016, April 2015, October 2014, April 2014, October 2013 and June 2013

- Steve was invited by Dr. Leeyoung Kim of Kongju University to make a presentation at the Seoul International Symposium for water cycle held on July 27, 2017 at Seoul City Hall. Steve's presentation was entitled "Sustainable Urban Water Cycle Management, Low Impact Development Strategies for Urban Retrofits". Steve also made a presentation to Master and PhD Engineering students at Kongju University on designing LID treatment systems. He also visited the research office of Land & Housing Institute in Daejeon to inspect recent LID retrofits consisting of Bioretention systems, Bioswales and Permeable Paver systems.
- Steve was invited by Dr. Shin to visit the Korean GI/LID research center in July of 2017. The purpose of the visit was to inspect the LID research systems which had been in place for a year to observe how well they were functioning and also to observe the current research on infiltration of LID systems and evapotranspiration of green roof systems.
- Steve was an invited attendee to the official opening of the Korean GI & LID Research Center recently constructed at the Yangsam Campus of Pusan National University. Steve was a consultant on the design of the research center for Dr. Hyunsuk Shin of Pusan National University.
- Steve was an invited presenter at the World Water Forum by Dr. Hyunsuk Shin of Pusan National University. He presented case studies of GI/LID applications in the United States.
- Steve was invited by Dr. Yong Deok Cho of Kwater to participate in the Water Business Forum at the World Water Forum. Steve presented an overview of his business and expertise in Low Impact Development.

Nanjing, China, September 2018

Steve was invited by the organizing committee for the third China Sponge City International Exchange Conference to make three presentations on LID. The presentations were entitled: “LID: The Good, the Bad and the Ugly”, “Permeable Pavement Case Studies” and “The regulatory framework to adopt LID”. The conference was held September 27th and 28th in Nanjing, China.

Beijing/Zhenjiang, China – August 2017

Steve was invited to make a presentation entitled “Urban LID in China and South Korea” at the 2017 Second China Sponge City International Exchange Conference held in Beijing on August 16-1, 2017. He also made a presentation for Dr. Nian She, Director of Smart Sponge City Planning and Construction Research Institute in Zhenjiang, China on modeling approaches for LID treatment systems as well as inspecting some recent LID retrofits currently under construction in Zhenjiang. Steve also made a presentation at Reschand entitled “LID Case Studies from US” at the request of Yuming Su of Reschand.

Nanjing, China – September 2016

Steve was invited to present at the 2016 First China Sponge City International Exchange Conference held in Nanjing, China. The presentation focused on several case studies of LID systems in the US.

Zhenjiang, China – June 2015

Was retained by Dr. Nian She to design Urban LID retrofits for a 2.5 hectare (6.5 acres) dense residential area in the city of Zhenjiang. The LID retrofits had to fully treat runoff from the existing impervious areas (building roofs, driveways and parking areas) for 65 mm (2.6”) of rainfall in 24 hours. The LID systems also had to attenuate the peak rate of runoff for a rainfall event of 150 mm (5.9”) rainfall event. A combination of Bioretention systems, and permeable pavers with a filter course and reservoir layer were used to meet these stormwater requirements.

Zhenjiang, China – May 2015

Steve was invited by Professor Nian She of Shenzhen University to make a presentation entitled “Using LID to Attenuate Large Rainfall Events and Reduce Flood Potential” at the 2015 First Sino US Sponge City LID Technology Practice Conference held on May 4-5, 2015 in Zhenjiang, China organized by Zhenjiang Water Supply and Drainage Management Office. (http://www.c-water.com.cn/2015lid/en/index_e.html). In addition to the presentation, field inspections were made of several new LID installations in the city consisting of Bioswales, permeable pavement systems and rainwater harvesting.

Guangzhou, China – December 2012

- Steve was an invited attendee at the 15th Annual Guangzhou Convention of Chinese Scholars in Science and Technology in Guangzhou, China on December 17 – 21, 2012 to present a project narrative on how Low Impact Development and sustainable development can be applied to address water quality issues in urban and rural areas of China to implement sustainability concepts and conservation of resources. He attended with Dr. Jim Su, PE of Golder Associates of Mt. Laurel, New Jersey. While at the convention he met with representatives from Sichuan University, Chang’an University, Guangdong University of Technology, Shenzhen University and the South China Institute of Environmental Sciences, MEP to discuss LID being incorporated into their engineering programs.
- Steve also met Dr. Hongbin Cheng of New China Times Technology which is located in Stellenbosch, South Africa. Steve has signed a three year partnership agreement with New China Times Technology to introduce LID concepts to the west cape area of South Africa.

- Layout concepts to maximize development, while preserving environmentally sensitive areas.
- Design of horizontal and vertical road geometry.
- Preparation of grading, drainage and erosion and sedimentation control plan.
- Use AutoCAD Land Development, Civil3D, HydroCAD and Pondpack software packages.
- Layout and design of sanitary sewers.
- Bid estimates.
- Construction oversight.
- Third party technical reviews.
- Expert testimony.

Professional Committees

- Chairman and primary author of EWRI/ASCE LID Model Ordinance Task Committee (goal is to create a National LID Guidance document to further the adoption of LID)
- Chairman of EWRI/ASCE LID Task Committee on Filter Strips and Bioswales (goal is to review & evaluate literature and design specifications for filter strips and Bioswales and create uniform design standards for different geographical regions)
- Member of EWRI/ASCE LID National Guidelines Task Committee

Published Articles

- **“Easier Said Than Done – Overcoming common errors when installing bioretention systems”** – October 2018 edition of Storm Water Solutions by Scranton Gillette Communications.
- **“Large-scale LID Design for urban expansion in South Korea”** with co-author, Dr. Kyung Hak Hyun of South Korean Land and Housing Institute – Volume 3/Issue 4, August/September 2015 – Worldwater Stormwater Management by the Water Environmental Federation.
- **“Research team leads LID deployment in South Korea”** – Volume 2/Issue 1, Spring 2014 – Worldwater Stormwater Management by the Water Environmental Federation.
- **“Low Impact Development, Sustainable Stormwater Management”** – English article converted to Chinese and published in the Chinese Edition of Global Water Magazine, July 2013.
- **“A Case Study: Southbury Medical Facility and Low Impact Development”** - January/February 2014 issue of Land and Water.
- **“A True Pioneer of Low Impact Development – Member Spotlight”** – January/February 2014 Issue of Erosion Control – Official Journal of the International Erosion Control Association.
- **“Low Impact Development: Changing the Paradigm”** published in the March 2012 edition of PE, The Magazine for Professional Engineers by the National Society of Professional Engineers. Article was also republished in the Spring 2012 addition of EWRI Currents (with permission of NSPE).
- **“Stormwater Retrofit of Existing Detention Basins”** published in the March/April 2012 Land and Water, The Magazine of Natural Resource Management and Restoration with co-author Sean Hayden of the Northwest Conservation District.
- **“Out in the Open; Creating a Stormwater Park in the Heart of a Community”** published in the April 2013 issue of WaterWorld by Pennwell Corporation.
- **“Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut”** published in the July/August 2013 edition of Land and Water

Volunteer Organizations

- President (elected 11/2013) and Connecticut Representative to the Board of Directors for the Northeast Chapter of IECA,

Environments” at the Annual US-Korea Conference on Science, Technology, and Entrepreneurship being held in Atlanta, Georgia on July 29 to August 1, 2015.

- Steve was invited by the Lake George Waterkeeper to make a presentation entitled “Applying LID Concepts in the Real World” at the 5th Annual Low Impact Development Conference being held in Lake George, NY on May 7, 2015.
- Steve was invited by Dr. Hyunsuk Shin and made a presentation entitled “Real Adaptation and Implementation of GI and LID Technology in USA” at the **World Water Forum** held in Daegu, South Korea on April 14, 2015.
- Steve prepared a presentation for a workshop to civil and environmental engineering students at **Pusan National University** in Busan, South Korea on April 17, 2015, entitled “Designing LID System - What do you need to know and why”.
- Steve was invited by Dr. Hong-Ro Lee of Kunsan National University and made a presentation entitled “Understanding Low Impact Development in the Urban-Rural Interface” for the **Ariul Brainstorming Working Group** on April 16, 2015, in Gunsan, South Korea.
- Steve was an invited speaker at the **2014 Low Impact Development Conference** sponsored by the Lake George Waterkeeper and the Fund for Lake George in Lake George, NY on May 1, 2014, for land use professionals and regulatory agencies. He will be presenting case studies focusing on the application of LID concepts for commercial and residential projects.
- Steve was invited by Justin Kenney, Green Infrastructure Coordinator of the Vermont Department of Environmental Conservation Watershed Management Division to present an eight-hour workshop entitled “From Bioretention to Permeable Pavement: An In-depth Introduction to Low Impact Development and Green Stormwater Infrastructure” in Montpelier, Vermont on December 5, 2013.
- Steve was invited to attend and present on the Application of LID Concepts for the Urban Environment and LID Case Studies at the 2nd Low Impact Development, Stormwater Management Forum hosted by the **Land & Housing Institute, Korean Land & Housing Corporation** held in South Korea in on October 31, 2013. He also made presentations at the **Korean Institute of Construction Technology** and **Pusan National University** on various aspects of LID during this time.
- Steve was an invited speaker at the **2013 Low Impact Development Conference** sponsored by the Lake George Waterkeeper and the The Fund for Lake George in Lake George, NY on May 2, 2013 He made a presentation entitled “Barriers to the implementation of LID”.
- Steve was an invited presenter at a closed-meeting of the **National Association of Home Builders (NAHB) and the Water Environment Federation (WEF)** on October 10, 2012 focusing on progressive stormwater management. The presentation focused on the application of LID strategies on actual development projects and discussed the hydrologic performance and cost effectiveness of LID design.
- Steve was the invited presenter for a 1-hour long webinar presented by **Stormwater Solutions and Stormwater USA** on Low Impact Development and the Basics of Bioretention held on September 18, 2012. Over 760 individuals watched the webinar.
- Steve was an invited speaker at and **EPA/WEF Stormwater Technical Meeting** on July 18, 2012 in Baltimore, MD to discuss the application of Low Impact Development strategies for actual projects with a focus on cost effectiveness when compared to conventional stormwater management as well as field performance of the LID designs. The purpose of this meeting was to assist EPA in the development of a National Stormwater Rule.
- Site Design using Low Impact Development Strategies and What are the impacts of Impervious Cover on Water Quality and Quantity were presented at a workshop entitled “Challenges and Solutions using Low Impact Development”, sponsored by the **Lake George Waterkeeper** in Lake George, NY on May 5, 2011.

August 2013:

A Case Study – Southbury Medical Facility and LID
LID regulations in Connecticut: The Long and Tortured Road
Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut

September 2011:

Stormwater Retrofit of Highwood Estates Detention Basins to enhance Water Quality Benefits;
A Low Impact Development (LID) Model Ordinance and Guidance Document
The Farmington River Enhancement Grants: A tale of three towns and the path to Low Impact Development

April 2010:

The application of Form-Based Zoning and Low Impact Development for the Revitalization of the Town Center of Simsbury, Connecticut
The Integration of Low Impact Development to enhance the application of Smart Code Zoning to create a Gateway District to the Historic Town Center of Tolland, Connecticut

November 2008:

Ahead of the Curve – Tolland, Connecticut adopts Low Impact Development Regulations
Trade Winds Farm – Winchester, Connecticut – How to create a LID subdivision along with the
A poster on Preparing a Pollutant Loading Analysis for Land Development Projects

EWRI/ASCE Watershed Management Conference:

August 2010:

How the application of Environmental Site Design Strategies and Low Impact Development Storm Water Treatment Systems can mimic the Natural Hydrologic Conditions in a watershed and provide a resource for carbon sequestering
The Importance of Assessing Pollutant Loads from Land Development Project and the Design of Effective Storm Water Treatment Systems

ICEA Annual Conference:

February 2023:

Stormwater Management for Ground Mounted Solar Arrays in the Real World

February 2022:

Low Impact Sustainable Development Design Manual for Morris, Connecticut
LID in Connecticut – Are Designs Improving?

February 2021:

Implementing LID Retrofits to Address Nutrient Loads in Lake Pocotopaug in East Hampton, Connecticut
How to Design Stormwater Management for Ground Mounted Solar Array

February 2019:

A Study on Introduction Plan of Low Impact Development Techniques for Widespread Application in South Korea
If LID is so easy to implement, how come we keep getting it wrong?

February 2018:

How Low Impact Development strategies can mitigate high intensity rainfall event
Designing Low Impact Sustainable Development treatment systems for Agricultural Environments

How the application of Environmental Site Design Strategies can provide a resource for carbon sequestering

December 2010:

Stormwater Pollutant Load Modeling

October 2008:

Trade Winds Farm – Winchester, Connecticut – How to create a LID subdivision and Preparing a Pollutant Loading Analysis for Land Development Projects

TRIECA Conference:

March 2018:

Addressing Stormwater in China with Low Impact Development
Implement Low Impact Development in South Korea

Mid-Atlantic Chapter of IECA:

July 2017:

Keynote: A Worldwide Perspective on Municipal Stormwater Issues

Southeast Chapter of IECA:

August 2014:

A Case Study – Southbury Medical Facility
Applying LID concepts on undeveloped land and in the urban environment

Korean-American Scientists and Engineers Association:

December 2021:

Implementing LID Retrofits to address Nutrient Loads in Lake Pocotopaug in East Hampton, CT
How to Design Stormwater Management for Ground Mounted Solar Arrays

August 2019:

Designing Low Impact Development Treatment Systems for Agricultural Environments

August 2016:

Designing LID Systems: What do you need to know and why

Regional KSEA Conference

October 2015:

Applying LID strategies to residential and commercial developments to address water quality and runoff volumes

EPA Region 6 Stormwater Conference:

October 2015:

Designing LID systems: What do you need to know and why
Designing LID treatment systems for Urban and Agricultural Environments

July 2014:

The Incorporation of LID on Affordable Housing Projects, A Case Study – Southbury Medical Facility and LID
Municipal LID Regulations

National StormCon Conference:

Two-hour webinar entitled Bioretention System Design

December 2021, July 2020:

Two-hour webinar entitled How to Design for Stormwater Management for Ground Mounted Solar Arrays

January 2022:

6.5-hour presentation on CT Erosion and Sediment Control

February 2022:

6.5 hour presentation on New York Erosion and Sediment Control

May 2016: Four one hour long webinars

Introduction to Low Impact Development

Bioretention System Design

Applying LID Concepts to Residential Development

LID Case Studies

November 2015:

6.5 hour presentation on Stormwater Management 2015

June 2014:

6.5 hour presentation on Stormwater Regulations in Connecticut

Connecticut Chapter of the American Institute of Architects:

April 2014, September 2010, December 2010:

What is Low Impact Development and how do you apply it to residential projects

Low Impact Development and the Environmental Site Design

LID Stormwater Treatment Systems: Siting, Design and Installation for Maximum Environmental Benefit. What are the aesthetic, financial and maintenance implications?

Connecticut Association of Wetland Scientists:

March 2014

Wastewater to Stormwater; Designing a subsurface flow gravel wetlands

Soil and Water Conservation Society:

March 2014:

Low Impact Development and the Connecticut General Stormwater Permit

ASCE/EWRI:

March 2013:

Changing the Regulatory Framework to Adopt LID Strategies

August 2013:

He co-taught an ASCE Short Course entitled, Introduction to Low Impact Development with Mike Clar at the 2013 Low Impact Development Symposium

May 2011:

eight-hour short courses on Low Impact Development at the EWRI/ASCE 2011 World Environmental & Water Resources Congress in Palm Springs, CA (May 2011). The following topics will be covered: Understanding and Implementing Principles of Low Impact Development, Applying LID Strategies to a

Conferences Attended

- Bioretention Summit: Ask the Researcher – Annapolis, MD (July 2010).
- Workshop at the University of New Hampshire Stormwater Center on permeable pavements. (December 2009).
- Two workshops at the University of New Hampshire Stormwater Center in Durham, NH to observe conventional and Low Impact Development storm water treatment systems in operation. (March 2006 and May 2007).
- 2ND National Low Impact Development Conference – (March 2007).
- Designing Bio/Infiltration Best Management Practices for Stormwater Quality Improvement – University of Wisconsin (November 2005).
- Stormwater Design Institute – Center for Watershed Protection (December 2004).
- Engineering and Planning Approaches/Tools for Conservation Design – University of Wisconsin (December 2003).
- Law for Design Professionals in Connecticut (September 2002).
- On-site Wastewater Facility Design – University of Massachusetts (May 2002).
- The Northeast Onsite Wastewater Short Course & Equipment Exhibition (March 2002).
- Designing On-site Wetland Treatment Systems, University of Wisconsin (October 1999).
- Cost Effective Drainage System Design – University of Wisconsin (November 1997).
- Treatment Wetlands, University of Wisconsin, (Madison, WI) (April 1996).
- Alternative On-site Wastewater Treatment Systems (November 1994).
- Stormwater Quality, University of Wisconsin (June 1994).



LOW IMPACT SUSTAINABLE DEVELOPMENT PROJECTS

LID and LISD Regulations and Design Manuals

- **Town of Tolland, CT** – Prepared amendments to Town of Tolland Zoning, Subdivision, Inland Wetland regulations and Road Design Manual to incorporate Low Impact Development standards. Wrote “Design Manual – Low Impact Development – Storm Water Treatment Systems – Performance Requirements – Road Design & Storm Water Management” prepared for the Town of Tolland; October 2007. The Town of Tolland was awarded the Implementation Award by the CT-APA for the LID regulations and design manual in December 2008.
- **Town of Plainville, CT** – Planimetrics was the lead consultant on this project. This office performed the technical regulatory audit to identify barriers to the implementation of LID. These barriers were removed from the regulations to provide for the implementation of LID. A LID design manual was written by Steve Trinka to address specific development/stormwater issues for the Town of

runoff from the impervious areas will be infiltrated up to and including the 25-yr storm event (5.7" of rain/24 hrs). Fully constructed and occupied.

- **SRG Family, LLC** – Southbury, Connecticut: Design final site grading for 38,000+ sq.ft. Medical services building and approximately 225 parking spaces in order to maintain overland flow patterns. Designed multiple LID treatment systems consisting of bioswales with weirs, Bioretention systems and Permeable Pavement (asphalt) to handle runoff from all impervious area on the project site. The LID treatment systems are capable of fully infiltrating the runoff from a 50-yr storm event will virtually eliminating the discharge of any pollutants to the adjacent wetland area. Currently pending before Inland Wetlands Commission for modification of original approval.
- **Farmington River Watershed Association** – Winchester, Connecticut: Designed stormwater retrofit for existing 1-acre paved parking area at the science building of the Northwest Community College to treat runoff prior to discharge into the Still River. Retrofit consists of forebay and Bioswale to treat runoff from parking area and building roof. Currently at Bid stage.
- **Garden Homes Management** – Southport, Connecticut (Affordable Housing) - Designed site to support 96-unit apartment building and 115 parking spaces. Site contains both freshwater and tidal wetlands. Stormwater management design required to provide Groundwater Recharge Volume & Water Quality Volume in addition to reducing the post-development peak rate of runoff from the 10-yr rainfall event to the pre-development peak rate of runoff from the 2-yr rainfall event. The stormwater management design includes grassed swales, Bioretention systems and underground concrete galleries to meet all of these stormwater requirements. Due to favorable soils on the site, the site will likely be a zero discharge site. Court Approved.
- **Garden Homes Management** – Milford, Connecticut (Affordable Housing) - Designed site to support 257-unit apartment building with 295 parking spaces. Stormwater management design required to provide Groundwater Recharge Volume & Water Quality Volume in addition to reducing the post-development peak rate of runoff from the 25-yr rainfall event to the pre-development peak rate of runoff from the 25-yr rainfall event. The design utilizes a Bioretention system, two underground galleries systems as well as a small detention basin to meet all of the stormwater requirements. Court Approved.
- **Garden Homes Management** – Milford, Connecticut (Affordable Housing) - Designed site to support 21,888 sq.ft. building (three stories) containing 36 studio apartments and 45 parking spaces. Permeable pavement and Bioretention will be used on the site to treat runoff for water quality improvements along with reducing runoff volume from the 1-yr to 100-yr storm event. Construction complete and project occupied.
- **Quickcomm, Inc.** – Newtown, CT: Design a parking facility for approximately 140 vehicles to serve an existing corporate use. Runoff from the entire parking facility will be directed to one of seven Bioretention systems. Water quality of the runoff will be improved by the filtration through a specialized soil media and will then infiltrate into the underlying soils. Due the presence of sand and gravel soils, the Bioretention systems will fully infiltrate all runoff up to and including a fifty-year design storm (6.5" of rain/24 hours). Land use approvals obtained in the fall of 2012 and work completed in the fall of 2013.
- **Garden Homes Management** – Fairfield, Connecticut (Affordable Housing) - Designed site to support 32,592 sq.ft. building (three stories) containing 54 studio apartments and 68 parking spaces. Permeable pavement will be used for majority of parking facility. Roof drains will also be directed

- **Trade Winds Farm** – Winchester, Connecticut: 24 lot Open space subdivision on 104+ acres of land. Performed all civil engineering design work for project. Notable feature of project is the preservation of 64+ acres of the site as dedicated Open Space. Many LID strategies such as Environmental Site Design, site fingerprinting, volumetric reduction and water quality improvements were incorporated into site design. Storm water treatment systems utilized vegetated basins, vegetated swales with gravel filter berms, emergent marsh, Bioretention systems, linear vegetated level spreader, and meadow filter strips.
- **Northern View Estates** – Sherman, Connecticut: Five lot subdivision with private road. Design has no direct wetland impacts and only minor intrusions into defined 100' upland review area. Low Impact Development systems, such as vegetated swales and Bioretention were used to treat post-development runoff while maintaining existing drainage patterns to the maximum extent possible.
- **Mill River** – New Milford, Connecticut: Designed 14 lot open space subdivision on 68-acre site. Performed all civil engineering services for project. LID treatment systems such as a permanent pond/emergent marsh system, linear biofiltration swale, and rain gardens were designed for the site.
- **Byron Avenue Cluster Development** – Ridgefield, Connecticut: Seven lot cluster subdivision on 4 acres. The Stormwater management system consisted of a road with no curbs, grassed swales, and constructed wetland with detention to reduce pollutant loads and increases in the peak rate of runoff.
- **The Estates on the Ridge** – Ridgefield, Connecticut: 32 lot open space subdivision on 152+ acres. Over 80 acres of the site will be preserved as Open Space as part of this project. Stormwater will be treated by the use of rain gardens for roof drains, infiltration trenches for footing drains, emergent marsh systems and vegetated swales for conveyance and treatment of road runoff. Designed over 1 mile of proposed road for project. Designed bottomless culverts over several wetlands crossing to minimize direct impact on wetland areas.
- **G & F Rentals, LLC** – Oxford, Connecticut: By utilizing LID stormwater concepts such as grass filter strips, Bioretention in parking islands, Bioretention for roof drains, and infiltration trenches, a total of 54,000 sq.ft. of commercial office space along with 140+ parking spaces was placed on 10-acre site. The project also restored previously degraded inland wetlands on the site.
- **Dauti Construction – Edona Commons** – Newtown, Connecticut: Designed 23-unit affordable housing plan to minimize impacts on delineated wetland areas. Designed three construction wetland systems for the treatment of storm water runoff for water quality renovation.
- **American Dimensions, LLC** – New Milford, Connecticut: Redesigned the storm water treatment systems for a 7-lot residential subdivision. Rain gardens were designed to handle the runoff from all roof areas and proposed driveways. Each rain garden provided the required Water Quality Volume and Groundwater Recharge Volume as specified in the 2004 Storm Water Quality Manual. A Subsurface Gravel Wetland was designed to treat the full Water Quality Volume for runoff from adjacent roads network which drained through the subject property.
- **Molitero Residence** – New Fairfield, CT: Designed five Bioretention systems to mitigate both volumetric increases of runoff and address water quality issues for large building addition to single family residence on Candlewood Lake. Also designed landscape filter strip above lake edge to filter runoff from up gradient lawn area. Bioretention systems fully infiltrated 5" of rain in 24 hours from Hurricane Irene in August of 2011. Project was featured in newsletter of Candlewood Lake Authority to demonstrate the effectiveness of LID treatment systems in a lake environment.

- **Town of Newtown Inland Wetlands Commission** – Sherman Woods – 38 lot residential Subdivision with focus on stormwater management and water quality. Review stormwater management plan for compliance with CT DEP 2004 Storm Water Quality Manual to address water quality issues being directed to high quality wetland systems. Also review erosion & sedimentation control plan for adequacy and compliance with CT DEP 2002 Guidelines for Soil Erosion & Sediment Control. Project withdrawn and not resubmitted.
- **Town of Winchester Inland Wetlands Commission** – 30,000 sq.ft. Commercial building with grading and stormwater management within 100-yr flood plain. Plan reviewed focused on impacts to floodway and 100-year flood plain as a result of the placement of significant fill within the flood plain. Project approved with modifications to stormwater management system.
- **Town of Southbury Inland Wetlands Commission** – 35,000 sq.ft. Medical office building proposed in close proximity to inland wetlands & watercourses. Review focus on the adequacy of the stormwater management plan to address water quality and runoff volumes prior to discharge into on-site wetland areas.
- **Friends of Litchfield** – Stop & Shop proposal on existing retail site proposing an increase of impervious area of 1 acre directly draining into an aquifer protection area. Focus of review was on adequacy of stormwater management system to address water quality of runoff and prevent further off-site adverse impacts. Project approved with minor modifications to stormwater management system.
- **The Regency at Ridgefield** – Proposal for contractor’s yard on steep slope immediately uphill of existing pond and wetlands. Project proposed removal of over 45,000 cubic yards of earth and rock to facilitate construction of building. Focus of review was on adequacy of erosion control and stormwater management plan to prevent discharges of pollutants to receiving pond. Project denied citing impacts of stormwater on existing pond.
- **Friends of Oswegatchie Hills Nature Preserve, Inc. and Save the River, Save the Hills, Inc.** – Review of preliminary site plan for 840 unit of affordable housing on a 230+ acre site directly adjacent to the Niantic River submitted for a zone change to the Planning and Zoning Commission. Focus of review was on stormwater management and impacts to down gradient wetlands, including the Niantic River. Preliminary site plan approval granted with conditions of approval requiring final plans to address stormwater issues raised by Trinkaus Engineering, LLC.
- **Save the River, Save the Hills, Inc.** – Review of the erosion control plans and stormwater management plans for 90-acre solar array proposed on core forest in Waterford, Connecticut which drained directly to first order cold water fishery streams. Provide written comments to Connecticut Siting Council on behalf of Save the River, Save the Hills (Intervenor). Siting Council denied project citing erosion and stormwater management issues with the plan.
- **Town of Brookfield Inland Wetlands Commission** – The Enclave at Brookfield, an affordable housing project with 187 units on 9.8 acres proposing filling of wetland, locating stormwater basin within inland wetland area and a significant increase of impervious. Review focused on adequacy of stormwater management system to address water quality, runoff volume and peak rate changes due to development in accordance with CT DEP 2004 Storm Water Quality Manual and local land use requirements, review of erosion & sedimentation control plan for compliance with CT DEP 2002 Guidelines for Soil Erosion & Sediment Control and local land use requirements. Offer modifications to plans to address water quality and runoff volume which applicant accepted resulting in approval of project.
- **Town of Brookfield Inland Wetlands Commission and Zoning Commission** – The Renaissance, an affordable housing project with 156 units of 5+ acres adjacent to the Still River replacing existing development on the site. Review focused on adequacy of stormwater management system to address water quality, runoff volume and peak rate changes due to development in accordance with CT DEP 2004 Storm Water Quality Manual and local land use requirements, review of erosion & sedimentation control plan for compliance with CT DEP 2002 Guidelines for Soil Erosion &

hearings in front of Inland Wetlands Commission. Application to conduct regulated activities was denied by the commission in July 2019.

- **Town of Brooklyn** – Perform review of stormwater management design with regard to addressing water quality, runoff volume and downstream impacts of a 51-unit condominium project. Provide suggestions to design engineer to implement comments in review letter.
- **Friends of the Lake – Enfield, CT** – Perform third-party civil engineering review of proposed 819,000 square truck warehouse/distribution center with a focus on impacts of increased runoff volumes and water quality from a high-pollutant load site. Prepare written report and provide testimony in front of Planning and Zoning Commission.
- **Newtown Neighbors – Newtown, CT** - Perform third-party civil engineering review of proposed 340,000 square truck warehouse/distribution center with a focus on impacts of increased runoff volumes and water quality from a high-pollutant load site. Prepare written report and provide testimony in front of Planning and Zoning Commission.
- **Town of Mansfield – Mansfield, CT** - Perform third-party civil engineering review of alterations to existing car dealership to allow for the construction three new restaurants and retail space. Review encompassed all civil engineering aspects of plan. Prepare written report for submission to Inland Wetlands Agency.

Ground Mounted Solar Arrays

- **Lodestar Energy – Winchester, CT:** Performed all civil engineering for an eight-acre solar array on 100-acre parcel. This work included the access driveway, two wetland crossings and the design of a stormwater management system for the project. Notable aspects include: All solar panels are considered impervious area, Soil Class for hydrologic model was dropped down by 1 to account for compaction by the movement of vehicles, grass swales with check dams were proposed on the two sides of the array to collect runoff and convey to a constructed wetland basin which met the requirements of the channel protection volume (DEP Manual). All designed comprehensive erosion and sedimentation control plan with multiple phases. The design of the erosion control plans and stormwater management plans exceed the requirements found in the CT DEP 2004 Storm Water Quality Manual and the CT DEP 2002 Guidelines for Soil Erosion and Sediment Control.
- **GRE – Waterford, CT:** Retained by Save-the-River, Save-the-Hills to review the erosion control plan and stormwater management plan on an environmentally sensitive site with runoff being directed to cold-water fishery streams which support native trout populations and drain to Niantic River. Provide civil engineering technical review in pre-filed testimony to Connecticut Siting Council and testify at Siting Council public hearing on application.
- **GRE – East Lyme, CT:** Retained by adjacent property owner to evaluate stormwater impacts from 30 acres ground mounted solar array in legal case for adverse impacts to wetlands and watercourses. Finding showed that runoff from the site was significantly under-estimated by the design professional as the panels were not considered impervious and the changes to soil conditions due to regrading were not considered in the design which resulted in the failure of the stormwater basins during construction as well as after the construction was complete.

- **Anthony DeLuca**, Design 2 acre pond, Redding, Connecticut.
- **Barrett Cram**, Design 0.5 acre pond, Redding, Connecticut.
- **Jay & Eileen Walker Residence**, 27,000 sq.ft. residence, Ridgefield, Connecticut.

Athletic Facilities

- **Kingdome – East Fishkill, NY**, Prepare comprehensive site plan for the construction of an air-supported structure covering 7.96 acres of land area. Project also includes the design of 303 parking spaces, two full size artificial turf baseball fields and three 54-80 artificial turf baseball fields. Designed all site grading and stormwater management facilities to address water quality volume, channel protection volume as well as peak rate attenuation for the 1-yr, 2-yr, 10-yr, 25-yr, 50-yr and 100-yr rainfall events.
- **Tiger Hollow – Ridgefield High School – Phase I**, Design and site artificial turf competition field and track complex. Design access road to provide access to new building containing locker rooms, concessions, media room, and equipment storage areas. Design all utility connections and obtain local permits.
- **Tiger Hollow – Ridgefield High School – Phase II**, Prepare Conceptual Development plan for reconfiguration of existing athletic fields adjacent to the Tiger Hollow stadium.
- **Joel Barlow High School – Redding, CT**, Provide preliminary Master Plan on pro bono basis for reconfiguration and improvement of existing athletic fields at Joel Barlow in response to Falcon Pride stadium proposal. Plan was provided to Region 9 Board of Education for general discussion purposes.



Trinkaus Engineering, LLC
114 Hunters Ridge Road
Southbury, Connecticut 06488
203-264-4558 (office)
+1-203-525-5153 (mobile)
E-mail: strinkaus@earthlink.net
<http://www.trinkausengineering.com>

March 12, 2024

Ms. Deborah Moshier-Dunn
STR-STH
P.O. Box 505
Waterford, Connecticut 06385

RE: Conceptual 8-30g Site Plan
91 Boston Post Road
East Lyme, Connecticut

Work Performed:

1. Review engineering plans and documents submitted for above referenced project.
2. Perform civil engineering review and prepare written report on adequacy of information provided by the applicant for a conceptual site plan.

For Consulting Services: \$ 875.00
Please make checks payable to Trinkaus Engineering, LLC

2022 Appendix B-1. List of Impaired Waters for Connecticut (EPA Category 5)

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT1001-00-1-L1_01	Wyassup Lake (North Stonington)	MERCURY	Fish Consumption
CT2000-30_01	Fenger Brook (Waterford)-01	CAUSE UNKNOWN	Habitat for Fish, Other Aquatic Life and Wildlife
CT2101-01_01	Wheeler Brook (Stonington)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT2101-03_01	Donahue Brook (Stonington)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT2202-00_01	Latimer Brook (East Lyme)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT2204-03_01	Stony Brook (Waterford)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT2205-02-1-L1_01	Dodge Pond (East Lyme)	MERCURY	Fish Consumption
CT3002-02-1-L2_01	Amos Lake (Preston)	CHLOROPHYLL-A	Recreation
CT3002-02-1-L2_01	Amos Lake (Preston)	ALGAE	Recreation
CT3002-02-1-L2_01	Amos Lake (Preston)	NUTRIENTS	Recreation
CT3004-00_01	Oxoboxo Brook (Montville)-01	CAUSE UNKNOWN	Habitat for Fish, Other Aquatic Life and Wildlife
CT3006-00_01	Hunts Brook (Waterford)-01	CAUSE UNKNOWN	Habitat for Fish, Other Aquatic Life and Wildlife
CT3100-00_05	Willimantic River (Tolland/Willington/Ellington/Stafford)-05	ESCHERICHIA COLI (E. COLI)	Recreation
CT3104-00-2-L8_outlet_01	Ruby Lake outlet stream-01	Diesel Fuel	Habitat for Fish, Other Aquatic Life and Wildlife
CT3201-00_01	Bungee Brook (Woodstock)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT3202-00_01	Still River (Eastford)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT3207-12_01	Roberts Brook (Mansfield)-01	CAUSE UNKNOWN	Habitat for Fish, Other Aquatic Life and Wildlife
CT3208-00_01	Sawmill Brook (Mansfield)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT3208-02_01	Conantville Brook (Mansfield)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT3300-10_01	Quinasset Brook (Thompson)-01	ESCHERICHIA COLI (E. COLI)	Recreation
CT3700-00_01	Quinebaug River (Lisbon/Griswold)-01	CAUSE UNKNOWN	Habitat for Fish, Other Aquatic Life and Wildlife

2022 Appendix B-1. List of Impaired Waters for Connecticut (EPA Category 5)

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT-E1_014-SB	LIS EB Inner - Thames River (Mouth), New London	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_014-SB	LIS EB Inner - Thames River (Mouth), New London	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	FECAL COLIFORM	Commercial Shellfish Harvesting Where Authorized
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	ENTEROCOCCUS	Recreation
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_016-SB	LIS EB Inner - Thames River (Upper), Norwich	NUTRIENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_016-SB	LIS EB Inner - Thames River (Upper), Norwich	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_016-SB	LIS EB Inner - Thames River (Upper), Norwich	FECAL COLIFORM	Commercial Shellfish Harvesting Where Authorized
CT-E1_016-SB	LIS EB Inner - Thames River (Upper), Norwich	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_016-SB	LIS EB Inner - Thames River (Upper), Norwich	ENTEROCOCCUS	Recreation
CT-E1_020	LIS EB Inner - Niantic River (mouth), Niantic	NUTRIENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_020	LIS EB Inner - Niantic River (mouth), Niantic	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_020	LIS EB Inner - Niantic River (mouth), Niantic	CAUSE UNKNOWN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_022	LIS EB Inner - Bride Brook, East Lyme	FECAL COLIFORM	Shellfish Harvesting for Direct Consumption Where Authorized
CT-E1_024-SB	LIS EB Inner - Connecticut River (mouth), Old Lyme	POLYCHLORINATED BIPHENYLS (PCBS)	Fish Consumption

2022 Appendix B-1. List of Impaired Waters for Connecticut (EPA Category 5)

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT-E2_009-SB	LIS EB Shore - Thames River Mouth (East), Groton	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_010-SB	LIS EB Shore - Thames Rvr Mouth (West), New London	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_010-SB	LIS EB Shore - Thames Rvr Mouth (West), New London	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_010-SB	LIS EB Shore - Thames Rvr Mouth (West), New London	FECAL COLIFORM	Commercial Shellfish Harvesting Where Authorized
CT-E2_011-SB	LIS EB Shore - Thames Rvr Mouth (West), Waterford	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_011-SB	LIS EB Shore - Thames Rvr Mouth (West), Waterford	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_013	LIS EB Shore - Niantic Bay (East), Waterford	CAUSE UNKNOWN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_014	LIS EB Shore - Niantic Bay (West), East Lyme	CAUSE UNKNOWN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E2_015	LIS EB Shore - Niantic Bay (Black Pt), East Lyme	CAUSE UNKNOWN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E3_001	LIS EB Midshore - Stonington	ALGAE	Recreation
CT-E3_001	LIS EB Midshore - Stonington	ALGAE	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E3_001	LIS EB Midshore - Stonington	ESTUARINE BIOASSESSMENTS	Recreation
CT-E3_001	LIS EB Midshore - Stonington	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E3_005-SB	LIS EB Midshore - Waterford, Thames River	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E3_005-SB	LIS EB Midshore - Waterford, Thames River	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E3_006	LIS EB Midshore - Niantic Bay	CAUSE UNKNOWN	Habitat for Marine Fish, Other Aquatic Life and Wildlife

CT DEEP 2023 Stocking list

Name	Town	BN (Y)	BK (A)	BN (A)	RW (A)	Tiger (A)	BK 12+	BN 12+	RW 12+	Tiger 12+	Brood	Total
Green Falls River	North Stonington, Voluntown	0	0	720	0	0	0	0	0	0	0	720
Hall Meadow Brook	Torrington, Goshen	0	400	665	190	0	0	0	0	0	0	1,255
Hammonasset River	Clinton, Madison, Killingworth	0	1650	1970	700	125	0	0	500	0	10	4,955
	Middlebury	0	400	560	250	0	0	0	0	0	0	1,210
Hop Brook	Bolton, Coventry	0	854	1402	500	100	0	0	250	0	5	3,111
Hop River	Waterford	0	450	360	0	0	0	0	0	0	0	810
Indiantown Brook	Preston, Ledyard	0	0	1415	150	0	0	0	0	0	0	1,565
Jeremy River	Colchester, Hebron	0	600	850	760	250	0	0	200	0	2	2,662
Kettletown Brook	Southbury	0	80	220	0	0	0	0	0	0	0	300
Kitt Brook	Canterbury	0	700	200	0	0	0	0	0	0	0	900
Latimer Brook	East Lyme	0	300	1260	0	200	0	0	200	0	5	1,965
Leadmine Brook	Harwinton, Thomaston	0	850	1315	800	0	0	0	0	0	5	2,970
Little River	Canterbury, Sprague	0	1588	1069	450	0	0	0	0	0	0	3,107
Mad River	Norfolk, Winchester	0	175	300	250	0	0	0	0	0	0	725
Mashamoquet Brook	Pomfret	0	700	500	550	0	0	0	0	0	5	1,755
Mianus River	Greenwich, Stamford	0	450	570	300	0	0	0	0	0	10	1,330
Middle River	Stafford	0	0	702	179	0	0	0	0	0	0	881
Mill Brook	Woodstock	0	200	0	0	0	0	0	0	0	0	200
Mill River	Fairfield, Easton	0	150	640	430	0	0	0	0	0	10	1,230
Mill River	Hamden	0	1215	1700	985	0	0	0	400	0	10	4,310
Moosup River	Plainfield, Sterling	0	1350	1245	650	0	0	0	0	0	10	3,255
Morrissey Brook	New Milford, Sherman	0	200	400	30	0	0	0	0	0	0	630
Mount Hope River	Ashford, Mansfield	0	1000	2703	894	500	0	0	1250	0	3	6,350
Mount Misery Brook	Voluntown	0	0	450	440	0	0	0	200	0	0	1,090
Muddy River	North Haven, Wallingford	0	500	655	850	0	0	0	0	0	0	2,005
	Voluntown	0	0	395	550	0	0	0	250	0	0	1,195
Myron Kinnie Brook												
Naugatuck River, West Branch	Torrington	0	200	100	200	0	0	140	0	0	0	640
Nepaug River	New Hartford	0	250	540	200	0	0	0	0	0	5	995
Nonewaug River	Bethlehem, Woodbury	0	500	325	350	0	0	0	0	0	5	1,180

**Trout stocked by the Fisheries Division:
SUMMARY OF CATCHABLE TROUT STOCKED IN 2023 (LISTED BY FISHERIES MANAGEMENT TYPE):**

	<i>Standard Trout:</i>							<i>Specialty Trout</i>				
	Brown Yearling	Brook Adult	Brown Adult	Rainbow Adult	Tiger Adult	Brook >12"	Brown >12"	Rainbow >12"	Brood-stock	Total Trout		
Community Fishing Waters	0	4,525	3,310	6,165	700	0	300	120	0	15,120		
Trout Management Lakes	9,142	5,085	26,910	13,668	0	2,000	3,800	8,815	811	70,231		
Trout Park Ponds	0	6,700	7,555	19,628	5,405	0	575	2,610	105	42,578		
Lakes with No Special Management	1,500	10,295	27,865	34,079	1,355	0	450	3,675	111	79,330		
Lake/Pond Totals	10,642	26,605	65,640	73,540	7,460	2,000	5,125	15,220	1,027	207,259		
Enhanced Wild Trout Streams	0	3,010	8,070	19,355	835	0	355	3,250	50	34,925		
Trophy Trout Managed Streams	0	5,660	5,687	6,964	1,815	0	7,582	15,044	370	43,122		
Trout Park Streams	0	3,365	2,193	1,536	1,250	0	555	2,950	45	11,894		
Trout Management Areas (TMAs)	14,071	11,921	22,316	24,860	2,680	0	16,570	22,318	585	115,321		
Rivers with No Special Management	0	39,528	71,025	40,064	3,855	0	923	14,225	325	169,945		
River/Stream Totals	14,071	63,484	109,291	92,779	10,435	0	25,985	57,787	1,375	375,207		
Total Trout	24,713	90,089	174,931	166,319	17,895	2,000	31,110	73,007	2,402	582,466		

LATIMER BROOK, (SALEM, MONTVILLE, EAST LYME)

Updated April 17, 2016

Map 2 of 2

At the end of Chapman
Dr. off Winthrop Rd.,
East Lyme.

Behind St. Marthias
Church, above
campground, East Lyme.

Rocco Rd. bridge, East Lyme.

Town fishing area parking lot, East Lyme.

Rte. 161

Bobwhite Ln.

Cedarwood Dr.

Sandpiper Ln.

Egret Rd., bridge off of
Cedar Ln., East Lyme

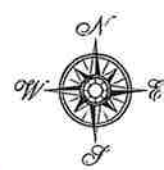
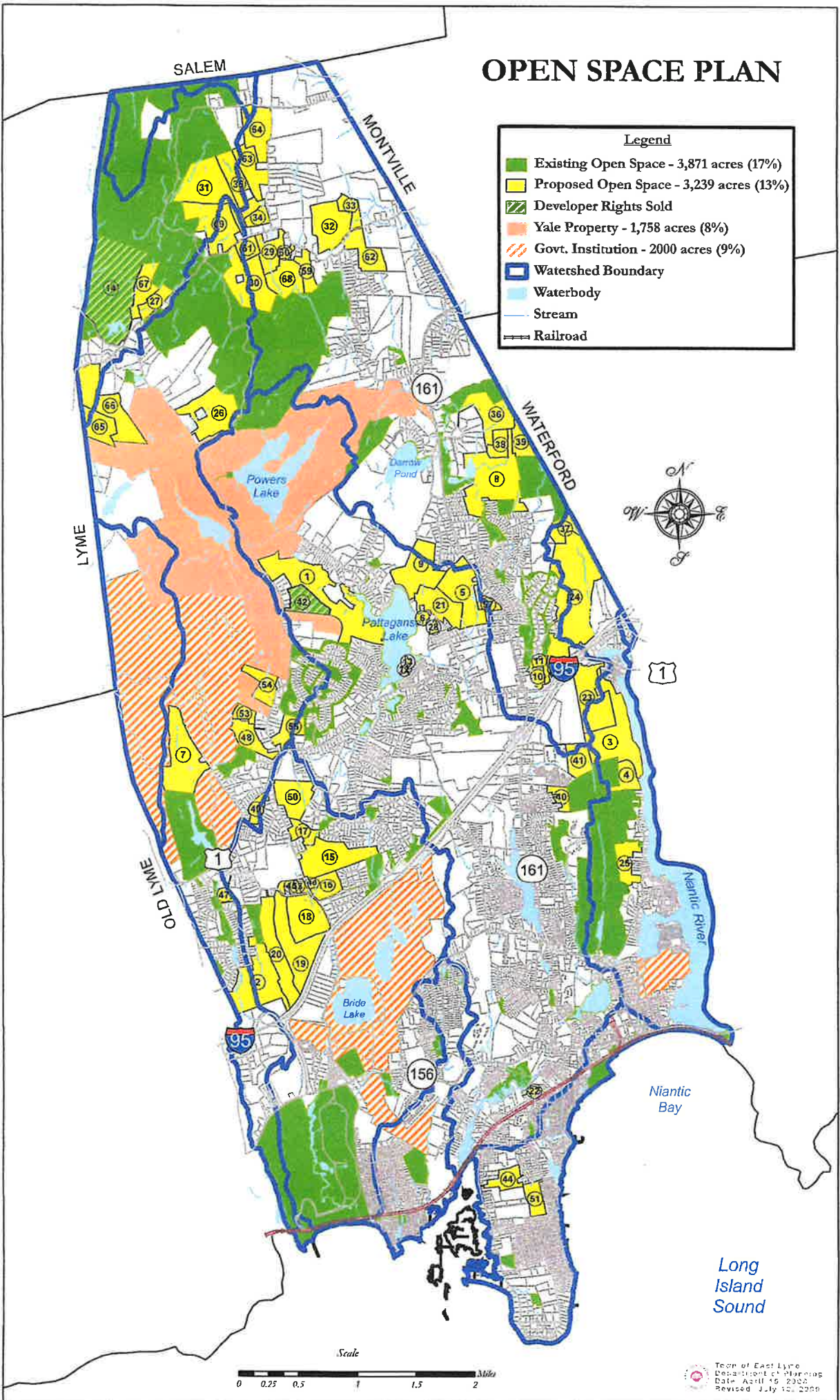
Pull off into small field through break
in the guardrails just prior to Exit 75
on I-95 North. This is the USGS
gauging station location. Run fish up
to just below bridge and from the
gauging station box. There are breaks
in the fence.

Dam at fishway, East Lyme. Above
dam at fishway and below dam.

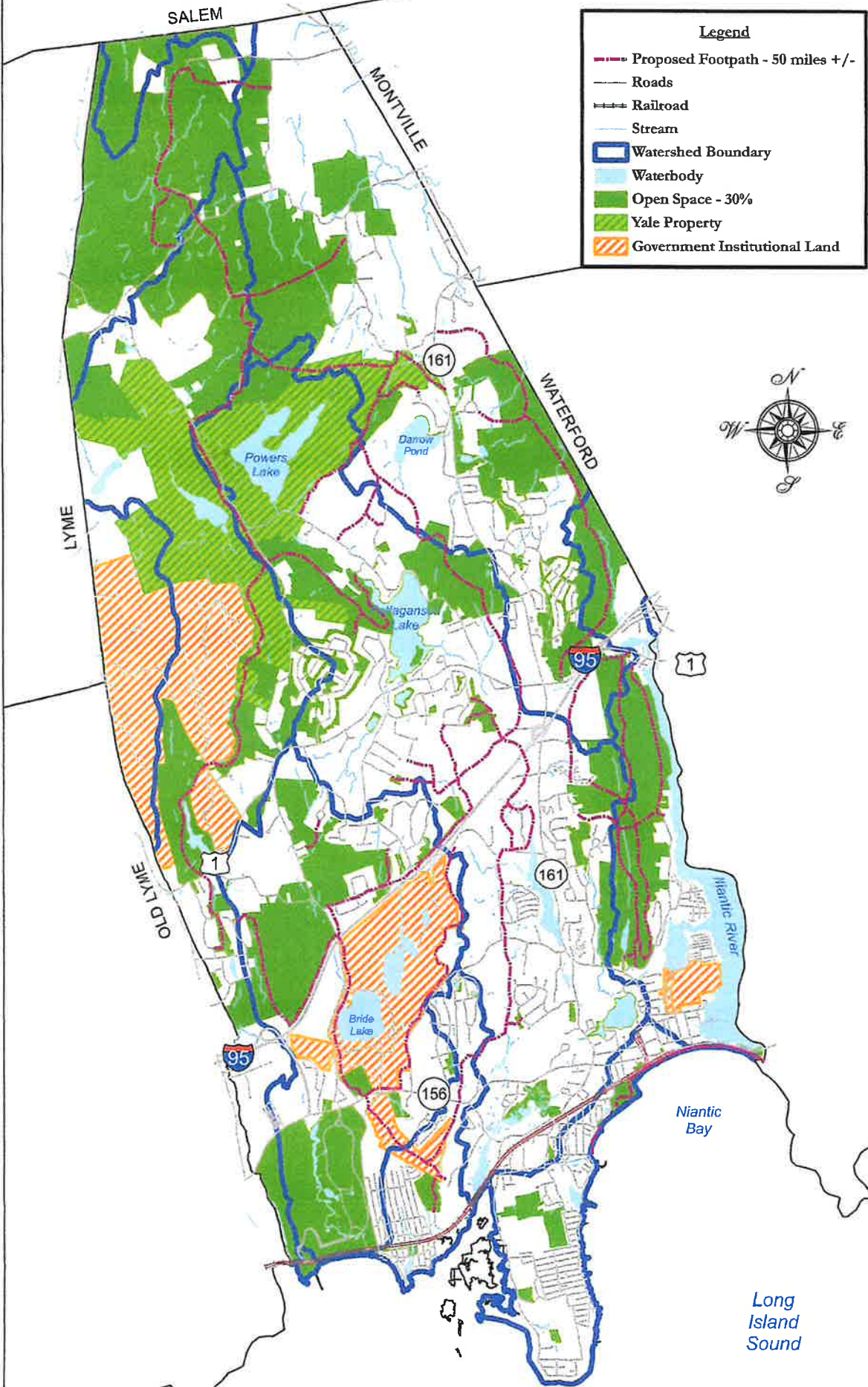
OPEN SPACE PLAN

Legend

- Existing Open Space - 3,871 acres (17%)
- Proposed Open Space - 3,239 acres (13%)
- Developer Rights Sold
- Yale Property - 1,758 acres (8%)
- Govt. Institution - 2000 acres (9%)
- Watershed Boundary
- Waterbody
- Stream
- Railroad



OPEN SPACE VISION



Legend

- - - Proposed Footpath - 50 miles +/-
- Roads
- = = = Railroad
- Stream
- Watershed Boundary
- Waterbody
- Open Space - 30%
- Yale Property
- Government Institutional Land

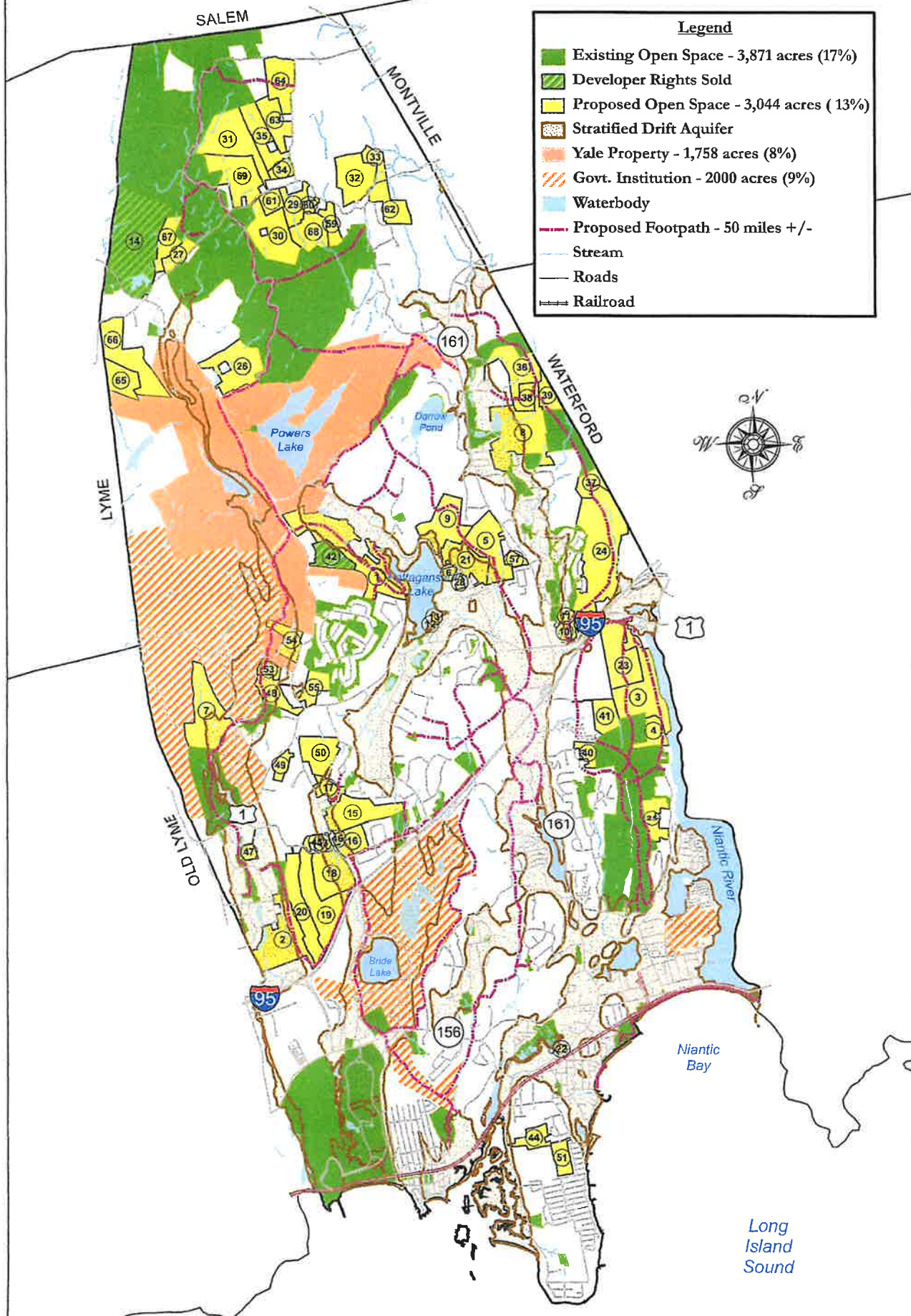


MAP

Scale

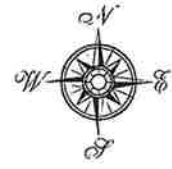


OPEN SPACE PLAN & PROPOSED FOOT PATHS



Legend

- Existing Open Space - 3,871 acres (17%)
- Developer Rights Sold
- Proposed Open Space - 3,044 acres (13%)
- Stratified Drift Aquifer
- Yale Property - 1,758 acres (8%)
- Govt. Institution - 2000 acres (9%)
- Waterbody
- Proposed Footpath - 50 miles +/-
- Stream
- Roads
- Railroad



Town of East Lyme
 Department of Planning
 Date: April 18, 2002
 Revised: May 23, 2009

MAP 6B