



# DEEP RIVER



Photo Credit: OnlyInYourState, exploreCTshoreline, Town of Deep River

## Community Resilience Building Summary of Findings

May 2024



# Town of Deep River, Connecticut

## Community Resilience Building

### *Summary of Findings*

## Overview

The need for municipalities, regional planning organizations, academic institutions, corporations, states, and federal agencies to increase resilience to extreme weather events and a changing climate is strikingly evident amongst the communities across the state of Connecticut. Relatively recent events such as Super Storm Sandy, severe winter storms (2013 & 2015), COVID-19 pandemic, and Tropical Storm Isaias have reinforced this urgency and compelled leading communities like the Town of Deep River to proactively collaborate on planning and mitigating risks. Ultimately, this type of leadership is to be commended because it will reduce the vulnerability and reinforce the strengths of people, infrastructure, and ecosystems and serve as a model for other communities in Connecticut, New England, and the nation.

Recently, the Town of Deep River embarked on certification with Sustainable CT. As part of that certification, The Nature Conservancy (TNC) and Sustainable CT provided the Town with a community-driven process to assess current hazard and climate change impacts and to generate potential and prioritized solutions to improve resilience and sustainability. In May 2024, Deep River's Core Team helped organize a Community Resilience Building process and workshop facilitated by TNC in partnership with Sustainable CT. The core directive of this effort was the engagement with and between community members to define strengths and vulnerabilities and the development of priority resilience actions for the Town of Deep River.

The Deep River Community Resilience Building Workshop's central objectives were to:

- Define top local, natural, and climate-related hazards of concern.
- Identify existing and future strengths and vulnerabilities.
- Identify and prioritize actions for the Town.
- Identify opportunities to collaboratively advance actions to increase resilience alongside residents and organizations from across the Town, and beyond.

The Town of Deep River employed an “anywhere at any scale”, community-driven process called Community Resilience Building (CRB) ([www.CommunityResilienceBuilding.org](http://www.CommunityResilienceBuilding.org)). The CRB’s tools, reports, other relevant planning documents, and local maps were integrated into the workshop process to provide both decision-support and visualization around shared issues and existing priorities across Deep River. The Deep River Plan of Conservation and Development (2015) and the Lower Connecticut River Valley Plan of Conservation and Development (2021), and the Lower Connecticut River Valley Hazard Mitigation Plan Update (2021) were particularly instructive as references. Using the CRB process - rich with information, experience, and dialogue - the participants produced the findings presented in this summary report. This includes an overview of the top hazards, current concerns and challenges, existing strengths, and proposed actions to improve Deep River’s resilience to hazards and climate change today, and in the future.

The summary of findings transcribed in this report, like any that concern the evolving nature of risk assessment and associated action, is proffered for comments, corrections and updates from workshop attendees and other stakeholders alike. The leadership displayed by the Town of Deep River on community resilience building will benefit from the continuous participation of all those concerned.

## **Summary of Findings**

### **Top Hazards and Vulnerable Areas for the Community**

Prior to the CRB Workshop, the Deep River Core Team identified the top hazards for the Town. The hazards of greatest concern included flooding and extreme precipitation events, heavy wind events, and drought. Additional hazards highlighted by participants during the CRB Workshop included Nor’easters and blizzards during fall, winter, and spring months as well as extreme temperature events (hot and cold) and hurricanes and tropical storms. These hazards have direct and increasing impacts on the infrastructure, environment, and residents of and visitors to Deep River. These effects are seen within residential areas, natural areas (wetlands, rivers, forests, preserves), roads, bridges, businesses, farms, municipal facilities, churches, social support services, arts and culture, and other critical infrastructure and community assets within Deep River.

## **Current Concerns and Challenges Presented by Hazards**

The Town of Deep River has several concerns and faces multiple challenges related to the impacts of natural hazards and climate change. In recent years, Deep River has experienced a series of highly disruptive and damaging weather events including Superstorm Sandy (October 2012), large snowfall events winter 2015-2016 (84" cumulative), extreme wind events (October 2017), ice jams along Connecticut River (January 2018), Tropical Storm Isaias (August 2020), and other less impactful but more frequent events. Impacts from Sandy included rain-induced, inland flooding, tree damage and associated power outages to the majority of Town for over five days. January ice jams (2018) halted ship traffic on the Connecticut River and caused flooding to town landing and adjoining neighborhoods. The magnitude and intensity of these events and others across Connecticut have increased awareness of natural hazards and climate change, while motivating communities such as Deep River to proactively improve their resilience.

This recent series of extreme weather events highlights that the impacts from hazards are diverse. In Deep River this included riverine flooding of critical infrastructure, roads, and low-lying areas; riverine flooding specific to Deep River through the central business district through Town; localized flooding from stormwater runoff during intense storms and heavy precipitation events; and property damage and utility outages (lasting several days or more) from wind, snow, and ice. Longer periods of elevated heat, particularly in July and August, have raised concerns about vulnerable segments of the population, including elderly and/or disabled community members. The combination of these issues presents a challenge to preparedness and mitigation priorities and requires comprehensive, yet locally specific actions for the Town.

The workshop participants were generally in agreement that Deep River is experiencing more intense and frequent storm events and heat waves. Additionally, there was a general concern about the increasing challenges of being prepared for the worst-case scenarios (e.g., major thunderstorms and hurricanes (Cat-3 or above)) particularly in the late summer and in the fall/winter months when more intense storms coincide with colder weather (i.e., snow/ice storms, Nor'easters, blizzards).

## ***Specific Categories of Concerns and Challenges***

As in any community, Deep River is not uniformly vulnerable to hazards and climate change. Certain locations, assets, and populations have been and will be affected to a greater degree than others. Workshop participants identified the following items as their community's key areas of concern and challenges across several broad categories. Vulnerabilities and associated mitigation actions identified in the current Lower Connecticut River Valley Hazard Mitigation Plan Update (2021) are provided in Appendix A for cross reference.

### **Municipal Functions, Operations, & Growth:**

- Growing number of vulnerable elderly residents on fixed incomes due to increases in the cost of living (food, rent, heat, etc.).
- Insufficient amount of affordable housing to satisfy the needs of the community in Deep River.
- Despite cooperation between the Tri-Towns (Chester, Essex, Deep River) there is still resistance to additional collaboration on regional issues, which has impacted advances in several issues.
- Escalating costs to process household non-recyclable waste (including food scraps that could be removed from waste stream) that is incorporated into local taxes that will become an increasing burden on residents.
- Deep River is highly dependent on volunteers for functions, resources, and services which can present a challenge if the volunteer pool shrinks due to the shifting interests amongst the younger generations.
- Relatively high percentage of “Asset Limited, Income Constrained, Employed” (ALICE) families in Deep River (30% of all families) who are financially vulnerable and find it difficult to find housing that is affordable given the current rental market in the Tri-Town area (“very vulnerable families in a relatively affluent area”).
- Growing influx of immigrant population that find it challenging to get established due to the relatively high cost of living in Deep River.
- Concerns about the ability of the agricultural community in Deep River to be adequately prepared for both flooding and drought conditions all in a single season.
- Growing need for capital investments to fund solutions coupled with challenges to set aside funds given ever increasing operations costs other than increasing mill rates (currently 33) and subsequent property taxes amongst residents.
- Limited amount of power generated locally through renewables, currently.

## ***Specific Categories of Concerns and Challenges (cont'd)***

- Annual flooding from the Connecticut River brings large woody debris and entire trees down from upstream sources resulting in challenges and costs to manage for the Town. Impacts include reduced accessibility of public boat launches and damage to docks.

### **Emergency Management & Preparedness:**

- Concerns about the reoccurrence frequency and duration of drought conditions in central Connecticut and the impacts it is having on people, agriculture, and natural ecosystems.
- Cycles of drought and intense rainstorms coupled with a warming climate is increasing the risk of vector borne diseases across Connecticut including Deep River.
- Ongoing challenges in distributing resources and information during power outages and road closures due to downed trees in many parts of the municipality.
- Growing elderly population in Deep River that may present challenges to existing support systems without adequate means of tracking changes in the groups of residents and location over time.
- List of residents with special needs during emergency situations is not updated routinely and requires residents to self-identify to be placed on list.
- Deep River does not have a proper emergency operations center.
- Significant flooding and exposure to people and property along Deep River Stream, which impacts the central business district, the Fire Department, senior housing, Library, and several critical bridges (“significant municipal assets in floodplain”).
- Predominance of above ground power lines resulting in ongoing high exposure to impacts from trees and tree limbs.
- Power outages lasted several days presents challenge to private residences dependent on drinking water wells.
- Concerns about the impact of heat waves on elderly and those in housing that do not have air conditioning systems. Additional regarding the coupling of heat waves with power outages impacting young families with children as well as elderly in relatively isolated housing.
- Hemlock Neighborhood has very steep topography that becomes problematic during the winter month potentially resulting in isolation of elderly residents from the rest of Town.

### **Roads, Bridges, Road Networks, & Dams:**

- Several low-lying roads that flood routinely including Essex Street and at the end of Cedar Swamp Road.

## ***Specific Categories of Concerns and Challenges (cont'd)***

- Kirkland Street towards The Landing floods resulting in impacts to homes and a parking lot.
- Flooding along Essex Street at Pratt Cove cuts off access to those living in the surrounding neighborhoods.
- Routine flooding of roadway in front of the Ambulance Barn.
- Concerns about the status and level of maintenance amongst all the private owned dams in Deep River, which in some case constituted a significant risk to downstream people and property if catastrophic failure were to occur.
- Flooding issues increasing at Keyboard Pond which has resulted in houses along the pond having flooding basements due to irregular management of a privately owned sluiceway designed to regulate the flow of water for a historic mill facility.

### **Stormwater, Waste Systems, & Drinking Water Supply:**

- Fountain Hill Cemetery flooding with impacts to elementary school at the bottom of hill.
- Devitt Field has less than adequate drainage mechanisms in place which results in chronic icing and subsequent salting of the area by municipal crews during the winter.
- High cost of maintaining existing stormwater management systems coupled with undersized culverts on many secondary roadways in Deep River.
- Castle Heights hill causes high volumes of stormwater runoff that results in downstream storm drains getting backed up with localized flooding.
- Erosion on private property due to increasingly intense and longer duration precipitation events results in sediment running off onto municipal roads in certain locations.

### **Watersheds, Wetlands, Rivers, Open Space, Forests, Agricultural Lands, & Trees:**

- Dead and dying trees located along transportation corridors that present potential challenges to public safety, road access, and power outages (e.g., Tropical Storm Sandy). Tree density and canopy along roadways has expanded significantly since last major hurricane.
- Ongoing concerns regarding the periodic construction of beaver dams that cause localized flooding and road closures after major precipitation events.
- Concerns about the impacts of more intense and extended droughts on forest species diversity and distribution over time in the forested landscapes of Deep River and the entire Connecticut River corridor.

## ***Specific Categories of Concerns and Challenges (cont'd)***

- Tick population continues to expand and is becoming a major public health problem with more complicated tick-borne illnesses beyond just Lyme Disease.
- Open space parcels do not remain on the market very long which presents a challenge to secure adequate funding to ensure parcels are protected from development.
- Limited amount of open space owned and managed by the municipality with the majority owned privately or by the state of Connecticut. Privately owned open space is always subject to additional development which could alter the current balance between development and conserved lands in Deep River.
- Open space and undeveloped areas in Town continuously vulnerable to establishment of invasive species that can compromise native flora and fauna and the integrity of natural ecosystem along the lower Connecticut River.
- Ongoing proliferation of invasive species along roadways due to current maintenance techniques and approaches.
- Increases in annual rain fall amounts coupled with proximity to Connecticut River is resulting in higher seasonal groundwater levels in lower lying areas of Deep River.
- Water quality concerns for the Connecticut River due a history of discharge of untreated sewage upstream in Hartford and Springfield.
- Loading due to stormwater runoff of waterways in proximity to residential and commercial lawns receiving chemicals and fertilizers.



Credit: Wikipedia



Credit: Zillow



Credit: CTvisits



## **Current Strengths and Assets**

Just as certain locations, facilities, and populations in Deep River stand out as particularly vulnerable to the effects of hazards and climate change, other features are notable assets for Deep River's resilience building. Workshop participants identified the following items as their community's key strengths and expressed interest in centering them as the core of future resilience building actions.

### **Municipal Functions, Operations, & Growth:**

- Clearly, the responsive and committed engagement exhibited by leadership, staff, and residents is a very appreciated strength within and across Deep River. Ongoing collaboration between municipal staff, committee/commission/board volunteers, business community, faith-based organizations, non-governmental organizations, adjoining municipalities, Council of Government, and various state-wide organizations (i.e., Sustainable CT, The Nature Conservancy), among others, on priorities identified herein will help advance comprehensive, cost-effective, community resilience building actions.
- Deep sense of community in Deep River where neighbors look to help one another resulting in a small-town feel. Many multi-generational families call Deep River home.
- Tremendous willingness for residents to get involved and support impactful, community-based efforts.
- Residents take the time to come together and address issues and find solutions as event by the level of participation in gatherings such as Deep River's Community Resilience Building workshop. Residents and groups are open and receptive to discussions on issues of concern across Deep River.
- Small town provides residents and volunteers with the ability to speak directly with leadership about concerns, which is not always the case in larger communities ("Deep River is like a big extended family").
- Dedicated residents that bring the expertise and background to volunteer opportunities on various boards and committees in Deep River ("volunteers are the backbone of our community"). Strong core of volunteers in Deep River as well as routine collaboration with similar groups in Chester and Essex.
- Decisions to solve issues are made from the ground up with active listening by leadership in Deep River.

## **Current Strengths and Assets (cont'd)**

- Highly educated and aware volunteers from the community help make policies and regulations generated via Deep River Planning and Zoning align and support the realities within the Town.
- Deep River Sustainability Committee has engaged with the community and has become a recognized asset to the Town responsible for stimulating critical discussions about the future of municipality and ways to balance growth with cost efficiency (i.e., food scrap collection pilot, improved management at Transfer Station).
- High level of collaboration within and across municipal departments to ensure the residents are routinely provided with quality services and resources. Collaborative approaches extend amongst municipal staff with the adjoining municipalities of Chester and Essex, which are important and highly valued within Deep River.
- Municipal staff are willing to go above and beyond to ensure that projects and initiatives that benefit Deep River are completed (“focused on doing what is right for the Town”).
- Connectedness and inter-dependence of the “Tri-Town” areas (Chester, Essex, Deep River) is a considerable strength that lends itself to providing a regional approach to resource sharing and supportive services.
- Undeveloped land in Deep River provides greater flexibility and options for future land use that can accommodate or balance growth and conservation resulting in a higher quality of life for residents.
- Local homeowners take a great deal of pride in maintain their properties.
- Select areas of Deep River are walkable with sidewalks that are well used by residents to connect to municipal amenities.
- Ready access to many healthcare facilities including dentists, hospital and doctor’s offices, and emergency services.
- The village area is designed to be friendly to the aging populations in Deep River.
- Two access points to the Connecticut River in Deep River which is beneficial to residents as well as bringing in visitors traveling by boat.
- Presence of a transfer station that is both convenient and accessible is a significant asset for Deep River.

## **Current Strengths and Assets (cont'd)**

- Accessory dwelling units (ADUs) help to diversify and increase the housing stock within Deep River and are easily approvable via existing zoning regulations.
- Senior and disabled housing units in Deep River make it affordable through subsidies for elderly to remain in Town. Several facilities such as Kirkland Commons are located very close to downtown which helps residents without vehicles to gain access and enjoy town amenities.
- First Selectmen sends out a weekly letter summarizing ongoing within Deep River.
- Town situated along Route 9 which provides ready access to employment centers in Middletown and Hartford.
- Ready train transportation access to places like Boston and New York City via Metro North stations in Old Saybrook and Westbrook.
- Connected to adjoining municipalities through the Lower Connecticut River Council of Governments and other networks that allow for regional planning to occur.
- Ongoing updates to Deep River's Plan of Conservation and Development will include discuss and integration of climate change implications and opportunities.
- High quality of life due to parks and open space coupled with vibrant downtown areas.
- Recognition that regionalization is a necessity for the Tri-Town areas to ensure vibrance, cost efficiencies, and high quality of services and resources for a growing number of residents.
- Long historic heritage in Deep River including the largest global muster or gathering of fife and drum corps among other traditions and historic buildings.
- Desirable place to live that attracts a skilled and talented group of residents that contribute freely to the strong artistic community in Deep River.
- Regional School System, including the Middle School and High School, are both located within Deep River.
- Regional Animal Control Officer located in Deep River.
- Natural gas distribution system to residential households, businesses, and municipal facilities.

## **Current Strengths and Assets (cont'd)**

- Deep River Police Department is working on furthering accreditation and support an even higher level of training for staff to ensure a well-trained and ready police force.

### **Emergency Management & Preparedness:**

- Increasingly well-staffed and well-equipped Public Works Department, which has resulted in quicker response and job completion times including clearing roads of downed trees after major storm events.
- Social Services in Deep River maintains a list of residents who require oxygen or other medical necessities which is shared with the emergency management to aid with effective medical responses during a major event resulting in power outages and road closures.
- River access via the Connecticut River affords alternate means of supplying provisions by barge during major disasters that isolate Deep River from major north-south transportation corridors such as Route 9.
- Multiple mutual aid agreements in place amongst first responders and police services that result in shared during larger public events as well as natural disasters.
- Fire Department has a solid core of supportive volunteers.
- Volunteer Fire Department has a boat that can be deployed to assist with issues up and down the Connecticut River.
- Resident state trooper (Troop F) located in Deep River results in quick response times.F.

### **Stormwater, Waste Systems, & Drinking Water Supply:**

- Downtown area of Deep River is serviced by the wastewater treatment system along with drinking water system, which increases the overall, long-term resilience and stability of this critical economic driver for the municipality.
- Deep River has a Water Pollution Control Authority which differentiates the municipality amongst neighboring municipalities in the Lower Connecticut River area.
- Public wastewater treatment system is a tremendous asset for the Tri-Town area given that the system is at only 60% utilization suggesting further opportunities for handling additional growth in population including areas where septic systems can't meet code.

## **Current Strengths and Assets (cont'd)**

- “Capacity Management, Operation, and Maintenance” assessment completed in stormwater collection system that is not combined with the Deep River wastewater treatment collection system (“non-CSO system”).
- Pump stations associated with wastewater treatment system are in good shape with contingencies in place to manage flooding.
- Municipal wastewater treatment system helps to limit the number of septic systems that could potentially impact the water quality of adjoining streams and rivers including the Connecticut River.

### **Watersheds, Wetlands, Rivers, Open Space, Forests, Agricultural Lands, & Trees:**

- Strong community desire to preserve and maintain the rural character of Deep River through open space protection and working agricultural landscapes.
- Relatively high level of biodiversity and array of habitats including forested lands, open spaces, rivers and lakes, and trails that help increase tourism in Deep River.
- Significant protection of open space consisting of large portions as State Lands (i.e., Cockaponset State Forest, Messerschmidt Pond Wildlife Management Area) and many parcels managed in the Deep River Land Trust as well as working local farms. Deep River is therefore generally protected from issues of overdevelopment.
- Comprehensive Open Space Plan in place with a large amount of open space already protected.
- Highly appreciated waterfront park that provide families and children opportunities to explore and play.
- Deep River Open Space Fund is used to quickly capitalize land acquisition for open space when parcels become available.
- Fountain Hill Park provide residents with passive recreation opportunities that are greatly appreciated. Stormwater drainage systems installed at the Park have helped reduce localized flooding.
- Proximity to Connecticut River with landing features in Deep River as well as public boat launches, docks, and open water mooring sites.

## **Recommendations to Improve Resilience**

A common theme among workshop participants was the need to continue community-based planning efforts focused on developing adaptive measures to reinforce Deep River's strengths and reduce vulnerability to extreme weather, climate change and other common concerns raised. To that end, the workshop participants helped to identify several priority topics requiring more immediate and/or ongoing attention including:

- **Long-term vision and growth** (i.e. sustainable growth, volunteerism, conservation & recreation, affordable housing, regionalization of systems (waste & drinking water));
- **Infrastructure improvements** (i.e. roads/bridges/dams/road crossings, green stormwater infrastructure/management systems);
- **Quality of life improvements** (i.e. parks and recreation, open space & accessibility, sustainability, health & safety, economic prosperity, housing, education, regionalization);
- **Emergency management** (i.e. communications, outreach, education, continuation of services, business recovery, evacuation, vulnerable populations).

In direct response, the Community Resilience Building workshop participants developed the following actions and identified, but not ranked, them as priority or as additional actions. Mitigation actions from the Deep River Municipal Hazard Mitigation Plan Annex (2021) are provided in Appendix A for cross reference with actions presented herein. Maps provided during the CRB Workshop, gathered from the Deep River Plan of Conservation and Development (2015), Lower Connecticut River Valley Hazard Mitigation Plan Update (2021), and Lower Connecticut River Valley Plan of Conservation and Development (2021), are provided in Appendix B.

### **Priority Actions**

- Identify and finalize the Emergency Operations Center and ensure the facility is properly equipped for all manner of events along with education of municipal staff and leaders in Deep River on the operations and capabilities of the Center. Conduct subsequent annual review of resources needed to ensure the Emergency Operation Center is fully equipped and ready for action.

## Priority Actions (cont'd)

- Explore ways to leverage existing systems and services such as wastewater treatment and transfer station that are centered in Deep River into revenue generating entities by further supporting the regional Tri-Town area (“Deep River has what is needed versus what is wanted”).
- Examine potential private/public partnerships to advance wastewater treatment system and renewable energy options in Deep River. Secure the expertise and profit focused approaches of the private sector to expand current systems to service more residents and businesses across the Tri-Towns.
- Define options for opening the Deep River Transfer Station to Chester residents for a fee to help generate additional revenue to fund additional services at the Station as well as provide a needed amenity to more residents in the Tri-Town area.
- Examine current and future zoning maps for Deep River to ensure undeveloped and non-protected open space is identified for future expansion of systems such as the wastewater treatment system versus designation for future commercial development. Deep River needs to maintain its current flexibility in available space for future growth of critical systems and programs (i.e., transfer station, recycling, etc.). Use examination as foundation for a 20-50-year land use strategic plan development.
- Develop and advance a “Land Management Strategy” that combined revenue via annual contributions in the municipal budget for open space with opportunities for the expansion of systems via infrastructure development.
- Expand the current sidewalks and bike lanes to create a connected system from Chester to Deep River to Essex (“Tri-Town connected sidewalk system”) to help increase the walkability and connectedness amongst the downtown areas, schools, and other amenities across the three municipalities.
- Work to prioritize and improve the stormwater drainage and management system including the installation of green stormwater infrastructure as a more natural alternative to standard engineering approaches.

## Priority Actions (cont'd)

- Assess the existing vulnerabilities and plans in place and create a comprehensive dam management plan that includes eliminating dams and/or creating new fish passages. Dam removal followed by ecological restoration of the damaged river and stream systems should be prioritized across Deep River. This will result in more functional, ecologically sound waterways better able to accommodate future extreme precipitation events and serve to increase the scenic beauty of the community.
- Continue to update the emergency management plan for Deep River including review of sheltering, staffing, transportation, notifications, and redundant communication system stability.
- Request that local leaders within the Regional School District create a holistic Emergency Action Plan for all scholastic facilities.
- Conduct study of Keyboard Pond including the potential for dredging and handling of subsequent dredge materials.



Credit: Tripadvisor (Whistle Stop)



Credit: The Lace Factory



Credit: Zillow



## Additional Actions

- Explore the needs for resources to sustainability support the growth of the municipality's population over the next few decades.
- Engage with neighboring municipalities regarding priority actions generated during Community Resilience Building workshops in hopes of fostering more regional approaches and projects over time.
- Explore the potential of expanding the First Selectmen's weekly letter to include emergency management services information to help bolster preparedness amongst residents.
- Continue to advance the creation of an online management system (i.e., Community Connect) to track calls and dispatches as well as a tool for homeowners to upload useful emergency information about their properties (i.e., number of residents, medical needs, etc.) to aid in emergency management operations. Work with Chester and Essex to better understand how these neighboring towns rolled out their systems with particular attention placed on how to encourage residents to participate fully in the management system.
- Work to update the list of residents that are in need of special assistance from emergency management and first responders in advance of and during natural disasters that knock out power and cause road closures.
- Explore the potential of establishing a new system that can better monitor the health condition and whereabouts of elderly residents during major events. This could include setting up a database for elderly residents with known medical needs and vulnerabilities as well as potentially initiating a buddy system with surrounding neighbors willing to check on elderly during emergencies situations and power outages.
- Look into setting up an informal phone tree to help ensure individuals identified as in need of special assistance during major events are safe.

## **Additional Actions (cont'd)**

- Generate and distribute a list of important phone numbers to help make it easier for residents to know who to call during times of emergency.
- Encourage state representatives to build more support and connections between local efforts the needs for more supportive state legislation given the issues being addressed.
- Complete the update of the Plan of Conservation and Development (2024) to provide the future vision for Deep River. Integrate outcomes from processes such as Deep River's Community Resilience Building efforts as stated herein. Continue to engage residents in the update of the Plan of Conservation and Development.
- Encourage the establishment of a complete streets plan for Deep River including enhancement of walkability and bikability connectivity across Town in hopes of reducing automobile dependency longer-term.
- Increase the compliance of the Transfer Station by educating staff on best practices and policies and educating residents about proper usages of the Station's services.
- Continue to work to maintain and improve the Town's financial stability to ensure facilities are maintained and solutions to problems as they arise can be funded. The Board of Finance and the Board of Selectmen are working diligently on these issues, currently.
- Explore possibility of the municipality becoming a public utility with a vision of building a gas plant, anaerobic digesters, and solar farms options for locally control power generation and sourcing to Tri-Town residents.
- Evaluate opportunities to build on regionalization of services such as with the current educational system via a regional middle and high school.
- Reexamine the current capacity of the municipality across all departments against the aspirations for Deep River, which may require replacing certain volunteer positions with paid staff to be successful.

## Additional Actions (cont'd)

- Assess the impacts to new development and redevelopment from future sea level rise, flood stage increases, and changes in depth to seasonal groundwater prior to permitting.
- Look to ensure trees planted in the vicinity of power lines are selected to minimize future impacts to power lines. This may require providing educational opportunities to homeowners as well as regulations that identify appropriate tree species and planting distances.
- Review and update street scaping regulations to prevent new tree plantings under or in proximity to power lines.
- Conduct roadside invasive plant control to help limit the spread to public and private lands.
- Actively pursue and secure additional open space preservation by the municipality and local land trust across Deep River.
- Explore fundable options via grants for collaboration on projects between Deep River Land Trust and Sustainable Deep River such as a natural resource inventory and the development of a Deep River Watershed Management Plan.
- Continue to identify and track the presence of pest and pathogen impacts on trees and forests in Deep River.
- Increase monitoring and public awareness about diseases related to changes in climate (i.e., ticks, mosquitos, etc.).
- Identify debris receiving and management sites for Deep River and secure approval and permitting from Connecticut Department of Energy and Environment Protection for site use during and after major events.
- Work to routinely remove debris caught in catch basins and culverts to help reduce preventable, localized flooding.

## **Additional Actions (cont'd)**

- Conduct a review of sanding and salting practices (location, quantities, interval timing, etc.) to explore ways to reduce clogging of stormwater features and impacts on freshwater systems in concert with the need to ensure roadways are safe for travel in the winter months.
- Educate private property owners on how to increase stormwater and precipitation storage on the properties rather than allowing it to run off onto roadways.
- Explore the need to draft and implement a beaver management plan complete with guidance for municipal staff on best practices to manage beavers causing localized flooding on select roadways.
- Initiate a public forum in hopes of educated residents on affordable housing definitions and requirements along with an open discussion around the current diversity of housing types and future needs to accommodate a growing Deep River community.
- Work to improve food security through availability and access of locally grown produce and meat products.
- Identify potential funding to provide low interest loans to residents to help facilitate the purchase of generators for households in Deep River.
- Explore potential partnerships with local restaurants to help feed those residents in need in the aftermath of disasters.
- Seek out and promote lawn care that minimizes the use of chemicals and fertilizers to lower the water quality impacts to adjoining waterways in Deep River.
- Educate residents and encourage the composting of appropriate household food scraps and waste.
- Work towards providing free or low cost wifi to all residents and business.

## **CRB Workshop Participants: Department/Organization**

Town of Deep River – Office of the First Selectmen  
Town of Deep River – Planning and Zoning Department  
Town of Deep River – Social Services Department  
Town of Deep River – Public Works Department  
Town of Deep River – Water Pollution Control Department  
Town of Deep River – Animal Control Department  
Town of Deep River – Fire Department  
Town of Deep River – Parks and Recreation Department  
Town of Deep River – Harbormaster Department  
Town of Deep River – Economic Development Commission  
Town of Deep River – Planning and Zoning Commission  
Town of Deep River – Conservation and Inland Wetlands Commission  
Town of Deep River – Board of Education  
Town of Deep River – Water Pollution Control Authority  
Town of Deep River – Transfer Station Committee  
Tri-Town Youth Services Bureau  
Sustainable Deep River  
Deep River Land Trust  
Deep River Garden Club  
Deep River Congregational Church  
River Fire Glass  
Middlesex Community Foundation  
Connecticut River Area Health District  
Lower Connecticut River Valley Council of Governments  
Connecticut State Division of Emergency Management & Homeland Security – Region 2  
Connecticut State Representative – 36<sup>th</sup> General Assembly District

## **Deep River Core CRB Project Team**

Carol Jones, First Selectmen, Town of Deep River

Sara Conner – Chair, Sustainable Deep River, Town of Deep River

Lenore Grunko – Co-Chair, Sustainable Deep River, Town of Deep River

## **Online CRB Workshop Facilitation Team**

The Nature Conservancy – Adam Whelchel, Ph.D. (Lead Facilitator)

Sustainable CT – Jessica LeClair (Small Group Facilitator)

The Nature Conservancy – Drew Goldsman (Small Group Facilitator)

Sustainable CT – Torin Radicioni (Scribe)

The Nature Conservancy – Caitlin Cleary (Scribe)

Sustainable CT – Inez Ortiz (Scribe)

The Nature Conservancy – Jessica Cañizares (Scribe)

Sustainable CT – Dorothy Piszczek (Scribe)

## **Recommended Citation**

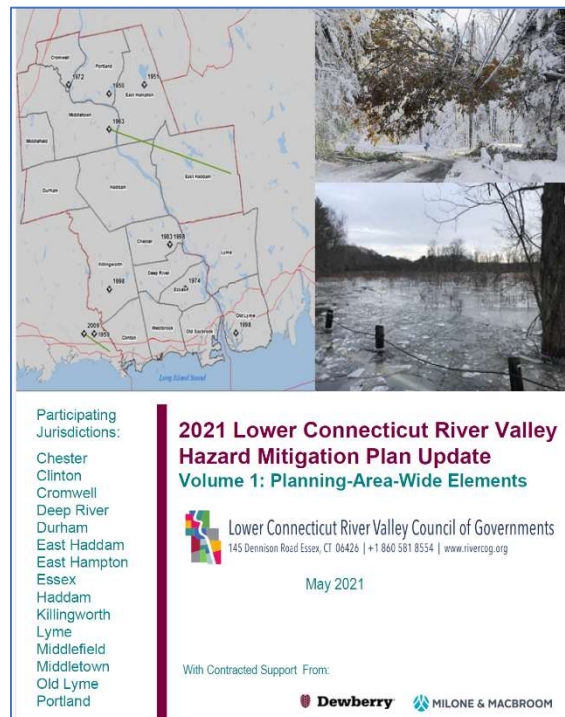
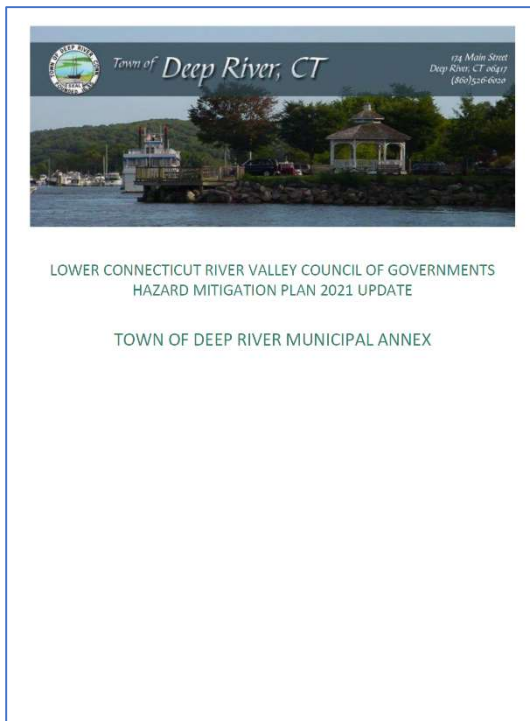
Town of Deep River Online Community Resilience Building Workshop - Summary of Findings Report. (2024). Community Resilience Building Program. The Nature Conservancy and Sustainable CT. Deep River, Connecticut.

## **Acknowledgements**

Special thanks to the Town leadership, staff, and community members for their willingness to embrace the process in hopes of a more resilient future for Deep River. This online Community Resilience Building Workshop was made possible in large part through the dedicated contribution of the facilitation team members who skillfully conducted the Deep River Community Resilience Building workshop in close partnership with the Town's Core CRB Project Team.

# Appendix A

## Deep River Mitigation Action Plan and Actions\*



**\*Gathered from Deep River’s Municipal Annex within the Lower Connecticut River Valley Council of Governments Hazard Mitigation Plan Update (2021).**

KEY: SW= Severe Weather, TW = Tornado/Wind, ET = Extreme Temperatures, WS=Winter Storm, F = Flood, TI = Tree Damage and Invasive Species, WF = Wild Fire, D = Drought, E = Earthquake, CC = Climate Change

Table 5-3. Deep River Hazard Mitigation Strategies and Prioritization.

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
1	1-1	<b>Business Recovery Plan</b> Explore the needs of local businesses and incorporate these needs into a business recovery plan that can then be distributed to town businesses.	Select Board, EDC	\$1,000 - \$5,000	General Fund, OB	7/2021 – 6/2023	SW, TW, ET, WS, F, TI, WF, D, E, CC	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4/M
2	1-1	<b>Landlord Incentives</b> Research what kind of incentives would motivate landowners to make the additional investment that would reduce potential damages to their properties and loss of life of their tenants.	Select Board, EDC	\$1,000 - \$5,000	OB	7/2021 – 6/2023	SW, TW, WS, F, E	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	6/M

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
3	3-1	<b>Local Social Resources</b> In order to assist vulnerable populations during an event, these populations and their location need to be identified. Seek grants and identify a methodology to locate and track locations of these populations (i.e. elderly, disabled, non-English speaking, etc.)	EMD, SS	\$5,000 - \$10,000	Grant (HMA)	7/2021 – 6/2022	SW, TW, ET, WS, F, TI, WF, D, E, CC	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4/M



Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
4	1-1	Possible Open Space Criteria the Conservation Commission will conduct a review of storm surge inundation areas for future open space considerations.	CIWC	\$1,000-\$5,000	OB	7/2023 – 6/2025	F, CC	1	0	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8/M
5	1-1	Emergency Supply Cache Pursue the creation of emergency supply caches that include drinking water and emergency supplies such as cots for sheltering.	EMD	\$20,000 - \$50,000	Grant (HMA)	7/2023 – 6/2025	SW, TW, WS, F, E	1	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	8/H

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
6	1-1	Pursue funding to develop and maintain a comprehensive, "in-house" GIS database that will provide the town with immediate capabilities of assessing areas	P&Z	\$20,000 - \$50,000	Grant (HMA)	7/2021 – 6/2023	SW, TW, ET, WS, F, TI, WF, D, E, CC	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	6/H
7	2-1	Road Reconstruction Collaborate with Connecticut DOT to address the roadways of concern that are under the state's jurisdiction.	DPW, Select Board	\$1,000 - \$5,000	OB	7/2021 – 6/2022	F	1	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	7/H
8	1-1	Land Acquisition Pursue funding for acquisitions for both open space and public park creation	CIWC, P&Z, Parks & Rec	\$50,000-\$100,000	Grant	7/2022 – 6/2025	F, CC	1	0	1	0	1	0	1	0	0	0	1	0	1	0	0	8/M	

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
9	3-1	Public Information Develop a preparedness webpage to cover all hazards, and include information such as evacuation routes, hazard areas, shelter location, insurance information, and mitigation efforts property owners can easily pursue. Conduct outreach to RL and SRL owners to encourage review of alternatives.	EMD	\$5,000 - \$10,000	General Fund	7/2021 – 6/2022	SW, TW, ET, WS, F, TI, WF, D, E, CC	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4/M

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Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
10	3-1	Public Outreach Develop a program to inform residents on natural hazards. Action items may include: - Collecting readily available brochures and pamphlets and distribute them more widely, - Conduct annual educational outreach in schools to educate on hazards, - Educate and encourage resident on the benefits of elevating above BFE. Include drought and target outreach to socially vulnerable populations.	EMD	\$5,000 - \$10,000	General Fund	7/2022 – 6/2023	SW, TW, ET, WS, F, TI, WF, D, E, CC	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4/M

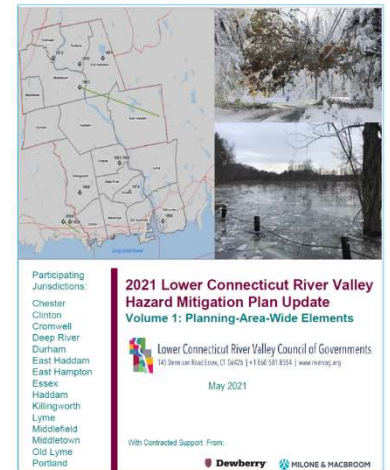
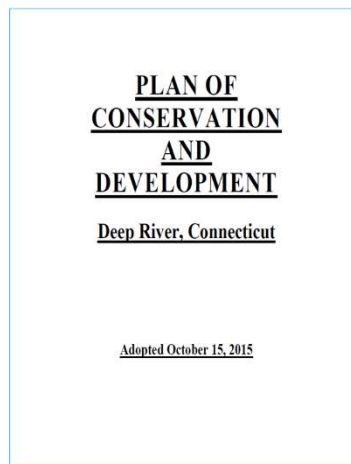
35

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority		
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
11	1-1	<b>Debris Management Plan</b> Pursue the development of a formal debris management plan. Address the need to increase the capacity of the current debris management site.	DPW, EMD	\$1,000-\$5,000	General Fund, OB	7/2021 – 6/2022	SW, TW, WS, TI, WF	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	4/H
12	1-1	<b>Firefighting Capabilities</b> Equipment needs are evaluated and assessed on a 5, 10- and 15-year planning horizon. Pursue funding for future equipment needs to ensure response capabilities, such as an engine and SCBA (breathing apparatus).	FD	\$10,000-\$25,000	General Fund	7/2024 – 6/2025	WF, D	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2/L

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	Weighted STAPLEE Criteria														Total STAPLEE Score/Priority	
								Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
13	1-1	<b>Benefit/Cost Analysis (RL Properties and Buy Outs)</b> – Evaluate opportunities for public funding of mitigation on private property where public benefits exceed the cost for RL properties or those otherwise eligible for buyout	P&Z, DPW, Select Board	Staff time	FEMA HMA grants	2025	FL	1	0	0	0	0	-1	1	0	0	0	1	0	1	1	0	5/M
EDC	Economic Development Commission	P&Z	Planning & Zoning																				
SS	Social Services	BOE	Board of Education																				
PH	Public Health	ConCom	Conservation Commission																				
DPW	Department of Public Works	OB	Operating Budget																				
EMD	Emergency Management Director	HMA	FEMA Hazard Mitigation Assistance																				

# Appendix B

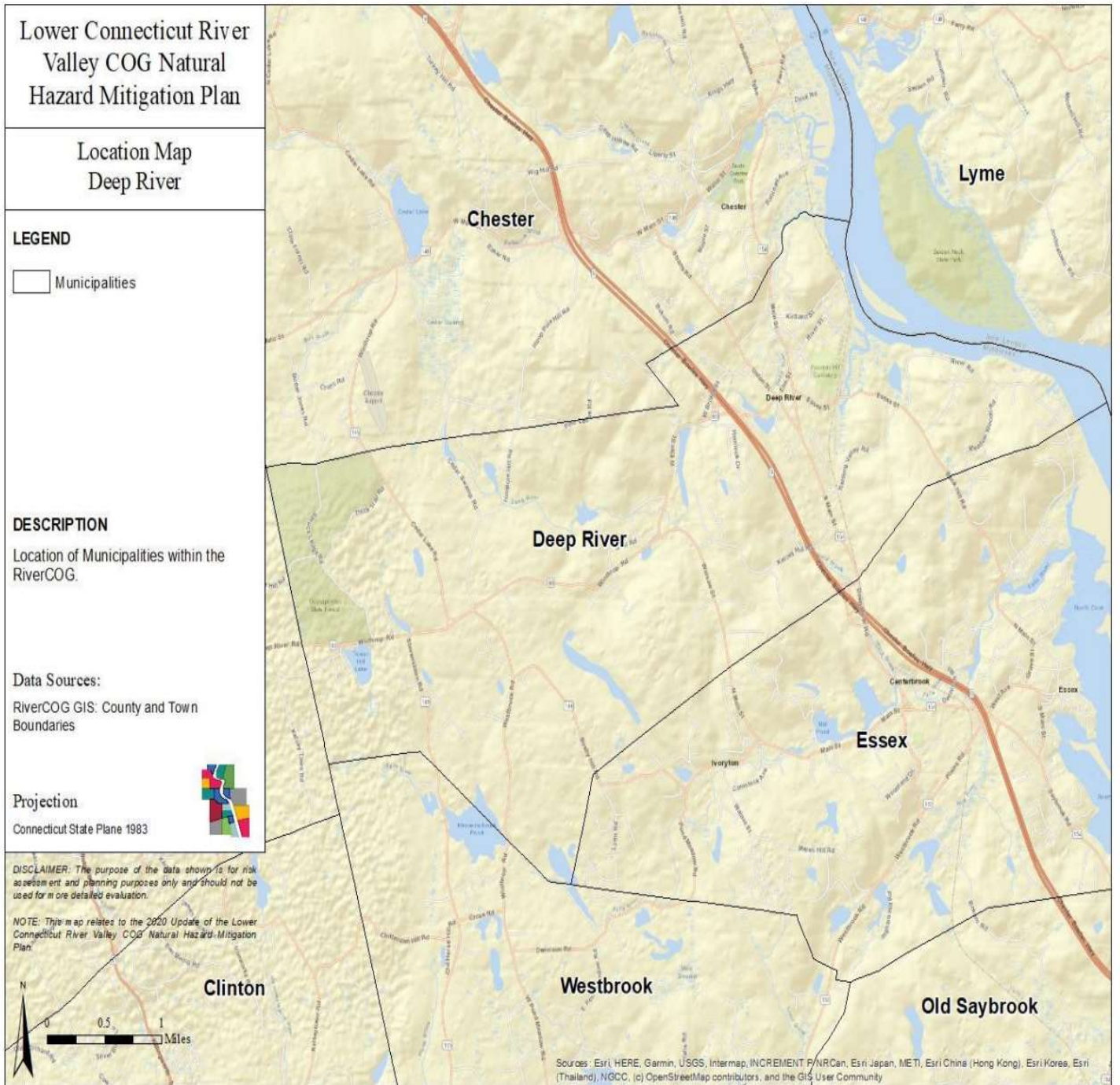
## Deep River Map Resource Packet\* Used During Workshop

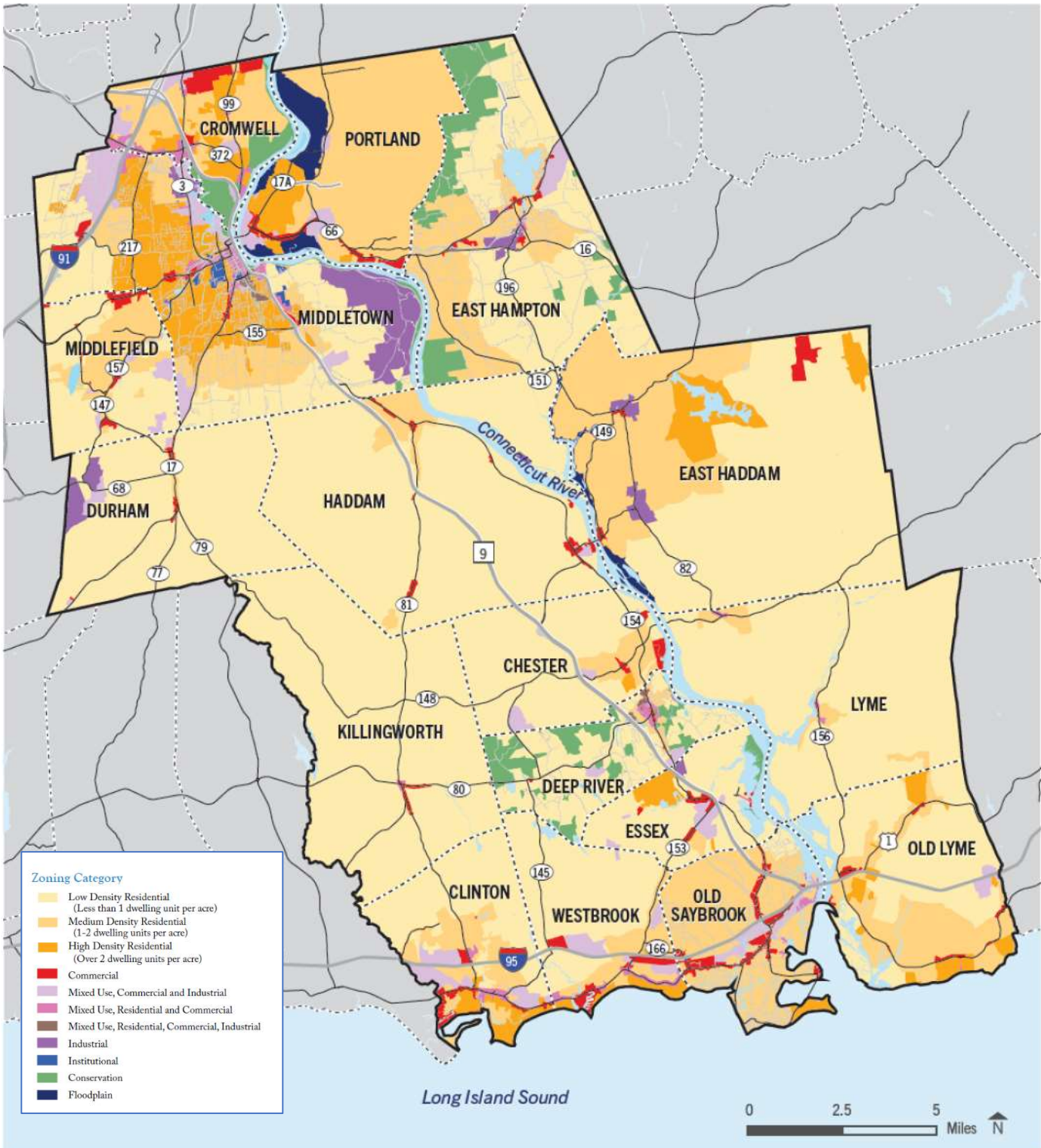


**\*Gathered from Deep River’s Plan of Conservation and Development (2015), the Lower Connecticut River Valley Council of Governments Hazard Mitigation Plan Update (2021), and the Lower Connecticut River Valley Plan of Conservation and Development (2021).**

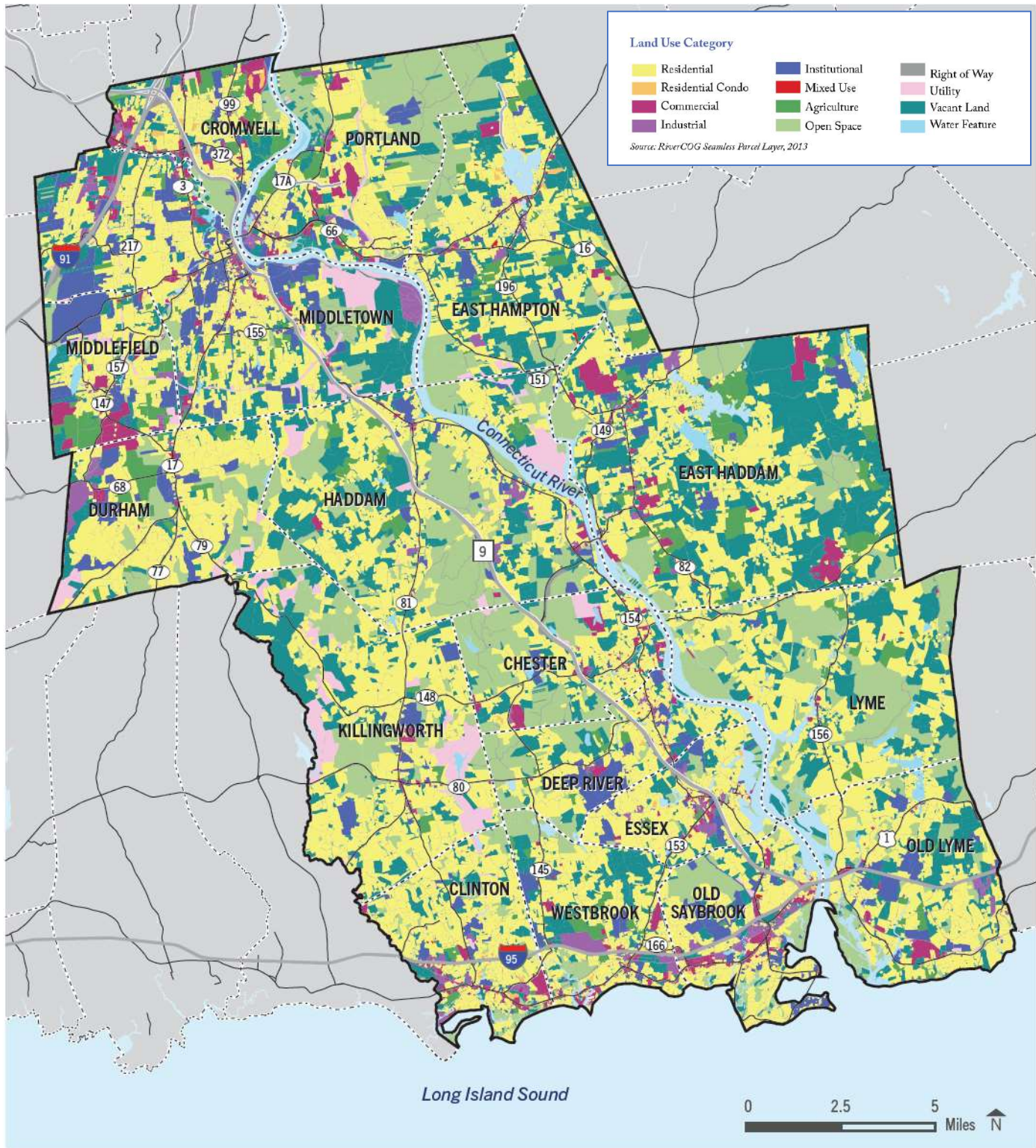


*Lower Connecticut River Valley Region*





Generalized Zoning Map Source: Compiled Municipal Zoning Maps



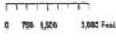
2013 Generalized Land Use Map\*

*\*This map is a generalized land use map for the purpose of comparing land use across the Region. It is not intended to replace local land use maps which may be more accurate than this map.*



# DEEP RIVER, CONNECTICUT OFFICIAL ZONING MAP

- Harbor District
- Parks and Recreation District
- Very Low Density Residential District (V-LD)
- Low Density Residential District (R-60)
- Medium Density Residential District (R-40)
- Village Residential District
- Village Mixed Use District
- Neighborhood Commercial District
- Village Commercial District
- General Commercial District (GC)
- Commercial Industrial Park (CIP)
- Township Industrial District (TID)
- Village Industrial District (VID)
- Parcels
- Deep River Municipal Boundary
- Gateway Condominium Zone Boundary
- Capital Management Zone Boundary
- Municipal Boundary
- Water
- Streets



1 inch = 816.010617 feet

Drawing Date: 04.26.1912

Project Date	Project Name	Project No.
Feb. 10, 1912	Map 1, 1912	20, 21, 1912
June 10, 1912	Map 2, 1912	22, 23, 1912
Feb. 12, 1913	Map 3, 1913	24, 25, 1913
Apr. 14, 1914	Map 4, 1914	26, 27, 1914
Aug. 14, 1915	Map 5, 1915	28, 29, 1915
Dec. 14, 1916	Map 6, 1916	30, 31, 1916

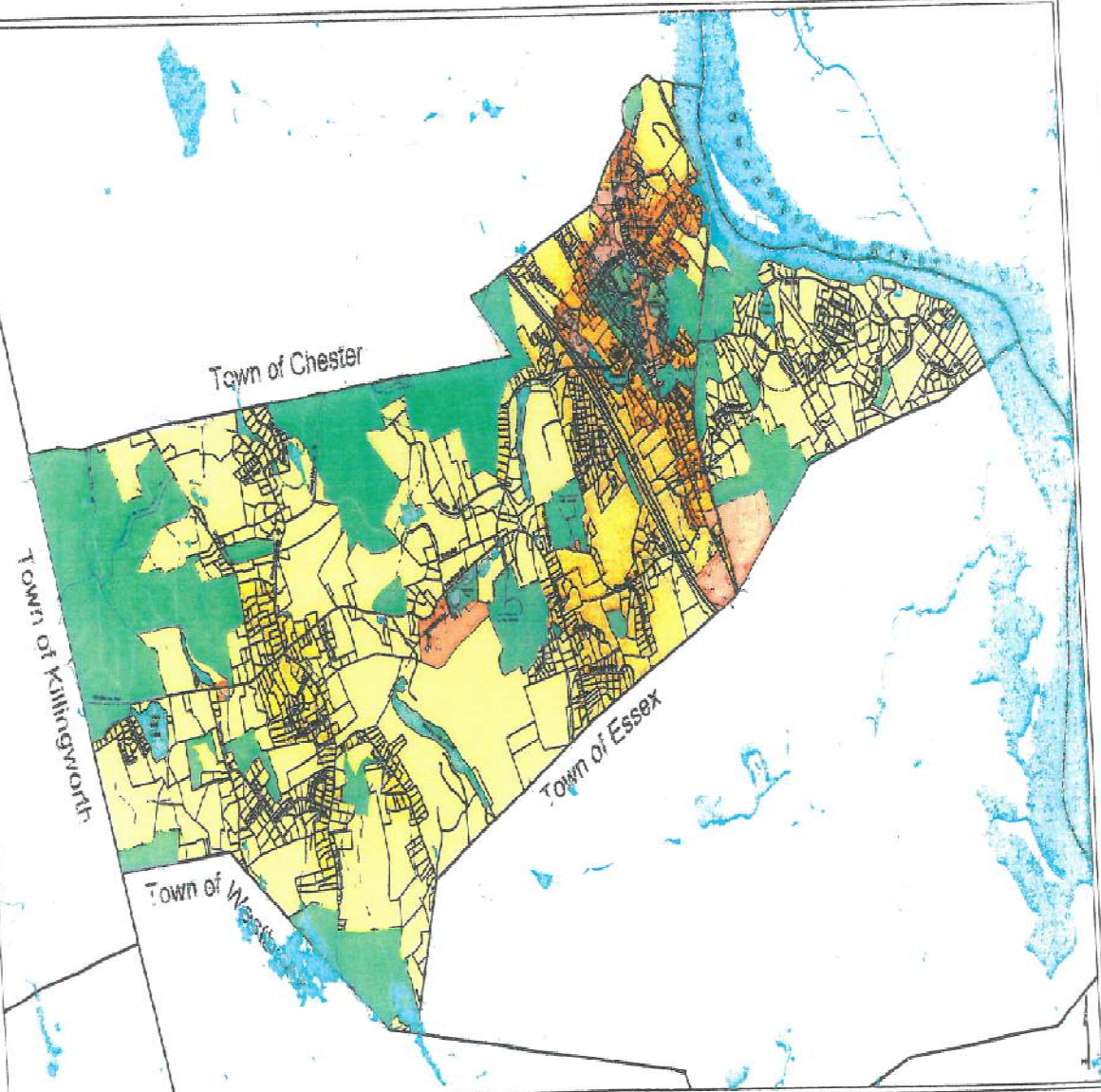


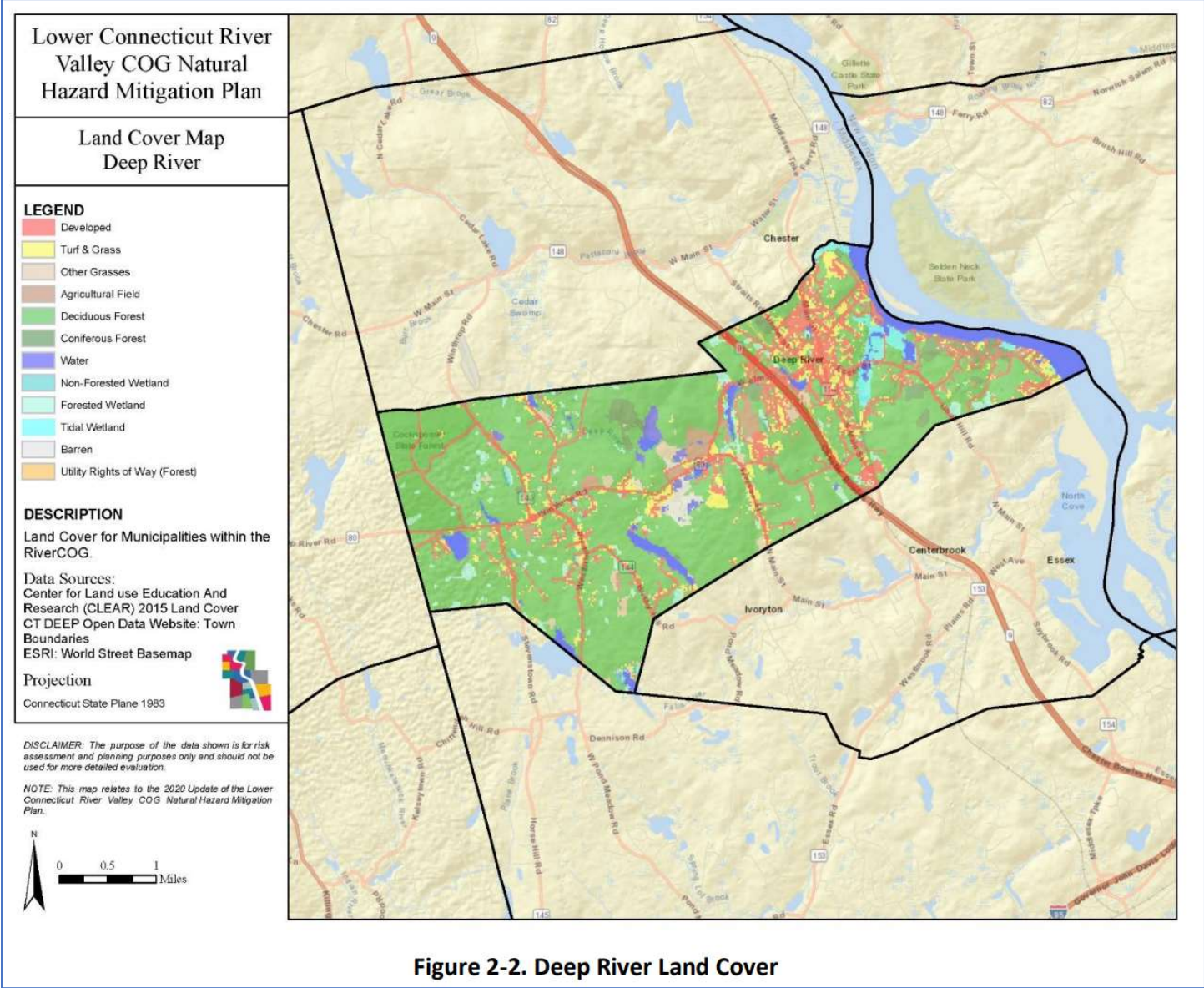
Town of Deep River

Map created by CDEMPA with information provided by the Town of Deep River. Governmental. Printed date and scale. This map is subject to change without notice. No warranty is made for any use other than planning purposes. This map should only be used for planning purposes.

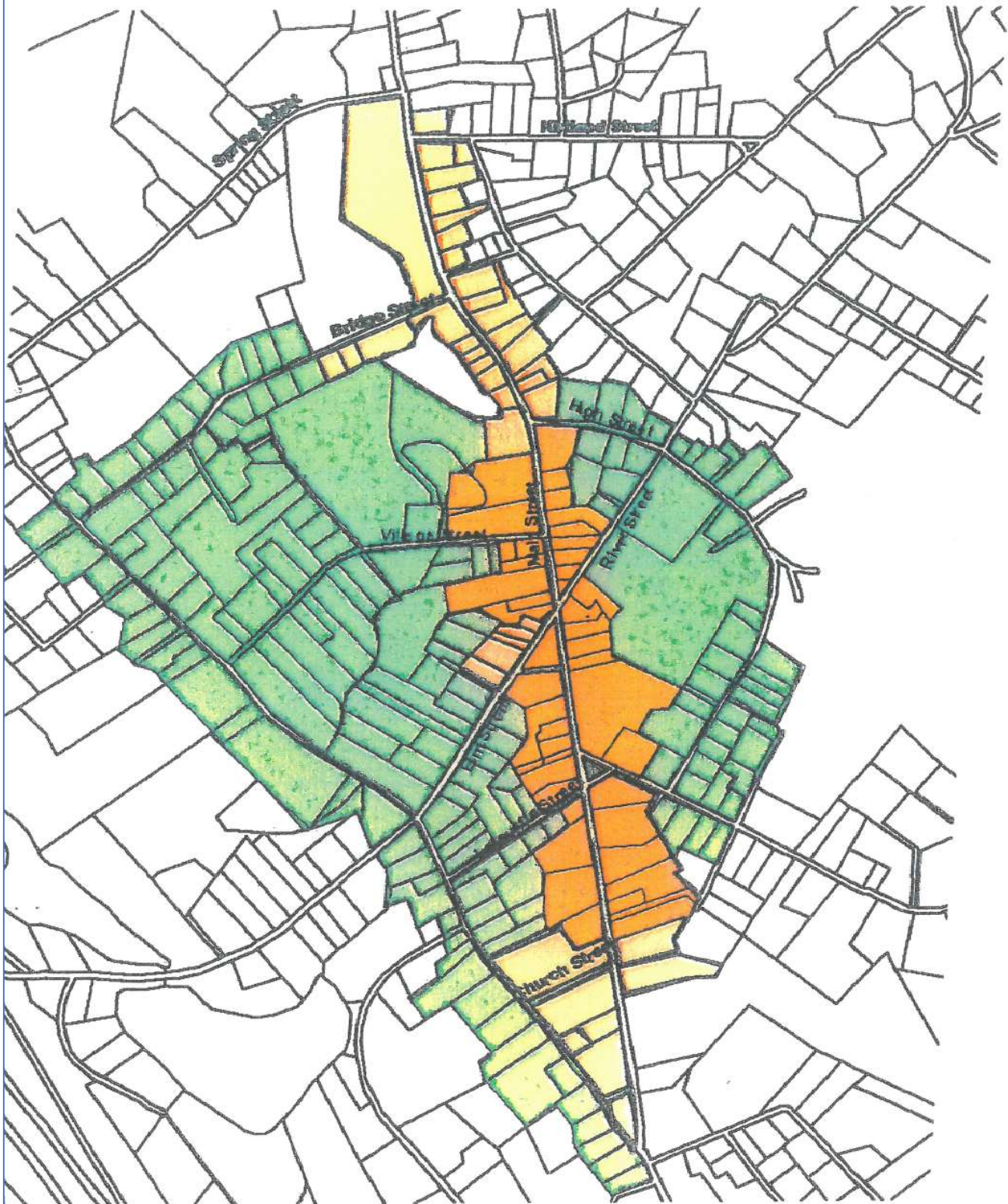
Date: March 10, 2014

Responsible: DEEP River Government - A. Burns



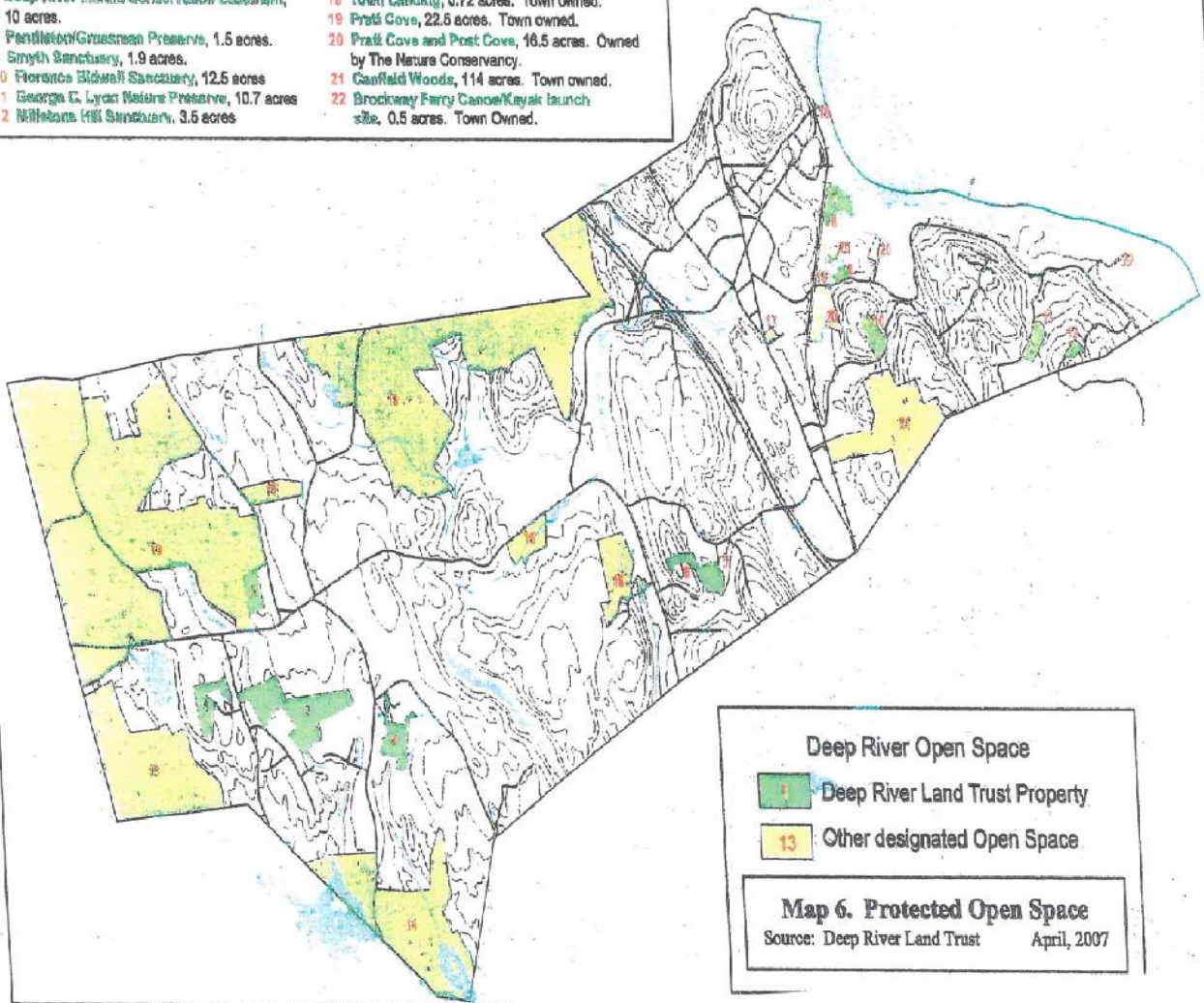


# Village District



- Lot Lines
- Village mixed use district.shp
- Village commercial district.shp
- Village residential district.shp

- |   |   |
|---|---|
| 1 Sunset Ridge Preserve, 15.4 acres                         | 13 Cockaponset State Forest, over 1200 acres. State owned.                  |
| 2 Howard Easement, 12.5 acres.                              | 14 Messerschmitt Pond Wildlife Area, 176 acres. State owned.                |
| 3 Falls River Sanctuary, 60.9 acres                         | 15 Pinewood Park, 22 acres. Town owned.                                     |
| 4 Nature Trail Preserve, 15.9 acres                         | 16 Rosemont Open Space, 40 acres. Town owned.                               |
| 5 Whitlessey Brook Sanctuary, 9.6 acres                     | 17 Davitt Field, 2.5 acres. Town owned.                                     |
| 6 Greenaway Section of Whitlessey Brook Sanctuary, 10 acres | 18 Town Landings, 0.72 acres. Town owned.                                   |
| 7 Deep River Marina Conservation Easement, 10 acres.        | 19 Pratt's Cove, 22.6 acres. Town owned.                                    |
| 8 Pentiketon/Graesman Preserve, 1.5 acres.                  | 20 Pratt's Cove and Post Cove, 16.5 acres. Owned by The Nature Conservancy. |
| 9 Smyth Sanctuary, 1.9 acres.                               | 21 Canfield Woods, 114 acres. Town owned.                                   |
| 10 Florence Blodwell Sanctuary, 12.5 acres                  | 22 Brockway Ferry Canoe/Kayak launch site, 0.5 acres. Town Owned.           |
| 11 George C. Lyon Nature Preserve, 10.7 acres               |   |
| 12 Millstone Hill Sanctuary, 3.5 acres                      |   |

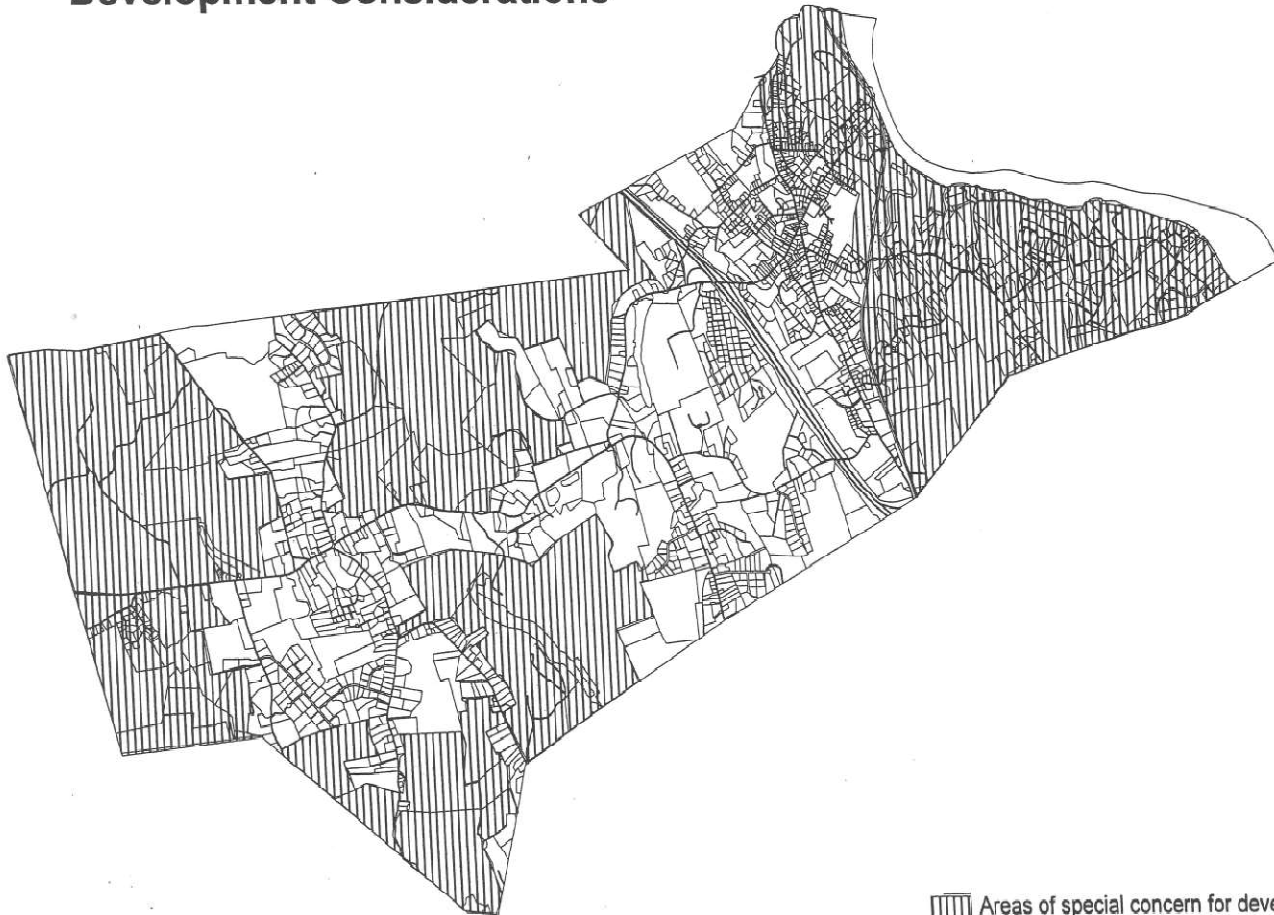


**Deep River Open Space**

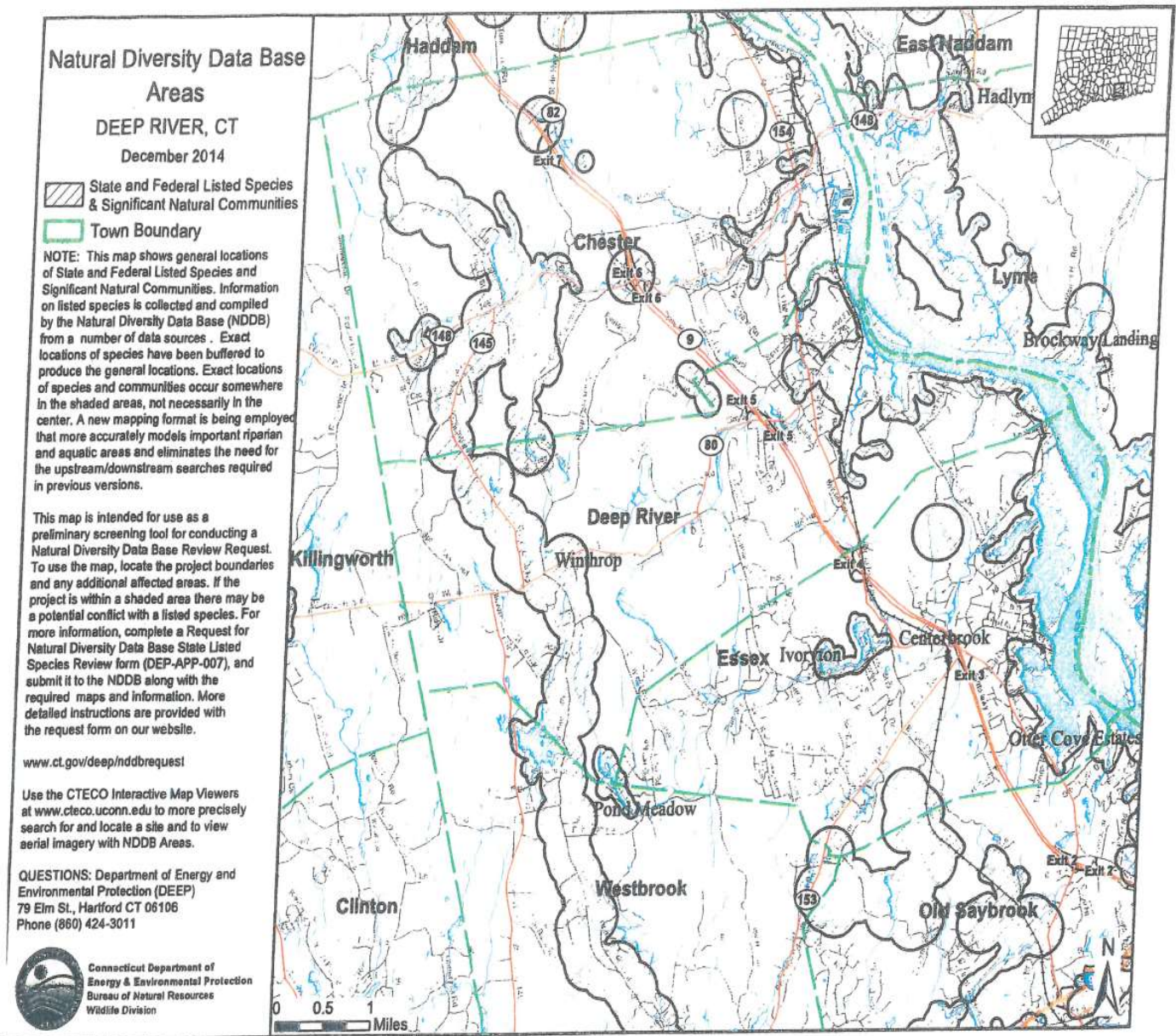
- Deep River Land Trust Property
- 13 Other designated Open Space

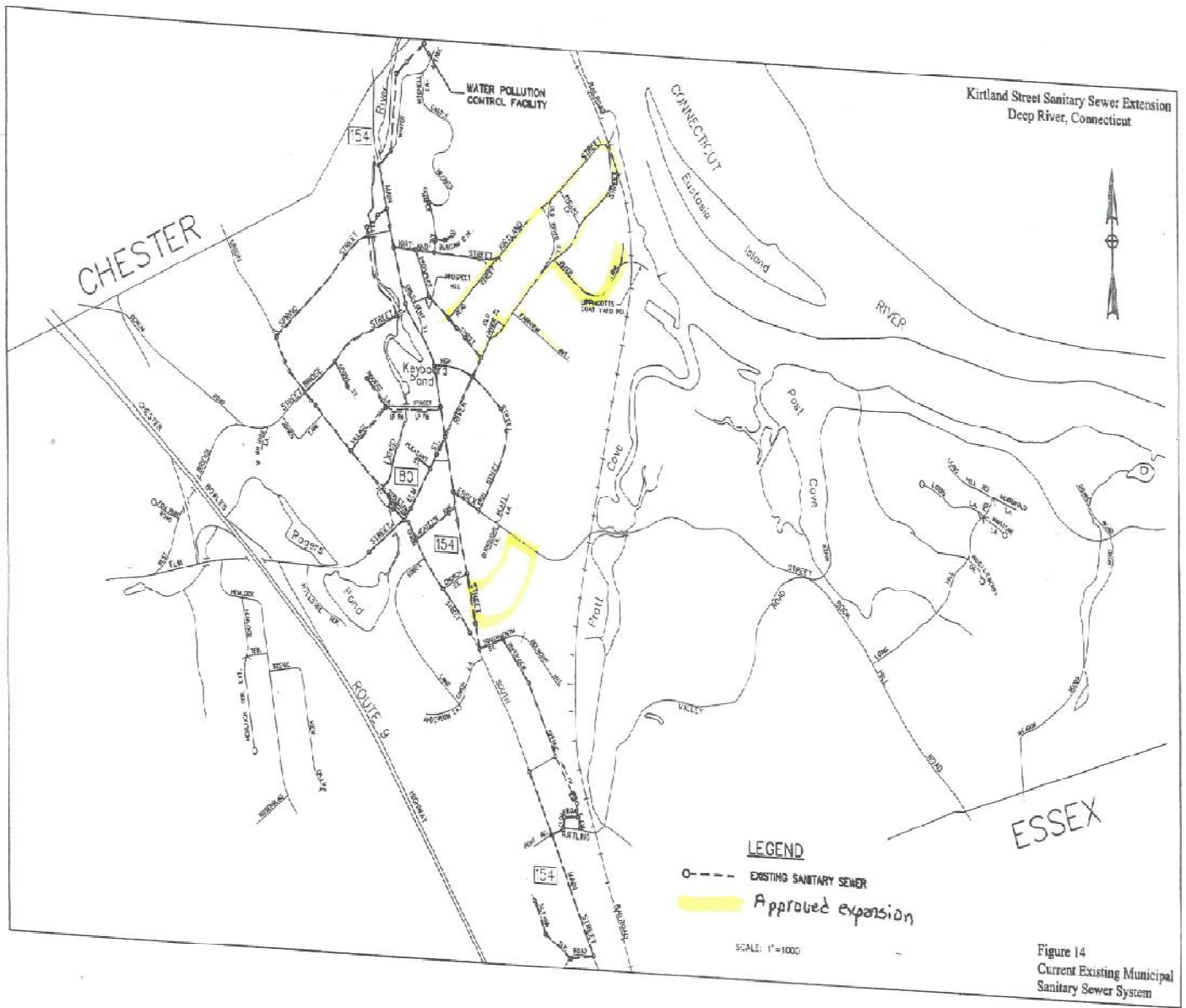
**Map 6. Protected Open Space**  
Source: Deep River Land Trust April, 2007

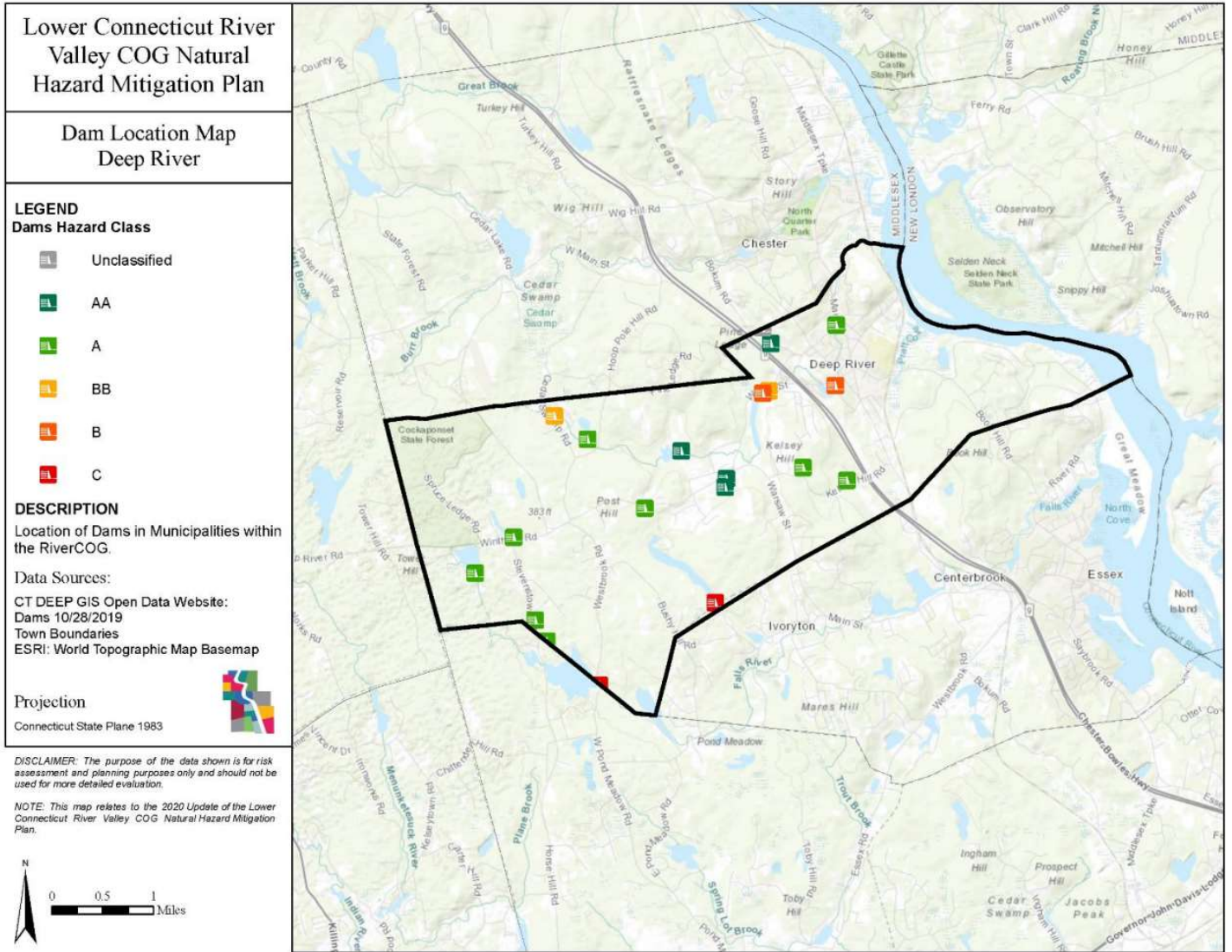
## Areas for Potential Special Development Considerations



▨ Areas of special concern for development.shp

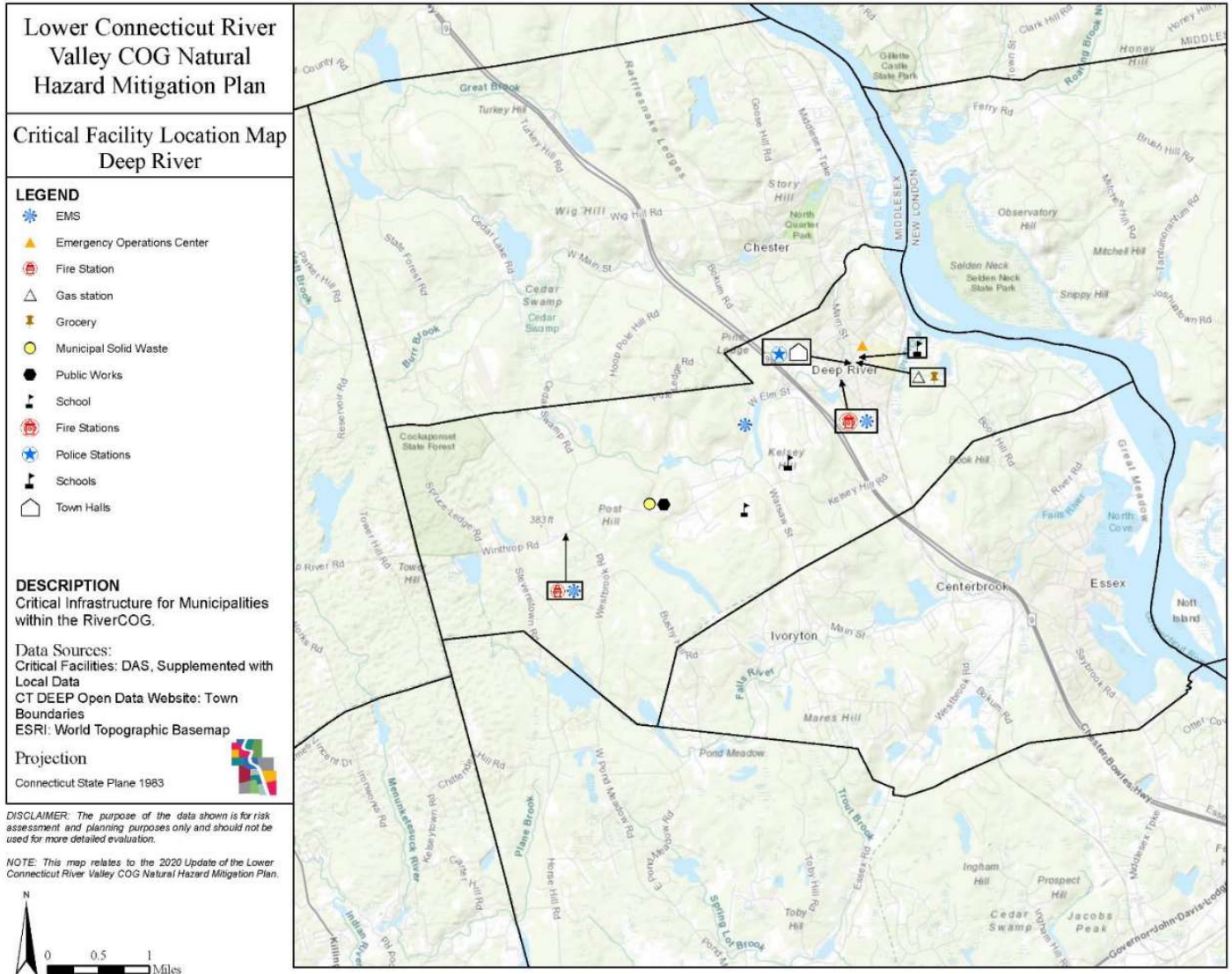






**Figure 2-4. Location of Dams in Deep River**





\*Valley Regional HS and transfer station are included on the map and listed by the State as critical facilities. They are not included in the table below of Deep River identified critical facilities.

**Figure 4-1. Location of Critical Facilities in Deep River.**



[www.CommunityResilienceBuilding.org](http://www.CommunityResilienceBuilding.org)