Norwalk River Valley Trail Routing Study

Regional Report

SEPTEMBER 2012

PREPARED FOR:
Norwalk River Valley Trail Steering Committee

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1 Overview

The Norwalk River Valley Trail (NRVT) Routing Study report is the product of a year-long effort to study, analyze and develop routing recommendations for a trail along the Norwalk River and Route 7 corridor in Southern Connecticut. The NRVT will ultimately provide residents throughout the region with a safe pedestrian and bicycle path that will connect to neighboring municipalities. Certain sections of the trail will be designed to accommodate equestrians as well.

In most areas along the length of the alignment, the preferred NRVT route was apparent due to the relative ease of developing a trail within the contiguous corridor of Connecticut Department of Transportation (DOT) properties or because of existing portions of the NRVT currently in use in Wilton and Norwalk. In a handful of locations, however, routing options were presented and narrowed down based on input from the general public and members of the Norwalk River Valley Trail Committee, which includes public officials, local commission members, and community advocates.

The primary **Mission** of the NRVT is an interconnected multi-use trail along the Norwalk River and Route 7 corridor from Danbury to Norwalk that incorporates existing and planned trails, and connects to nearby parks, schools, town centers, train stations, and other destinations in order to promote multi-modal transportation and recreational opportunities. The individual Goals for the project include:

Goal 1: Connect Danbury, Ridgefield, Redding, Wilton, and Norwalk with a contiguous multi-use trail, prioritizing links to existing sections of trail. Connections to existing train stations and commercial centers will facilitate the use of the NRVT for both recreational and transportation purposes.

Goal 2: Promote walking and bicycling throughout Southern Connecticut by connecting the NRVT with existing and planned regional trails, especially the Merritt Parkway Trail.

Goal 3: Support each community's economic development efforts by routing the NRVT and its spurs to serve their commercial districts, town centers, and unique destinations.

Goal 4: Incorporate context-sensitive design: individual sections of the trail may be designed as a rustic, natural-surface trail or as a paved, ADA accessible, multi-use path based on local conditions. Where practical, design some stretches to encourage equestrians. Throughout the corridor, trailheads, parking areas, kayak/canoe launches and rest stations will be placed strategically.

Goal 5: Create interpretive elements to reflect each community's unique heritage and culture, while using a consistent trail logo to establish a consistent identity along the entire greenway trail.

Goal 6: Preserve and enhance rare species habitat, wetlands, and riparian ecology, with Allen's Meadow as a high priority for preservation.

Figure 1: The Norwalk River in Norwalk

2 Summary of Routing Recommendations

The map on the following page illustrates the recommended 38-mile trail alignment along the Norwalk River Valley through the municipalities of Danbury, Ridgefield, Redding, Wilton, and Norwalk. Subsequent sections of this report describe in detail the existing conditions analysis, evaluation of the various routing options, and final routing recommendations for the NRVT. See *Section 11: Routing Recommendations* for a detailed description of the route and larger scale maps for each municipality.

The northern terminus of the proposed NRVT route is Rogers Park in Danbury. From here the trail travels through Tarrywile Park, where it overlaps with the Ives Trail. The trail continues through woodlands and along Starrs Plain Road, then due south parallel to and east of Route 7.

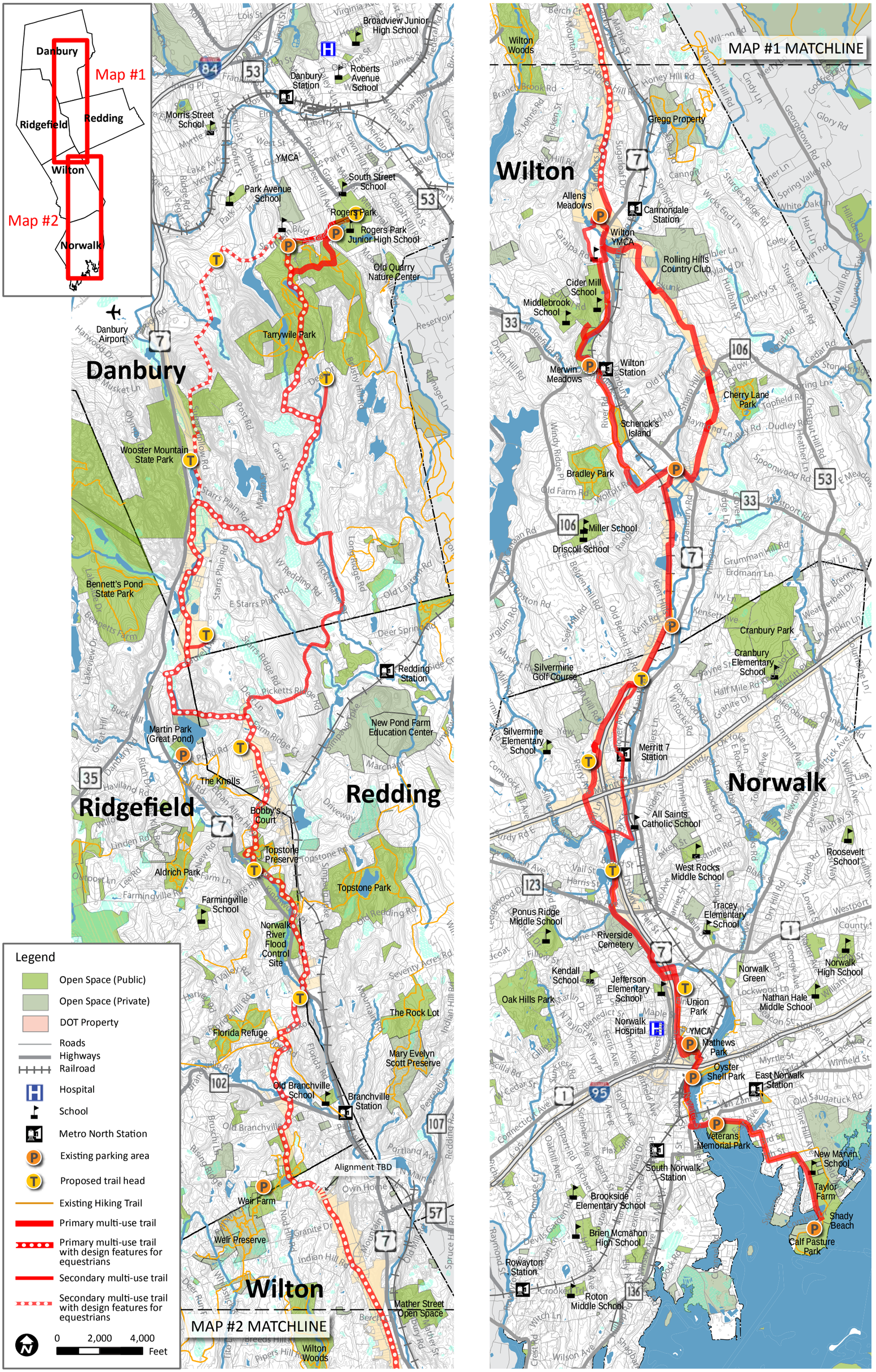
As the trail leaves Danbury, it crosses back and forth between the towns of Ridgefield and Redding. The primary route enters Ridgefield from Danbury just north of Martin Park and Great Pond. The trail bends eastward north of the Pond to connect across Pickett's Ridge Road to DOT-owned property in Redding. The trail continues through a wooded area until it crosses back into Ridgefield through Bobby's Court, Topstone Preserve, and a Norwalk River Flood Control Site. The trail connects back into Redding briefly until it crosses Route 7 at a proposed new traffic signal south of Florida Hill Road and continues to Weir Farm National Historic Site.

South of Weir Farm in Wilton, the trail follows a long, continuous stretch of DOT-owned property to Allen's Meadows, where it splits into two branches. The eastern branch runs east of Route 7 through DOT-owned property while the western branch travels past several schools and through Wilton Center to the Wolfpit Road/Route 7 intersection. Here, the two branches converge and continue southward along the utility corridor towards Norwalk.

In Norwalk, the primary route follows the west side of Route 7 within the right-of-way southward and under the Merritt Parkway, where a connection to the potential Merritt Parkway Trail is possible. The recommended secondary route runs east of Route 7 and connects to the Merritt 7 train station. From Perry Avenue, the trail continues on the west side of Route 7 to Belden Avenue, where it crosses under Route 7 to Union Park. Using the built sections of trail at Union Park, Mathews Park, and Oyster Shell Park, the NRVT continues past the Maritime Aquarium to the Stroffolino Bridge. The trail crosses to the east side of the bridge to Veterans Memorial Park, and eventually will connect through East Norwalk to Calf Pasture Beach.

While a continuous trail is envisioned from Rogers Park to Calf Pasture Beach, the character of the NRVT will vary depending on the prevailing context. Urban portions will be 10-12 feet in width and paved while other sections may be a stonedust surface and less than 10 feet wide. In the short term, significant portions in steep, wooded areas will be narrow and accessible to hikers, mountain bikers, and equestrians only.

On opposite page: Figure 2: Regional map of NRVT recommended route



Norwalk River Valley Trail - Recommended Route

3 Study Methodology

The Norwalk River Valley Trail Routing Study followed a methodology that included a pair of community workshops, monthly NRVT Committee meetings, reviews of relevant planning documents and field observations to identify alternatives for development of the trail. Planning tools such as GIS-based data analysis and review of aerial photography were employed as well. Community workshops for the data-gathering stage were held in May 2011 with the assistance of the National Park Service's River and Trails group. In February 2012, routing alternatives were presented at a trio of meetings held in Norwalk, Danbury, and Georgetown. The latter was promoted to residents of Wilton, Ridgefield and Redding. Additionally, the project website was maintained throughout the duration of the Study with direct links to the previously-developed www.nrvt-trail.com site.

Figure 3 Residents comment on the draft routing recommendations at the February 16, 2012 meeting in Georgetown

A core element of the Routing Study was to identify gaps in the current trail system and propose alternatives for closing the gaps and connecting existing or planned sections of the NRVT. Gaps were evaluated for:

- Land ownership issues
- User accessibility
- Environmental concerns
- Physical barriers such as topography, major roads, and rail lines, etc.
- Permitability, constructability, and cost
- Adjacent planned development
- Community support or opposition
- Overall character, including view opportunities
- Adjacency to points of interest and destinations
- Potential or lack of access points

After existing conditions and opportunities and challenges were identified, a connectivity analysis of the project corridor was conducted to refine the routing alternatives. Working with the NRVT Committee, the alternatives were narrowed down to a recommended trail alignment that had the community's support. In conjunction with the routing recommendations, an implementation phasing plan and cost estimates for each phase were developed. The phasing recommendations take into account that trail planning, design, and development often occurs over extended periods of time and early successes can help maintain overall project support, funding, and momentum during the life of the project.

4 Summary of Existing Plans & Policies

Going back to the 1970s, many of the communities along the Norwalk River Valley corridor have expressed a desire for a trail within the valley and points north. This has manifested itself in the numerous studies and reports developed over the past few decades, in one way or another, have expressed the desire for the trail. To further understand the communities' strong desire and to help inform some of the planning work done in the current Norwalk River Valley Trail (NRVT) effort, the Alta team has reviewed many of these plans.

The brief summaries below point out the pertinent recommendations and other information necessary to fully understand the planning context in which the NRVT effort stands. It should be noted that in aggregate, these early planning efforts can be considered some of the early stages of the NRVT, yet have not always used that label. In the past, what people today consider the "NRVT" has previously been known as the Sugar Hollow Greenway, the River Walk, and the Route 7 Linear Trail. In this portion of the Routing Study Report, the names of the trail portions are used as noted in the original plans or studies. In addition, the summaries are organized into Statewide, Regional, and Local plan categories in order to group the recommendations thematically, rather than chronologically. The intent is to emphasize that the push for a trail along the Norwalk River Valley comes from all levels of government and the opportunities for cooperation among the affected communities is strong.

Besides the promotion of a trail along the river valley, there are other common themes among the planning documents summarized. All are forward-looking plans that envision a state, region, or community with less dependence on motor vehicles for transportation and/or a cleaner environment. Policy changes frequently promoted to achieve both include providing transportation options such as:

- Improved bus and rail transit
- More infrastructure for walking and bicycling
- Multi-modal connections to discourage single-occupant vehicle trips and park-and-ride at the train stations along the Danbury Branch Line

Providing these sustainable transportation options has the added benefit of promoting healthy, active lifestyles, reducing air pollution, and mitigating traffic congestion that impacts nearly all towns and cities in South Western Connecticut.

4.1 Statewide Plans

Connecticut Recreational Trails Plan (2005)

The Recreational Trails Plan (RTP) references officially-designated Connecticut Greenways[1] and is administered by the Connecticut Department of Environmental Protection. The Recreational Trails Plan is required by the FHWA in order to qualify the State of Connecticut for grants that the FHWA makes available as part of the Recreational Trail Program. These FHWA grants are provided for construction, maintenance, and educational trail projects. The Program has been successful with over 1000 miles of trails in the State of Connecticut.

[1] Connecticut Greenways are designated by the State's Greenways Council and are eligible for a modest amount of funding that is made available every year.

While numerous greenways and multi-use trails are located throughout the State, the Recreational Trails Plan highlights the need to complete many gaps in the system, which includes the Norwalk River Valley Trail. Goals of the RTP are outlined, including continuity and linkage of trail systems, accommodation of all trail users, ensuring public participation and support of trail programs, maintenance of environmental protection during trail construction and maintenance, and utilization of trails as educational tools. Priority projects related to the Norwalk River Valley Trail, listed as a proposed greenway, include:

- East Coast Greenway Connection - New Haven to New York Border
- Ives Trail (Danbury/Redding/Ridgefield) – significant portions opened in 2006 and right-of-way/easement acquisitions are being completed this year

Since the NRVT is listed as a priority project, this means that the trail has already received the recognition and support of the State as being an important state and regional asset and worthy of future implementation.

CT Statewide Bicycle and Pedestrian Plan (2009)

The 2009 Connecticut Statewide Bicycle and Pedestrian Transportation Plan provides an update to the vision and goals of the 1999 Statewide Plan. The vision and goals were developed with a comprehensive look at local, regional, and statewide bicycle and pedestrian efforts and included an extensive public outreach effort. The vision outlined by the plan is:

- To encourage and promote bicycling and walking throughout Connecticut by providing for the safe, convenient, and enjoyable use of these modes of transportation. Any person will be able to walk, bicycle, or use other types of non-motorized transportation modes safely and conveniently throughout the State. A network of on-road facilities and multiuse trails will connect towns, regions, and Connecticut to neighboring states. Specifically, residential areas, employment centers, shopping areas, transit centers, recreation and cultural attractions, and schools will accommodate the walking and bicycling needs of users, both within the development and to nearby destinations.[2]

The plan outlines goals for pedestrian and bicycle improvements, including developing and maintaining a safe and accessible pedestrian and bicycle network, connecting other modes of transportation (especially to rail stations), encouraging bicycle/pedestrian connections, safety, and education, and providing financial and technical support. Specific goals and recommendations of the Statewide Bicycle and Pedestrian Plan, noted from the SWRPA and HVCEO Plans for Conservation and Development for Statewide significance that relate directly to the Norwalk River Valley Trail include:

- Complete the Still River Multi-use Trail in Danbury, Brookfield, and New Milford
- Erect Signs along bike routes that are marked on the Statewide Bicycle Map
- Improve pedestrian access around town centers
- Complete the Merritt Parkway Trail
- Complete the Norwalk River Valley Trail to the Norwalk/Wilton town line
- Improve bicycle and pedestrian access and integration with transit
- Develop a policy to narrow the lanes by re-striping to slow traffic and provide a safer place for bicycle and pedestrians
- Implement shared lane markings ("sharrows") and bike boxes, where appropriate[3]

[2] Connecticut Department of Transportation, 2009 Connecticut Statewide Bicycle and Pedestrian Transportation Plan, Fitzgerald & Halliday, 2009.

[3] Connecticut Department of Transportation, 2009 Connecticut Statewide Bicycle and Pedestrian Transportation Plan, Fitzgerald & Halliday, 2009.

4.2 Regional Plans

Regional Planning Association (RPA) Merritt Parkway Trail Study (1994)

The RPA Merritt Parkway Trail Study considers the feasibility of a 37.5 mile multi-use greenway trail utilizing the three hundred foot right-of-way. The parkway was constructed in the northern-most half of the right-of-way, leaving the southern portion with mostly flat or rolling terrain available for a potential multi-use trail. The trail, if constructed, would link 41 parks and open spaces and numerous towns and villages. The study promotes the natural and scenic resources that are currently limited only to vehicles on the parkway. The Study also suggests a long-term implementation plan by first developing locally sponsored shorter segments of the trail to gain public interest and support.

The Merritt Parkway Trail would run east-west through the study area, crossing the Norwalk Valley River Trail. To maximize the opportunities for walking and bicycle transportation alternatives, The RPA Study shows a desire for regional trail and recreational connections in this area of Connecticut.

Norwalk River Valley/Route 7 Linear Trail Study (1995)

This study was commissioned by the South Western Regional Planning Agency (SWRPA) and considers the feasibility of a trail which would connect Mathews Park in Norwalk to the northern end of the DOT's Route 7 right-of-way near Dumplin Hill Road in Wilton. The trail alignment closely follows the Route 7 corridor, utilizing as much of the right-of-way as possible. The trail would begin by following Route 7 north to Belden Avenue and parallel the Norwalk River to a bridge at Deering Pond. The 10-foot-wide paved trail would then follow the west side of Route 7 to Grist Mill Road. In Wilton, it is proposed as a narrower soft-surface trail using existing trails in the Route 7 corridor. A railroad crossing and several difficult at-grade crossings are required as the trail proceeds north and also includes several sections with steep grade, unsuitable for bicyclists or disabled persons. The trail could have two possible termini at the northern end of the Route 7 right-of way: a low trail to Scribner Hill Road and a highland trail to Dumplin Hill Road, both near the northern end of the Route 7 right-of-way. The trail through Wilton is proposed as a 5 to 8-foot unpaved path. The Study recommended further analysis of certain areas and suggested that certain segments could have high construction costs, due to the proximity to wetlands and the Norwalk River. The report also suggests phasing construction of the trail, funding sources, and coordination with State agencies.

The Route 7 Linear Trail is conceptually the same trail as the Norwalk River Valley Trail. However, the current NRVT effort envisions a much longer regional trail along the Norwalk River/Rt. 7/Danbury Branch Line than the 1995 study.

South Western Regional Planning Agency (SWRPA) Plan of Conservation and Development (2006)

The SWRPA Plan of Conservation and Development covers a range of issues facing the region, from demographics and economic resources to transportation and recreational opportunities. Specific goals for land-use, infrastructure, and recreation that apply to the Norwalk River Valley Trail include:

- Encourage a park-and-walk pattern
- Improve pedestrian circulation and safety
- Encourage the use of bicycles for transportation
- Increase recreational opportunities throughout the Region, particularly bicycling
    - Seek municipal endorsement for a designated route for the East Coast Greenway and complete the Route 7 Linear Trail from Norwalk to Danbury (aka NRVT)
    - Propose specific bicycle and pedestrian facilities in municipal plans for conservation and development
    - Develop safe bicycling and walking routes to schools
    - Install bicycle storage facilities in suitable areas

The SWRPA Plan for Conservation and Development defers to and supports more specific recommendations made in the Transportation Plan.

Housatonic Valley Council of Elected Officials (HVCEO) Plan of Conservation and Development (2009)

The Plan of Conservation and Development covers a large range of issues effecting the area including housing, economic development, transportation, and open space. The Plan recommends implementing the Regional Transportation Plan. Specific goals and policies outlined by the plan include:

- Promote a better balance between transportation modes, such that the share for automobile travel of total travel can decline in the future. Facilitate convenient pedestrian movements, mixed use and transit-oriented developments.
- Complete the Ridgefield-Danbury-Bethel Ives Trail. Proceed with the purchase of privately owned properties (or purchase of conservation/public access agreements) that will link the open space properties along the Ives Trail.[4]

Figure 4: Detail of Ives Trail in Danbury, Courtesy of Rick DeWitt

- Complete the Danbury – Brookfield – New Milford Still River Greenway and Housatonic Valley River Trail. This priority is for the purchase of privately owned properties (or purchase of conservation / public access agreements) that will link open space properties in Danbury, Brookfield, and New Milford to create the regional Still River Greenway.

[4] A main portion of the Ives Trail opened in June of 2006. Additional parts of the trail are under construction and the remaining easements and right-of-way acquisitions are being completed this year.

- Pedestrian access goal: To significantly increase sidewalk development and improve pedestrian amenities in the Region, especially in coordination with mixed-use and transit-oriented developments.[5]

Route 7 Transportation and Land Use Study (2010)

This Study was commissioned by the South Western Regional Planning Agency and considers existing transportation and land use conditions along the Route 7 corridor from Miry Brook Road in Danbury to Grist Mill Road, just south of the Wilton town border in Norwalk. It establishes a clear vision and a series of recommendations for the corridor pertaining to all types of mobility and land uses. The study recommends maintaining undeveloped and rural areas while encouraging development in five village centers, Branchville, Upper Ridgefield, Wilton Center, Cannondale, and Georgetown. Specific recommendations include:

Bicycle improvements:

- Five-foot-wide striped shoulder with drainage structures located behind shoulder (bike friendly catch basin grates where possible) with regular maintenance (sweeping)
- Advanced stop bars for left-turn bicycle queuing
- Bike pockets between right-turn lanes and through lanes
- Bike warning sign and/or bike route signage (upon completion of other improvements)
- Bicycle racks at village locations and train stations
- Routine maintenance (sweeping) of shoulders
- Advance the Norwalk River Valley Trail development

Pedestrian Improvements:

- Connect gaps in sidewalk network between Norwalk and Grumman Hill Road in Wilton
- Improve sidewalk networks at village and train station locations:
    - Upper Ridgefield
    - Branchville Station and Village
    - Cannondale Station
    - Wilton Station
- Improve intersections that are not fully ADA compliant[6]

These bicycle and pedestrian improvements support the vision of the Norwalk River Valley Trail and will help to enhance access to the trail from Route 7, the train stations and town centers in the corridor. The plan also outlines the Norwalk River Valley Trail, as portrayed in the 1995 Norwalk River Valley/Route 7 Trail report, with an off-road paved path between Norwalk and Route 33 and on-road bicycle facilities on Route 7, north of Route 33.

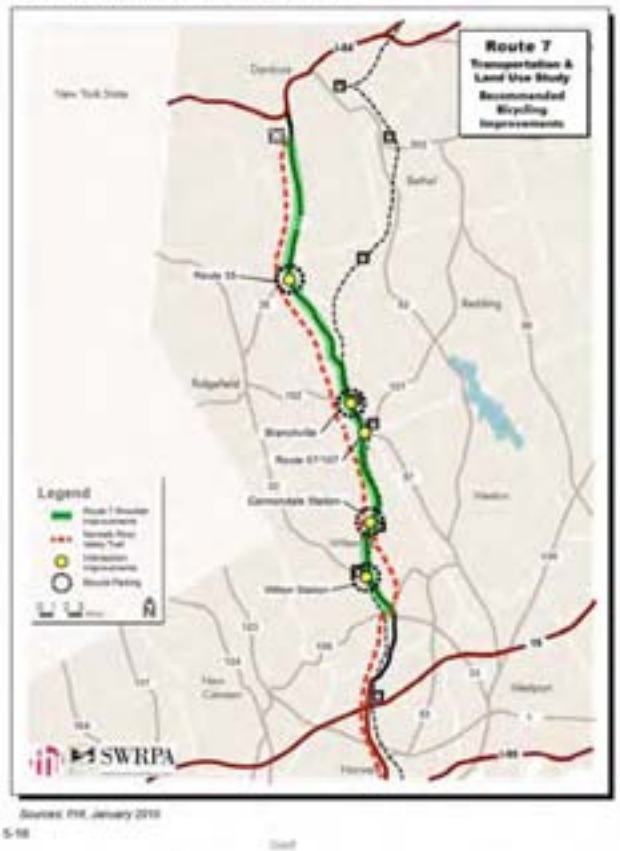


Figure 5: Map from Route 7 Transportation Land Use Study

[5] Housatonic Valley Regional Plan of Conservation and Development (2009)
[6] SWRPA & HVCEO, Route 7 Transportation and Land Use Study, Fitzgerald & Halliday, September 2010.

Going Forward – The Plan to Maintain and Improve Mobility (Long Range Transportation Plan for the South Western Region 2011-2040)

Going Forward – The Plan to Maintain and Improve Mobility, prepared by the South Western Regional Planning Agency, is a comprehensive study of existing transportation conditions and recommended policies and improvements to all modes of transportation, including vehicles, bus, rail, bicycle, and pedestrian. Specific strategies to improve bicycle and pedestrian mobility include:

- Recognize bicycling and walking as essential modes in the transportation system, which are viable transportation options for many travelers
- Build bicycle and pedestrian elements into transportation and community facilities
- Promote the development of a robust intermodal network in which bicycles and pedestrians play an integral role
- Promote bicycle and pedestrian safety and education programs targeted at vulnerable groups such as seniors and youth
- Construct and maintain secure bicycle storage at intermodal and community facilities
- Develop safe walking and bicycling routes to schools (Safe Route to Schools)
- Promote bicycling and walking as ways to improve health
- Provide technical assistance to municipalities and advocacy groups regarding bicycle and pedestrian issues, projects, programs and plans[7]

Going Forward also articulates four critical multi-use trails in the SWRPA jurisdiction that when built would comprise a 56-mile network within the region. The NRVT is one of the four, in addition to the Merritt Parkway Trail, the Mill River Greenway and the I-95 trail in Greenwich. A trail along the Merritt Parkway would complete the longest section of the East Coast Greenway (ECG) without a viable off-routing option. Because of the intersection with the Merritt in Norwalk, the NRVT offers a critical ECG spur trail to Long Island Sound, something to be emphasized when seeking grant money and other funding opportunities.

Housatonic Valley Council of Elected Officials (HVCEO) Regional Transportation Plan (2011)

The HVCEO Regional Transportation Plan focuses on the Route 7 corridor, and restates the region's support for policies recommended the Route 7 Transportation and Land Use Study and strong desire not to institute the State's Route 7 expressway plans. The regional transportation plan defaults to the local Danbury, Ridgefield, and Redding Plans for Route 7 corridor improvements. Updating Route 7 curb-cut management plans is also recommended. The Plan supports the completion of the Sugar Hollow Greenway within the Route 7 Expressway right-of-way through all three municipalities. When implemented, the NRVT will become part of the overall Sugar Hollow Greenway corridor.

4.3 Local Plans

City of Danbury - Transportation Plan (2005)

The Danbury Transportation Plan prepared by the Department of Planning and Zoning addresses existing conditions and transportation needs from four different aspects: streets and highways; public transportation; pedestrian, bicycle and air travel; and state and regional transportation issues. Street and highway recommendations focus on implementation of intelligent transportation systems (ITS) and traffic-calming measures, which can increase mobility and safety for both bicyclists and pedestrians. The Plan recognizes the importance of sidewalks to improve pedestrian safety, encourage walking, and improve visual quality of the commercial corridor. These improvements could contribute to better access and mobility of pedestrians using

[7] SWRPA Long-Range Transportation Plan (2007-2035)

the future Norwalk River Valley Trail. Five types of bikeway treatments are proposed on Danbury's heavily traveled corridors and should be incorporated into road widening projects, which again will increase access for bicyclists using the Norwalk River Valley Trail. Finally, the Plan suggests considering the feasibility of designating two bikeways in the north-east area of the Town but supports recommendations for additional bikeways in the future.

Danbury Branch Line Study (2012, ongoing)

The Danbury Branch Line Study proposes station and track improvements between Norwalk and Danbury, with potential improvements up to New Milford. Proposed additional sidings and track realignments should be considered for NRVT alignments that are near or within the railroad right-of-way. The study also shows the need for additional parking at stations. The proposed NRVT could alleviate some of this need but alignment of the trail and spur trails should consider these expansions around the stations.

Town of Redding - Town Plan (2008)

The main vision for the Town of Redding remains historic preservation and open space acquisition. Redding has exceeded its previous goal of preserving over 25% open space within the town boundary. The focus has shifted to maintaining the existing rural and natural character of the area with development focused in only two areas, Georgetown and West Redding. The Town has continued to work with a developer creating a large mixed-use development in Georgetown, guided by Smart Growth principles to produce a vibrant and walkable village center. The Town has revised the Plan to include specific recommendations for a pedestrian connection across Main Street/Old Mill Road, on-street parking, and traffic-calming measures. The Town's Plan recommends the following as it relates to bicycle and pedestrian elements:

- Purchase land as it becomes available for preservation, passive or active recreation, and limit development in certain areas
- Promote regional bikeways along major and minor collector roads
- Implement traffic-calming measures for protection of established residential areas, such as speed humps, speed tables, textured pavement, existing topography, optical lane narrowing, chicanes, and gateways
- Review ownership of abandoned roadways and consider conversion for recreational use [8]

The Norwalk River Valley Trail that will eventually be located through this area of Redding is both supported by this vision and will also enhance Redding's desire to maintain open space and encourage walking and bicycling.

Town of Ridgefield - Plan of Conservation and Development (2010)

Ridgefield's Plan includes encouraging public transit, walking, and bicycling as a major theme. The Plan suggests that new and re-developments consider bicycle and pedestrian activity. It also recommends maintaining the existing sidewalk network, expanding it north from Ridgefield Center, and using this network as an example in other designated Pedestrian Enhancement Areas such as the Branchville train station. Designating the areas around schools as Pedestrian Enhancement Areas is also recommended. It recognizes the lack of pedestrian network in the rural areas of the Town and recommends study of off-road systems and dirt trails within the right-of-way to increase connectivity to schools and other destinations. The Ridgefield Plan encourages bicycle ridership both for transportation and recreation. The Plan recommends

[8] Town of Redding, 2008 Town Plan, Redding Planning Commission, 2008

prioritizing routes that connect high density residential areas with activity centers and considering bicycle needs when improving roadways.

Ridgefield's Plan highlights the importance of open space, specifically the enhancement of open spaces with greenways by creating recreational opportunities and connections between open spaces and destinations. Support continues for the Sugar Hollow Greenway to connect a series of open space parcels between Ridgefield and Norwalk within the "Super 7" expressway corridor. The planning initiative for the Norwalk River Valley Trail is discussed along with the benefits it will bring to Ridgefield including the protection of: aquifers and wetland systems, significant habitats and rare species, historic sites, and scenic resources.

Town of Wilton - Plan of Conservation and Development (2010)

The Wilton Plan is focuses on maintaining the character of Wilton by protecting natural resources and maintaining open space, greenways, historic buildings and Wilton Center. The need for additional housing was also made evident by outreach efforts and must be done while maintaining the vision for Wilton, such as "promoting other forms of transportation, and becoming a 'greener' community." Creating greenways becomes an important part of that vision. The plan proposes utilizing the Route 7 Expressway right-of-way and segments alongside the Norwalk River to create important connections throughout Wilton. Three village centers are highlighted, Wilton Center, Cannondale, and Georgetown, for increased pedestrian mobility. The Plan suggests a continued effort to make pedestrian connections to these activity centers and suggests considering central parking to promote shared parking lots and increased pedestrian activity. Improved pedestrian connections between Wilton Center and the train station are also recommended. The Plan recommends implementation of the River Walk (see Figure 6) to assist in reaching these goals and to provide access to the river. The River Walk is a long standing concept within Wilton and has the potential of being a segment of the overall NRVT. The Town's Plan suggests that the trail be implemented in an incremental approach or with alternative routing. Finally, the Plan summarizes the need to consider trail options along Route 7 and in other areas around Wilton and calls for the investigation of "the feasibility of trails within the State Right of Way for Route 7" as part of the Plan's Implementation Policies and Tasks.

Figure 6 Town of Wilton River Walk Options A and B

Town of Wilton – Linear Park Proposal (1971)

The Town of Wilton - Linear Park Proposal was written by Wilton Town Planner Russell Patrick for the Route 7 Committee chaired by Valerie Green. The primary recommendation is for a 7-mile long trail along the DOT-owned properties assembled for the "Super 7" expressway within the Town of Wilton. The proposed design is quite modest: it calls out for a 5 foot-wide, "natural" (unpaved) path within a 25 foot "Linear Park" space, leaving enough space for screening from the adjacent highway and properties using trees and landscaping. The intent is for hiking purposes but widening in the longer term is considered for equestrian use. At potential trailheads, rest areas and scenic overlooks, the report recommends the use of DOT's "excess taking parcels" wider than 25 feet. Securing the rights to easements on private properties not already controlled by DOT is described as one of the two "problem areas" for the development of the trail (topography

precludes keeping the trail on DOT property). The other is the need to cross physical barriers such as the railroad tracks, the Norwalk River, Route 7 and cross streets.

City of Norwalk - Plan of Conservation and Development (2008)

The Norwalk Plan recommends creating a unified system of open spaces linked by trails, pedestrian paths, and bicycle routes. The vision is to integrate neighborhoods and open spaces while promoting health and exercise. Specific goals that relate to bicycle and pedestrian mobility include:

- Provide capital budget funding to fill in "gaps" in the Riveredge Park and Bikeway along the Norwalk River
- Provide additional areas/opportunities for walking
- Create a plan for bikeways linking residential areas with downtown and provide capital budget funds in Recreation and Parks budget
- Establish appropriate bike lanes on select streets
- Provide funding for pedestrian circulation system of sidewalks, new and reclaimed footpaths, and crosswalks, especially in high traffic areas
- Encourage participation in the "Become a NorWALKER" program of the Norwalk Healthy Partnership's Healthy Lifestyles Cardiovascular Project
- Add new NorWALKER routes
- Plan for footpaths and trails on park and state land, including utility easements, and institute tax incentives for trails and footpaths on private land
- Fund for extension of the Harbor Trail and enhance pedestrian river crossings
- Support the construction of Route 7 Linear Park
- Implement the regional trail/bikeway along southern edge of Merritt Parkway right-of-way[9]

Norwalk Pedestrian and Bikeway Transportation Plan - Draft Introduction and Existing Conditions (current)

The City of Norwalk is currently undergoing a bicycle and pedestrian master plan. A vision for the City of Norwalk has been developed:

"All Norwalk residents and visitors have access to the benefits of walking and cycling. They are physically active and they and their children have learned to safely walk and bike, giving them mobility and independence. Norwalk is a community where people can walk or ride from their home to work, transit, to places for shopping and entertainment and for recreation.

Norwalk's streets are livable places that accommodate many activities. Neighborhood business districts are thriving with foot traffic from residents and visitors. A civic commitment to share the road is expected by drivers, cyclists, and pedestrians alike. Norwalk is the hub of a connected regional bicycle network that includes bike lanes, multi-use paths and greenways."[10]

The report continues to review existing studies and plans for the area. An inventory of existing sidewalks, paths, and shared use trails was taken for the City of Norwalk. Major pedestrian routes, on-road bicycle routes, and trails/multi-use paths are identified. This includes the Norwalk River Valley Trail and the completed and uncompleted sections through the City of Norwalk. All will be critical to help the team further understand the NRVT corridor.

[9] Town of Norwalk, Plan for Conservation and Development, Chan Krieger Sieniewicz, 2008.
[10] Norwalk Pedestrian and Bikeway Transportation Plan - Draft Introduction and Existing Conditions, Fitzgerald & Halliday, Inc., 2011.

5 Existing Conditions

The analysis of the existing conditions in the NRVT corridor is a composite of several different forms of input. Community input was gathered from the public workshops, lead by John Monroe from the National Park Service's Rivers and Trails group. The NRVT Committee members have also contributed feedback. Additionally, GIS base maps have been developed that inventory the key features along the corridor and field work has been conducted to gather additional information.

The existing conditions analysis is presented here in two sections. First, opportunities and challenges in each municipality within the corridor are mapped. Following this is the environmental analysis, which includes maps of environmental constraints that helped to inform the routing alternatives.

5.1 Opportunities and Challenges

The routing recommendation of the trail was informed by the opportunities and challenges posed in the corridor. Opportunities include cultural, historic, or scenic features, spaces where the trail may easily fit, connections to existing trails and destinations, and suitable locations for trailheads and spur trails. Challenges include pinch points where trail routing will be difficult, roadway and railway crossings, steep topography, and discontinuous public lands. The following maps (Figure 7 through Figure 22) show the opportunities and challenges for each jurisdiction along the corridor.

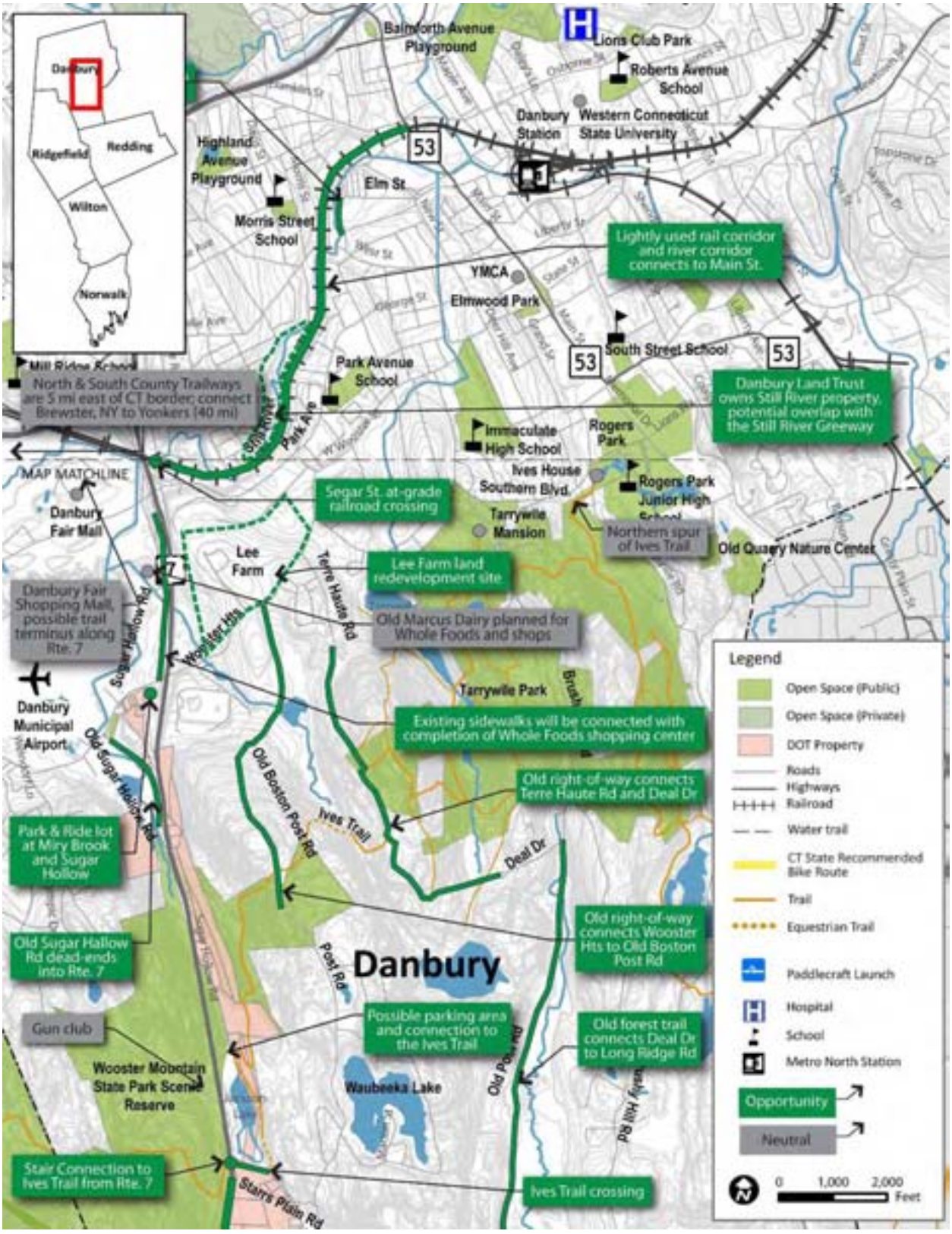


Figure 7: City of Danbury Opportunities (North)

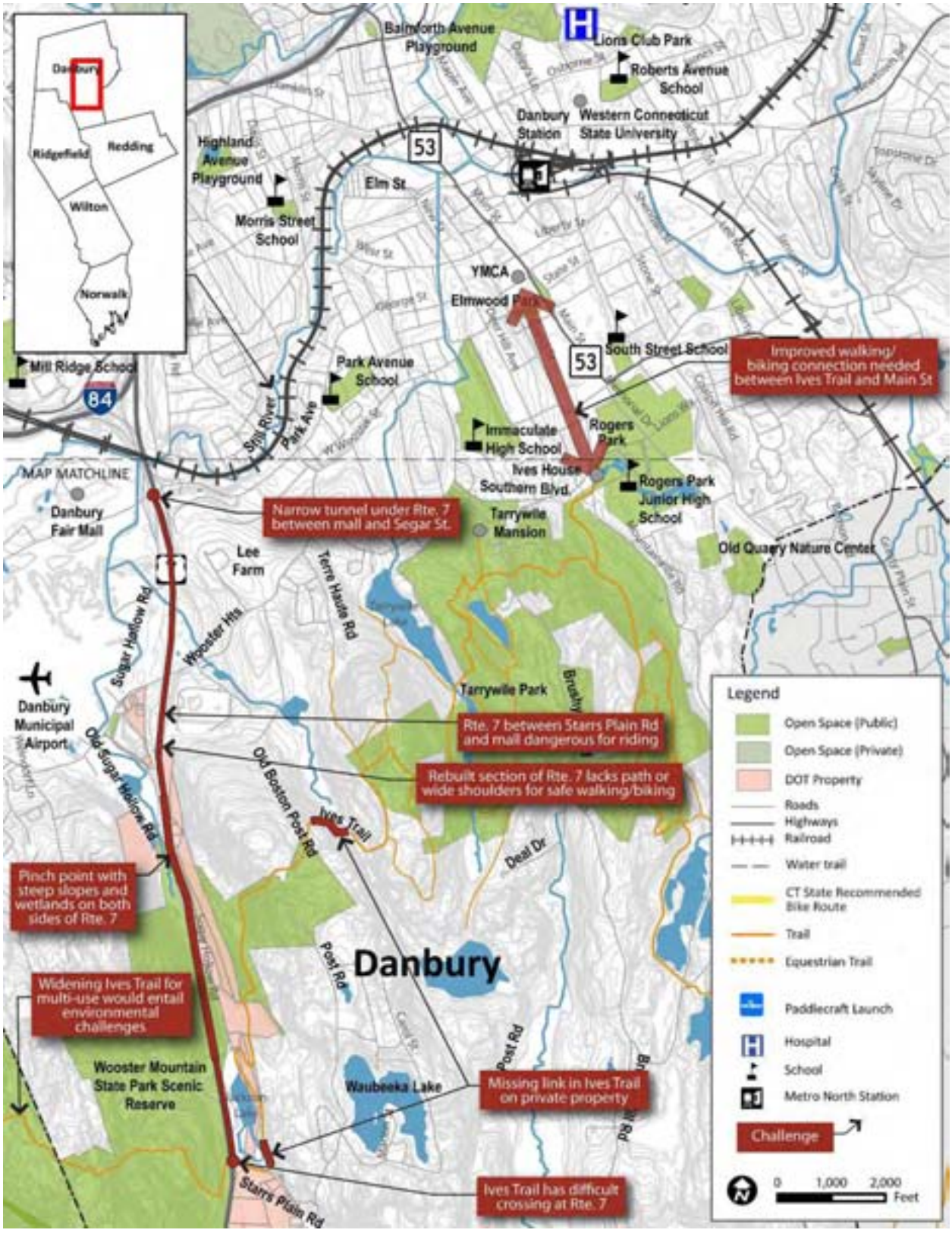


Figure 8: City of Danbury Challenges (North)

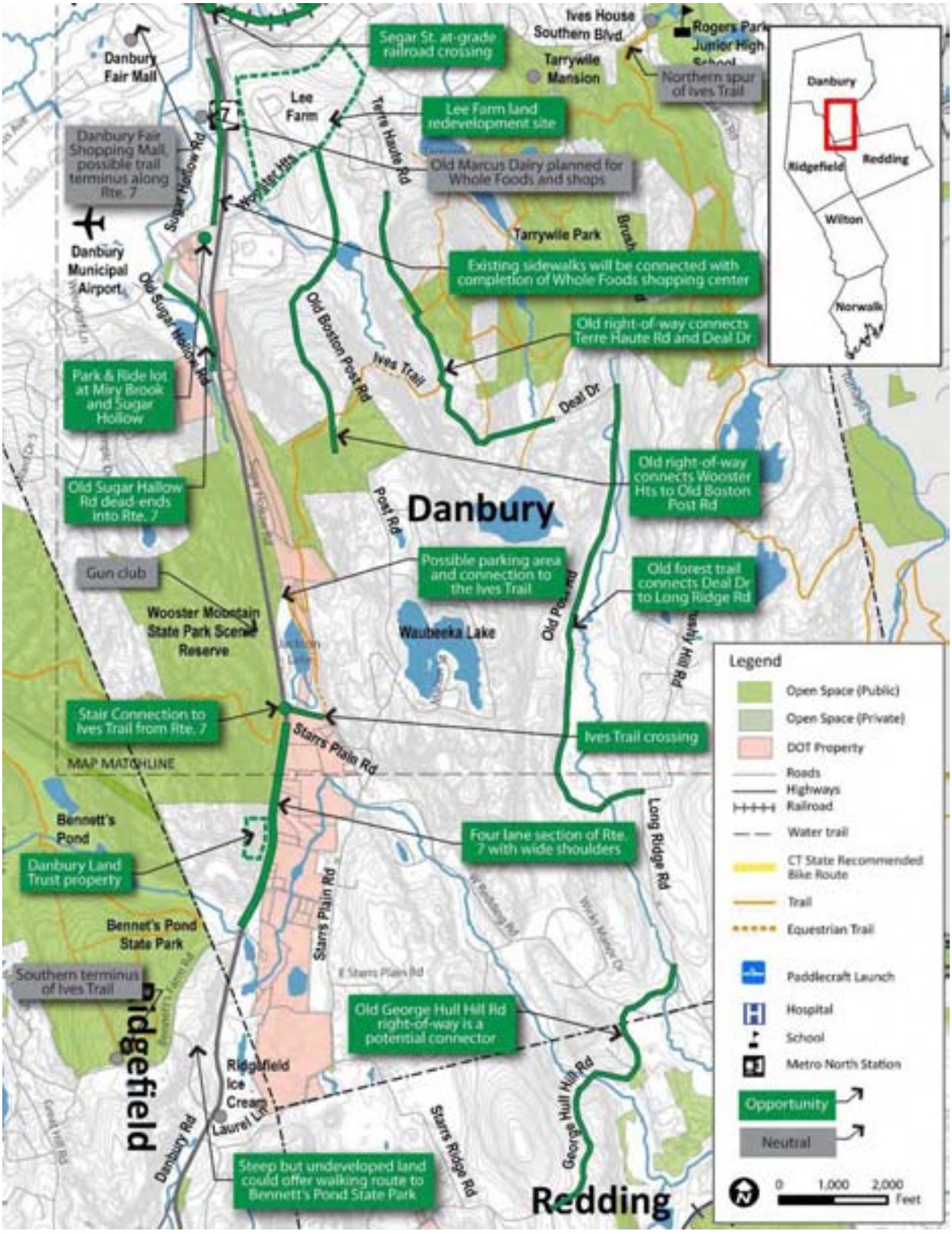


Figure 9: City of Danbury Opportunities (South)

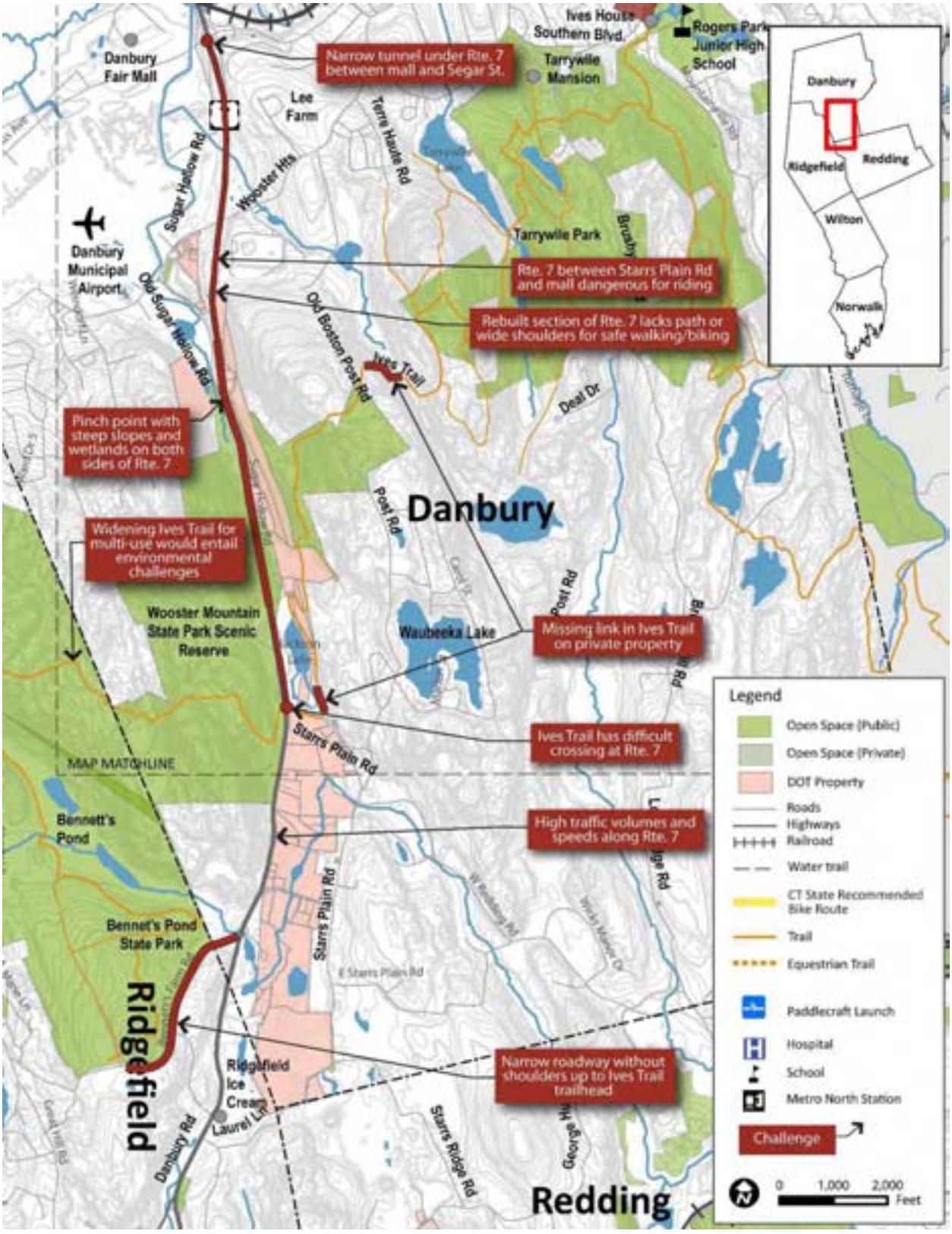


Figure 10: City of Danbury Challenges (South)

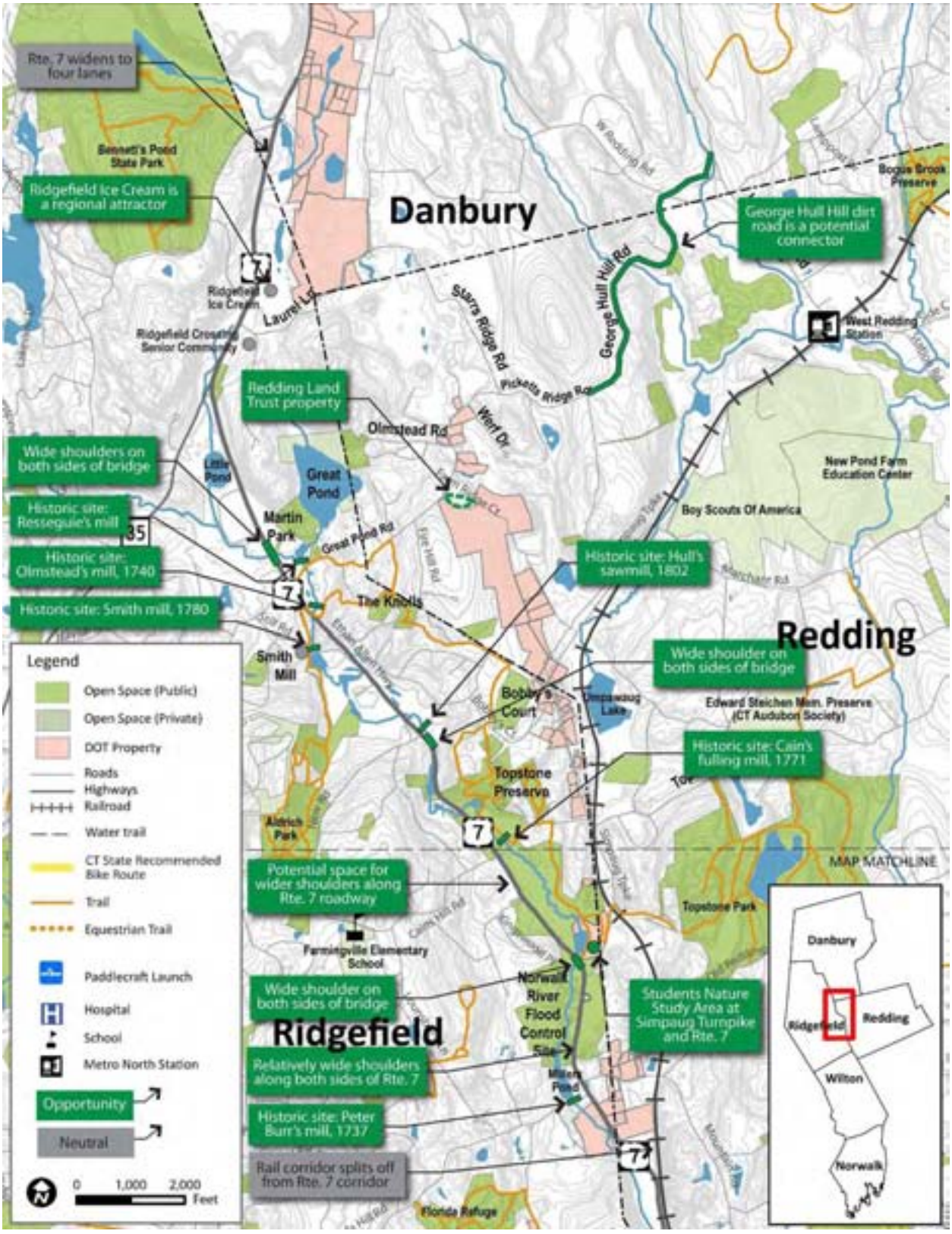


Figure 11: Towns of Ridgefield and Redding Opportunities (North)

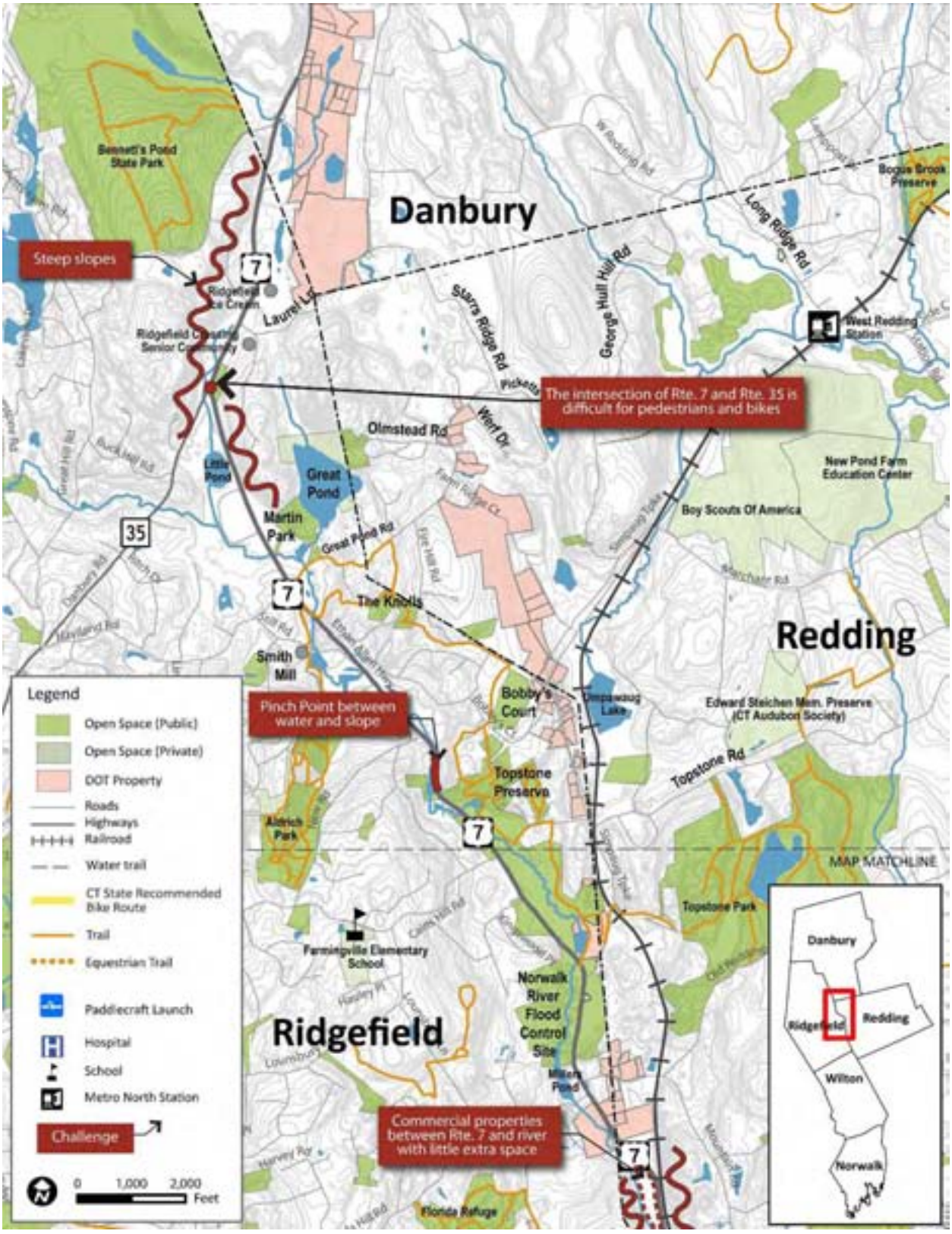


Figure 12: Towns of Ridgefield and Redding Challenges (North)

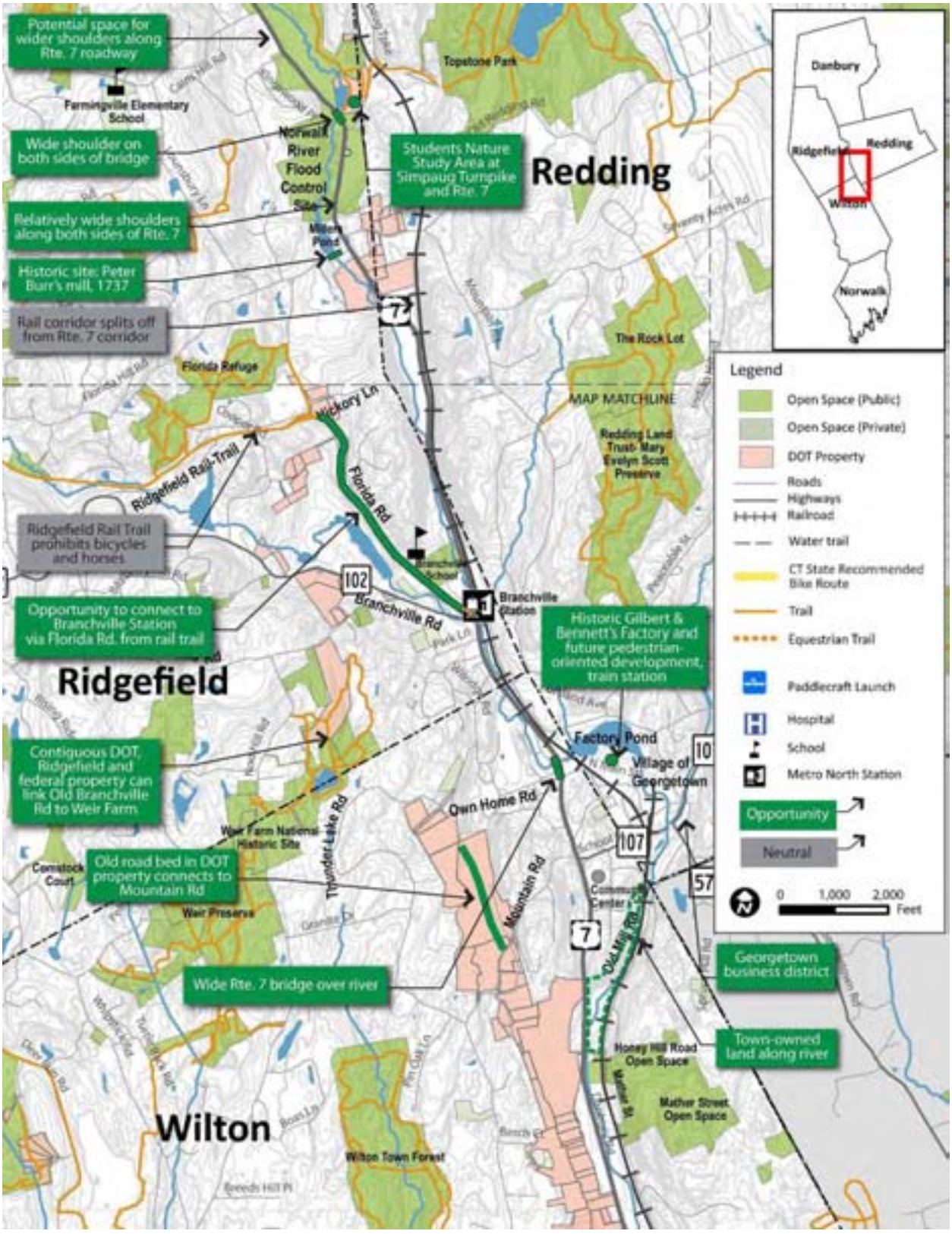


Figure 13: Towns of Ridgefield and Redding Opportunities (South)

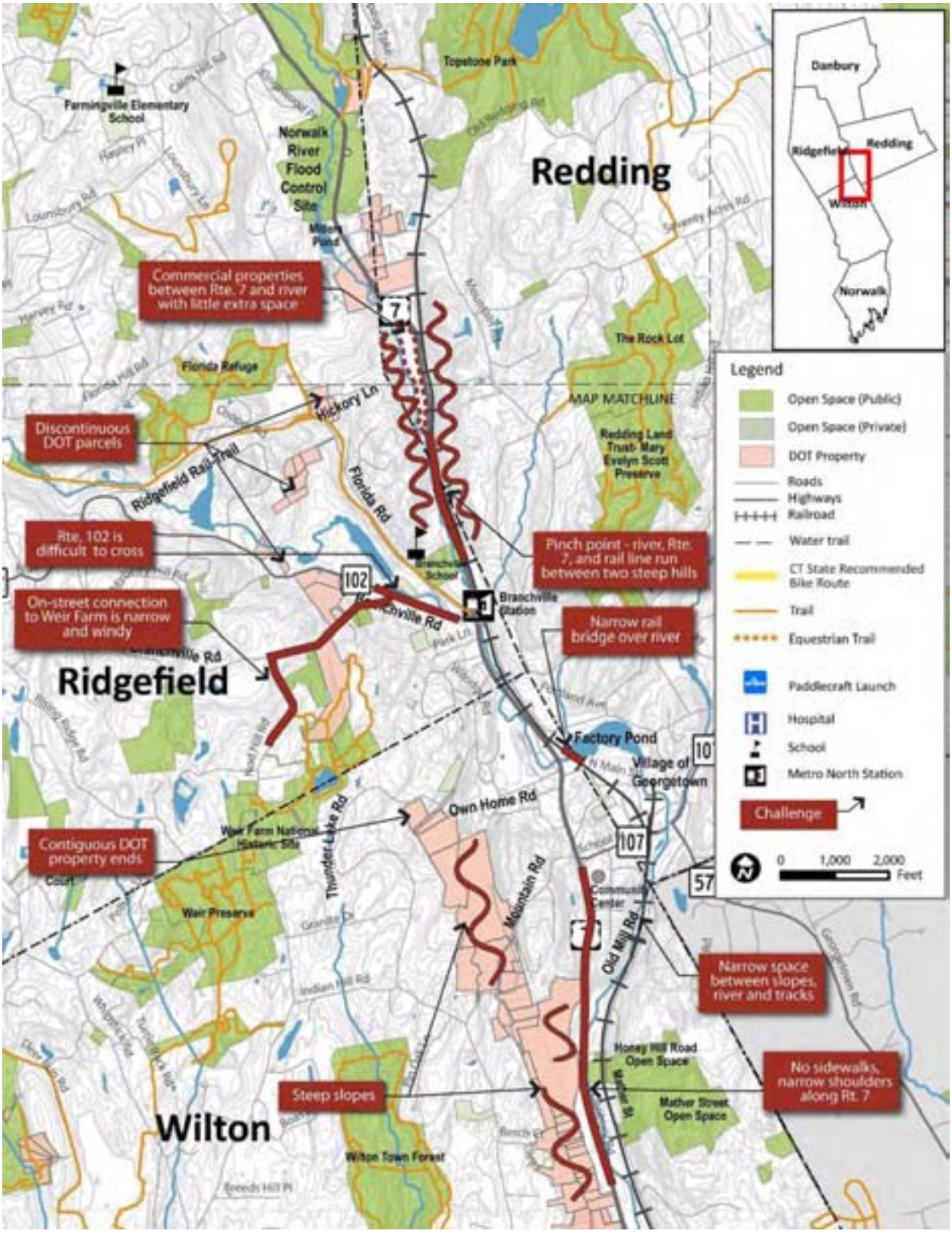


Figure 14: Towns of Ridgefield and Redding Challenges (South)

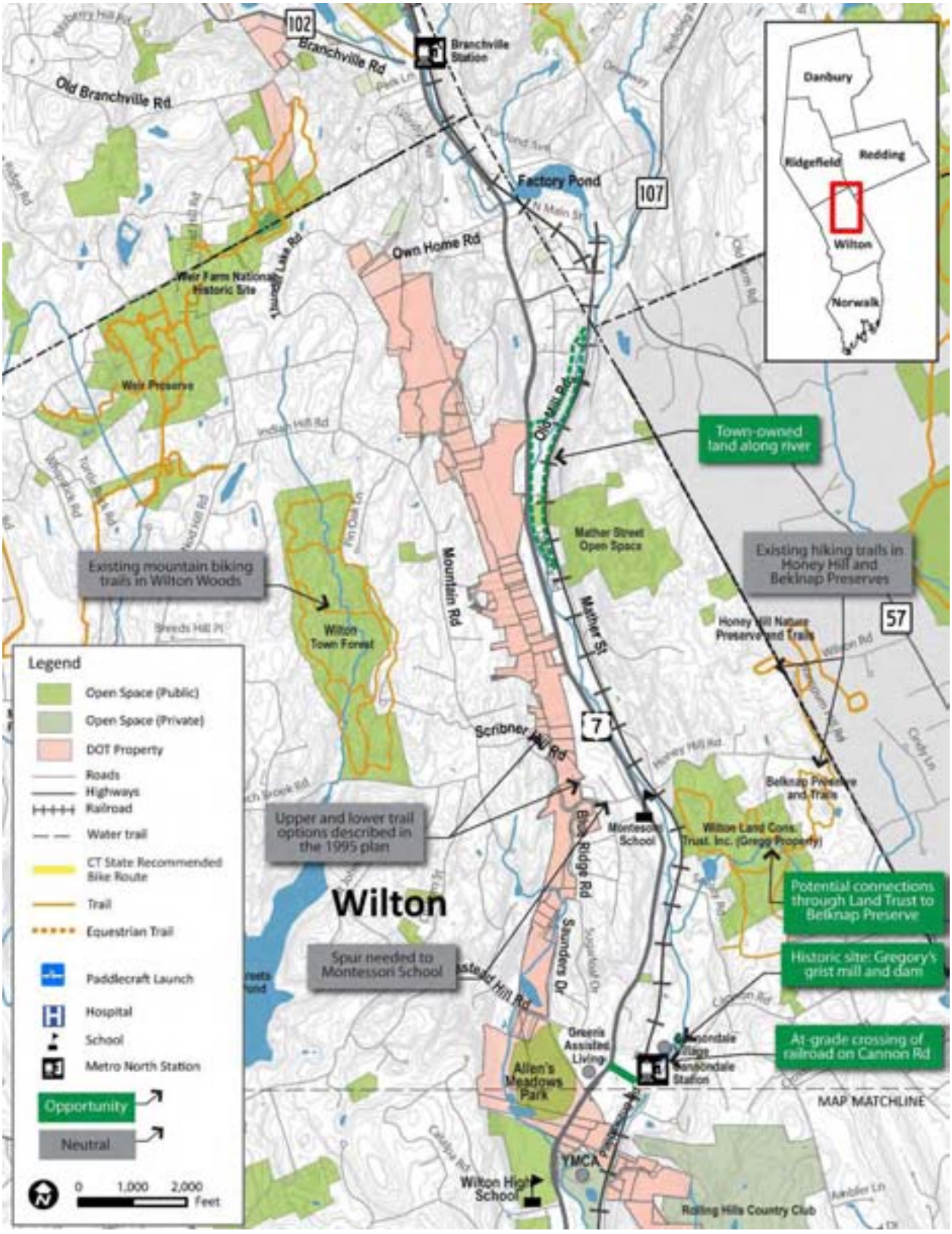


Figure 15: Town of Wilton Opportunities (North)

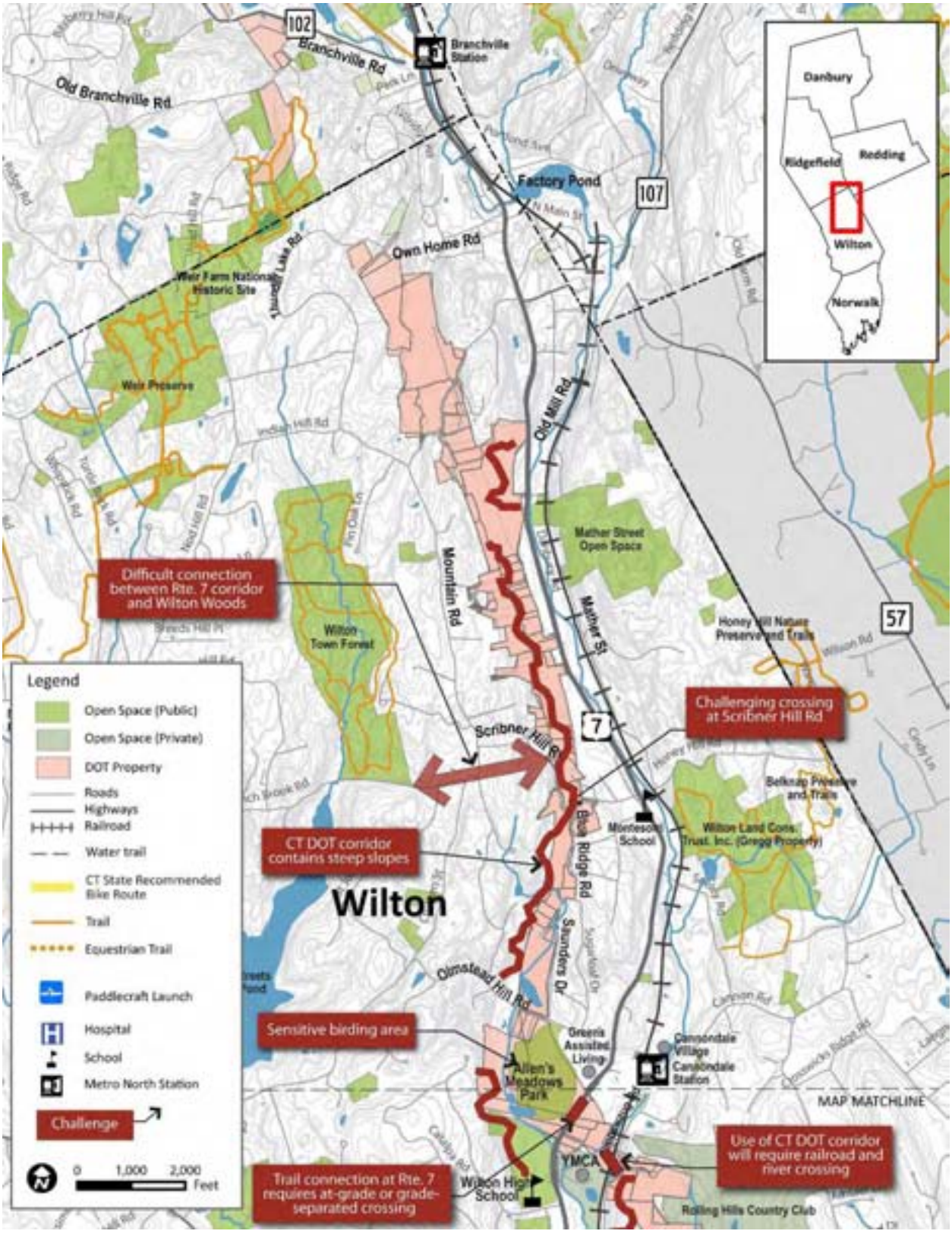


Figure 16: Town of Wilton Challenges (North)

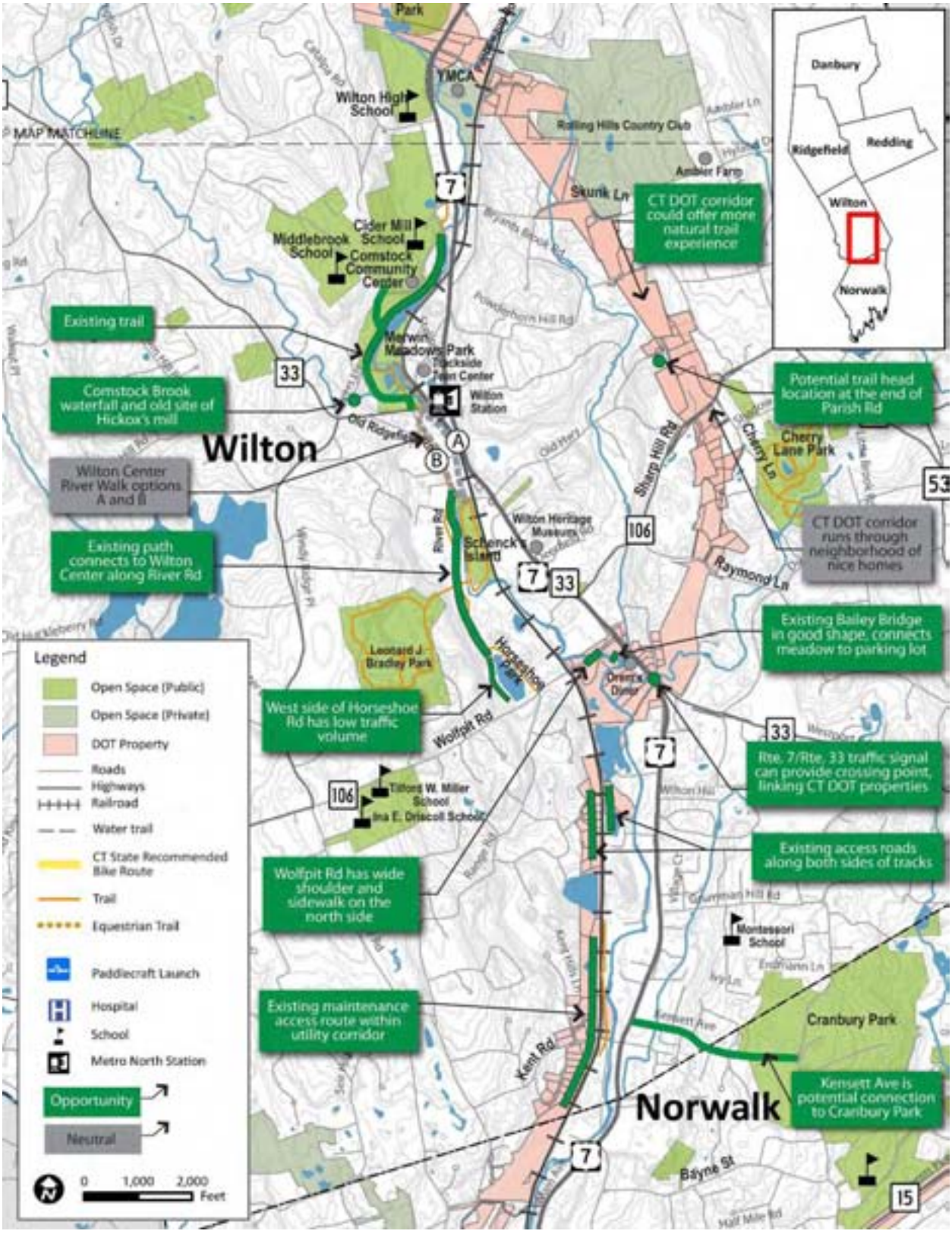


Figure 17: Town of Wilton Opportunities (South)

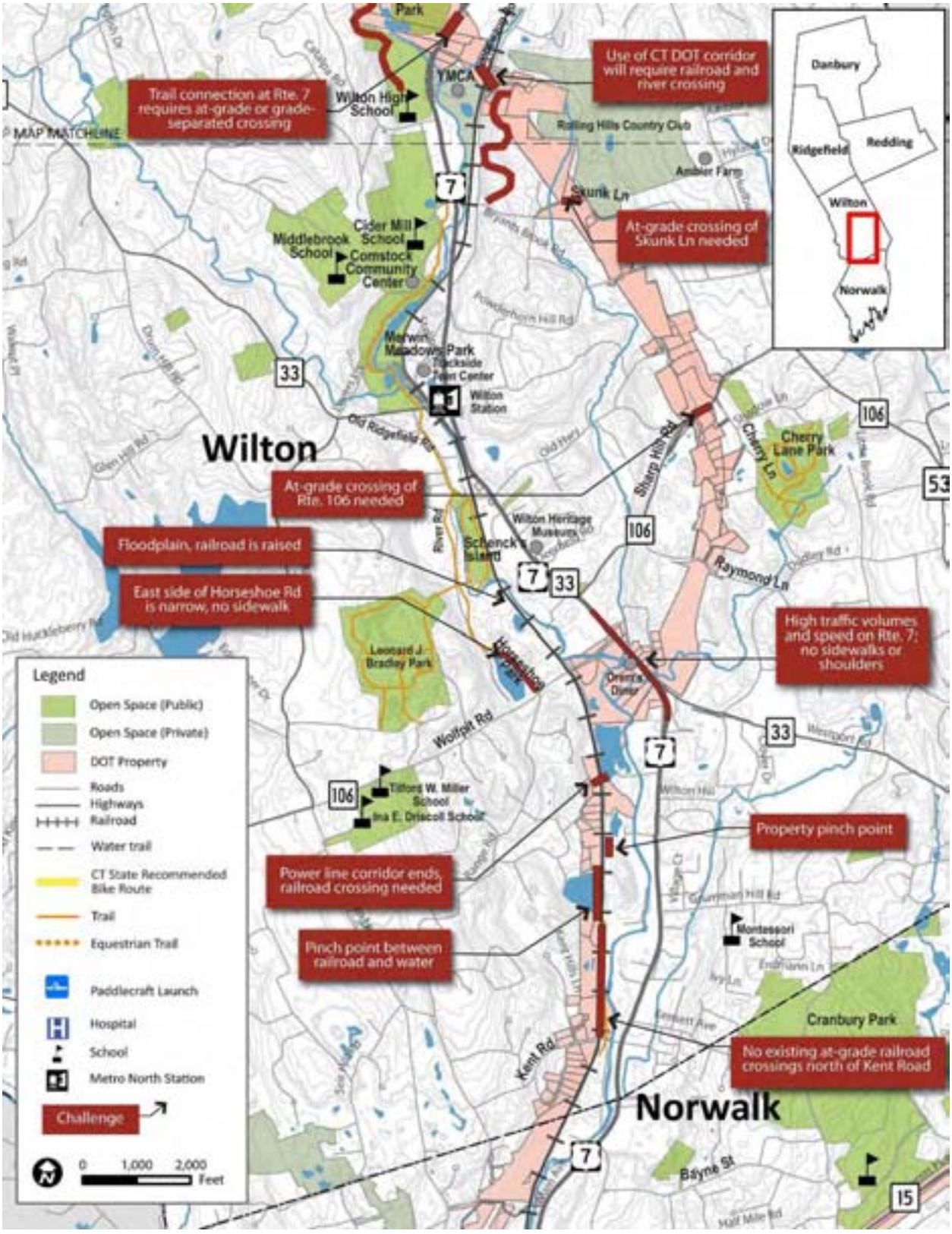


Figure 18: Town of Wilton Challenges (South)

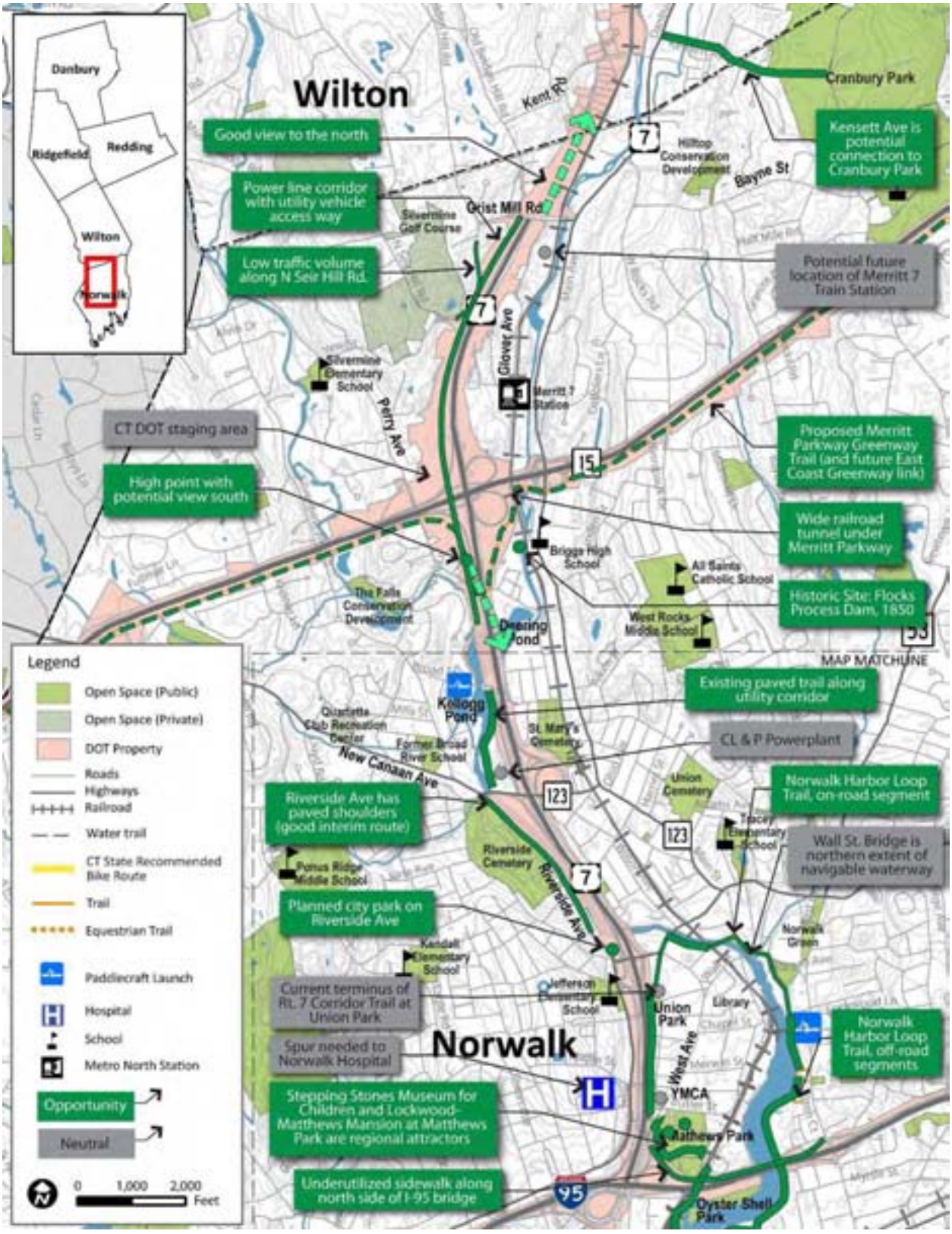


Figure 19: City of Norwalk Opportunities (North)

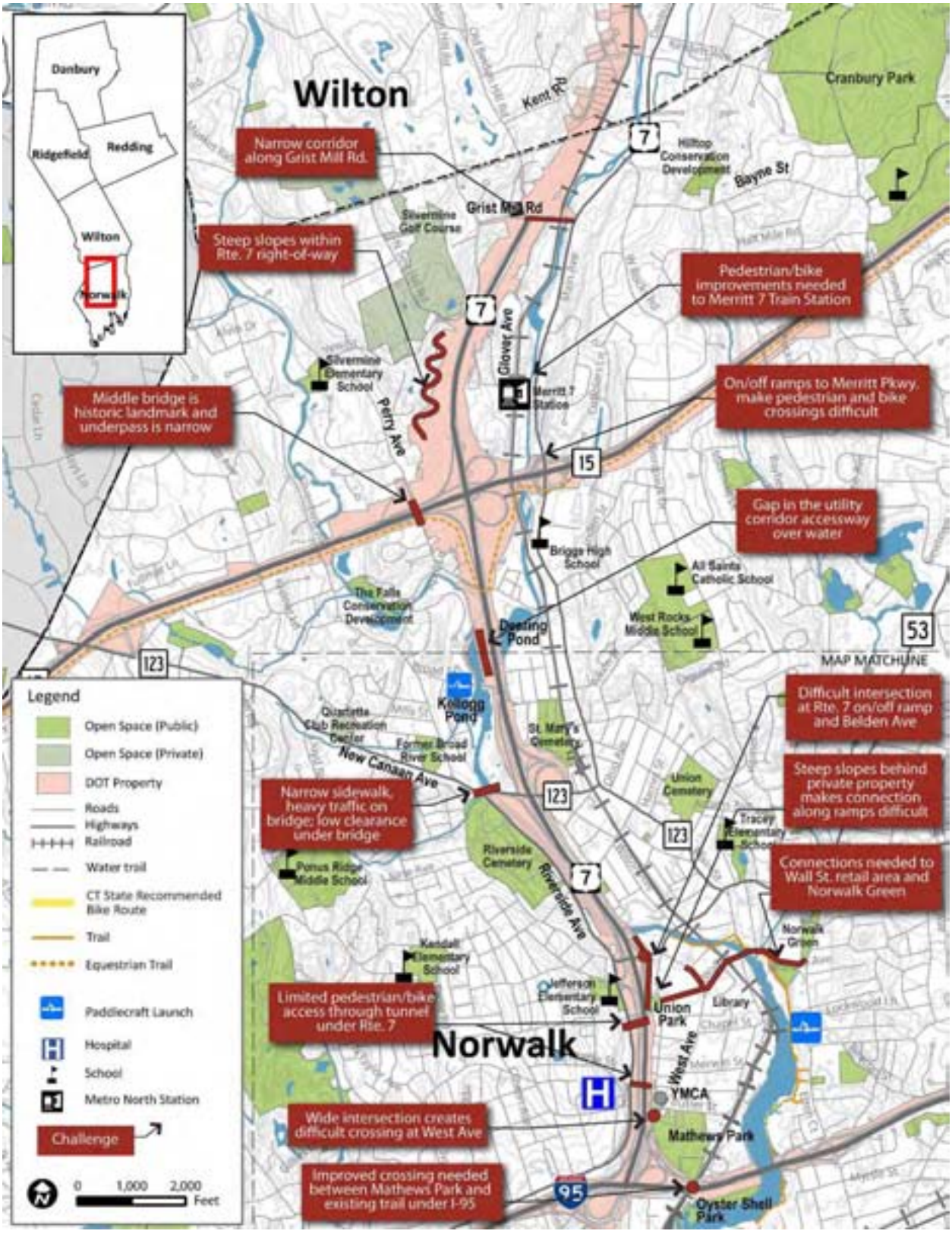


Figure 20: City of Norwalk Challenges (North)

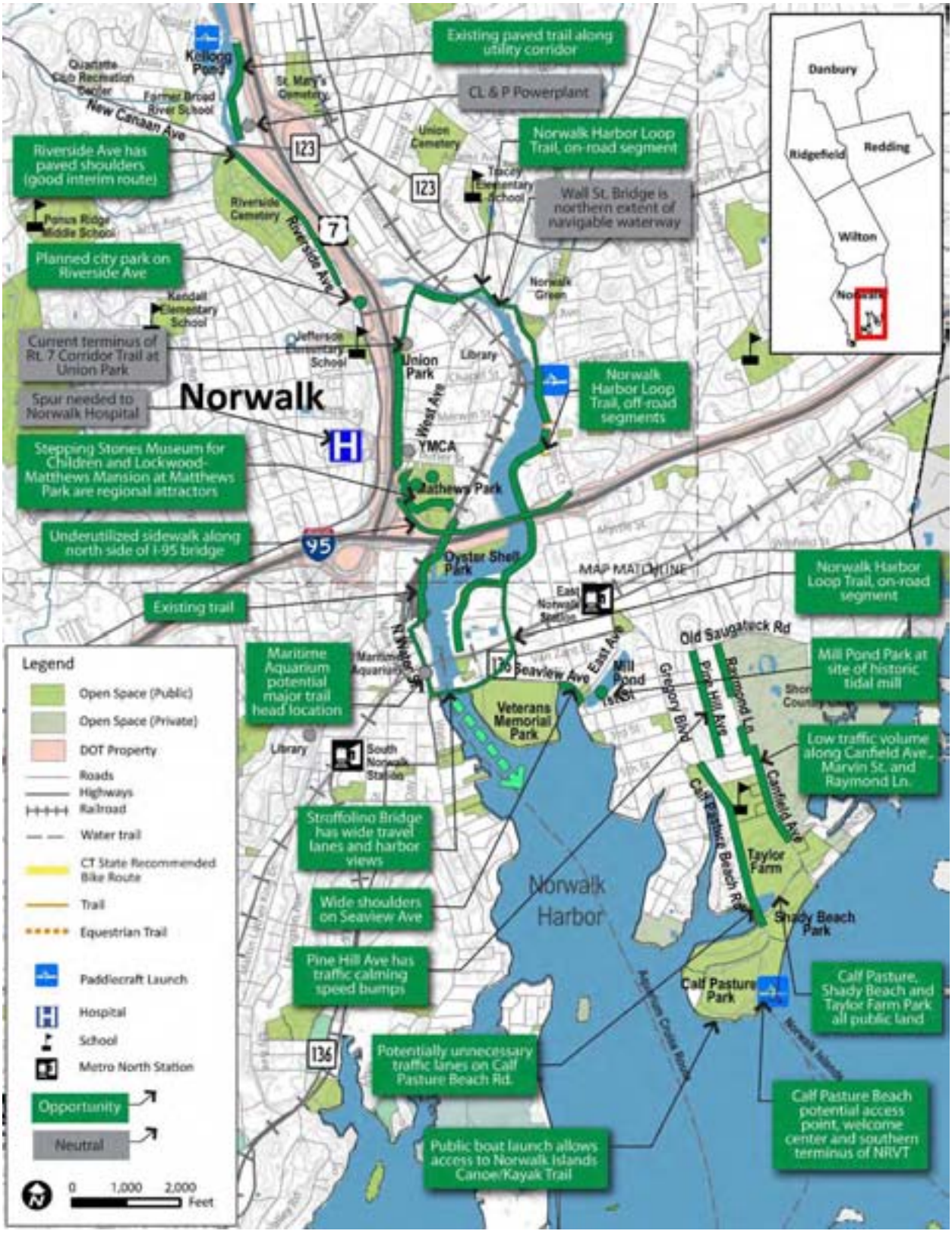


Figure 21: City of Norwalk Opportunities (South)

Figure 22: City of Norwalk Challenges (South)

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5.2 Environmental Analysis

A critical piece of the routing analysis and alignment feasibility was the careful consideration of the potential environmental constraints and ability to mitigate construction-related impacts. The following maps (Figure 23 through Figure 30) were developed using existing resources to identify some of the elements that need to be considered in trail planning. It is equally important to identify opportunities for the NRVT to provide positive environmental benefits including conservation, public access to outdoor recreation, and habitat restoration. This is not intended to represent areas of elimination from consideration, but identifies potential constraints. Specifically, the constraints identified in the maps include the following:

FEMA 100 Year Flood

These areas have been established as the flooding limits for the 100 year storm. These limits are regulated by Connecticut Department of Energy and Environmental Protection (DEEP). Trail construction within the floodway may be challenging and will increase the likelihood of trail damage during floods. Due to the scale of the submitted map, exact location of the 100 year flood line should be verified by field survey data.

Coastal Boundary

This is a protected area as defined by the Connecticut Coastal Management Act set in place to facilitate management of the land and water resources of the coastal area. Sections of trail that fall within the Coastal Boundary will require additional review from the DEEP Office of Long Island Sound.

Contours

Contours are used to show ground elevations at 10 foot intervals. Areas of steep slopes can be compared to gradual inclines. Where possible, the trail will be routed in areas with gradual changes in grade, to minimize the amount of regrading and disturbance the construction of the trail will have on its surroundings. This information has been made available by DEEP.

Inland Wetlands Soils

Inland wetland areas are identified by soil type. Changes made to an inland wetland site should include consideration of wildlife and fisheries habitats, flooding and flood hazards and other environmental concerns. Trail construction in wetlands is more challenging from an engineering, cost, and ecological preservation perspective.

Aquifer Protection Area

These are areas of land contributing to ground water that, in turn, are linked to the public drinking supply. Minimizing potential contamination of the ground water should be considered when proposed work is to take place in these areas.

Environmental Sensitive Areas/Critical Habitat

These are areas that have been identified by the DEEP Natural Diversity Database as being areas where one or more critical habitats exist. Colored outline on map represents approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. Confirmation and follow up with DEEP wildlife section is required. Trail routing should avoid or minimize impact on environmentally sensitive areas.

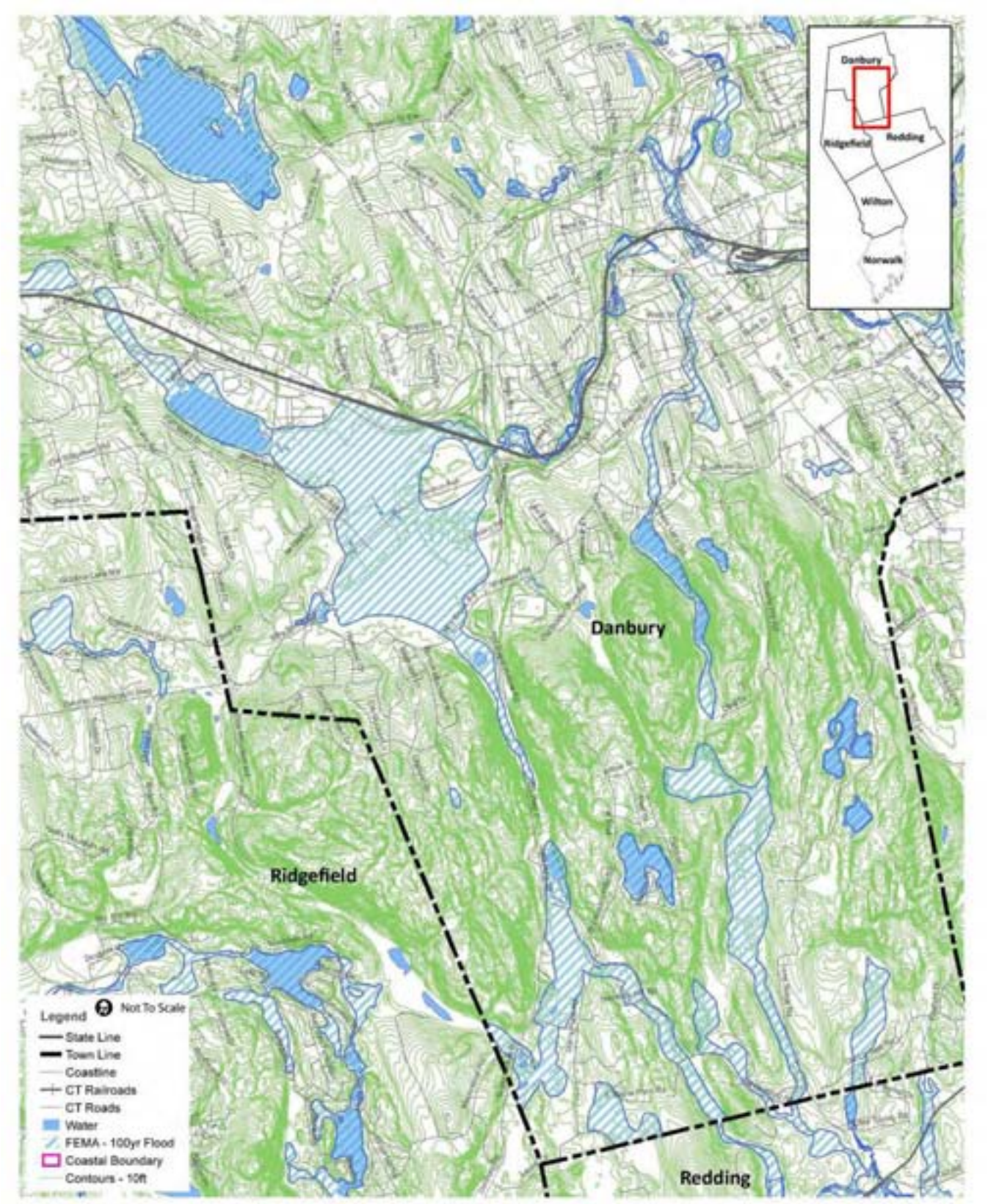

Figure 23: City of Danbury Topography and Flood Zones

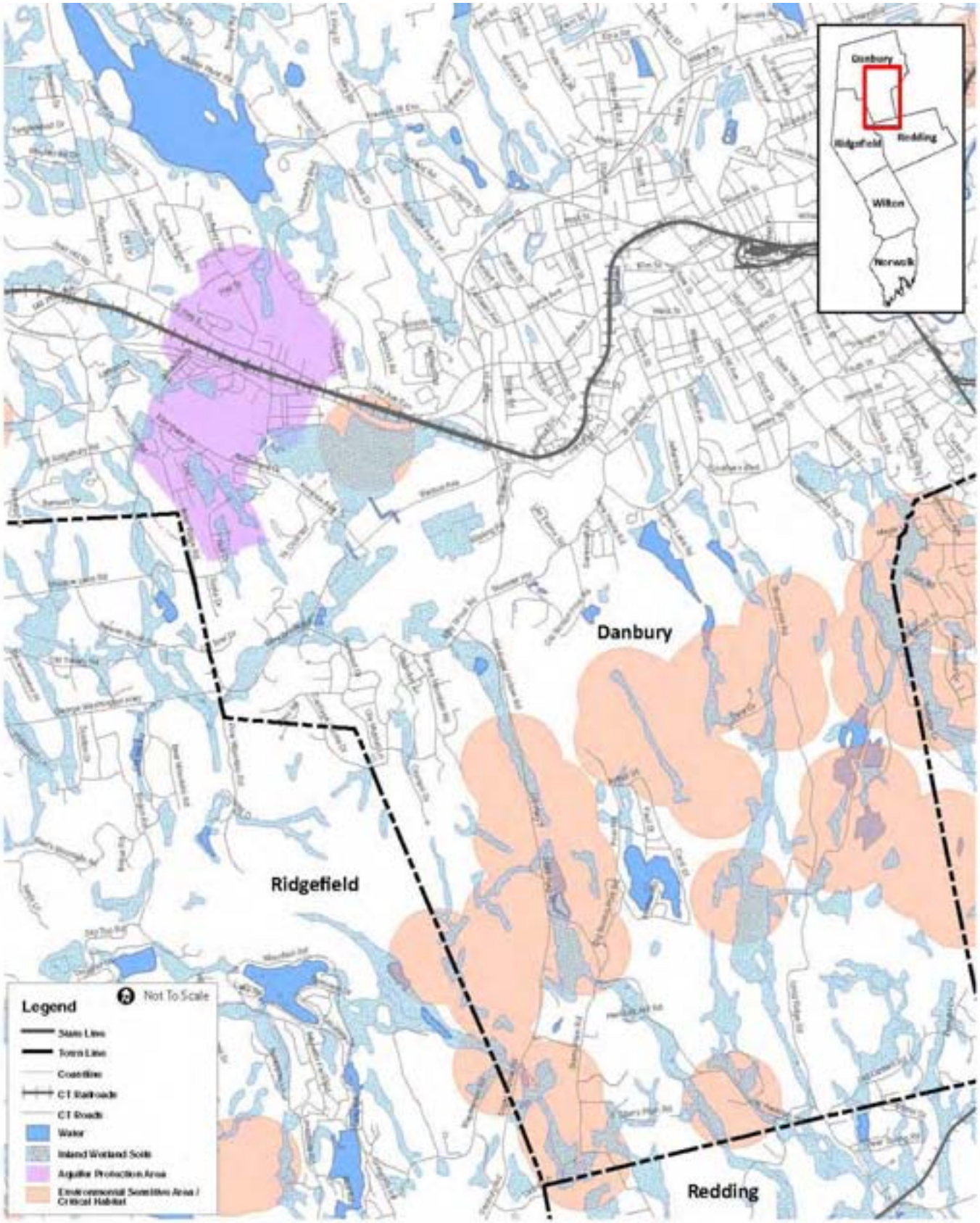

Figure 24: City of Danbury Environmental Constraints

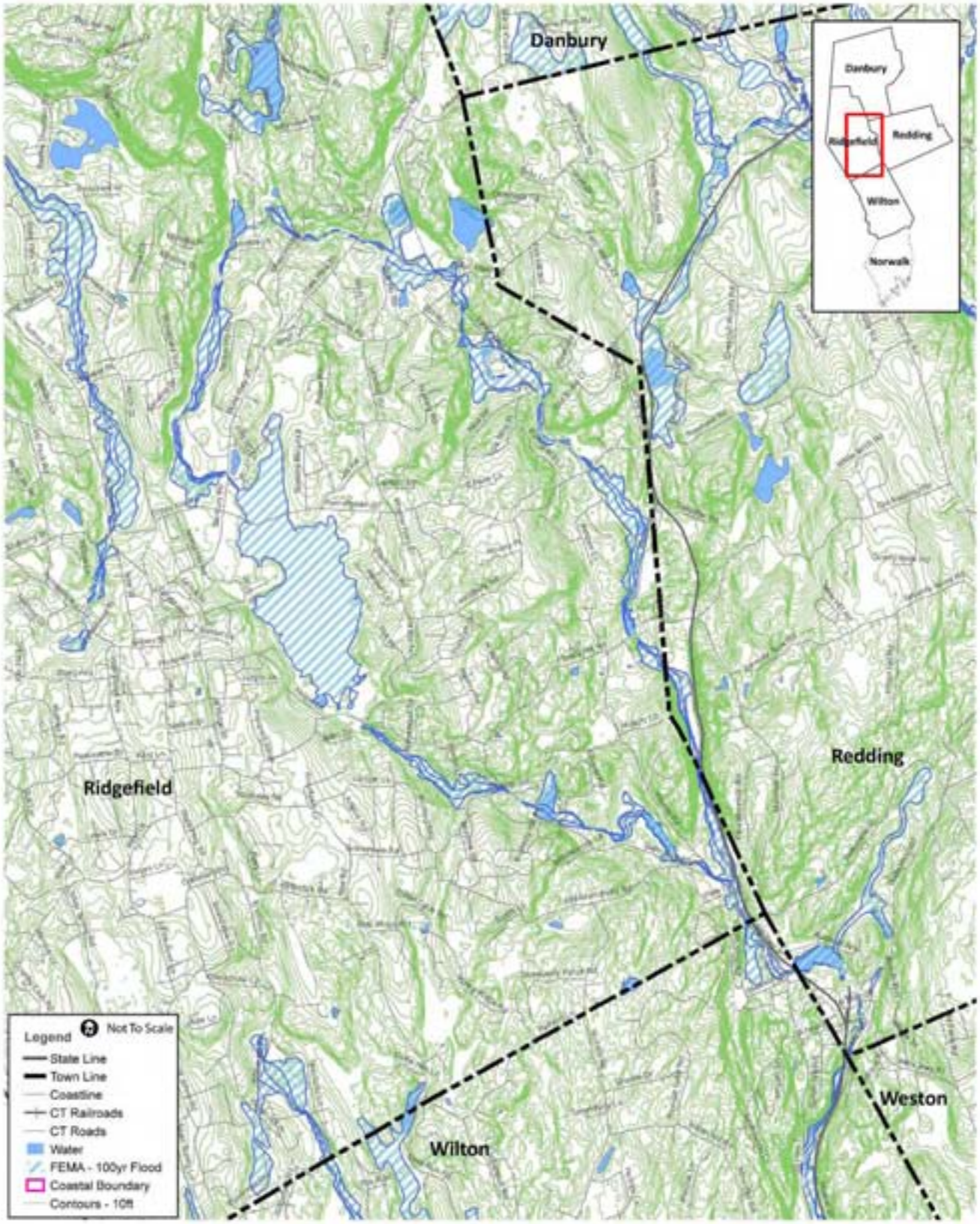

Figure 25: Towns of Ridgefield and Redding Topography and Flood Zones

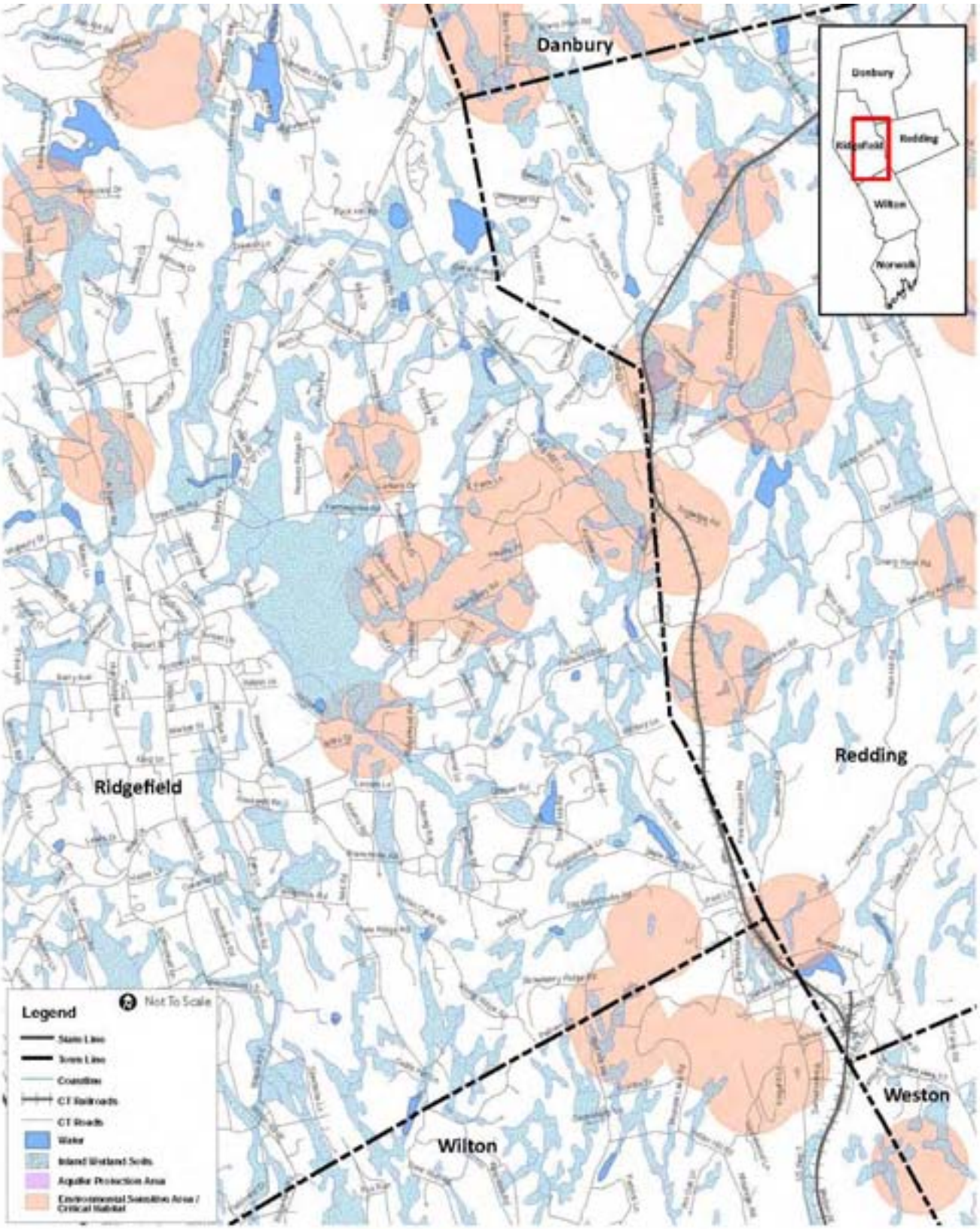

Figure 26: Towns of Ridgefield and Redding Environmental Constraints

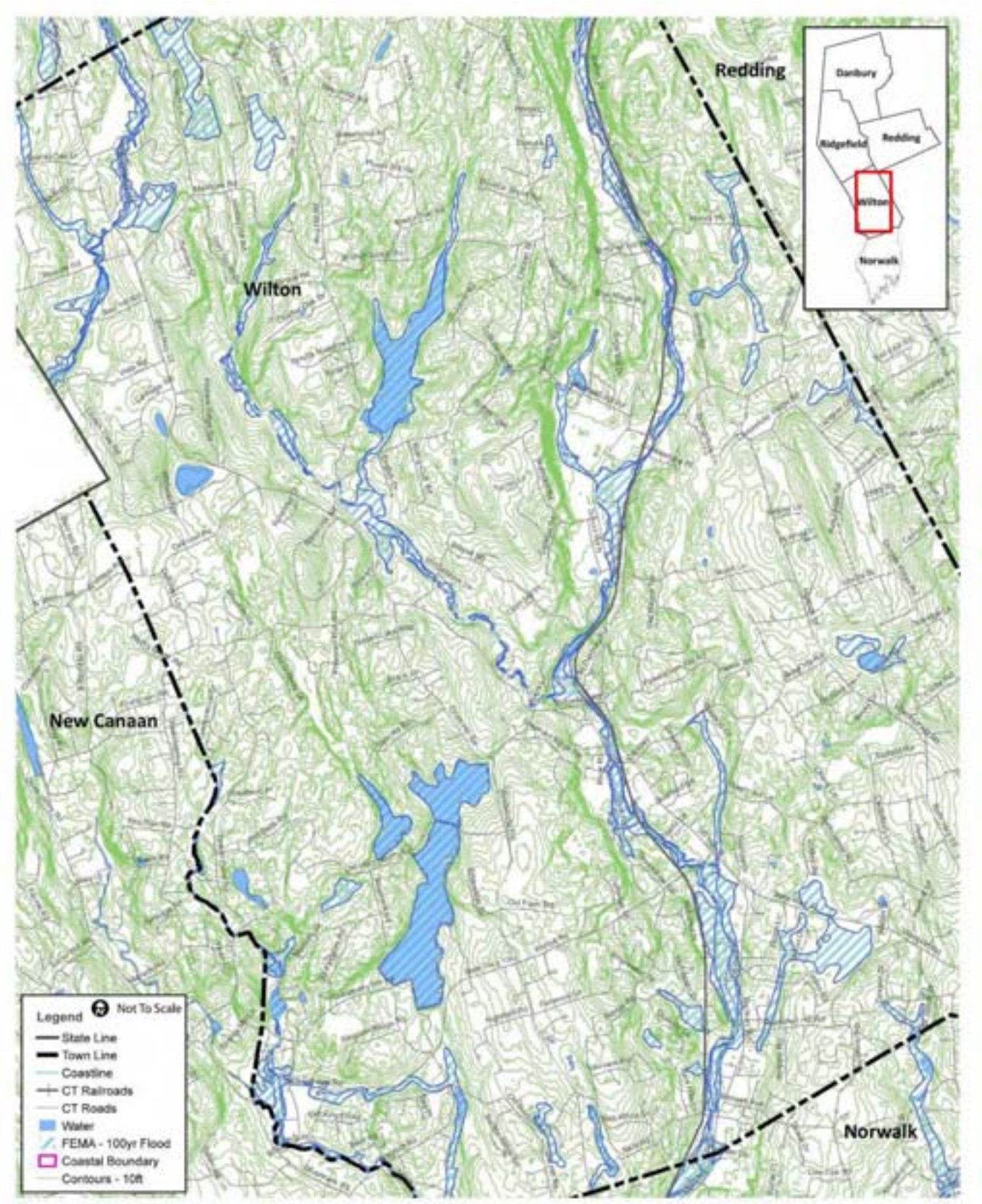

Figure 27: Town of Wilton Topography and Flood Zones

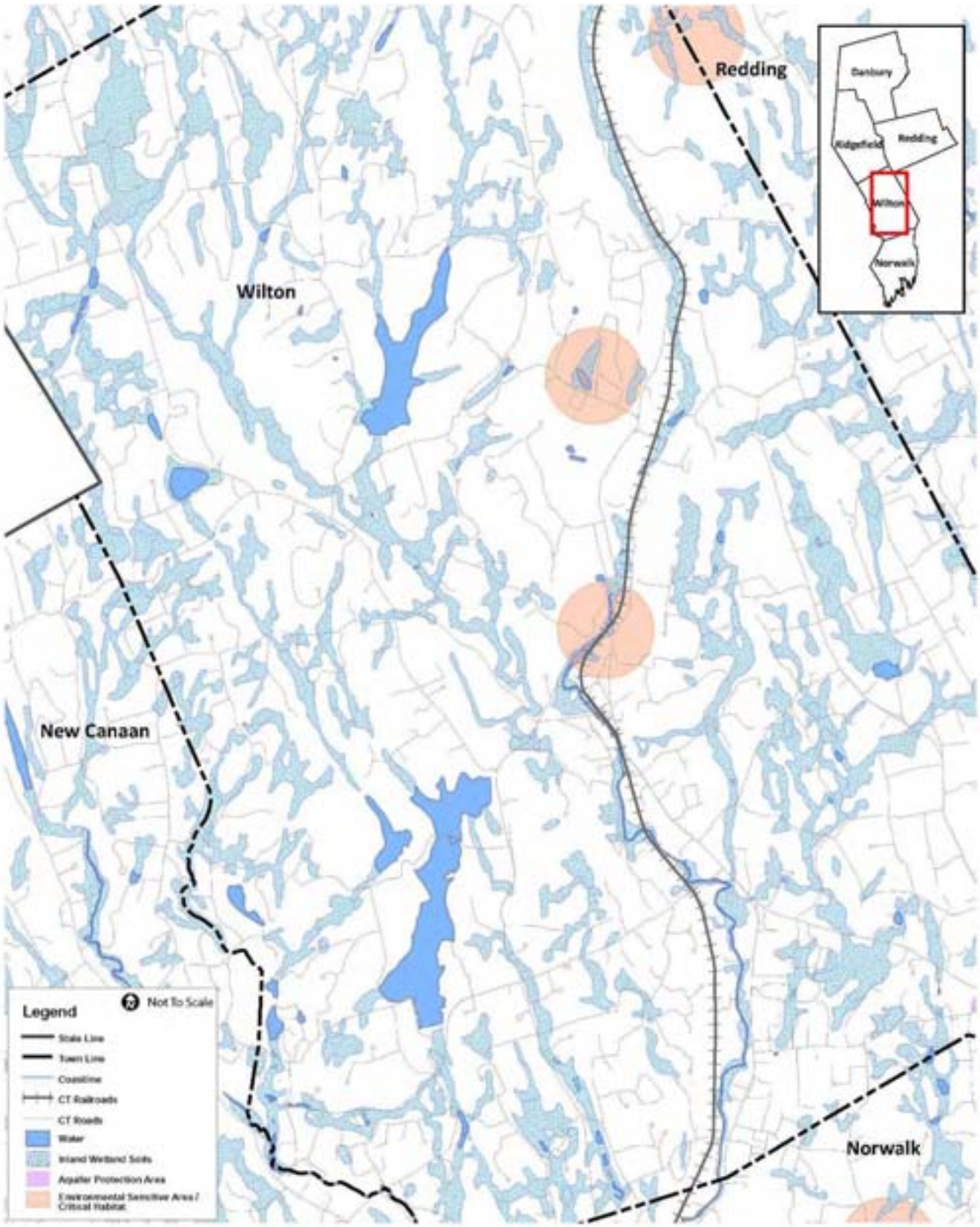

Figure 28: Town of Wilton Environmental Constraints

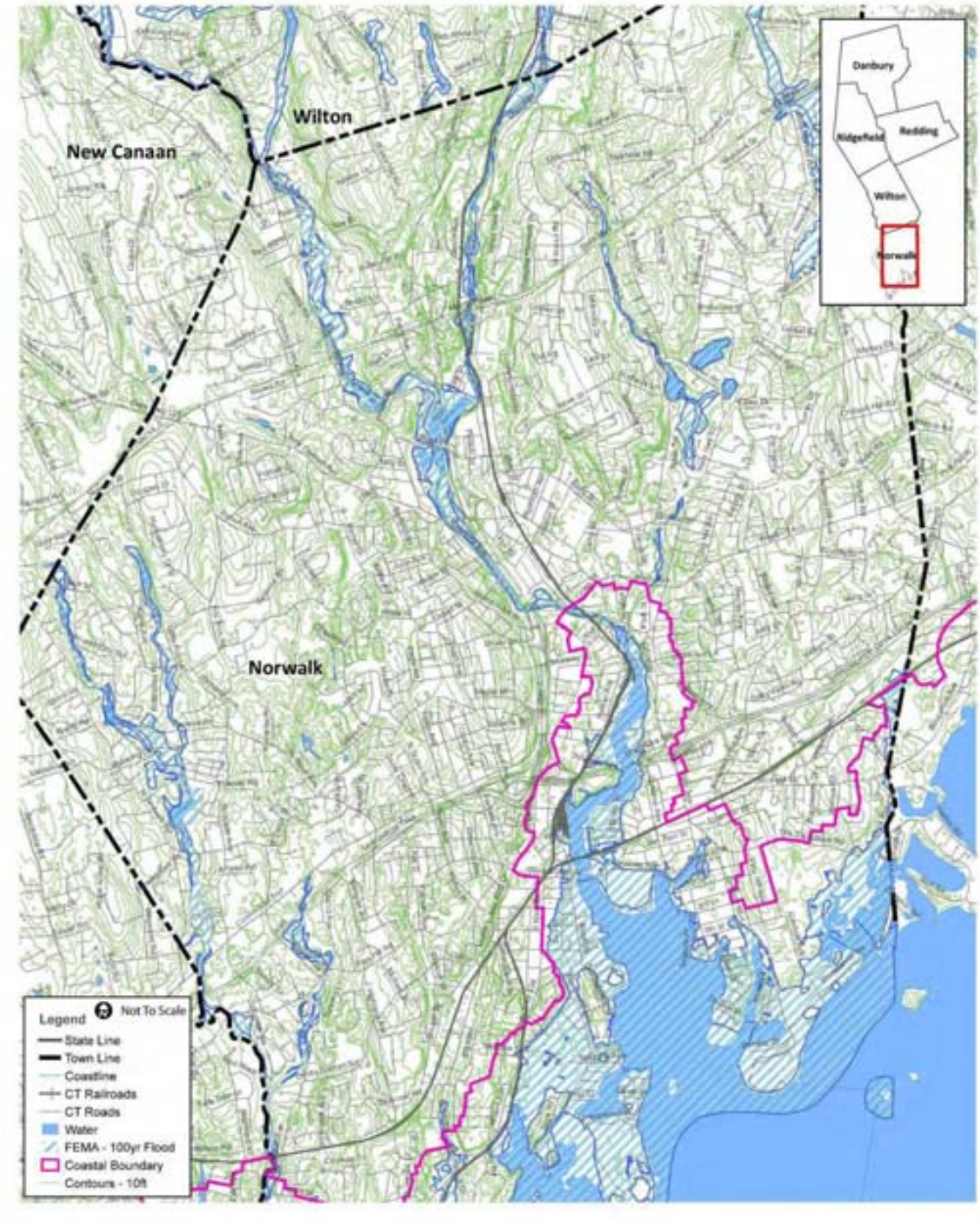

Figure 29: City of Norwalk Topography and Flood Zones

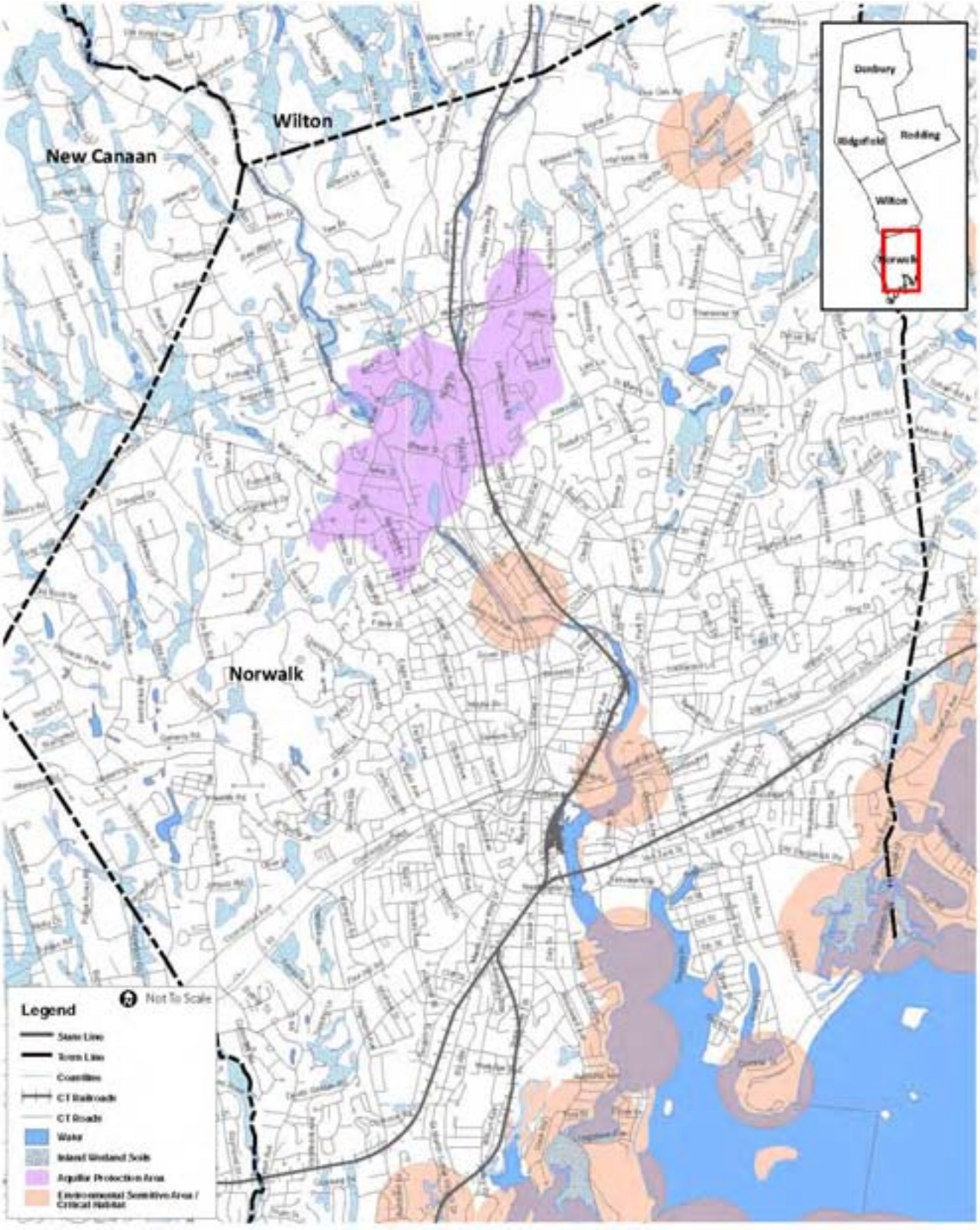

Figure 30: City of Norwalk Environmental Constraints

6 Connectivity Analysis

The overall concept for the NRVT is to provide an 8- to 12-foot shared use path for walking and bicycling with some areas designed for equestrian accessibility. The following analysis shows areas where viable space for the NRVT exists and where there is strong potential for linkages. In places where connectivity is difficult due to topographic, environmental, or land ownership issues, additional routing alternatives are shown. The potential trail routes are categorized into the following types:

Potential Connection within Public Roadway: In some areas there is potential for a trail to be routed within the existing right-of-way of a public road. This can mean the trail takes advantage of an existing wide shoulder and/or sidewalk. In other cases it requires that additional improvements be made to make space for trail users within the right-of-way.

Potential Trail within Active Rail Corridor: Currently no rail-with-trails exist in the corridor, but there is some potential for this where the Metro-North Danbury Branch line runs. Such an opportunity would require an adjacent level shelf, unutilized spur, or maintenance way, where there is enough space to include a trail and appropriate setback (ideally 20-25 feet from the tracks' centerline).

Potential Trail within River Corridor: The trail may be routed next to the Norwalk River where there is available space and floodplain constraints are minimized.

Potential Trail within Utility Corridor: With cooperation from the utility company, a trail can potentially take advantage of the utility lines corridor or adjacent maintenance roads.

Potential Spur Trail/Street Improvement: Spur trails connect off the main spine of the trail system, which travels north-south, to a destination to the east or west. These connections are frequently on-street, requiring improvements such as improved shoulders, bicycle lanes, and sidewalks.

Potential Trail in Old Road Right-of-Way: There are multiple opportunities in the corridor to take advantage of old road right-of-ways that are no longer open to motorized vehicle traffic.

Potential Water Trail: There may be opportunities to add paddle craft launches and new water trails within the navigable portion of the Norwalk River.

Potential Trail through Undeveloped Land: In some areas, the trail may be routed through an undeveloped area where there is no existing corridor for it to follow.

Connectivity Mapping

There are a myriad of routing options for the trail through Danbury, Redding, Ridgefield, Wilton, and Norwalk. The following is a brief summary and map of the routing alternatives. These potential routes provide the basis for the route recommendations that appear further on in the report.

Danbury

Beginning at the north end of the corridor, east of Route 7 at the Danbury Metro-North Railroad station, there are two directions the trail route could go. Heading south through downtown Danbury, an on-street connection can be made to Rogers Park, where a path connection to the Ives House and Tarrywile Park is possible. Heading west, the trail can follow the railroad and Still River corridor (potentially overlapping with the planned Still River Greenway), or an on-street alternative, to the Danbury Fair Shopping Mall and the west side of Route 7.

As the trail moves southward, it can follow Sugar Hollow Road on the west side of Route 7, utilizing existing sidewalks and the development of the Marcus Dairy site into a Whole Foods shopping mall. An on-street connection past an existing Park-and-Ride lot to Old Sugar Hollow Road will lead the trail to a pinch point at the northern tip of Wooster Mountain State Park. Steep slopes and wetlands on both sides of this 4-lane section of Route 7 will make routing difficult as the trail moves southward past the Ives Trail crossing opposite Starrs Plain Road.

Alternatives to following the Route 7 corridor include routing the trail south through Tarrywile Park or through the Lee Farms property, which is planned for redevelopment.[11] There are opportunities to take advantage of abandoned road rights-of-way extending south from Wooster Heights Road on either Old Boston Post Road or Terre Haute Road. Old Boston Post Road can connect back to Starrs Plain Road and Route 7 at the site of the Ives Trail crossing, and continue south out of Danbury from there along some wetlands in the contiguous parcels of DOT land. Terre Haute Road connects through to Deal Drive south of Tarrywile Park, where another abandoned right-of-way connects to Long Ridge Road. A spur connection continuing down Long Ridge Road can connect to the West Redding train station, while George Hull Hill Road, a dirt road, provides the connection into Redding.

Figure 31: Old Sugar Hollow Road dead-ends at a pinch point between a wetland and the newly reconstructed, 4-lane section of Route 7

[11] Property recently purchased by U.S. Army Reserve for a training center. Danbury News Times. Sept 15 2011. Dirk Perrefort. http://www.newstimes.com/news/article/Military-buys-Lee-Farm-property-in-Danbury-for-2172652.php

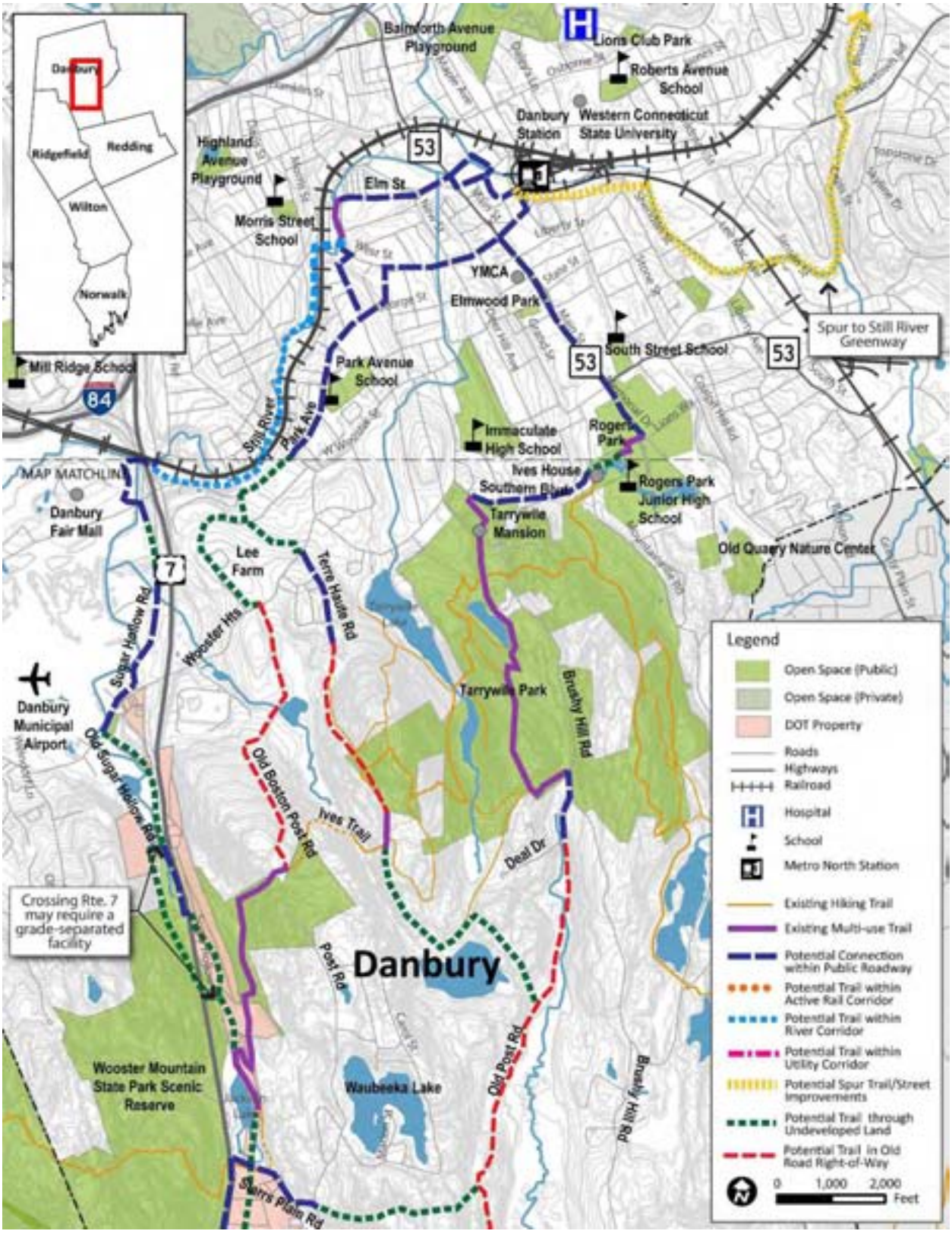

Figure 32: Danbury Connectivity Analysis (North)

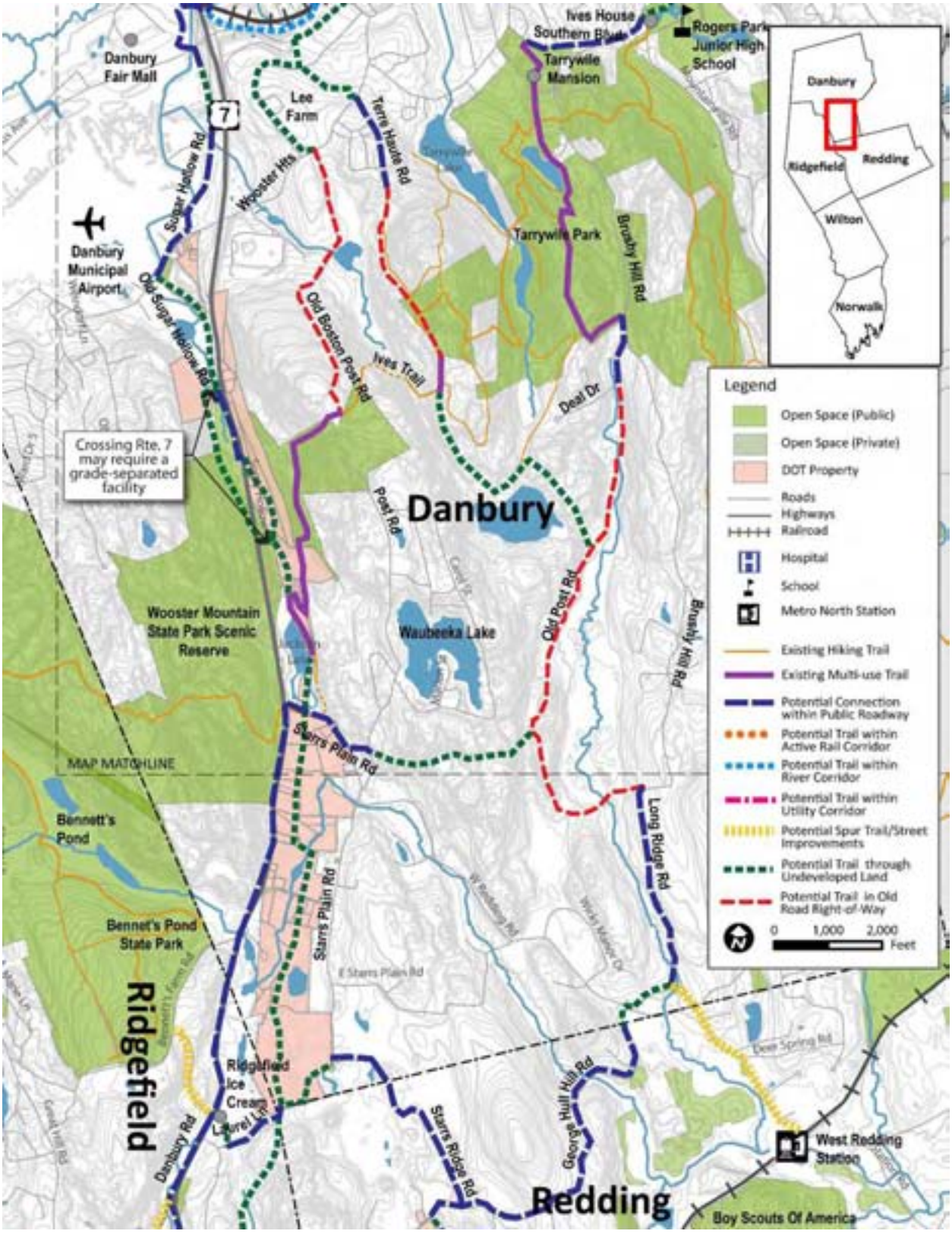

Figure 33: Danbury Connectivity Analysis (South)

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Ridgefield and Redding

As the trail continues south out of Danbury, several route options criss-cross the town line between Ridgefield and Redding. The trail can potentially follow the Route 7 right-of-way from Danbury into Ridgefield. The roadway is four lanes across and has shoulders on both sides in this section (north of the intersection with Route 35). South of Route 35, it narrows to two lanes with no shoulders. Alternatively, the trail can enter Ridgefield from the end of the contiguous DOT parcels in Danbury near Laurel Lane, and –with some easements through private property– can connect to the north end of Great Pond and Martin Park in Ridgefield. From here the trail can continue in the Route 7 right-of-way, with a possible spur leading to Pierrepont State Park. Another diversion off Route 7 exists down Stonehenge Road to the historic site of the Smith Mill. A blazed Norwalk River Watershed Association hiking trail connects from Smith Mill to Aldrich Park.

As an alternative to the Route 7 corridor, the trail could enter Redding on George Hull Hill Road, a dirt road connecting to Picketts Ridge Road and then westward to Werf Drive. At the end of Werf Drive, there is a potential connection to a stretch of contiguous DOT property. Starrs Ridge Road, or private properties adjacent to the road, offer another way of connecting between the DOT properties north of Redding, in Danbury and these parcels. The trail can cross Fire Hill Road from the DOT properties onto Town of Ridgefield property, where it joins the Norwalk River through a town-owned flood control site. Spurs can connect westward to Aldrich Park and eastward to Topstone Park from here.

If the trail continues south in the Route 7 right-of-way, it will encounter an extremely narrow pinch point where two steep slopes push the river, railroad tracks, and Route 7 together. An on-road alternate route takes Florida Hill Road to Florida Road, or an off-road alternative goes through DOT property west of Route 7 and some private properties before connecting through Hickory Lane. The trail passes the Ridgefield Rail Trail, which extends westward to historic Ridgefield Center. With some easements on private property, the trail could connect to more DOT property and then to Branchville Road, or it could continue in the Florida Road right-of-way past Branchville Elementary School. The trail can connect through another DOT property to reach Old Branchville Road, where a series of adjacent, publicly-owned parcels connect to Weir Farm National Historic Site.

Figure 34: There is an opportunity to connect to the Ridgefield Rail Trail from Florida Road

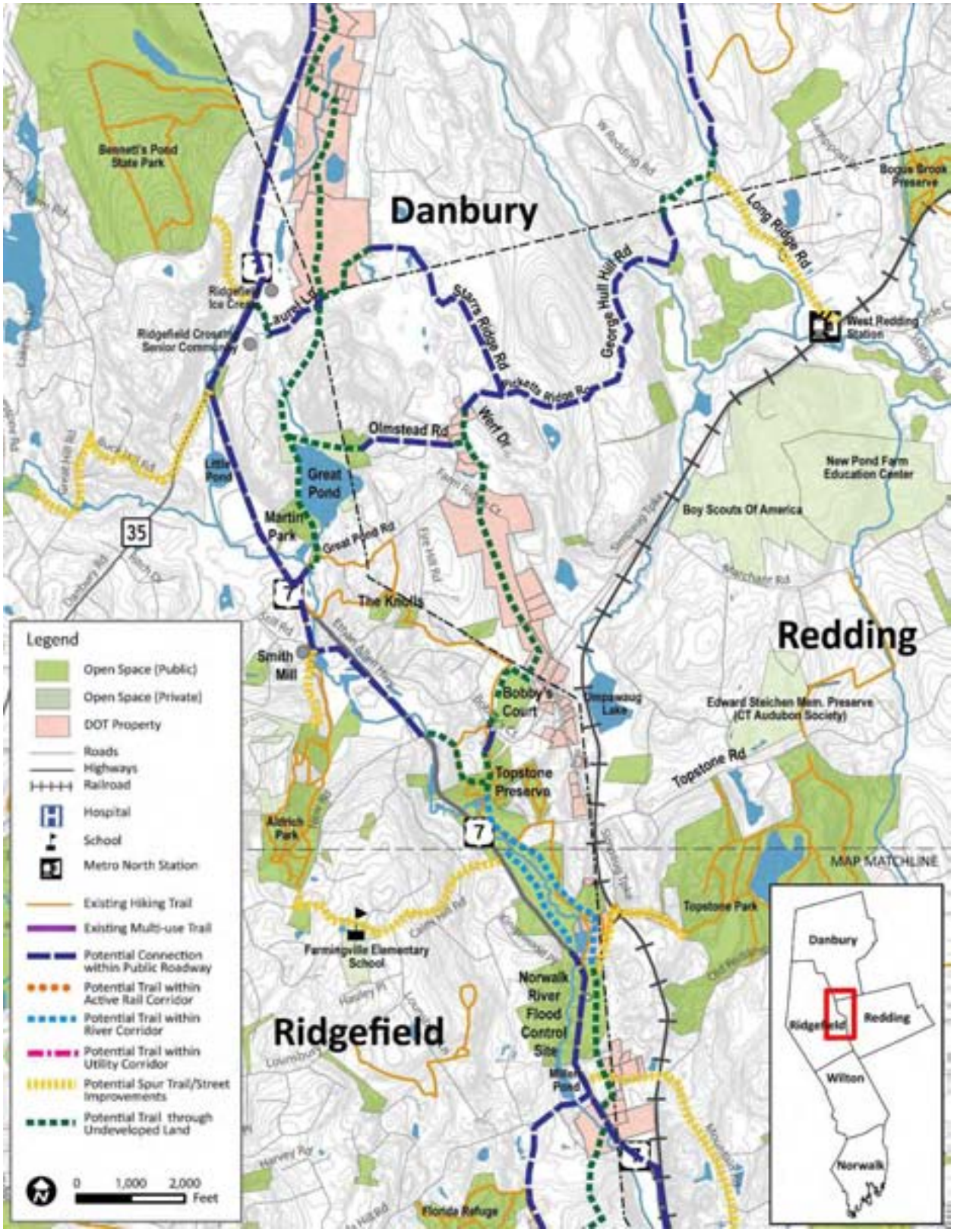

Figure 35: Ridgefield and Redding Connectivity Analysis (North)

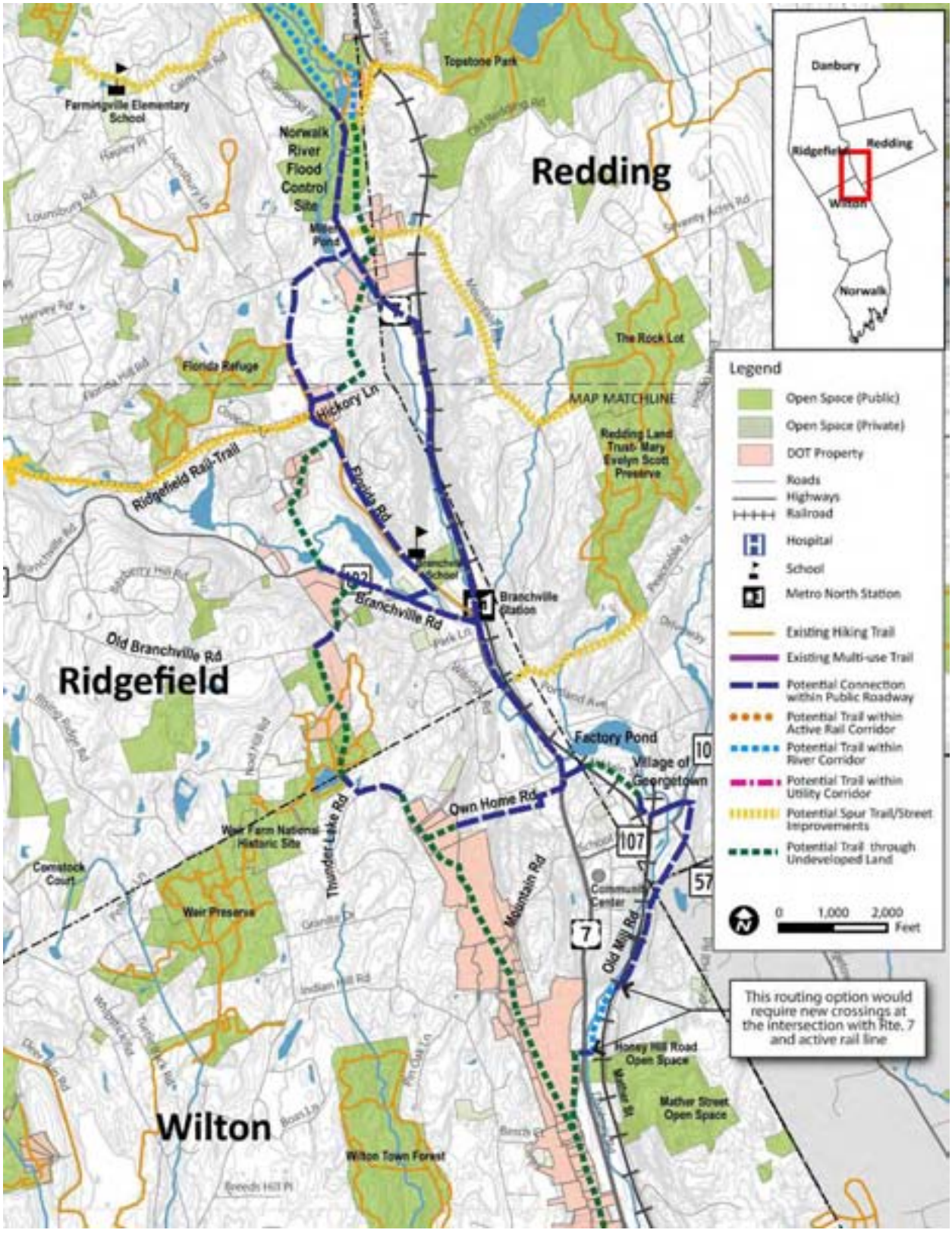

Figure 36: Ridgefield and Redding Connectivity Analysis (South)

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Wilton

The trail can continue southward via an existing easement through Weir Farm to Thunder Lake Road. Using the Duplin Hill right-of-way, the trail can connect to a long stretch of contiguous DOT parcels that extend all the way to Allen's Meadows. A trail spur eastward can connect to Route 7 via Own Home Road, but would likely need a traffic signal to safely cross Route 7. Although there is no existing signal, a connection can potentially be made to North Main Street, which leads to the historic Gilbert & Bennett site at Factory Pond. This site is slated for pedestrian-oriented redevelopment and possibly a Metro-North Railroad station. With the addition of a railroad crossing off Old Mill Road, a loop could be made that connects Georgetown southward to Route 7 and the DOT corridor via Wilton Town-owned property between the river and railroad tracks.

Steep slopes within the DOT corridor pose a challenge for a trail spur connection at Scribner Hill Road to the Wilton Town Forest, a popular mountain biking destination. The trail can squeeze past this slope on the eastern edge of the DOT properties and out to Olmstead Hill Road next to a wetland. With the addition of an at-grade road crossing here, the trail can connect to the trails at Allen's Meadows. Some existing mowed walking trails connect along the west side of Allen's Meadows to the Wilton High School campus. It may be more appropriate for a multi-use trail with heavier use to skirt through the sports fields at Allen's Meadows, rather than disturbing the birding opportunities in the meadow to the west.

Allen's Meadows is the junction of two possible trail directions. The first option travels south through the Wilton High School campus, and down School Road to the existing trail that connects to Merwin Meadows and the Wilton Train Station. From here, the trail can link to the future Wilton River Walk, either on-street along Old Ridgefield Road or along the river, to Schenck's Island Park. The existing path on the west side of the river stretches from the park to Horseshoe Road, where an on-street section can connect across the Wolfpit Road Bridge to the Park and Ride lot on Route 7.

The second option from Allen's Meadows leads eastward, continuing along DOT property east of Route 7 and the railroad tracks. The trail can utilize an existing traffic light on Route 7 to cross to the Wilton YMCA, and then a new above-grade railroad crossing can bring the trail to the DOT property. Alternatively, the route would be on Cannon Road, which provides an on-street connection via an existing crosswalk at Route 7 and an at-grade railroad crossing.

Figure 37: Existing rail and river crossings on Cannon Road.

Aside from a steep slope at Pimpewaug Road, the DOT corridor is relatively flat. Wetlands at Sharp Hill Road may require the trail to jog east to Cherry Lane, connecting to Cherry Lane Park, before rejoining the corridor at the Wolfpit Road/Route 7 Park and Ride. Connecticut DOT property continues south from here to a utility corridor, but a large wetland blocks access. The trail can be routed over a weir bridge and through the wetlands, or along the east side of the river, with some easements on private property, to connect to the utility corridor at a power station. A railroad crossing will be necessary in order to continue along the utility corridor and in the DOT properties, which are on the west side of the railroad tracks. Another wetland creates a pinch point against the tracks just south of Arrowhead Road. The utility corridor crosses Kent Road and then continues into Norwalk.

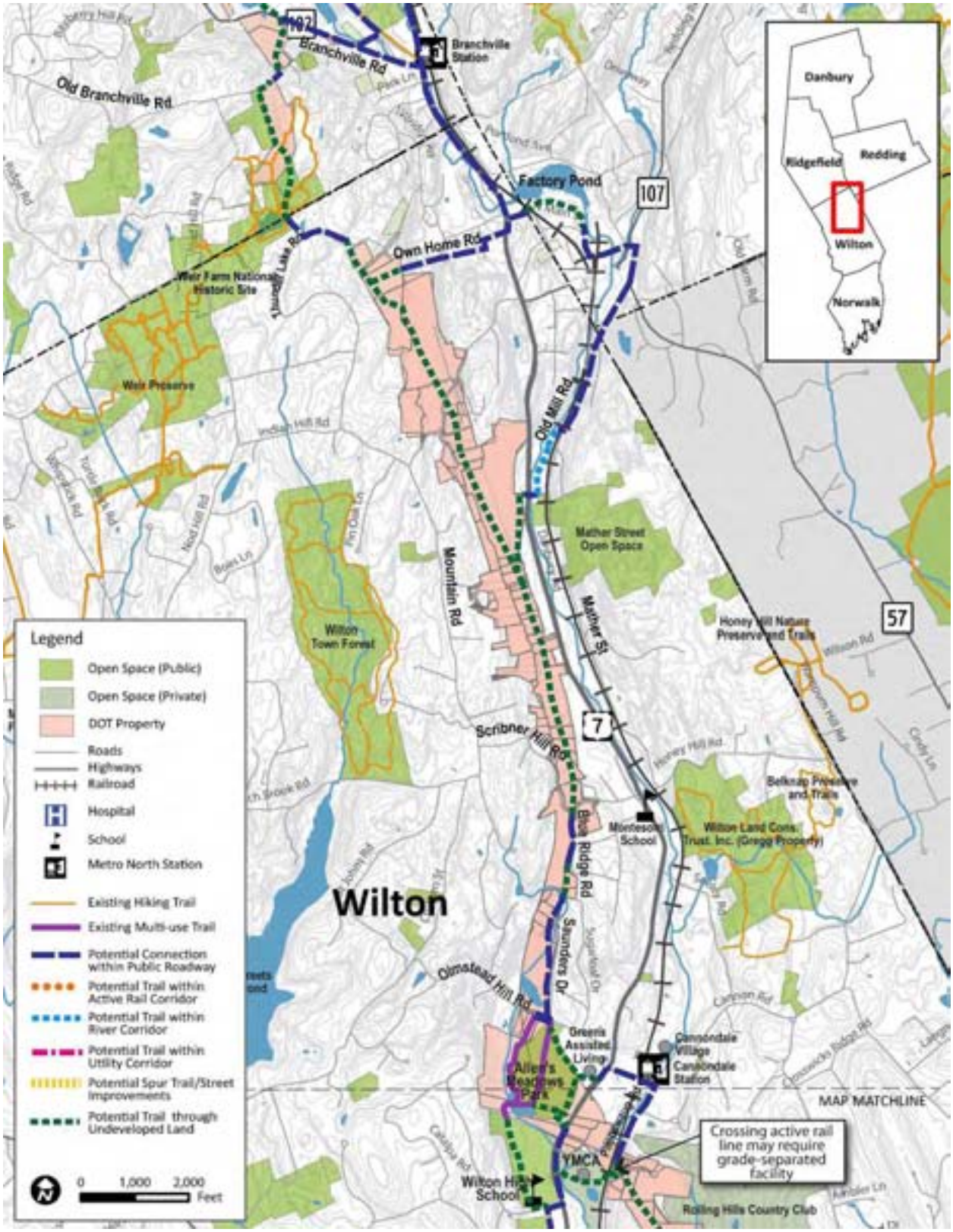

Figure 38: Wilton Connectivity Analysis (North)

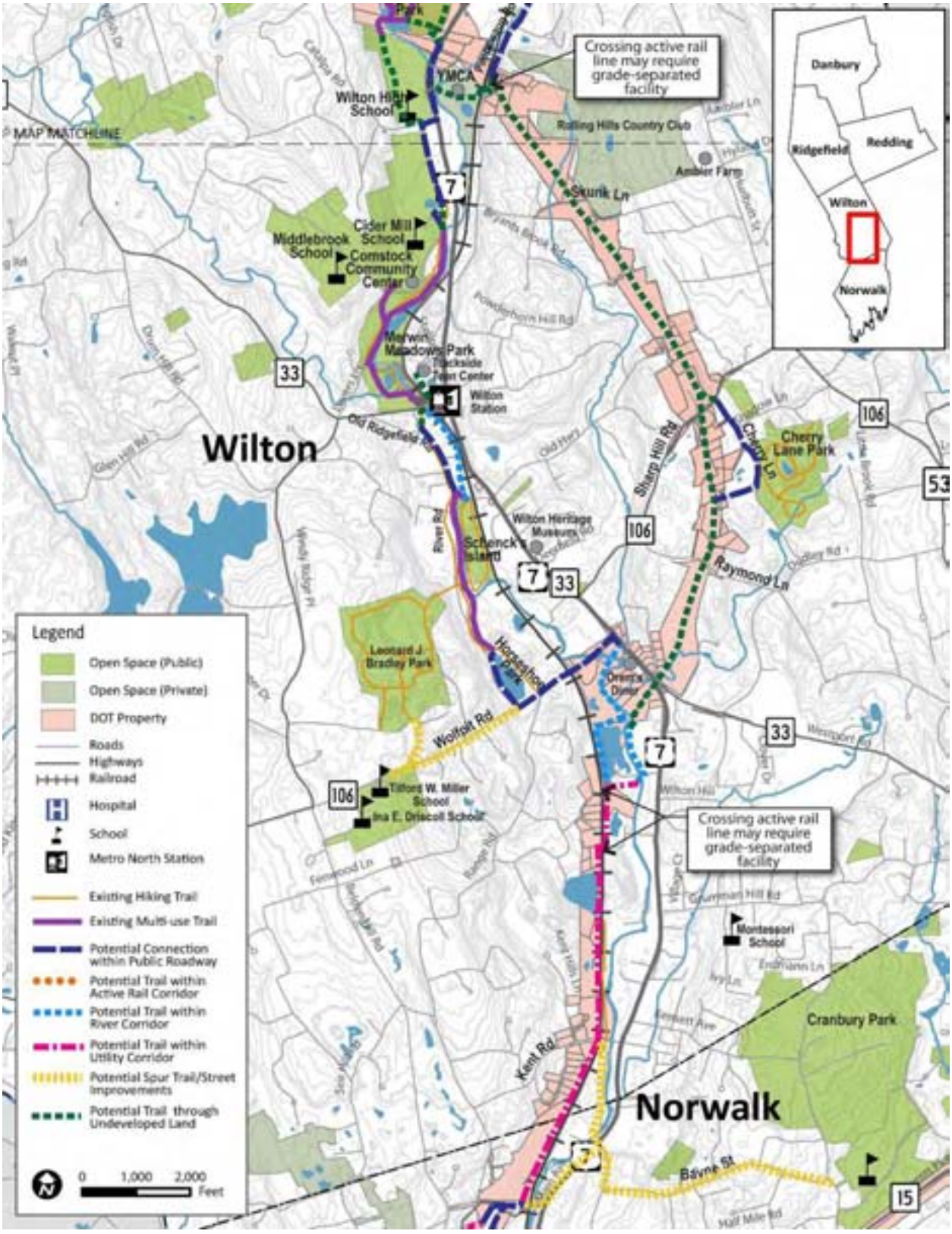

Figure 39: Wilton Connectivity Analysis (South)

Norwalk

The trail, entering Norwalk in the utility corridor from the north, can travel along the north side of Grist Mill Road to the west side of Route 7 and continue in the utility corridor to the Merritt Parkway. Here the trail will need to follow the Perry Avenue right-of-way, which includes a very narrow, historic tunnel under the Merritt Parkway, before meeting the utility corridor again.

Alternately, the trail could stay east of Route 7 at Grist Mill Road, and connect through DOT property to Seir Hill Road, and down to the Merritt 7 Metro-North Station. Continuing south, the trail can follow the train tracks under the Merritt Parkway. There is potentially enough room in this tunnel for the trail on the west side of the tracks. With some private property easements the trail can follow the Norwalk River along a dike, across Perry Avenue, and under Route 7 to rejoin the utility corridor.

After crossing a water body north of Broad Street, an existing trail under the utility lines picks up and leads to the New Canaan Avenue Bridge. This bridge has five lanes, no shoulder and narrow sidewalks, so a river crossing just north of this bridge may be preferable. A spur connection can be made up Ponus Avenue to the Ponus Ridge Middle School. A sidewalk and high-visibility crossings already make this road a good pedestrian connector to the school.

The trail can continue south on the west side of the Norwalk River and east of Riverside Avenue. An on-street option may be necessary if easements cannot be obtained through private property just north of where the river bends eastward and goes under Route 7.

From Belden Avenue, a spur connection to the nearby Jefferson Elementary School is possible, and potentially up Grandview Avenue to the Kendall School as well. The Norwalk Harbor Loop Trail picks up on the opposite side of Cross Street and continues along the river, mostly on the east side, around to the Stroffolino Bridge. There are a number of gaps in the Harbor Loop Trail that need to be addressed before the loop can be complete.

From where the river crosses to the east side of Route 7, the trail may continue south to meet an existing section of trail at Union Park. Steep slopes make the connection along the Route 7 on/off ramps difficult, so an on-road alternative may be utilized. A spur from the Maple Street trail crossing to the Norwalk Hospital should be made, although the tunnel under Route 7 has narrow sidewalks.

Improved crossings are needed to link the trail across the West Avenue intersection to Mathews Park and across the railroad tracks to the trail segment under I-95. The existing trail ends just north of the Maritime Aquarium. A trail connection along the water may be difficult for crossing under the railroad bridge, so a Water Street connection may be considered. A spur through South Norwalk connects to the South Norwalk train station.

The trail crosses the Stroffolino Bridge, connecting to an existing trail through Veterans Memorial Park on the east side. From here, on street connections can lead to Mill Pond Park and either up East Avenue to Cemetery Street or along Seaview Avenue to First Street. A spur will connect the trail to the East Norwalk train station.

Figure 40: East Avenue is one-way toward Seaview Avenue, but may have enough space for a contra-flow bike lane and sidewalk.

The trail may continue south toward Calf Pasture Beach on one of several roads. With improvements, Gregory Boulevard and Calf Pasture Beach Road may be the best connection. Alternatively, Pine Hill Avenue, which has traffic calming speed humps, or Raymond Lane, if it were improved to connect through from Old Saugatuck Road to Marvin Street, are viable options. The trail can connect past Taylor Farm Park and Shady Beach to Calf Pasture Beach, the southern terminus of the NRVT.

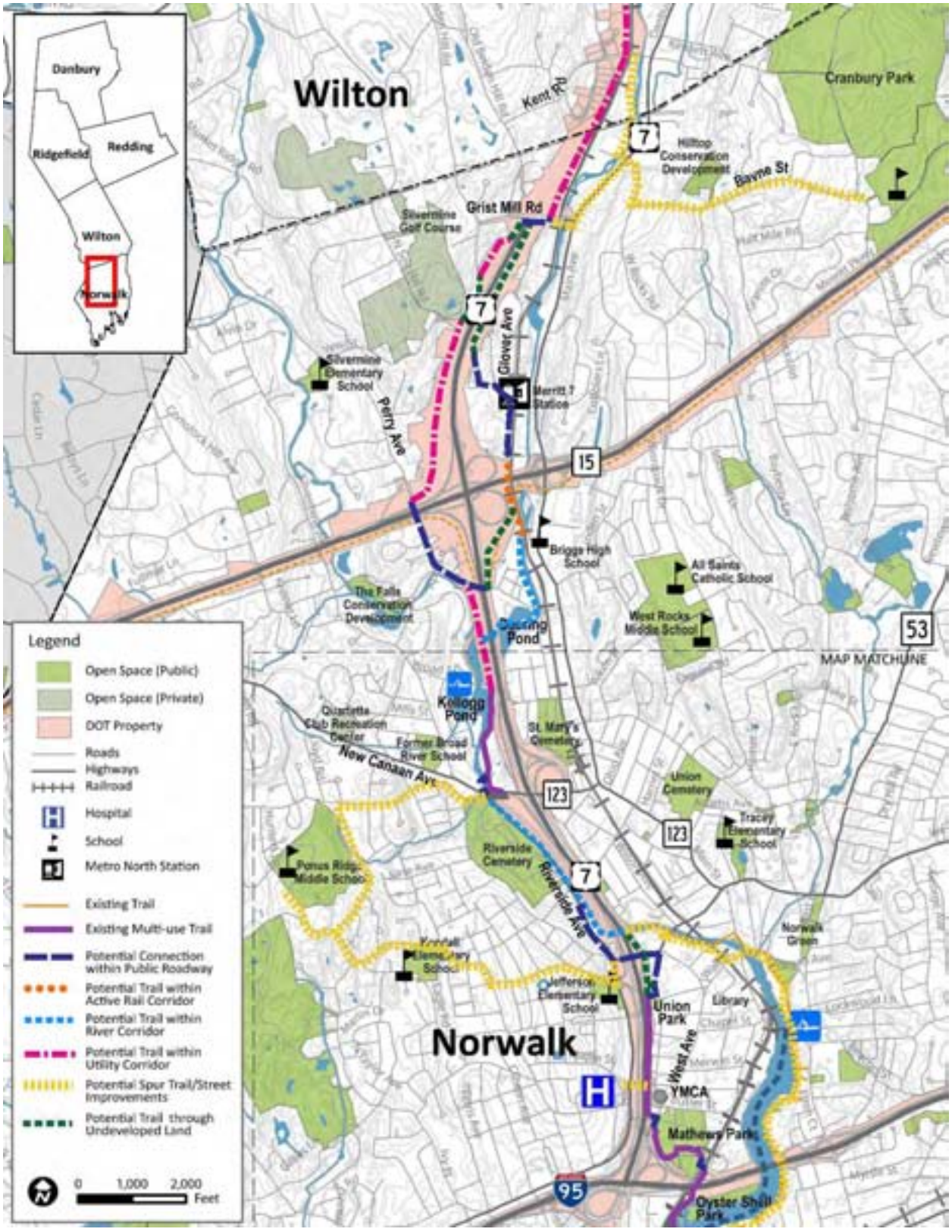

Figure 41: Norwalk Connectivity Analysis (North)

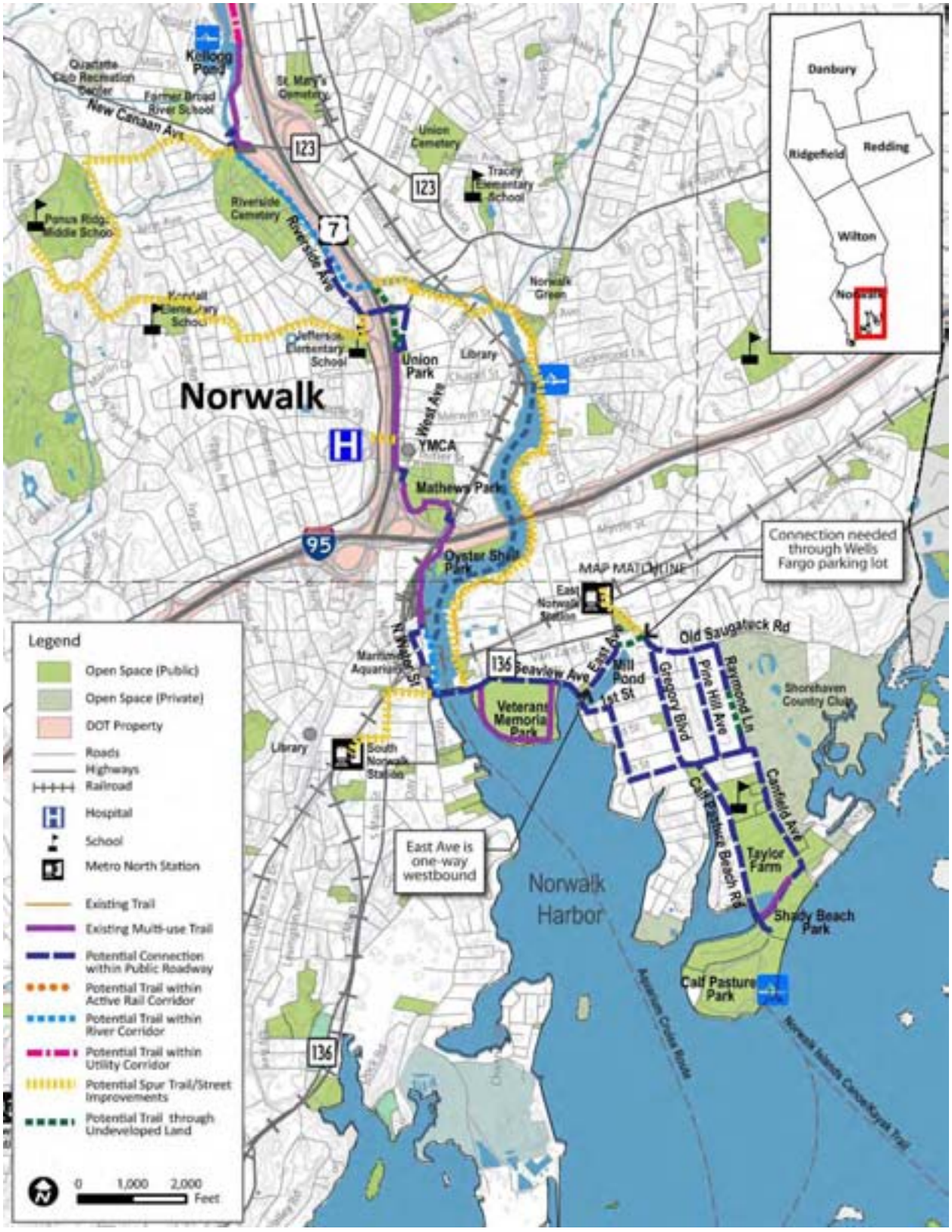

Figure 42: Norwalk Connectivity Analysis (North)

7 Trail Characteristics

The primary goal of the NRVT is to provide a continuous trail that enhances multi-modal transportation, recreation, and access to nature. In most locations outside central Norwalk, it will be a dawn-to-dusk pathway designed for use as both a transportation corridor (commuting, errands, etc.) and for recreational purposes. Ideally, the trail will be separated from nearby roadways by a five- to ten-foot landscaped buffer or, at a minimum, a crash barrier set within a three-foot-wide grassy shoulder. This Study recommends the accommodation of all of these users for the maximum length of the trail as practicable. In the short term, some discrete locations may not accommodate ADA requirements and "single track" natural trail surfaces for hiking, mountain biking and/or equestrian use may be the best available option. Ultimately, these narrow pinch points and other spots requiring significant engineering solutions should be designed to accommodate all users in a safe and comfortable environment. Water trail or 'blueway' options are also an important consideration so the Norwalk River can be accessed by canoe or kayak in the relevant locations.

7.1 Trail Width

The NRVT is planned as a multi-use trail from end to end. The exact width of the trail at any point will be determined by the local context, the existence of topographic and environmental constraints, and anticipated trail usage. In order to maintain viability as a multi-use trail, the NRVT—to the extent possible—will be a minimum of 8 feet wide and a maximum of 12 feet wide throughout the corridor. In the short term, or until funding is found to develop the most challenging and complex sections of the trail, some segments will remain as narrow trails for hiking and, in some cases, for mountain biking and equestrian use. Other sections of the trail will incorporate an on-road routing, utilizing existing sidewalks with bicyclists sharing low volume/low speed streets with motor vehicles.

7.2 Trail Surface Type

Paved Trail

An asphalt or concrete paved trail surface should be used in areas where the trail passes through an urban or suburban context. These sections of trail area are designed to accommodate the highest levels of use and should be plowed in winter. Soft shoulders can be included along the paved surface for runners and joggers and to provide an offset from adjacent utility poles, signs, etc.

Figure 43: Typical paved multi-use trail

Soft Surface Trail

Many sections of the NRVT traverse wooded and rural areas where a soft trail surface material is more appropriate. Stone dust or compacted dirt are both materials that will work for a multi-use trail. During the winter, these trails will not be plowed, but can be used for cross-country skiing and snow shoeing.

Figure 44: Typical soft-surface, multi-use trail

Boardwalks and Bridges

Where necessary to connect the trail across waterways or wetlands, boardwalks and bridges will be used. Depending on the context, the boardwalk may be elevated fewer than 30 inches, and thus require no railings. In more heavily-traveled sections passing over larger wetland areas, elevated section of the trail set up on piles with 42" railings. Bridges and boardwalks intended for pedestrian, bicycle, and equestrian use should be 10 to 12 feet wide. Fords to accommodate equestrian crossings should also be explored.

Figure 45: Example of a trail boardwalk

7.3 User-accessibility

To the extent possible, the NRVT is envisioned to be a multi-use trail available to the widest range of users possible, including walkers, hikers, runners, bicyclists, mountain bikers, skaters, equestrians, cross-country skiers, and people with disabilities. However, it's important to note that significant stretches of the trail will not be fully available to all users for multiple reasons. For example, some stretches of the trail will not be paved and therefore unavailable for skaters and roller bladers. Walkers are the one user type who will have full access to the entire trail, from end to end. Where possible, the trail is planned to be ADA accessible. However, a handful of constraints will make a fully-accessible trail unlikely for the short and mid-term.

Equestrian-Accessible Trail

More than half of the NRVT corridor will be designed to accommodate equestrians. However, while equestrians are not prohibited from any portion of the trail, there will be places in the lower half where equestrian access is restricted due to public safety concerns, the protection of sensitive wildlife habitat, or is simply impractical. The area designed for equestrians is recommended to run from Tarrywile Park in Danbury to Allen's Meadow in Wilton. In places where trail usage is relatively low or where constraints exist, a single tread for the trail is appropriate for equestrians, bicyclists, and pedestrians to share. In places with more space and higher volumes of uses, it may be appropriate to separate equestrians onto a different tread, which can be separated by distance, visual screens, and/or physical barriers. In addition, the trail in this area will need to be constructed so that it allows a 12 foot vertical clearance (10 foot minimum).

Figure 46: Multi-use trails can be accessible to equestrians as well.

Mountain Bike-Accessible Trail

The NRVT is intended to be a multi-use trail open to many types of cyclists. Accommodation for mountain bikers should be incorporated wherever possible as a parallel but separate trail. A good mountain bike trail is a narrow, single track, dirt trail that traverses challenging topography and obstacles.

At this time, DOT does not support the construction of mountain bike trails on their property, as it may increase potential conflict with Section 4(f) of the Department of Transportation Act (see page 72 of this report). Continued dialogue with the department on this issue is encouraged, as is exploration of mountain bike trails on non-DOT owned properties along the NRVT corridor. Design and maintenance of any mountain bike trails in the NRVT corridor should be coordinated with local mountain biking organizations and enthusiasts.

ADA Accessibility

While significant swaths of the NRVT trail will be compliant with the Americans with Disabilities Act (ADA), the most rural sections of the route will run through steep and sometimes rocky terrain that will potentially limit accessibility in these areas in the short- and mid-term. Paved portions of the trail will be 8 to 12 feet wide and maintain slopes of 5% or less and therefore be fully accessible. This includes all of Norwalk, most parts of Wilton and the north end of Danbury. Short portions of the trail can be steeper than 5% and still be accessible (see Table 1).

Figure 47: Trails surfaced with "crusher fines" are acceptable under ADA

To accommodate ADA guidelines in the soft-surface sections of the trail in parts of Wilton, Ridgefield, Redding and most of Danbury will be challenging due to topographical constraints and the engineering required to overcome them. More detailed survey of the proposed trail region will need to be acquired and examined in order to determine what level of ADA compliance is feasible. In addition, continued discussions with DOT will be needed to determine if ADA compliance is required on all segments of the trail utilizing their property.

Accessible Trail Slope Restrictions **Source: U.S. Access Board 2009 Draft Final Accessibility Guidelines for Outdoor Areas.**	
Slope	Maximum Length of Segment
< 5%	Unlimited
5% - 8.33%	200 feet
8.33% - 10%	30 feet
10% - 12.5%	10 feet
< 12.5%	Not permitted
Cross Slope	Surface
2% max	Asphalt, concrete, boardwalk
5% max	Stone dust, natural surface

Table 1: Accessible Trail Slope Restrictions

Areas of the trail that do not comply with ADA can be used for hiking, horse-back riding and mountain biking. Signs should be posted in non-compliant areas, providing information about grades and surfaces. Short stretches of trail adjacent to trail heads and parking areas are should be fully accessible, as well as the facilities available there (rest rooms, drinking fountains, parking stalls, etc). These short nature trails will be either paved or utilize crushed stone, both of which are compliant with ADA.

Paddle Craft Accessibility

Although for much of the year, the Norwalk River is a narrow and shallow body of water, the section of the river nearest to the Norwalk Harbor regularly has enough water to support canoe and kayak access. Small public boat launches for paddle craft are available in Norwalk for users to experience the NRVT by water.

7.4 Trail within Right-of-Way

Multi-use Trail

In some areas, the NRVT will resemble a side path alongside a roadway. The two-way trail should have a minimum 5 foot landscaped buffer or a barrier between the trail and the roadway. The barrier must be crash-worthy when it is adjacent to a high volume roadway.

Figure 48: Typical trail within public right-of-way

On-road Improvements

There are some sections of the NRVT where bicyclists are expected to use low volume roadways. Improvements range from shared use lane, shoulder stripe, or bike lane. In these areas, pedestrians will use existing or new sidewalks that are a minimum of 5 feet in width. Additional traffic calming and warning signage can be added where appropriate to enhance the bicyclists' experience.

Road Crossings

All at-grade road crossings along the NRVT require, at minimum, a high-visibility crosswalk. In some locations, such as where sight-lines are obstructed or where traffic speeds are high, other devices will be necessary to warn motorists of the trail crossing. These include warning signage and flashing beacons. Any trail crossing of Route 7 or other state highways will require a new traffic or pedestrian signal in locations where one is not already present.

7.5 Trail Amenities

Rest Station

Bathrooms, water fountains, and benches are important amenities that provide a more comfortable environment for trail users, particularly for people with young children and the elderly. Seating can be simple (i.e. wood timbers) or more ornate (i.e. stone, wrought iron, concrete, etc).

Figure 49: This trailhead at the Cape Cod Rail Trail features seating, bike racks, and map kiosk

Trailhead

Trailheads will include at minimum a sign and kiosk with map of the trail system. They may also include a small parking area for cars, bicycle parking and benches.

Trail Parking

There are a few, existing parking lots adjacent to the trail that can be used for trail parking. These larger parking lots may also be used for horse trailer parking, in areas where the adjacent trail is accessible to equestrians.

Maps and Signage

A comprehensive signing system that is consistent along the length of the NRVT will make the trail network much easier to use. Information kiosks with maps at trailheads and other key destinations will provide enough information for someone to use the trail system with little introduction.

7.6 Other Trail Amenities

Although not specifically included in this study, there are a handful of other trail-related amenities that should be considered along the NRVT. Further study will be required to determine the appropriate location and design of each of these, in coordination with the local municipalities and other stakeholders.

Nature Loops

Nature trail loops can be incorporated near trailheads. These trail loops should be completely ADA-accessible. They should be designed particularly to provide a trail experience for users who may not be able to experience larger stretches of the trail, especially where the terrain is challenging. Nature loops are particularly useful for people with disabilities, the elderly, or people with small children.

Interpretive Installations

Interpretive installations and signs enhance the trail experience by providing information about the history of the community. Installations can also discuss local ecology, environmental concerns, and other educational information. Public health can be integrated with 'calorie counter' maps that encourage physical activity along the trail.

Figure 50: Example interpretive sign along a river trail in Austin, TX

Pedestrian-scale Lighting

Pedestrian-scale lighting improves safety at key locations along the NRVT route and at trailheads. Lighting along the trail may be appropriate in the more urbanized areas of Norwalk, Wilton and Danbury. Additionally, designated parking areas, rest stations, and trailheads may have lighting for safety reasons. Lighting fixtures should be consistent with other design elements.

Public Art

Local artists can be commissioned to provide art for the trail system, making the trail unique to its community. Many trail art installations are functional as well as aesthetic. They may serve as mile markers and places to sit and play. Public art installations should be consistent with a design theme, based on the surrounding context.

Call Boxes

For safety and security reasons, call boxes may be added to the trail in areas with poor cellular phone service or where the trail extends for over a half mile without any road crossings or trail heads.

8 Trail Safety and Security

Trail safety and security are major concerns for both trail users and those whose property lies adjacent to a trail. Both require serious attention from the initial design phase of the trail through the management of the trail once it is built. A number of studies have been conducted to understand the impact of trails on local crime and have largely shown that trails do not increase the crime rates.

The Rails-to-Trails Conservancy conducted a survey of 372 rail-trail managers in 1998.[12] The results of the survey showed that 3% of trails had a record of any type of major crime (i.e. mugging, assault, rape, murder) and 25% of trails had a record of minor crimes (graffiti, litter, sign damage, trespassing, break-ins). Responses from law enforcement officials confirmed that trails do not increase crime, and many claimed that crime was lower on trails due to high use. The study emphasizes that while trails are not crime-free, they have excellent public safety records and are not more unsafe than other public spaces. In other words, trails do not uniquely attract criminals.

Other studies have indicated that crime rates are not negatively influenced by the presence of a trail. A study of a 34-mile trail in Florida with 90,000 users monthly found that crime rates are generally related to the character of the surrounding area rather than to the existence of a trail.[13] Another study of an urban rail-trail in Seattle found that vandalism and burglary on the trail was below the neighborhood average.[14] A reason cited for this was that criminals on the trail do not have quick and easy access to an escape vehicle. Reports also show that even when data indicates little or no criminal activity on a trail, public perception of a high security risk will lead to low use of that trail.[15]

While there is no way to completely ensure security on a trail (or any other transportation facility), many strategies can significantly enhance security. These strategies must address both real and perceived dangers. Real dangers on the trail include unsafe crossings, inadequate trail width, lack of maintenance, obstructions, poor lighting and sightlines, overgrown landscaping, and isolated or fenced in corridors. Perceived dangers come from neglected trails with graffiti, litter, lack of maintenance or vandalism. Other perceived threats can come from trespassing, unleashed pets, parking on private property, noise or loitering.

Trail design and enforcement certainly plays a role in enhancing safety on the trail. Emergency vehicle access to the NRVT is important, and the alignment and access point locations can be planned with this in mind. Volunteer trail patrols can also be considered. All of the municipalities along the corridor should plan for regular security patrols for the sections of the trail within their jurisdiction and develop an emergency response plan for police, fire and ambulance service. Creating a safe trail environment goes beyond design and law enforcement, however, and should involve the entire community. The most effective deterrent to illegal activity on the NRVT will be the presence of legitimate trail users. Getting as many "eyes on the trail" as possible is key to preventing undesirable activity.

[12] Tracy, Tammy and Hugh Morris. "Rail-Trails and Safe Communities: The Experience on 372 Trails." Rails-to-Trails Conservancy, 1998.

[13] Renaissance Planning Group. "Pinellas Trail Community Impact Study." Pinellas County Metropolitan Planning Organization, 2001.

[14] Seattle Engineering Department and Office for Planning. "Evaluation of the Burke-Gilman Trail's Effects on Property Values and Crime." Seattle Engineering Department, 1987.

[15] O'Donnel, Edward, Andrew Knab, and Lorene Athey. "Sidewalks and Shared Use Paths: Safety, Security and Maintenance." University of Delaware, 2007.

There are several components to accomplish this goal:

Provide good access to the trail

Access ranges from providing conveniently-located trailheads along the trail, to encouraging the development of sidewalks and bike facilities along public roadways that connect to, or intersect, the NRVT. Access points should be inviting and signed to welcome the public onto the trail. Where direct access to the NRVT is intermittent, municipalities will need to place additional emphasis on some of the other safety and security components listed below.

Good visibility from adjacent neighbors

Neighbors adjacent to the trail can potentially provide passive surveillance of the trail and can become an ally to local police departments. Though some screening and setback of the trail may be needed for privacy of adjacent neighbors, complete blocking out of the trail from view of adjacent businesses should be discouraged. This minimizes the "eyes on the trail" from adjacent properties and could result in a tunnel-like effect along portions of the trail.

High level of maintenance

A well maintained trail sends a message that the community cares about the public space. This message will help discourage undesirable activity along the trail. Additionally, a well-maintained trail will induce more use, which will improve the community's comfort level with the trail.

Programmed events

Community events along the NRVT will help increase public awareness and thereby attract more people to use the trail. Various civic organizations can help organize public events along the trail which will increase support. Events might include a day-long trail cleanup or a series of short interpretive walks led by knowledgeable residents or a naturalist. Because it is approximately the right length, a marathon course could be planned utilizing part or the entire trail corridor. Races can raise funds, in addition to awareness, for the trail. Any of these events could be coordinated with environmental organizations in the region, such as the NorWALKER group, the Ives Trail, or the Norwalk River Watershed Association.

Community projects

The support generated for the NRVT could be further capitalized by involving neighbors and Friends of the Trail groups in a community project. Ideas for community projects include volunteer planting events, art projects and interpretive research projects. These community projects create a sense of ownership along the greenway and serve as a deterrent to undesirable activity along the trail.

Adopt-a-Trail Program

Nearby businesses, community institutions and residential neighbors often see the benefit of their involvement in trail development and maintenance. Businesses and developers may view the trail as an integral piece of their site planning and may be willing to take on some level of responsibility for the trail as well. Creation of an adopt-a-trail program should be explored to capitalize on this opportunity and build civic pride in the greenway.

9 Potential Permitting Issues and Requirements

This section outlines the permits that may need to be obtained to construct certain segments of the NRVT. Knowledge of the permitting requirements will be useful when choosing the best trail routing option. The need for one or many permits does not exclude the possibility of a trail, but it is better to anticipate the time and work involved in obtaining the permits in advance so the trail can be completed on schedule. A matrix summarizing all the permits and their requirements is shown in Table 2.

Local Inland Wetlands

Various wetlands and watercourses are present within the corridor for the Norwalk River Valley Trail. Inland wetland areas are identified by soil type and will need to be located/evaluated by a certified soils scientist. If a DEEP Inland Wetlands Permit is not required and work is being proposed within wetlands or watercourses; or within Town established wetland buffers, then a local inland wetlands permit will be needed. The following are the general established wetland buffer limits for the Towns within the corridor (additional buffer requirements may apply to specific activities):

1. City of Norwalk: 100 feet from a watercourse, 50 feet from a wetland
2. Town of Wilton: 100 feet from a watercourse or wetland
3. Town of Ridgefield: Varies from 25 to 100 feet from wetlands or watercourse depending on regulated activity
4. Town of Redding: Varies from 100 to 200 feet from wetlands or watercourse depending on regulated activity, 500 feet for vernal pools
5. City of Danbury: Varies from 100 to 200 feet from wetlands or watercourse depending on regulated activity

Regulated activities may include filling, clearing and grubbing, dredging, grading or any other activity that is deemed to have an impact on a wetland or watercourse. In addition to wetland review, local municipalities are responsible for reviewing floodplain development and any work affecting the floodplains (sometimes in conjunction with the wetlands permit). Depending on the impacts and the Town/City requirements, these permits may require a public hearing. Timing for these permits may be up to 6 months.

DEEP Inland Wetlands Permit

Work for the proposed trail may be located within or affecting lakes, ponds or other waterways. Inland wetland areas are identified by soil type and will need to be located/evaluated by a certified soils scientist. If work is occurring within these areas and the work is being done or funded by State Agencies, an inland wetlands permit may be required. Regulated activities include, but are not limited to, filling, dredging, clearing, grubbing, grading, piping, culverting, channelizing, diverting, damming, dewatering or otherwise temporarily or permanently altering wetlands and watercourses. In making a decision on an inland wetlands and watercourses permit application, DEEP will consider, among other things, the impact of proposed activities on the environment including wildlife and fisheries habitats, flooding and flood hazards, and whether there are alternatives to the proposed action that will cause less environmental impact. Once the application is submitted, a sufficiency review is conducted and any additional information is requested. Once the application is deemed complete, a full technical review of the documentation provided is conducted which will include an assessment of the site and the anticipated effects of the proposed activity. The application may also be reviewed by DEEP's Fisheries and Wildlife Divisions and the staff of the Natural Diversity Data Base

Table 2: Matrix of potential permits and their requirements

Permit Title	Issuing Body	General Purpose	Estimated Time Frame
Local Inland Wetlands	Municipal Inland Wetland Dept.	A local inland wetlands permit will be needed if a CTDEEP Inland Wetlands Permit is not required and work is being proposed within wetlands or watercourses; or within Town established wetland buffers.	Up to 6 months
CTDEEP Inland Wetlands Permit	Connecticut Department of Energy & Environmental Protection	Permit required for work done or funded by State Agencies within or affecting inland wetland areas, including lakes, ponds or other waterways. DEEP will consider, among other things, the impact of proposed activities on the environment including wildlife and fisheries habitats, flooding and flood hazards, and whether there are alternatives to the proposed action that will cause less environmental impact.	6 months - 1 year
CTDEEP Flood Management Certification	Connecticut Department of Energy & Environmental Protection	This certificate is required in areas that have been established as the flooding limits for a 100 year storm and are regulated by DEEP. This permit is required for all State or State funded projects in or affecting floodplains or natural or man-made storm drainage facilities. DEEP will consider whether the proposed activity: is consistent with state standards and criteria for preventing flood hazards to human life, health or property and with the provisions of the National Flood Insurance Program (NFIP) and municipal floodplain regulations; does not adversely affect fish populations or fish passage; and does not promote intensive use and development of flood prone areas.	1 - 2 years
CTDEEP Structures, Dredging & Fill Permit	Connecticut Department of Energy & Environmental Protection	This review will involve an evaluation of potential impacts and the assessment of feasible alternatives for impacts waterward of the high tide line in tidal areas.	1 - 2 years
CTDEEP Tidal Wetlands Permit	Connecticut Department of Energy & Environmental Protection	DEEP will conduct a review of environmental impacts to areas that are below the high tide line based on the proposed project.	1 - 2 years
CTDEEP Coastal Consistency Review	Connecticut Department of Energy & Environmental Protection	This review is to confirm that activities do not adversely affect coastal resources within the defined coastal boundary & uses such as impact to natural habitats, marine resources, coastal flooding & water quality.	1 year
CTDEEP Stream Channel Encroachment Lines (SCEL)	Connecticut Department of Energy & Environmental Protection	This permit regulates the placement of encroachments and obstructions riverward of stream channel encroachment lines, to lessen the hazards to life and property due to flooding.	1 - 2 years
U.S. Army Corps of Engineers	U.S Army Corps	An ACOE permit will be needed, if any dredging or filling within jurisdictional waters of the United States is anticipated as part of this trail project. Depending on the area of disturbance, the type of permit would need to be identified. (Individual Permit or PGP Category 1, 2)	1 - 2 years
CTDEEP 401 Water Quality Certification	Connecticut Department of Energy & Environmental Protection	This permit applies to any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge into the navigable waters, including all wetlands, watercourses, and natural and man-made ponds.	1 - 2 years
CTDEEP Natural Diversity Database Review	Connecticut Department of Energy & Environmental Protection	DEEP will review the project for potential impacts to threatened and/or endangered species.	2 months
CTDEEP General Permit for Stormwater & Dewatering Wastewaters from Construction Activities	Connecticut Department of Energy & Environmental Protection	This permit applies to all discharges of stormwater and dewatering wastewater from construction activities which result in the disturbance of one or more total acres of land area on a site regardless of project phasing.	Up to 6 months
State Historic Preservation Office	Connecticut Historic Preservation and Museum Division	State Historic Preservation Office (SHPO) will need to review the project to evaluate if the proposed trail will have any impact on historical properties in the area.	Up to 6 months
U.S. Coast Guard Bridge Permit	U.S Coast Guard	This permit would be required if the project involves construction of a bridge across a navigable watercourse.	1 - 3 years

program. Once the technical review is complete, a tentative decision is made on the application. In some instances, a public hearing may be held. The DEEP will then make a final determination on the permit considering public input. Depending on the extent of the work, permitting process may take anywhere from 6 months to 1 year.

DEEP Flood Management Certification

Mapped FEMA 100 year floodplains exist throughout the corridor (including the Norwalk River). These areas have been established to be the flooding limits for the 100 year storm and are regulated by DEEP. This permit is required for all State or State funded projects in or affecting floodplains or natural or man-made storm drainage facilities. In making a decision on a Flood Management Certification, the DEEP will consider whether the proposed activity: is consistent with state standards and criteria for preventing flood hazards to human life, health or property and with the provisions of the National Flood Insurance Program (NFIP) and municipal floodplain regulations; does not adversely affect fish populations or fish passage; and does not promote intensive use and development of flood prone areas. Once the application is submitted, a sufficiency review is conducted and any additional information is requested. After the application is deemed complete, a full technical review is conducted. This review will involve an evaluation of potential impacts and an assessment of the site and of the project's consistency with the flood management standards. The application may also be reviewed by DEEP's Fisheries and Wildlife Divisions and the staff of the Natural Diversity Data Base program. Once the technical review is complete, a tentative decision is made on the application and any questions will be directed to the applicant for additional information. The DEEP will then make a final determination on the permit. Depending on the extent of the work and whether other DEEP permits are submitted in conjunction with this permit, permitting process may take anywhere from 1 to 2 years.

DEEP Structures, Dredging and Fill Permit

The trail may extend into tidally influenced waterway areas. The locations of the high tide line, mean high water and mean low water will need to be located. Work occurring waterward of the high tide line will likely require a DEEP Structures, Dredging and Fill permit. Examples of activities that would trigger this permit are: maintenance or repair of existing structures, construction of new structures, grading and filling and restoration of areas within the high tide line. Once the application is submitted, a sufficiency review is conducted and any additional information is requested. Once the application is deemed complete, a full technical review is conducted. This review will involve an evaluation of potential impacts and assessment of feasible alternatives that may have less impact waterward of the high tide line. Once the technical review is complete, a tentative decision is made on the application. In some instances, a public hearing may be held. The DEEP will then make a final determination on the permit considering public input. Depending on the extent of the work, permitting process may take anywhere from 1 to 2 years.

DEEP Tidal Wetlands Permit

Tidal wetlands are areas which border or lie beneath tidal waters and are areas of high nutrient and biological productivity that provide detritus, decaying organic matter, that forms the base of the food chain. Any work within these areas such as excavating, filling or construction of any structure is regulated and a DEEP Tidal Wetlands Permit will be required. Tidal wetland areas are located throughout the shoreline. Mitigation is generally required when impacting tidal wetlands. Once the application is submitted, a sufficiency review is conducted and any additional information is requested. Once the application is deemed complete, a full technical review is conducted. This review will involve an evaluation of potential impacts and assessment of feasible alternatives that may have less impact waterward of the high tide line. Once the technical review is complete, a tentative decision is made on the application. In some instances, a public hearing may be held. The

DEEP will then make a final determination on the permit considering input public. Depending on the extent of the work, permitting process may take anywhere from 1 to 2 years.

Connecticut Department of Energy and Environmental Protection (DEEP) Coastal Consistency Review

The corridor for the Norwalk River Valley Trail is located near the Norwalk River. The CT Coastal Boundary for the Norwalk River extends up to approximately 10 miles north of the intersection of I-95 and Route 7. If any work for the trail occurs within this coastal boundary, coastal consistency review from the DEEP Office of Long Island Sound will be required. The work will be reviewed to confirm that the activities do not adversely affect coastal resources and uses such as impact to natural habitats, marine resources, coastal flooding and water quality. The proposed work must be consistent with the Connecticut Coastal Management Act. Depending on the extent of the work, review process may take up to 1 year.

DEEP Stream Channel Encroachment Lines (SCEL)

This permit regulates the placement of encroachments and obstructions riverward of Stream Channel Encroachment Lines, to lessen the hazards to life and property due to flooding. Stream Channel Encroachment Lines have been established for about 270 linear miles of riverine floodplain throughout the State, and are shown on Stream Channel Encroachment Line maps. In making a decision on a Stream Channel Encroachment Line permit application, DEEP will consider the impact of proposed activities on the floodplain environment, including wildlife and fisheries habitats, and on flooding and the flood hazards to people and property posed by such activity. SCELs are present for the following Towns/Cities and respective locations:

1. City of Norwalk (Norwalk River)
    a. Between a point 200 feet below Wall Street and a point opposite Forest Street
    b. From a point opposite the end of Forest Street and New Canaan Avenue
    c. Between the dam at Flock Process Company and Grist Mill Pond.
2. Towns of Ridgefield/Redding (Norwalk River)
    a. From the Wilton-Weston town line to the Ridgefield Brook.
3. Town of Wilton (Norwalk River)
    a. From Wilton Center to the Redding Town Line
    b. Between the Kent Road and Route 33 Bridges.
4. City of Danbury (Still River)
    a. Between a point 120 feet downstream from Cross Street Bridge and the Triangle Street Bridge

Depending on the extent of the work and whether other DEEP permits are submitted in conjunction with this permit, permitting process may take anywhere from 1 to 2 years.

U.S. Army Corps of Engineers

If any dredging or filling within jurisdictional waters of the United States is anticipated as part of this trail project, an ACOE permit will be needed. There are two potential types of permits which may need to be obtained from ACOE. An activity which falls under Category 1 of the General Permit applies when only minor impacts are anticipated to wetlands or watercourses (generally impacts less than 5,000 square feet of wetlands/watercourse disturbance). A registration of the activity will be necessary but no formal approval is needed. When impacts are between 5,000 square feet and 1 acre, and work is in accordance with the current ACOE General Permit, a Category 2 permit must be submitted to and be approved by ACOE. When the activity is expected to disturb an area greater than 1 acre or is determined by the ACOE to have significant impact on wetlands and watercourses, an Individual Permit will be required. Other aspects of the project (besides square footage of disturbance) may cause an activity to be deemed eligible or ineligible for Category 2 or individual permitting. Specific permit requirements shall be reviewed once the scope of work of the trail construction is determined. Depending on the extent of the work and whether the application is under Category 2 or Individual permits, the permitting process may take anywhere from 1 to 2 years.

DEEP 401 Water Quality Certification

A section 401 Water Quality Certification will be required when a federal permit is applied for to USACE or U.S. Coast Guard. This permit applies to any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge into the navigable waters, including all wetlands, watercourses, and natural and man-made ponds. Trail construction may impact wetlands and watercourses by activities such as construction of structures, filling, dredging, grading and clearing and grubbing. A certification must be obtained from DEEP that the discharge is consistent with the federal Clean Water Act and the Connecticut Water Quality Standards. Any conditions contained in a water quality certification become conditions of the federal permit or license. In making a decision on a request for 401 Water Quality Certification, DEEP will consider the effects of proposed discharges on ground and surface water quality and existing and designated uses of waters of the state. Once the application is submitted, a sufficiency review is conducted and any additional information is requested. After the application is deemed complete, a full technical review is conducted. This review will involve an evaluation of potential impacts and an assessment of anticipated effects of the proposed activity and proposed impact mitigation or compensation. The application may also be reviewed by DEEP's Fisheries and Wildlife Divisions and the staff of the Natural Diversity Data Base program. Once the technical review is complete, a tentative decision is made on the application and any questions will be directed to the applicant for additional information. In some instances, a public hearing may be held. The DEEP will then make a final determination on the permit considering public input. Depending on the extent of the work and whether other DEEP permits are submitted in conjunction with this permit, permitting process may take anywhere from 1 to 2 years.

DEEP Natural Diversity Database Review

According to the DEEP Natural Diversity Database mapping there are several areas of potential concern throughout the corridor with the majority of these areas along the shoreline. The Natural Diversity Data Base maps represent approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. If any area of the proposed trail falls within one of these identified areas (1/2 mile upstream and downstream if along a watercourse), a formal review must be requested from DEEP. If upon review of the project the DEEP identifies that the proposed project may have an impact on threatened and/or endangered species; monitoring, avoidance, and mitigation may be required. Additional studies may also be required to review the potential presence of endangered, threatened and special concern species in the project area. Coordination with U.S. Fish and Wildlife Service and National Marine Fisheries Service will also

be required to determine if federal threatened and/or endangered species are present in the proposed work area. Initial DEEP review may take approximately 2 months.

DEEP General Permit for Stormwater and Dewatering Wastewaters from Construction Activities

This general permit applies to all discharges of stormwater and dewatering wastewater from construction activities which result in the disturbance of one or more total acres of land area on a site regardless of project phasing. For construction projects with a total disturbed area of between one and five acres, the permittee shall agree to adhere to the erosion and sediment control land use regulations of the town in which the construction activity is conducted. No registration of this general permit shall be required for such construction activity as long as it receives town review and written approval of its erosion and sediment control measures and follows the guidelines. If no review is conducted by the town, the permittee must register and comply with Section 6 of this general permit. For construction projects with a total disturbed area (regardless of phasing) of greater than five acres, registration is required to be submitted in order for the discharges to be authorized by this general permit. If the disturbance is greater than 10 acres, then a Stormwater Pollution Control Plan (SWPCP) must be submitted to DEEP for their review and comment. This registration must be filed a minimum of 30 days prior to construction and the review process may take up to 6 months depending on the extent of the work and the submission of the SWPCP.

State Historic Preservation Office

Local historical societies, State Historic Preservation Office (SHPO) and the National Register of Historic Places will need to be contacted to find out if the proposed trail will have any impact on historical properties in the area. Once the trail locations are further identified, additional information can be provided on potential historic property impacts.

U.S. Coast Guard Bridge Permit

This permit would be required if the project involves construction of a bridge across a navigable watercourse. This may be needed if the proposed trail project proposes a new crossing in the southern reaches of the Norwalk River. The river is generally navigable from the shoreline approximately up to Wall Street in the City of Norwalk. The timing of this permit may be from 1 to 3 years.

Federal Highway Administration (FHWA) - Section 4(f)

According to the Federal Highway Administration's (FHWA) web site, Section 4(f) specifies that the FHWA and other Department of Transportation agencies cannot approve the use of land from publicly-owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites. Use of this land type can only be approved if (1) there is no feasible and prudent alternative to the use of land and (2) the action includes all possible planning to minimize harm to the property resulting from use. More information can be found at http://www.environment.fhwa.dot.gov/4f/index.asp.

For the Norwalk River Valley Trail project, this will entail coordination of final trail siting, alignment and design with Connecticut Department of Transportation and Federal Highway Administration staff for sections of the trail that might traverse the identified public parcels that meet the criteria outlined above.

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