The New Milford River Trail Feasibility Report:
Phase II, Boardman Bridge to Helen Marx Park

Prepared for

New Milford River Trail Association

Prepared by

Hare Planning

November, 2014

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INTRODUCTION: The Context of this Feasibility Study

(by the New Milford River Trail Association
with research by the consultant)

The extensive economic, quality of life, and health benefits of scenic multi-use trails (and greenways) along riverfronts in Connecticut and throughout the country explain their growing numbers. Attracting residents and visitors alike, they have succeeded in generating millions of dollars for restaurants, retail stores, hotels, and riverfront events. The economic ripple effect can be even greater. Multi-use trails and greenways can help raise nearby property values, serve as magnets for tax revenue-generating commercial and residential development and continue to attract the attention of young, often health-conscious business entrepreneurs looking for the best places to set up businesses and raise their families.

In Connecticut alone, more than 20 municipalities have already revitalized their riverfronts or are in the planning or construction stages. The latest is Middletown, which recently received a $2.6 million grant from the state for creation of a destination riverfront park and boathouse/event facility. In many of these CT riverfront projects, a multi-use trail is a vital part of the plan to attract lots of users.

Today, the banks of the Housatonic River, as it flows through New Milford, represent a vastly under-leveraged resource for the town that calls itself "The Gateway to Litchfield County." Revitalization of New Milford's riverfront could be a prime competitive asset in attracting outside investment. Home to two aging fuel storage depots, the town's recycling center and the New Milford Public Works' 16-acre site—occupying what could be prime real estate—the Housatonic River's eastern bank has begun attracting a serious second look from town officials and residents who recognize its untapped potential.

The New Milford River Trail Association, or NMRTA (www.nmbikewalk.org), is a 501c3 volunteer organization working to create broader access to the town's riverfront. Its primary goal is to foster the creation of a multi-use trail that would enable walkers, joggers, stroller-pushers, and entire families to travel safely along the river, eventually also easily accessing the downtown Village Center.

Phase 1 of the riverside trail, completed in 2011, runs from Gaylordsville via the scenic, and as yet little-known River Road through Sega Meadows, a town-owned park, to Boardman Bridge. The Sega Meadows gravel-topped section was completed with generous support from the New Milford Public Works Department and funding through the GE Natural Resource Damages Fund.

Phase II Feasibility Study

This Phase II feasibility study, commissioned by NMRTA from Cornwall-based Hare Planning, outlines construction options and estimated costs for Phase II from Boardman Bridge to Helen Marx Park. It was underwritten with a $1,500 grant from the New Milford Economic Development Commission (EDC) and matching funds secured by NMRTA from the New Milford Recreation Association and an area family foundation.

If the New Milford River Trail is able to reach Helen Marx Park as projected, it could easily link to the proposed Young's Field Park Riverwalk & Greenway, presently in the planning stage and expected to continue the riverfront trail from Helen Marx Park to Veteran's Bridge, passing by the Young's Field ballfields, tennis

courts and playground. It is being funded, in part, with an $180,000 grant from the GE Natural Resource Damages Fund secured by the Town of New Milford, which will carry out the project.

As adequate funding is secured over the next several years, it is expected that the New Milford River Trail will continue to be extended in phases until it reaches the Brookfield town line.

Upon completion, the New Milford River Trail will attract recreational dollars that residents as well as visitors would have spent elsewhere. For example:

- The Harlem Valley River Trail (Wassaic NY to Millerton NY), only 15 miles long, attracts riders and walkers from far away towns, including New Milford.
- The Farmington Trails Network, running almost uninterruptedly through central Connecticut from New Haven to Massachusetts, issued a study in 2007 that conservatively estimated that Simsbury and the Farmington Valley took in $4–$7 million dollars annually in additional revenues that could be attributed to the estimated 250,000 trail users annually.

Safe places to walk and bike, especially ones without hills, are scarce in New England. They attract "local" users from surprising distances. The New Milford River Trail will attract visitors from much farther away. Because of the large number of trail efforts underway in both Connecticut and nationally, more and more local 10 and 20-mile trail projects end in connections with trail projects in other towns.

Linking Up with Other Trails

The New Milford River Trail is particularly well suited to link up with other area trails. A short distance to the north, the Housatonic Covered Bridge Trail, or HouBike Trail, (www.houbiketrail.org), is planned to run from Kent all the way to Massachusetts. Linking both trails would create a 45-mile trail, a distance long enough to become a "destination trail." It would draw users from New York City and beyond, according to Carl Knoch, Northeast Trail Development Manager, Rails-to-Trails Conservancy.

To the south, Brookfield recently broke ground on construction of the first (two-mile) section of the Still River Greenway, a fully-paved multi-use trail, which may in the future continue north to New Milford and south to Danbury. Further south, the Norwalk River Valley Trail (www.nrvt.org) is planned to extend from Roger's Park in Danbury to Calf's Pasture Beach on Long Island Sound.

All four of these western Connecticut trails follow the Route 7 corridor, as do a number of other trails in Massachusetts and Vermont. Organizations working to make these trails a reality came together a few years ago in a joint effort called the Western New England Greenway (WNEG). Its goal: a safe route for non-motorized travel from Long Island Sound to the Canadian border.

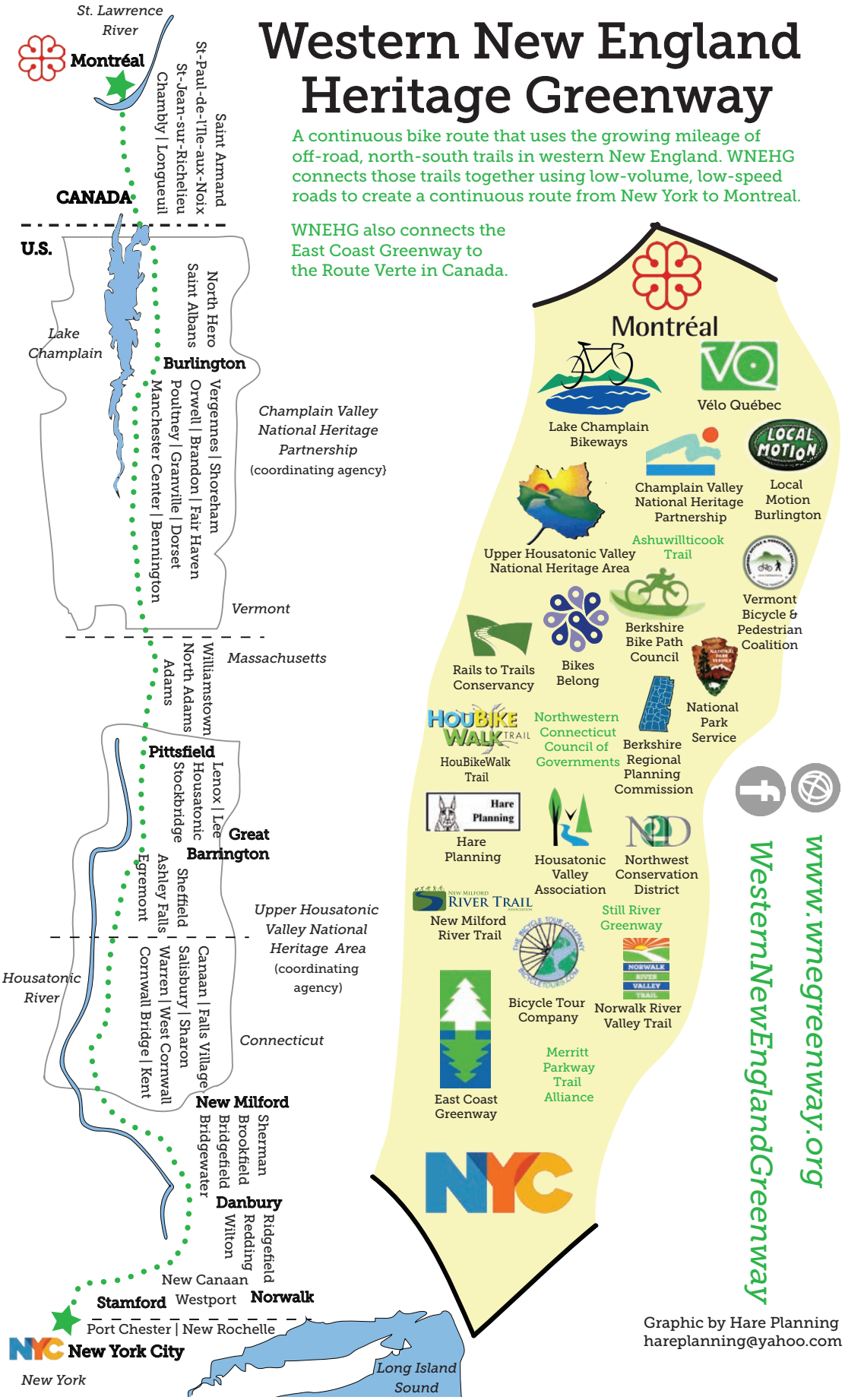
WNEG is sponsored by the Upper Housatonic Valley National Heritage area (www.upperhousatonicheritage.org) and the Champlain Valley National Heritage Partnership (www.champlainvalleynhp.org) The poster, reproduced in Figure 1-1 at right. shows WNEG's route from Montreal to New York City and the large number of advocacy organizations, businesses and public sector entities supporting its creation. As a crucial link in a much longer trail, New Milford will benefit from other towns' trail efforts just as other towns along the trail will benefit from New Milford's.

Tom Sexton, Director of the Rails-to-Trails Conservancy's Northeast Office, makes the point that most long-distance cyclists travel light. They carry almost no food, sleeping bags or tents. Many of them carry little but a

Western New England Heritage Greenway

A continuous bike route that uses the growing mileage of off-road, north-south trails in western New England. WNEHG connects those trails together using low-volume, low-speed roads to create a continuous route from New York to Montreal.

WNEHG also connects the East Coast Greenway to the Route Verte in Canada.



1-1: *The Western New England Heritage Greenway*

credit card and a change of clothes. They search out the historically-significant parts of the towns they visit, eat their meals in local restaurants and spend the night in nearby hotels or B&B's. Bicycle tourists give small town economies a shot in the arm—and they never complain about the parking.

Spending by Non Local Bikers and Walkers

In Section 6 is an estimate of how much non-local bike riders and walkers would spend on the combined New Milford River Trail and the HouBike Trail. As noted above, the two trails run for 45 miles from the Southern New Milford border to the Massachusetts line in North Canaan. The spending estimate presented here is based on the work of Rails-to-Trails Conservancy's Carl Knoch. He has gathered spending data from trail users on 14 existing trails in the U.S. Northeast, using the results of standard survey forms he designed for local biking advocacy groups to use. Based on spending data from the four trails most similar to the combined New Milford and HouBike Trails, spending along the two trails will grow to $4 million a year as the trails are completed and become widely known. As much as half of that $4 million is likely to be spent in New Milford alone as it has the best combination of services for cyclists along the 45 miles: multiple restaurant choices in the downtown area, a "picture book" town green with a Historical Society Museum, an inn at the top of the green and a nearby bike shop.

1-2 : Hiker Travelling Light

As mentioned above, the New Milford River Trail will also help increase both residential and commercial property values near the trail. In the past, industries in most river communities used water for power generation, manufacturing processes and waste discharge. When the industries left the rivers, they typically left behind river and groundwater pollution and vacant, decaying buildings. As a result, many communities turned their backs on their rivers.

Hartford, for example, allowed Interstate 91 to be built on old industrial sites along the west bank of the Connecticut River, completely cutting off downtown Hartford from the river. A campaign called "Riverfront Recapture" managed to recover the Connecticut River as an amenity for the city. A greenway was created from little strips of riverbank, weaving in and out and around bridge abutments and other obstacles on the wafer-thin piece of land between the highway and the Connecticut River. The trail was then linked to downtown Hartford with pedestrian bridges over the Interstate. The project is an impressive exercise in dramatic creativity, but much work remains to be done, and at great cost, to overcome the barrier imposed by a six-lane, limited-access interstate super highway.

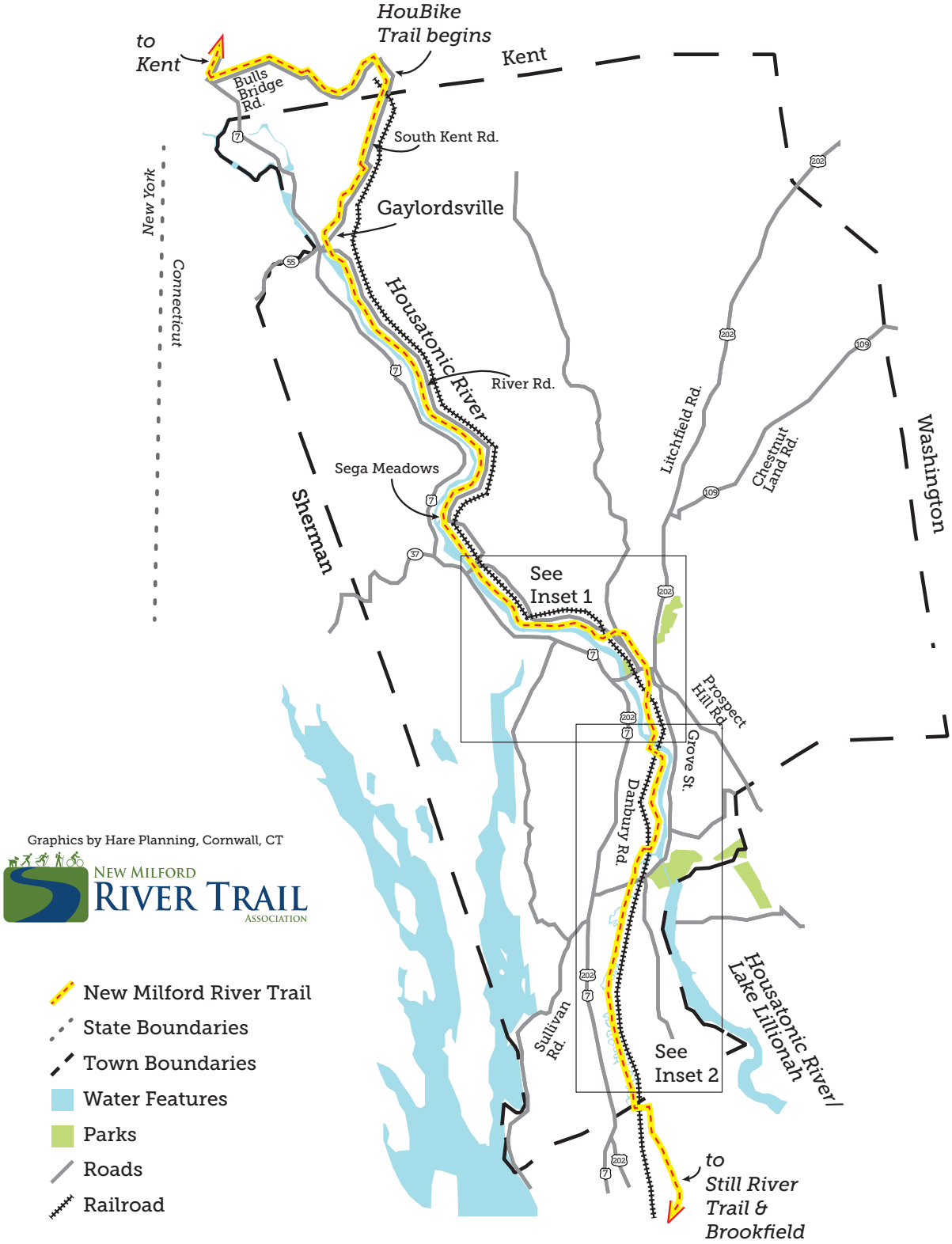
In contrast, New Milford's downtown sits on a bluff that offers an open, sweeping view of the Housatonic River and the wooded hills beyond with nothing separating the two but steps and a public park. The Native Meadows Preserve, being created by the Northwest Conservation District on the meadowland just across the river from the Village Center District, will add to an increasingly great view. So will the already-funded construction of the River Walk and Greenway under the aegis of the municipality.

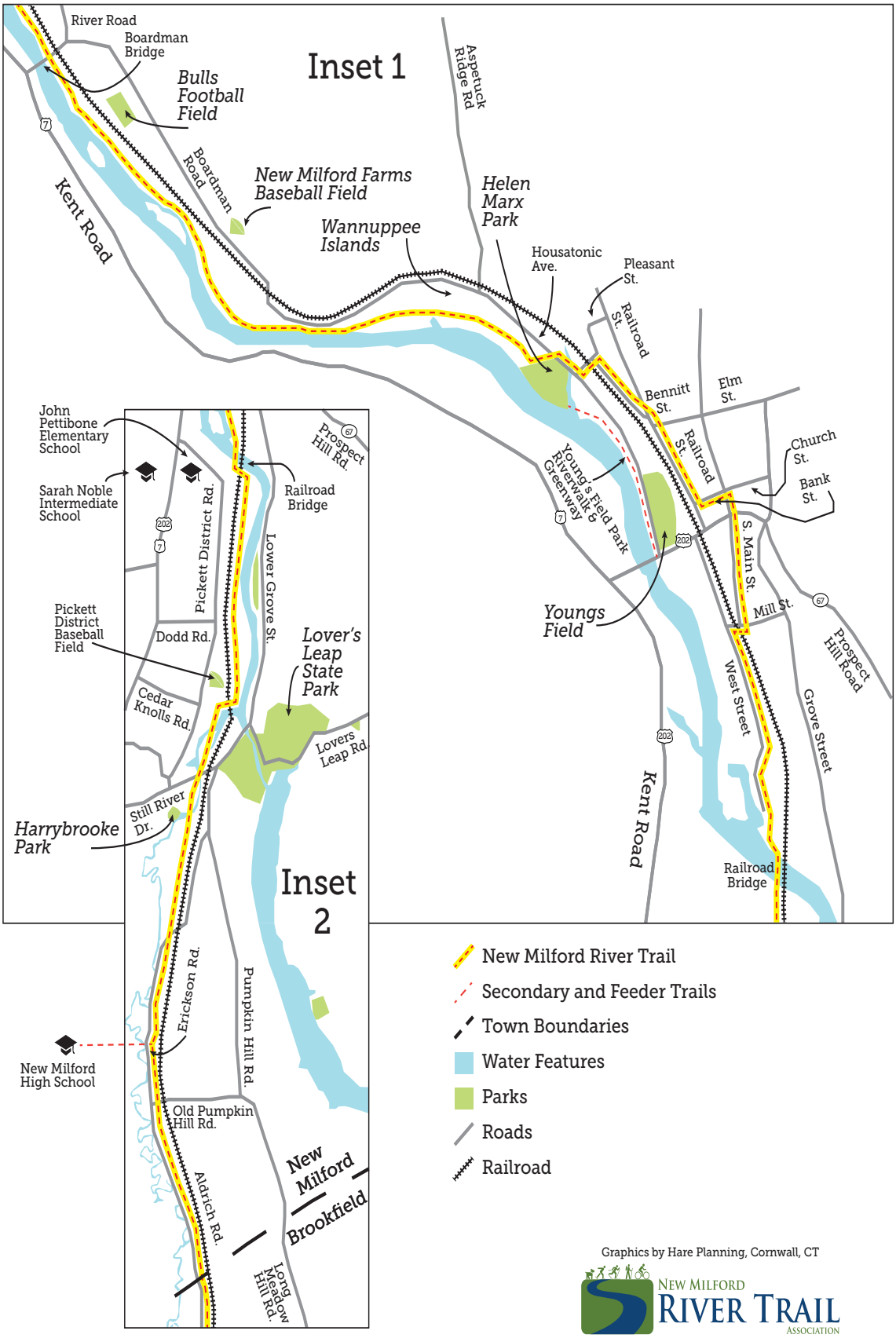
Elsewhere in New Milford, the Housatonic River can only be glimpsed in quick, partial views from car windows on short rides across bridges or while using Young's Field. The places where the magnificent beauty of the Housatonic River can be seen, such as Sega Meadows and River Road, are little publicized, little known and, as yet, underused. Adding a riverside multi-use trail along the river will enhance the river view from the Village Center District and bring many people to the river, and from the river trail back into the Village Center District to shop, eat and use the expanding array of services.

The following feasibility study looks at the physical challenges and construction costs of Phase II of the New Milford River Trail, 1.8 miles from Boardman Bridge south to Helen Marx Park. Some of these challenges are substantial, but none are insurmountable. For purposes of the study, the 1.8-mile distance is divided into five sections. The division is based upon the distinct geography of each section. Costs for different surfacing options or alternatives are listed in Section 6. The five sections are:

1. **Boardman** (Boardman Bridge to the northern Medinstill fence)
2. **Medinstill** (northern Medinstill fence to Railroad-Highway choke point)
3. **Choke Point** (railroad-highway choke point to northern end of the Wannuppee Islands
4. **Wannuppee Islands** (north end to south end of the islands
5. **Housatonic Avenue** (south end of Wannuppee Islands to Helen Marx Park)

The New Milford River Trail Feasibility Report:
Phase II, Boardman Bridge to Helen Marx Park





Graphics by Hare Planning, Cornwall, CT

New Milford River Trail Association

Previous page: P-1 *New Milford River Trail Concept Map, large view*
This page: P-2 *New Milford River Trail Concept Map, inset*

The New Milford River Trail Feasibility Report:
Phase II, Boardman Bridge to Helen Marx Park

Executive Summary

The purpose of this study was to determine the feasibility of and construction options for Phase II of the proposed New Milford River Trail running along the Housatonic River. The study makes clear that Phase ll is feasible. It runs for 1.8 miles from Boardman Bridge to Helen Marx Park. The full completed Trail will run from Gaylordsville to the Brookfield line. There are two short segments in Phase II between the southern end of the Medinstill property and Helen Marx Park that present some challenges, but will also offer some unusual scenic views. The estimated construction cost of Phase II will vary depending on the on the combination of construction options chosen as shown in the cost analysis. That analysis does not include most right -of-way costs.

Phase I of the Trail, from Gaylordsville to Boardman Bridge, is completed. It utilizes the existing lightly traveled River Road and a new gravel-surface path crossing Sega Meadows Park.

Phase II of the Trail will connect at its southern end with the Riverwalk–Greenway that will run from Helen Marx Park to Veteran's Bridge. The Town of New Milford has already received $180,000 in funding from the GE Natural Resource Damages Fund for the Riverwalk–Greenway and will carry out construction.

This feasibility study divides Phase II into five sections, each characterized by different geography:

1. **Boardman** (Boardman Bridge to the northern Medinstill fence)
2. **Medinstill** (northern Medinstill fence to Railroad-Highway choke point)
3. **Choke Point** (railroad-highway choke point to northern end of the Wannuppee Islands
4. **Wannuppee Islands** (north end to south end of the Islands)
5. **Housatonic Avenue** (south end of Wannuppee Islands to Helen Marx Park)

Multiple routes for each section are identified along with a description of the advantages and disadvantages of each route in terms of complexity and cost.

The feasibility study was commissioned in 2013 from Hare Planning, which is based in Cornwall, CT. The study was funded through a grant from the New Milford Economic Development Commission (EDC) and matching funds secured by the New Milford River Trail Association or NMRTA (www.nmbikewalk.org) from the former New Milford Recreational Association and an area family foundation.

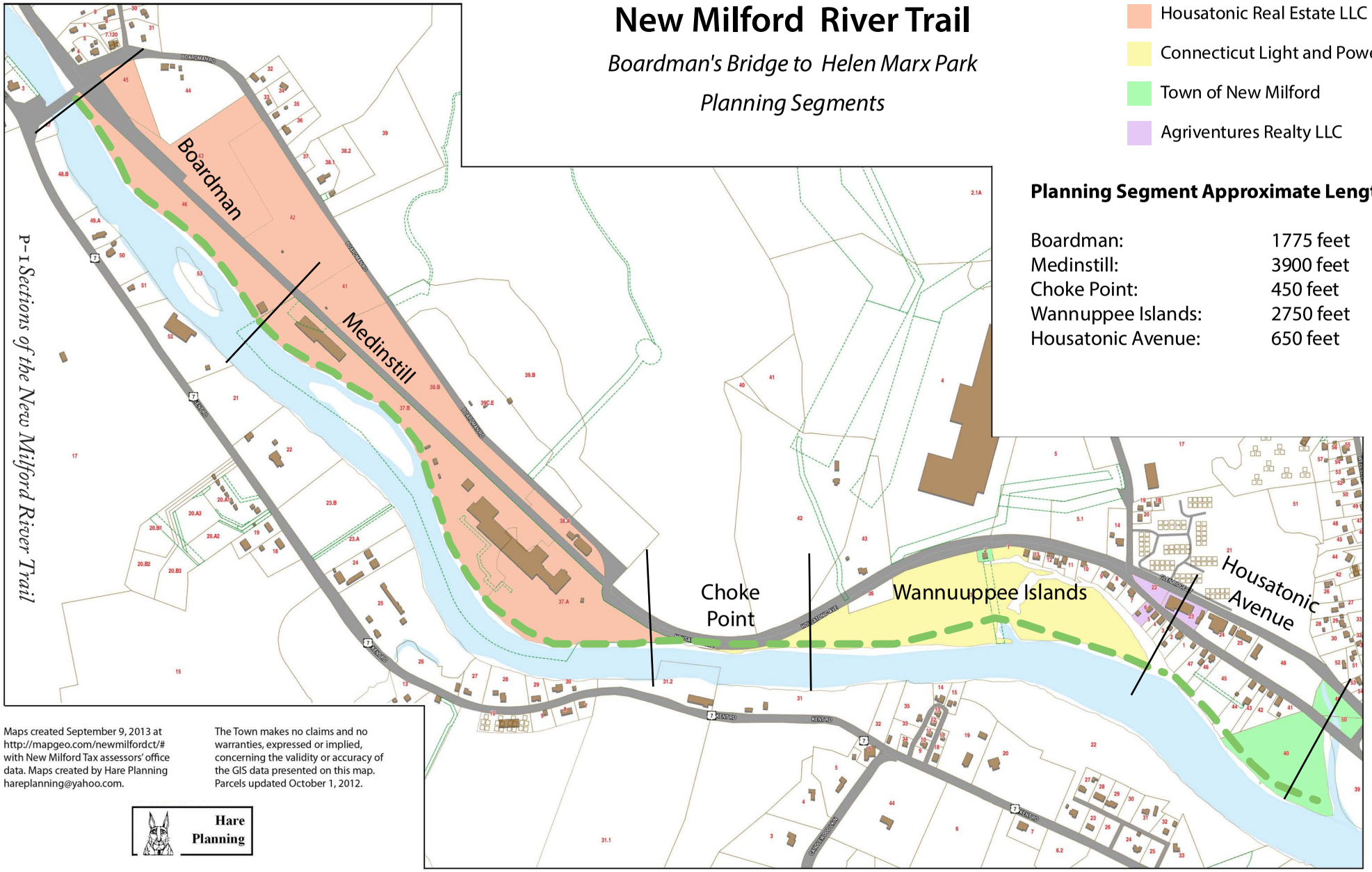
Analysis Of Trail Sections

This feasibility study looks at the physical difficulties and construction costs of the part of the New Milford River Trail that runs for 1.8 miles from Boardman Bridge south to Helen Marx Park. Some of those difficulties are substantial, but as suggested above, none are overwhelming. For the purposes of this study, the 1.8-mile distance is divided up into 5 sections. The division is based on the distinct geography of each section. The 5 sections are shown in Illustration P-1 at right. Costs for all sections are discussed in Section 6.

New Milford River Trail

Boardman's Bridge to Helen Marx Park

Planning Segments



Ownership

- Housatonic Real Estate LLC
- Connecticut Light and Power
- Town of New Milford
- Agriventures Realty LLC

Planning Segment Approximate Length

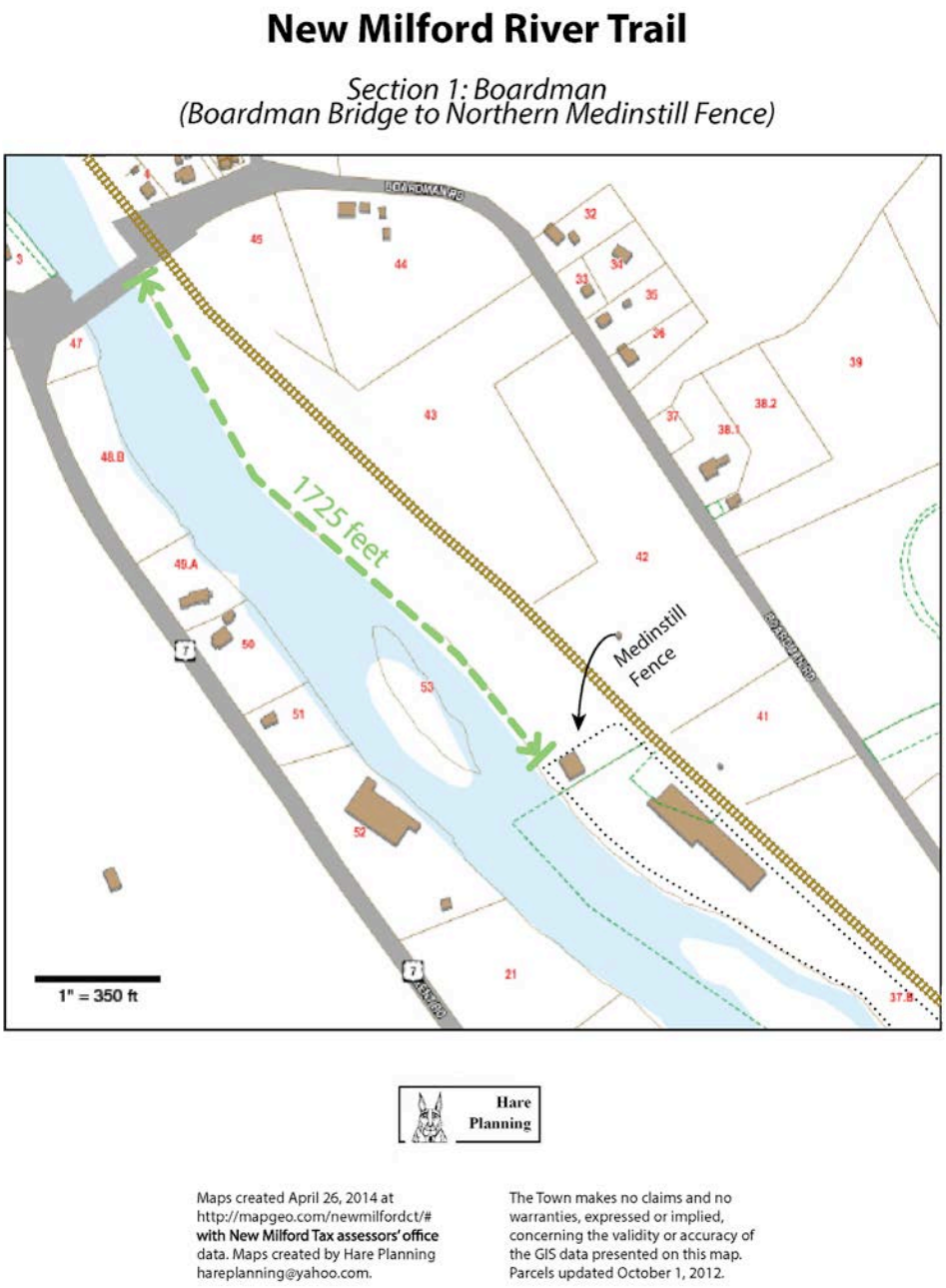
Boardman:	1775 feet
Medinstill:	3900 feet
Choke Point:	450 feet
Wannuppee Islands:	2750 feet
Housatonic Avenue:	650 feet

Maps created September 9, 2013 at http://mapgeo.com/newmilfordct/# with New Milford Tax assessors' office data. Maps created by Hare Planning hareplanning@yahoo.com.

The Town makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map. Parcels updated October 1, 2012.

Hare Planning

1. Boardman (Boardman Bridge to Northern Medinstill fence)



1-1 *Boardman Bridge to Northern Medinstill Fence*

As shown in Illustrations 1-1 and 1-2, this trail section of 1725 feet runs through second-growth hardwoods between Boardman Road and the River. The land, a long narrow northwest to southeast parcel, is owned by Medinstill, a medical products company that also owns the next section south. Going south from Boardman Bridge, Medinstill's land has no buildings or improvements of any kind until the northernmost point of the Medinstill chain-link fence that encircles the company's buildings. The ground is level and the Trail will not require any road or railroad crossings. For most of this section, the railroad tracks run about 300' to the east of the riverbank, leaving more than enough room for the Trail to run next to the River. Because the ground is level, typical paved trail construction should be possible. The only issue may be the evidence of former industrial activities. That evidence includes pieces of rusted iron, old pipes coming up out of the ground, grown-in indentations in the ground from former roads, etc. These raise the possibility of environmental hazards from prior industrial use[1]. However, short of very serious pollution, environmental issues should not affect the construction of a trail if the construction does not disturb any areas that have environmental problems. Ideally the Trail will run on the top of the riverbank, at the start of the 100-year-flood floodplain, with continual views of the River, as shown in illustration 1-2 below.

1 An environmental inspection by the Northwest Conservation District was not done because New Milford is not a participating town in NCD.

1-2 *The view of the River from the Boardman section of the Trail*

An easement for the trail, or outright ownership of a right-of-way, will have to be obtained from the Medinstill Corporation. Another option might be to see if the entire parcel could be donated to the New Milford River Trail association or to the city or a land trust.

If none of these options are possible, a less attractive alternative may be possible. The Housatonic Railroad (HRR) and the State of Connecticut might be convinced to permit the Trail to run next to the tracks on the railroad right-of-way, which the State owns and leases to the HRR. The 50 foot right-of-way has 16 feet on both sides of the "dynamic envelope" of a moving train. Sixteen feet is enough room in the right-of-way for a trail and fencing. Hopefully, this will approach will not be necessary. However, it is always good to be aware of options when laying out a trail. It makes it harder for one landowner or institution in one place along the trail to stop the project or ask high prices for a ROW.

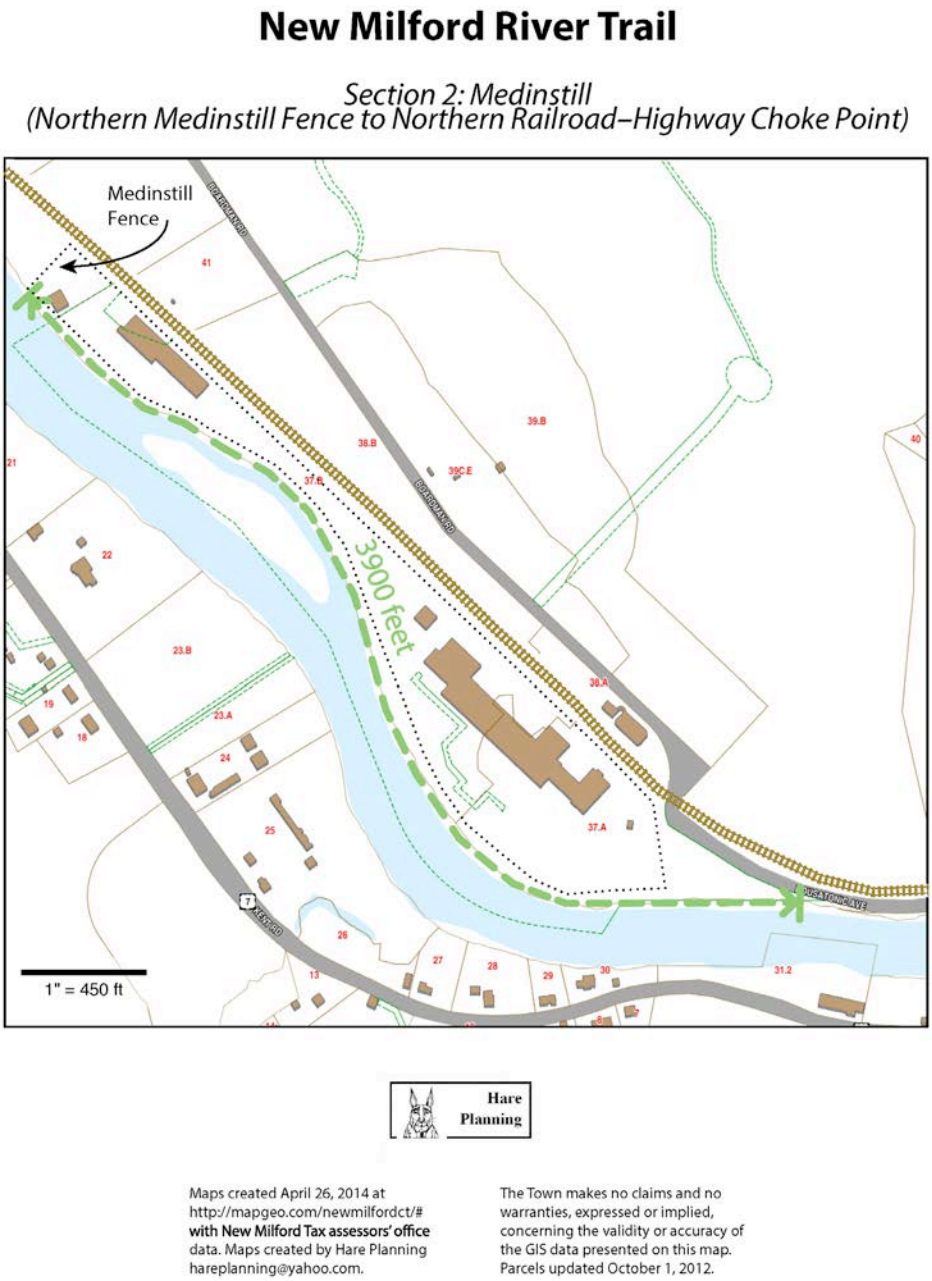
The range of cost of construction for asphalt paving is about $200,000–$300,000 per mile[2]. Assuming asphalt paving is chosen, and the middle of the cost range is used to calculate projected costs, the cost for the 1725' section between Boardman Bridge and Northern Medinstill Fence would be $82,000.

For purposes of comparison, here are the Rails To Trails cost ranges for other surfaces, per mile:

- **Asphalt**: $200,000–$300,000
- **Concrete**: $300,000–$500,000
- **Crushed/granular stone**: $80,000–$120,000
- **Soil cement**: $60,000–$100,000
- **Resin-based stabilized material**: varies
- **Boardwalk**: $1.5 million–$2 million

2 Rails to Trails at http://www.railstotrails.org/ourwork/trailbuilding/toolbox/informationsummaries/trail_surfaces.html

2. Medinstill (Northern Medinstill Fence to Railroad–Highway Choke Point)



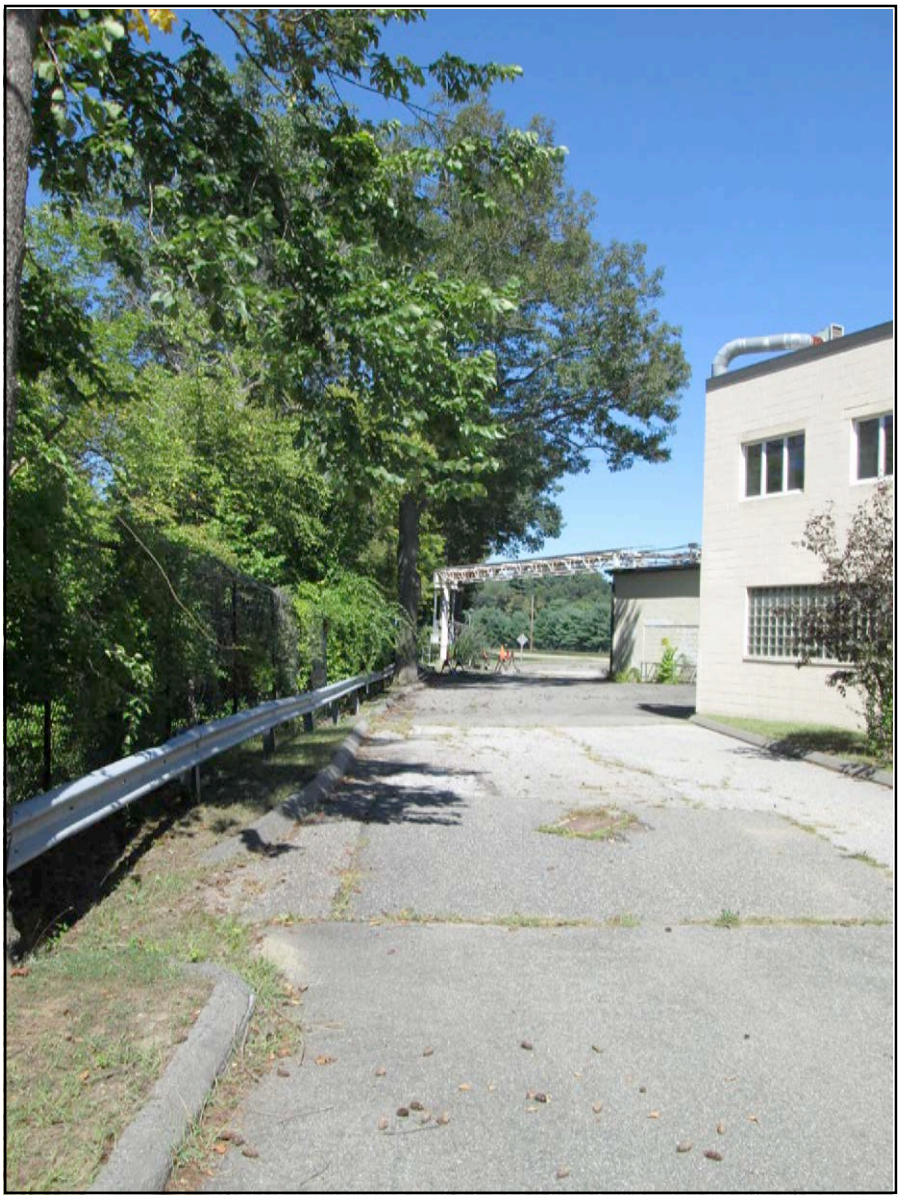
2-1 *Northern Medinstill Fence to Northern Highway–Choke Point*

A fence circles the portion of the Medinstill land that was actively used by the Nestlé Company when it owned the property. The fence, shown in Illustrations 2-1 and 2-2, goes around all the Medinstill buildings, enclosing a second northwest-to-southeast section.

(In the Illustration 2-2 at right, the chain link fence circles this section. The vehicle barrier beside the fence it in this photo does not.)

On the River side of the section, the fence runs along the top of the riverbank, where the level floodplain begins. Illustration 2-3 shows the 100-year-flood floodplain in light gray. It would be possible to build the River Trail on the steep riverbank, at the top of the bank but outside and to the west of the Medinstill fence. However, because of the steep riverbank, in many areas the Trail would have to be built as a boardwalk with columns and beams and decking, which would cost between $1.5 million and $2 million per mile, as opposed to $200,000 to $300,000 per mile for asphalt.

The Trail could also be built just east of the top of the riverbank bluff where the land is level. It would be inside the fenced area. Construction in this location would be much less expensive. It may seem unlikely that Medinstill would want to give up valuable industrial land for the Trail. However, it is equally unlikely that the Trail would hamper any future construction of buildings. The 16–20 foot strip of land right at the top of the riverbank which would be required for the River Trail might



2-2 *The chain-link fence surrounding this section (at left of the photo, in shadows)*

and are recognized as providing both health and transportation benefits to employees. Two Kimberly-Clark plants in Wisconsin and Arkansas recently received "Bike Friendly Business" awards from the League of American Cyclists. The text of their award is shown in the sidebar on page 12.

Two additional points should be made about the segment from the Northern Medinstill fence to the Wannuppee Islands. First, at some points along this segment the trees are so big they are a Trail feature all by themselves. Illustrations 2-4 and 2-5 are pictures of the trees near the riverbank at the southern end of the Medinstill property.

Second, there is an existing concrete road on the southern Medinstill property that is just inside the fence and parallels the river bank. It might be used for the Trail and would save most construction costs for this section. The road currently appears to be unused. The location of the road is shown in Illustration 2-3 and Illustrations 2-2 and 2-6 are pictures of the road.

even be in a required setback for any new buildings. It is also unlikely that the loss of a trail-wide strip of land would lower the value of the Medinstill property. The opposite is probably true. It is likely that the presence of the Trail would add value to the Medinstill property. Thirty years ago, a trail like the River Trail would have been seen as a nuisance by almost any owner of industrial and commercial land. In the last 30 years, however, experience has proven that trails add value to virtually every kind of property. They add prestige value to company sites,

The costs for the 3900' Medinstill section would be $185,000 for asphalt, $75,000 for crushed stone, and there would be virtually no cost if the existing roadway was used.

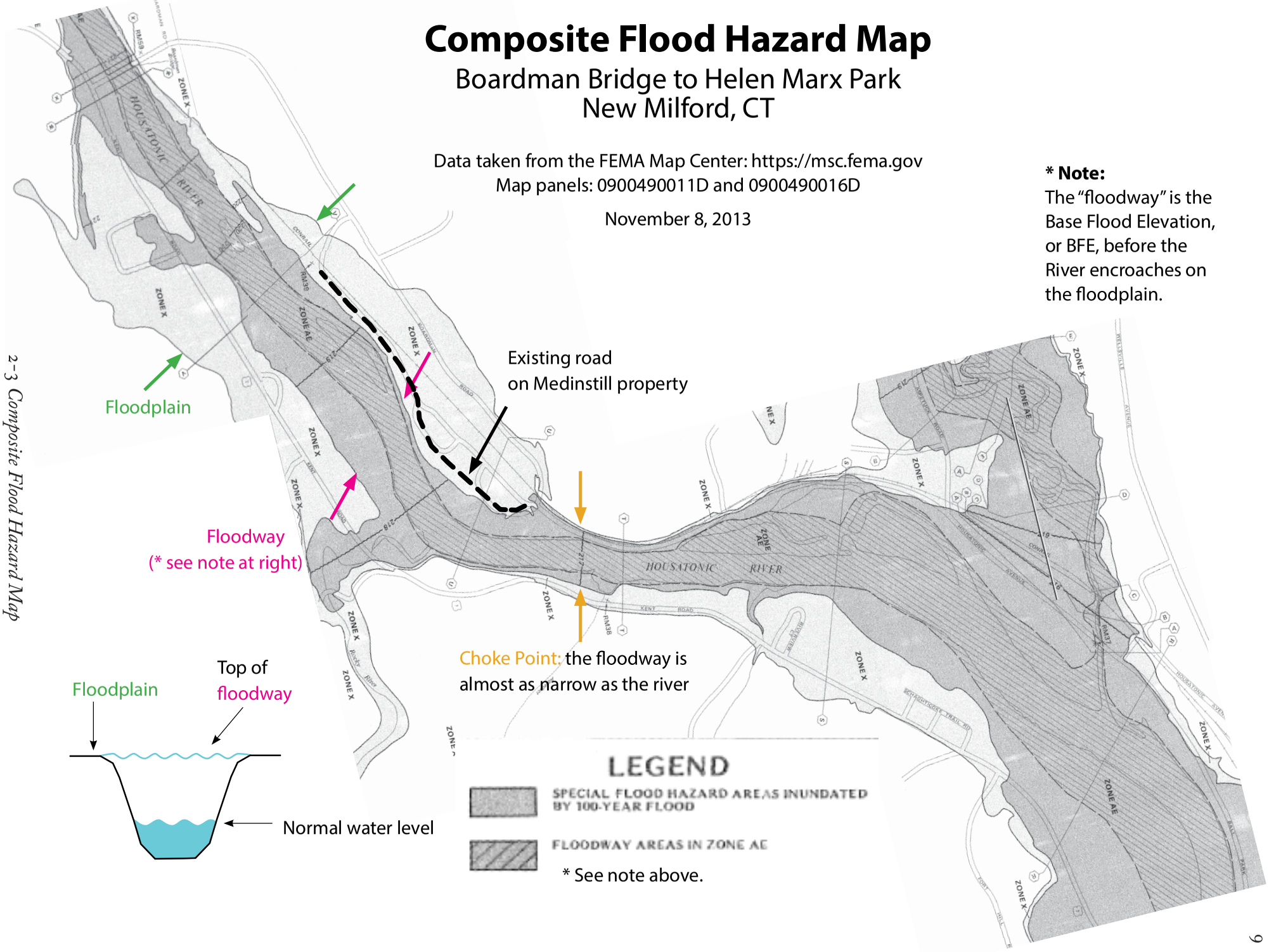
Composite Flood Hazard Map

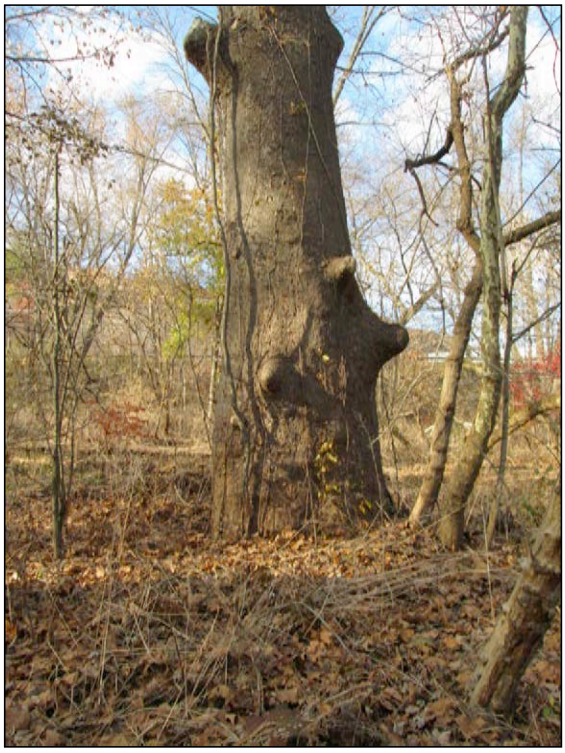
Boardman Bridge to Helen Marx Park
New Milford, CT

Data taken from the FEMA Map Center: https://msc.fema.gov
Map panels: 0900490011D and 0900490016D

November 8, 2013

*** Note:**
The "floodway" is the Base Flood Elevation, or BFE, before the River encroaches on the floodplain.





At left:
2-4 *Large tree on riverbank at southern end of Medinstill property*

At right:
2-5 *Two large trees at southern end of Medinstill property with river in background*

At left:
2-6 *Roadway that could be used for Medinstill portion of the Trail; top of riverbank is in trees at right*

"May 29, 2013: Kimberly-Clark Celebrates Two BFB Awards on Get Up & Ride Day Bicycle Friendly Business" by Carolyn Szczepanski

While the National Bike Challenge is now a daily joy for nearly 30,000 bicyclists nationwide, the idea came from an employee and bike commuter at the Kimberly-Clark Corporation: Rob Gusky. But the enthusiasm for active transportation doesn't end with the company's official Bicycling Ambassador—Kimberly-Clark is committed to biking as a means to improve the health and productivity of its employees and the sustainability of its business.

Last week, League COO Jakob Wolf-Barnett and League Board Chair Gail Spann traveled to Wisconsin to join more than 200 K-C employees for their annual Get Up & Ride Day. Encouraging that many folks to saddle up is certainly impressive, but that wasn't the only cause for celebration. Wolf-Barnett and Spann also presented K-C CEO Tom Falk with two Bicycle Friendly Business designations: a bronze for the company's Conway, Ark., location and a gold for its Neenah, Wis., office. Also on hand were League members and supporters, like the Bicycle Federation of Wisconsin and staff from Wheel and Sprocket bike shops.

3. Choke Point (Railroad-Highway Choke Point to North End of Wannuppee Islands)

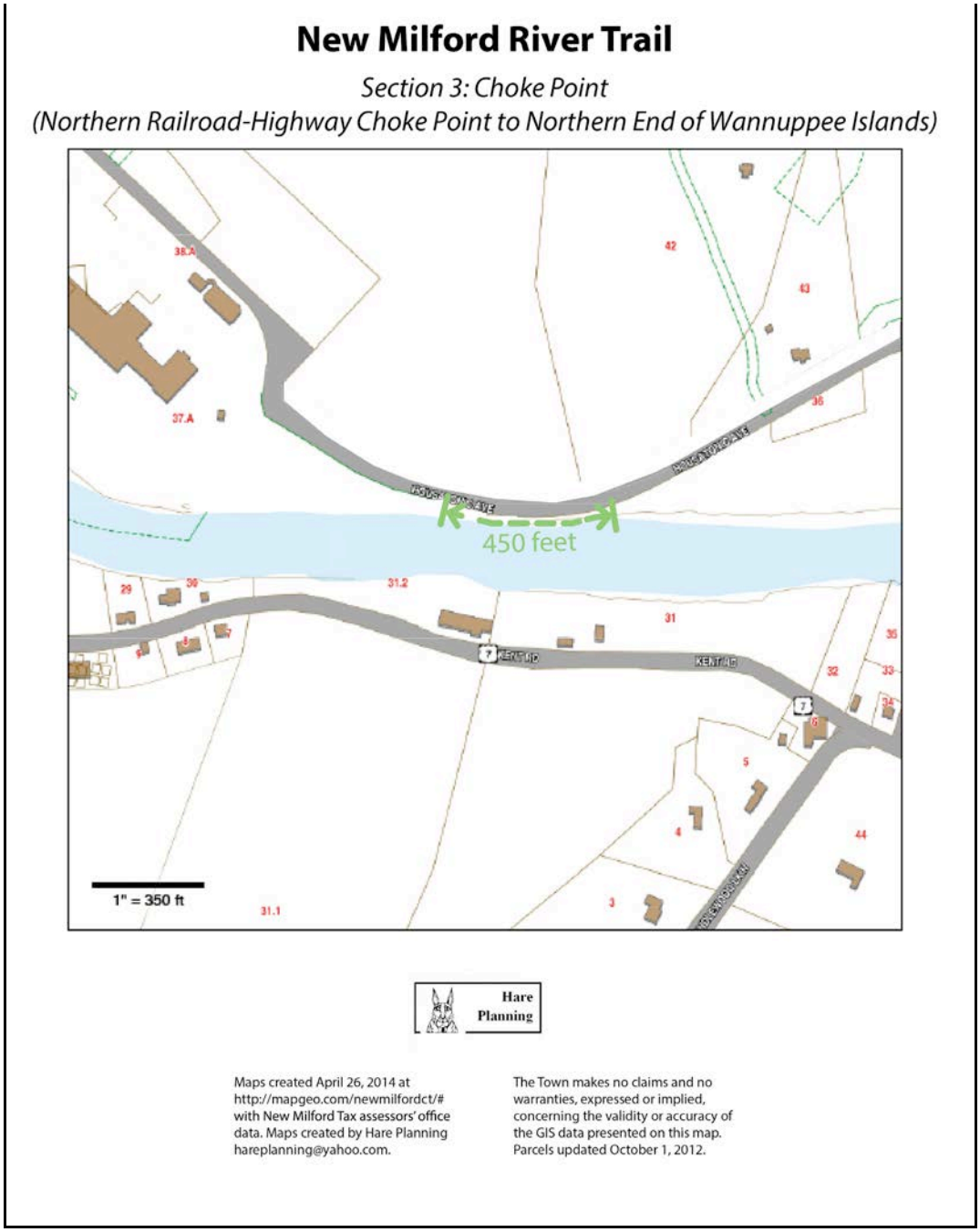
This is a short, 450-foot section, as shown in Illustration 3-1. Illustration 3-2 shows how in this section the steep ridge to the east has pushed the railroad tracks and Housatonic Avenue over to the west, hard against the River.

Illustration 3-3 is a photo of the riverbank just south of the choke point. It shows that north of the photo there is no room for the Trail unless it is built over the rip-rap stone retaining wall that supports Housatonic Avenue.

Illustration 3-4 is a picture of how a similar problem was solved on the Farmington River Trail with a boardwalk.

However, the boardwalk on the Farmington River Trail is located above a dam. The dam creates a wide pond. As a result the current is relatively slow even when the Farmington River is high. In contrast, the Housatonic at the choke point runs between steep banks. The River in this area cannot spread out as it rises until it reaches the 100-year-flood floodplain, as shown in Illustration 2.3, the Composite Flood Hazard Map.

The floodway is narrow. The 'floodway' refers to the channel banks between which a river rises before it spreads out on the floodplain. During periods of heavy rainfall or rapid snowmelt the River will be fast in this area because of the Venturi effect, which dictates that water will move faster between narrow banks than between wide banks because the same volume of water has to pass through a smaller space. At such times the columns supporting a boardwalk may have to resist much stronger currents than the posts on the Farmington. Also, during high water columns like those on the Farmington may catch trees being washed down the River. Any trees caught by the posts will greatly increase the surface area facing the current and in doing so increase the likelihood of damage to the boardwalk. It may be necessary to use a different solution. Heavier concrete columns would one such solution. A

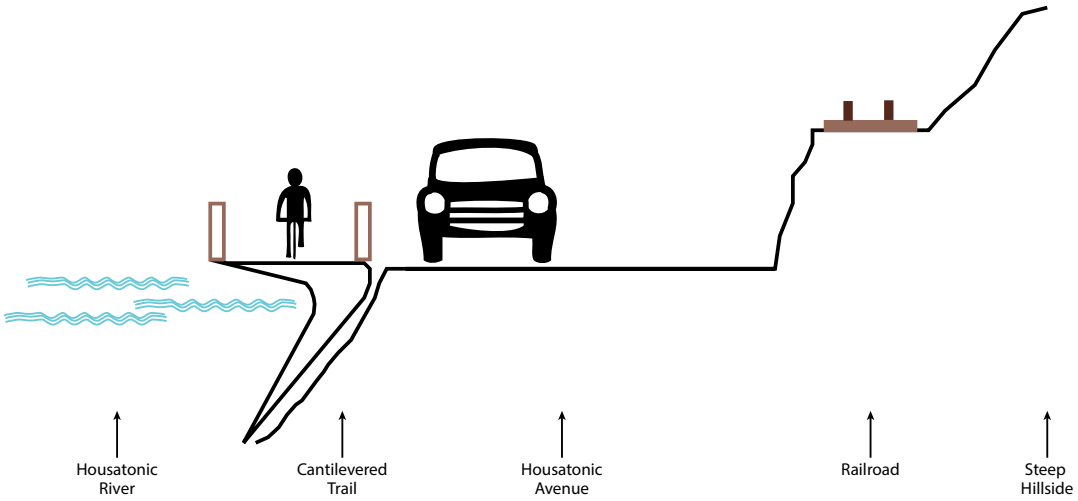


3-1 *Northern Railroad–Highway Choke Point to Southern End of Wannuppee Islands*

better alternative may be to cantilever the Trail off the highway embankment so there are no posts or columns out in the current.

A sketch of this option is shown in Illustration 3-2. Whether a boardwalk or cantilevered trail is used, the level of the Trail should be at the level of the 100-year-flood floodplain.

The costs per mile for either an elevated boardwalk or a cantilever trail is this section will be high, but fortunately the section is short. It is not possible to give an accurate cost estimate without detailed engineering, so the cost/mile for this section was assumed to be twice the cost of the high end of the Rails to Trails estimate for boardwalks. That would be $4,000,000/mile, or $340,000.



3-2 *Schematic Drawing of the Choke Point*

3-3 *Rip Rap Stone and Wire Gabion at Choke Point*

3-4 *Boardwalk on Farmington River Trail; highway is just to the left*

4. Wannuppee Islands (North end to South End of Wannuppee Islands)

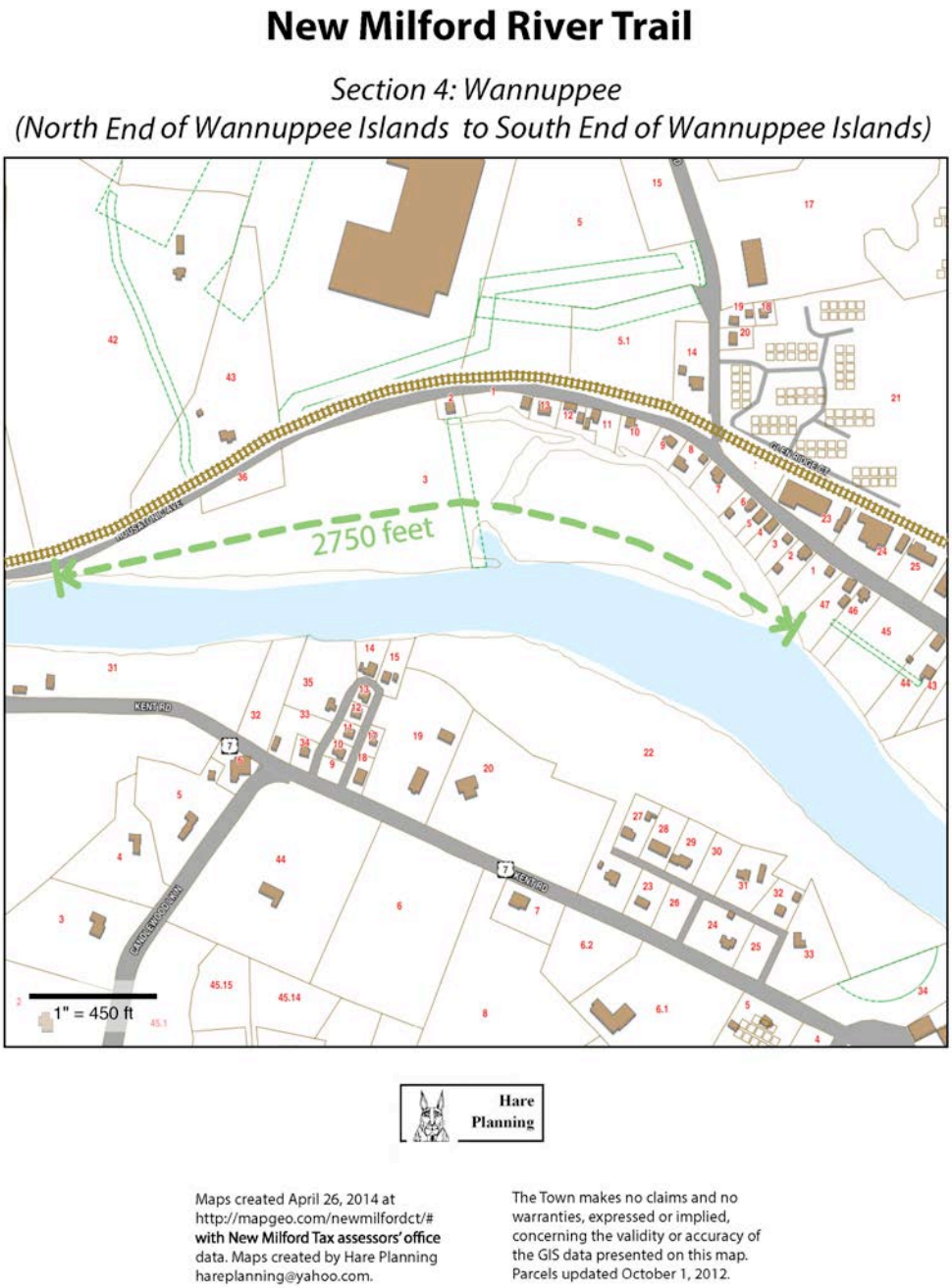
"Wannuppee," according to Samuel Orcutt's history of New Milford, is an Indian name signifying "overflowed" or "subject to overflow." The name fits. When the River is low, it appears to an onlooker looking down from the road that the Islands are one piece of low tree-covered land. In fact, this seemingly-solid land is grooved by deep channels. When the River rises, and uses those channels, it creates islands. Illustration 4-2 shows one of the channels and makes it possible to understand how the islands are created by high water.

The islands are owned by CL&P, which would have to permit and approve any trail construction. Because the Islands are frequently flooded, the ground level vegetation is different from other nearby areas. The frequent flooding does not seem to bother the trees on the Islands. As shown in Figure 4-3, many of the trees are substantial and must have lived through many floods.

The bottom of the channels that separate the Islands are about 8–12 feet below the tops of the Islands. When the River rises enough to be close to the level of the bottom of the channels, the gravel in the channel bottoms is saturated with water. In those conditions the channel bottoms may appear to be covered by leaves and fine for walking. In fact, at those times, they are a boot-grabbing hazard.

The Islands are marked as a "floodway" on Illustration 2-3, the Composite Flood Hazard Map.

The Islands are completely underwater before the Housatonic rises enough to reach the 100-year-flood floodplain. Because the Islands are frequently flooded, an asphalt trail or stone dust trail with bridges across the channels would probably be washed out frequently. A boardwalk or other solution is needed in this section as well. A cantilever would only work at the north end of the Section because of



4-1 *North End of Wannuppee Islands to South End of Wannuppee Islands*

the houses at the top of the floodway along Housatonic Avenue in the bottom ⅔s of the section. The houses are located where the cantilever would have to be located. However, a boardwalk should work here. The much wider floodway that starts just downriver from the choke point will lessen the current during high waters. The large trees on the Island will also reduce the current. The boardwalk would have to be fairly high, ideally as high as the start of the floodplain so there is no risk of the trail flooding during normal high waters that do not reach the flood plain. A high boardwalk in is pictured in Illustration 4-4.

An elevated boardwalk in the Wannuppee Islands would be have to be significantly higher. It would be attractive because it would be unusual. Cyclists and pedestrians would be up just below the canopy of the trees roughly at the same level of the top of the photograph in Illustration 4-3.

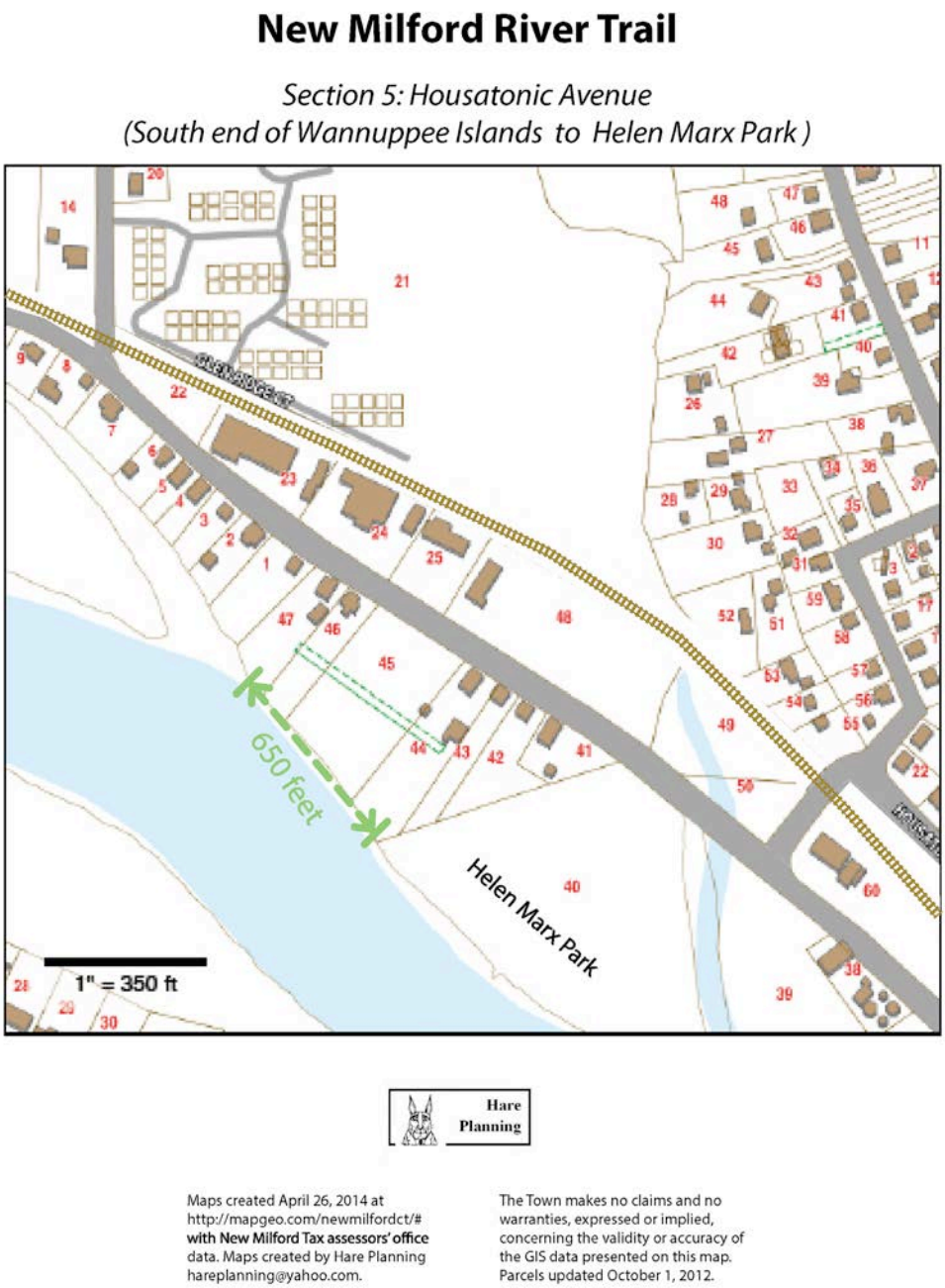
The cost per mile for an elevated boardwalk through this section would be $2 million/mile. For the length of the section, or 2750', the cost would be $1,040,000.

At right:
4-2 *Dry Channel in Wannuppee Islands when the Housatonic is low*

At left:
4-3 *Trees on Wannuppee Islands*

At right:
4-4 *An elevated boardwalk, Congaree National Park (Photo: Ken Lund, June 2011)*

5. Housatonic Avenue (South end of Wannuppee Islands to Helen Marx Park)



5-1 *South End of Wannuppee Islands to Helen Marx Park*

The Housatonic Avenue section is the most difficult section of the five. It is not difficult because of the geography of the riverbank, but because of the house lots that run from Housatonic Avenue to the riverbank. Illustration 5-1 shows the four key lots that have to be crossed to connect the southern end of the Wannuppee Islands directly to Helen Marx Park: those numbered 44–47. Given the likely concerns of the homeowners, various ways of minimizing the impact of the Trail on their lots and views were considered. They are shown in Illustration 5-6.

Of the various types of possible trails, one trail type, the floating trail, deserves added discussion. Floating trails are not common, but there are several examples as shown in Illustrations 5-7 to 5-8.

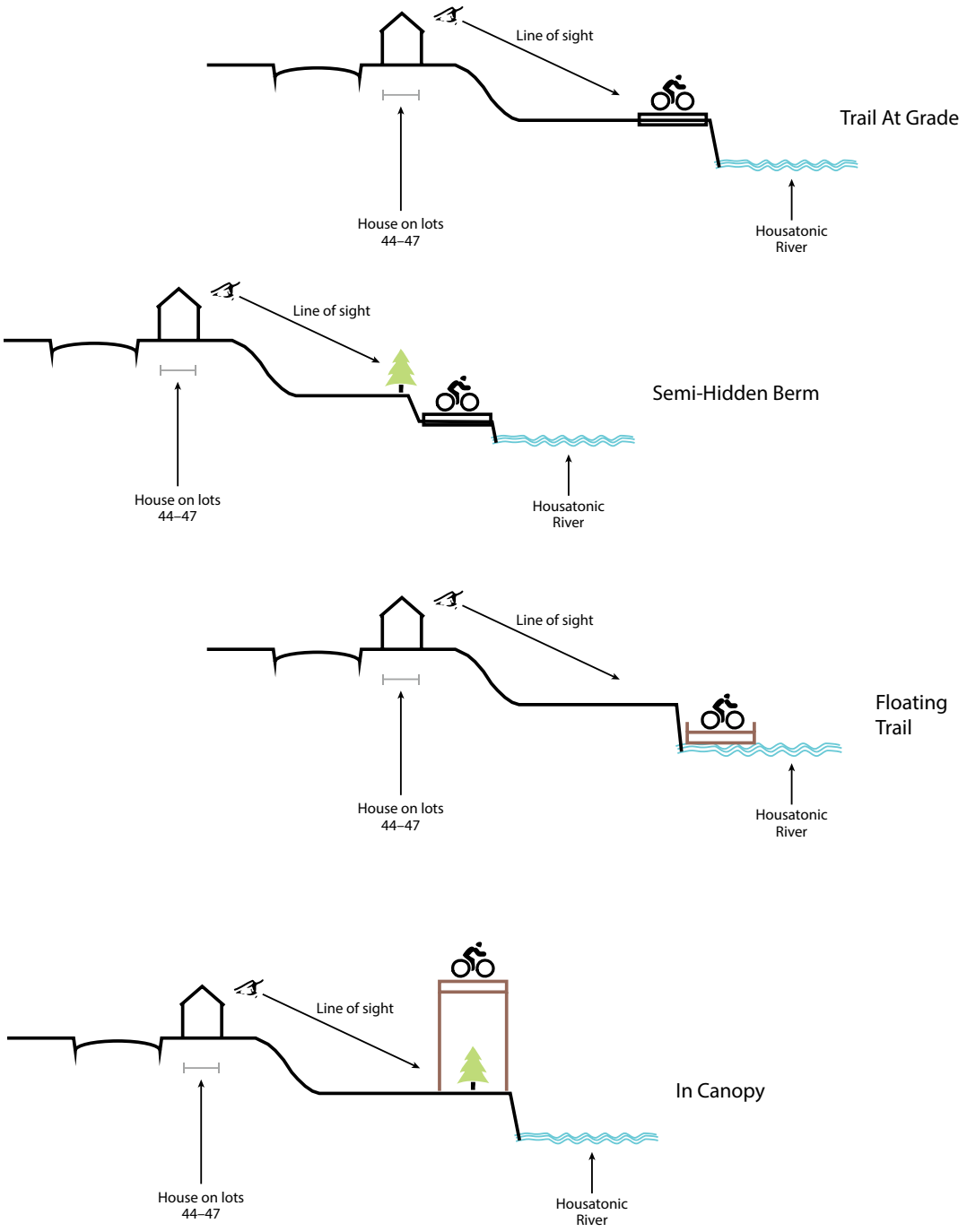
The floating trail would rise and fall with the River, which might be a problem because it would have to address large variations in water level. Construction would be expensive, but a floating trail in the River would bypass lots 44–47 and make it unnecessary to buy rights-of-way from the lot owners.

Yet another option is a "Riverbank Cable Ferry." It is shown in Illustration 5-9. The Riverbank Cable Ferry would also make it possible to bypass lots 44-47 .

All of these options, however, would still affect the views of the lot owners, at least when the River was high.

In considering how these options might affect

5-2 to 5-5 *Rear Views of Houses on Housatonic Avenue, taken from just above the riverbank. (The chair on the table is probably there to be sure it is not washed away by high water.)*



5-6 *Alternative Ways to Cross Lots 44-47*

homeowners, it is also important to remember that the Trail will increase the property value of lots 44–47 as well as the property values of all the owners along the west side of Housatonic Avenue from Helen Marx Park up to the Choke Point. The Trail will make it clear how excellent the location of the houses is, since they are both very close to the downtown and yet still have backyards that back up on the River.

Another possible route for the Trail to take in this section is to have the Trail go from the southern end of the Wannuppee Islands directly up to Housatonic Avenue on a right-of-way purchased from any of lots

1–7, and then continue along Housatonic Avenue to Helen Marx Park.

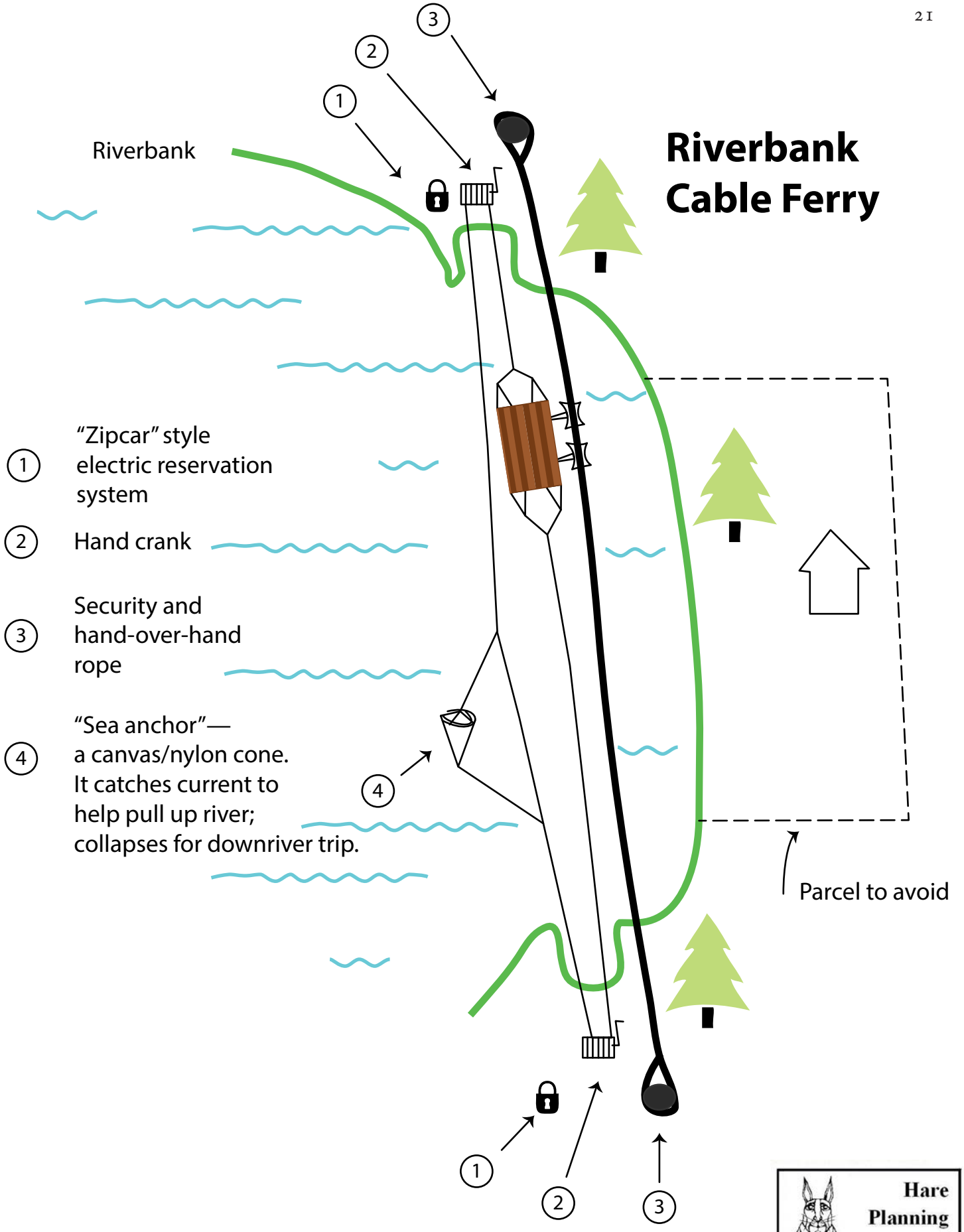
5-7 *Eastbank Esplanade, Portland,* OR

However, Housatonic Avenue presents its own problems, as shown in Illustration 5-11. Not only is Housatonic Avenue narrow, but so is the only sidewalk, on the west or River side of Housatonic Avenue. In addition, the houses along Housatonic Avenue have almost no setback. The narrow sidewalk is so close to the houses that someone could step out of their front door directly into the path of a cyclist. There are "sharrows" on Housatonic Avenue (shared-lane markings painted on the road), but it will not be as safe as an off-road trail.

On the other hand, having the Wannuppee Islands boardwalk or asphalt trail go straight to Housatonic Avenue has advantages. One is that it would mean only having to get a right-of-way from one homeowner while having up to seven to buy a right-of-way from, so the cost of the right-of-way should be lower. Owners of wider lots, such as 1 and 7, might be more willing to sell a right-of-way than owners of lots 2–6. This option is diagrammed in Illustration 5-10. Another advantage of going directly to Housatonic Avenue is that, assuming the Trail is elevated through the Wannuppee Islands, it could continue as an elevated trail to Housatonic Avenue. By avoiding the riverbank past lots 44-47, there would be far fewer concerns about either damage to the Trail, or risks to Trail users, during periods of high water.

5-8 EZ *Trail, by the* EZ *Dock Company*

In summary, the Housatonic Avenue section offers many choices, none of which jump out as being easier to build and/or preferable in terms of the kind of Trail created. It may be worthwhile



Hare Planning

Riverbank Cable Ferry design copyright

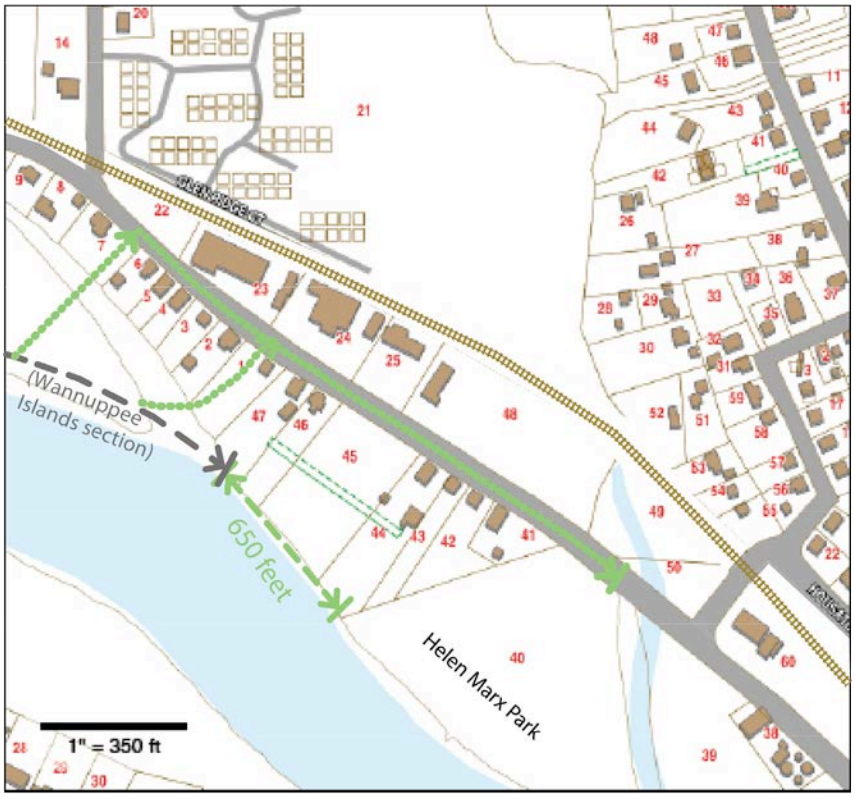
5-9 *Riverbank Cable Ferry*

to consider making one choice now in order to get the Trail open, while keeping open the option of changing the route later. For example, the Trail could go up to Housatonic Avenue now from the southern end of the Wannuppee Islands. Then, over time, rights of way across lots 44–47 could be purchased one by one as the properties come up for sale. Buyers straining to afford a house are often willing to accept a right-of-way if the cost of that right-of-way makes the house more affordable.

There are many options in this short 650' section. An asphalt trail across the back of the house lots would probably cost $37,000 in construction costs and probably at least $80,000 in right of way costs for a total of $117,000. A riverbank cable ferry would probably cost $30,000 in construction costs, and $50,000 in engineering and permitting costs. If the boardwalk from the Wannuppee Islands section went east to Housatonic Avenue at the end of the Islands, there would be no construction costs other than those already included in the Islands section. There would be right of way costs over one lot, estimated at $20,000.

New Milford River Trail

Section 5: Housatonic Avenue
Alternate Routes from Wannuppee Islands to Helen Marx Park

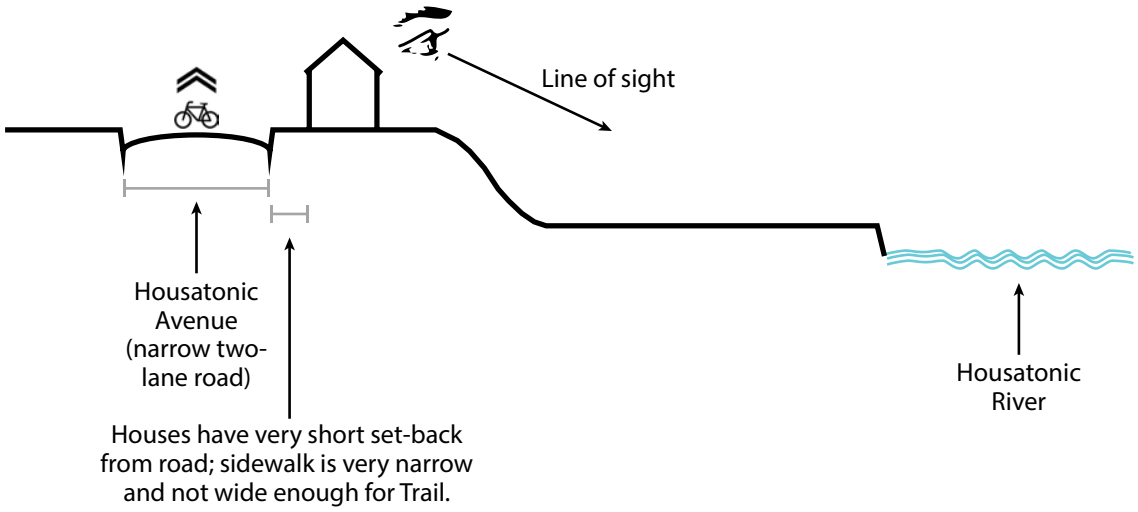


Hare Planning

Maps created April 26, 2014 at http://mapgeo.com/newmilfordct/# with New Milford Tax assessors' office data. Maps created by Hare Planning hareplanning@yahoo.com

The Town makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map. Parcels updated October 1, 2012

5-10 *Running Trail from the Wannuppee Islands to Housatonic Avenue*



5-11 *Housatonic Avenue, looking towards the river*

6. Cost Analysis

This section includes a table of estimated costs for the different options for each section, a second page of notes explaining how those costs were developed, and a third page that shows a set of choices among the options, and a total for those choices. All of the pages are in Excel. Using the third page, a reader could make a different set of choices and easily arrive at a estimated total cost for those options.

New Milford River Trail Cost Analysis

			Length in Feet	$1000/ Mile	$ Unit Cost	Cost Source	$ Cost Thousands
Section 1	**Boardman**						
		Asphalt	1725	250		Note 8	81.5
		Crushed Stone	1725	100		Note 8	32.6
Section 2	**Medinstill**						
		Asphalt	3900	250		Note 8	184.5
		Crushed Stone	3900	100		Note 8	73.8
		Existing Concrete Road	3900			Note 1	0
Section 3	**Choke Point**						
		Cantilever Supports	450	4,000		Note 6	340
Section 4	**Wannuppee Is**						
		Boardwalk	2750	1750		Note 8	910
		Elevated Boardwalk	2750	2000		Note 2	1040
		Asphalt with 2 bridges over channels	2750	300		Note 3	156
Section 5	**Housatonic Ave**						
		Boardw. from W. Is. Over Lots 1 or 7 to H. Ave.					
		Construction Cost	650		0	Note 5	0
		Right-of-Way Costs			$20,000	Note 4	20
		Asphalt with 1 bridge over channel					
		Construction Costs	650	300		Note 3	36.9
		Right-of-Way Costs			$80,000	Note 7	80
		Riverbank Cable Ferry					
		Construction Costs	650		$30,000		30
		Design and Permitting			$50,000		50

Total Length: 9475 feet; 1.8 miles

New Milford River Trail Cost Analysis

			$ Unit Cost	$ Cost Thousands
Section 1	**Boardman**			
		Asphalt		81.5
		Crushed Stone		32.6
Section 2	**Medinstill**			
		Asphalt		184.5
		Crushed Stone		73.8
		Existing Concrete Road		0
Section 3	**Choke Point**			
		Cantilever Supports		340
Section 4	**Wannuppee Is**			
		Boardwalk		910
		Elevated Boardwalk		1040
		Asphalt with 2 bridges over channels		156
Section 5	**Housatonic Ave**			
		Boardw. from W. Is. Over Lots 1 or 7 to H. Ave.		
		Construction Cost	0	0
		Right-of-Way Costs	$20,000	20
		Asphalt with 1 bridge over channel		
		Construction Costs		36.9
		Right-of-Way Costs	$80,000	80
		Riverbank Cable Ferry		
		Construction Costs	$30,000	30
		Design and Permitting	$50,000	50
	(Top)	**Total Recommended Costs:**		**1481.5**

(Bottom) 6-2 *New Milford River Trail Cost Analysis—Recommendation*

Notes

1. As shown on Illustration 2-2, there is an existing concrete road that could serve as the Trail on the Medinstill Section

2. The high end of the Rails To Trails cost estimate for boardwalks was used as the cost estimate for the elevated boardwalk.

3. The high end of the Rails To Trails cost estimate for asphalt was used as the cost estimate for asphalt with bridges.

4. Assumed cost for a right of way for the trail across any of lots 1-7.

5. Construction costs will be part of the southern end of the Wannuppee Islands Boardway which will turn east to Housatonic Ave.

6. Based on doubling the high end of the RTT cost of a boardwalk.

7. Assumes a ROW cost per lot of $20,000.

8. *Typical Construction Costs*

Source: Rails to Trails (RTT) at www.railstotrails.org/ourwork/trailbuilding/toolbox/informationsummaries/trail_surfaces.html

Asphalt: $200,000–$300,000

Concrete: $300,000–$500,000

Crushed/granular stone: $80,000–$120,000

Soil cement: $60,000–$100,000

Resin-based stabilized material: varies

Boardwalk: $1.5 million–$2 million

Appendix 1: Patrick H. Hare, Principal, Hare Planning

Mr. Hare is a professional town planner with extensive experience in bike trails and alternate transportation.

In 2006 he proposed the HouBike Trail from Ashley Falls, MA to the northern border of New Milford, CT. This project has been supported by the Upper Housatonic Valley National Heritage Area, the Northwestern Connecticut Conservation District and the Housatonic Valley Association (HVA). From 1990-96, he proposed and led the development of a 9-mile rail-trail along an active rail line in Washington, DC serving seven metro stations and 35 schools. It runs from Union Station in Washington, DC to Montgomery County, MD with a total construction cost that has passed $45 million.

Mr. Hare did a Master Plan for the communities of Kensington and Wheaton, MD, as a planner with the Maryland-National Capital Park and Planning Commission. The plan showed how to thread bike trails through a suburban are developed without them, and received an award from the local chapter of the American Planning Association. He managed preparation of a growth policy study testing different land use and transportation strategies for Montgomery County, MD. He led a group of 10 Washington, DC area environmental organizations to agree to endorse a major new shopping mall in return for the developer's agreement to a long list of transportation and environmental requirements.

In addition, Mr. Hare prepared a comprehensive HOV/bus system plan (High-Occupancy Vehicle (HOV) lanes are restricted traffic lanes reserved at peak travel times for exclusive use of vehicles with a driver and one or more passengers) for Montgomery County, MD and demonstrated that "instant carpooling" near online expressway ramps saved time and accounted for 50 percent or more of the 84,000 daily trips on HOV lanes. He authored a book, *Planning Transportation, and the Home Economics of Reduced Car Ownership*. It detailed how to plan for communities that maximize the savings from reduced second car ownership while minimizing the inconvenience.

Mr. Hare is a frequent contributor to professional planning publications. He has published op-ed articles in *The Washington Post*, *The Los Angeles Times*, and *The Hartford Courant*, among others. He presently resides in Cornwall, CT where he served his town on the Planning and Zoning Commission for nearly a decade as member, Vice-Chair, and Chair.

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