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Introduction

Background and Purpose ........................................... 1
The Naugatuck River Greenway and Trail ........................................... 2
The Study Area ........................................... 4
Previous Studies ........................................... 4

Methods

Data Collection and Field Investigation ........................................... 9
Identification of Potential Routes ........................................... 9
Analysis and Assessment ........................................... 11
Public and Stakeholder Engagement ........................................... 11
Cost Estimation ........................................... 13
Preferred Route Selection ........................................... 14

Route Discussion

Overview ........................................... 17
Section 1: Bogue Road to Thomaston Road Park & Ride ........................................... 18
Section 2: Park and Ride to Campville Hill Road ........................................... 22
Section 3: Campville Hill Road to Wildcat Hill Road ........................................... 28
Section 4: Wildcat Hill Road to Vista Picnic Area ........................................... 32
Section 5: Vista Picnic Area to Elm Street ........................................... 40
Section 6: East Main Street and Elm Street to Watertown Road ........................................... 46
Section 7: Watertown Road to New Trailhead on Old Waterbury Road ........................................... 52

Trail Development Considerations ........................................... 59
Funding Opportunities ........................................... 59
Permitting ........................................... 64
Design Considerations ........................................... 67
Branding, Signage and Wayfinding ........................................... 69
Safety and Maintenance ........................................... 71

Appendices

Appendix A: Detailed Trail Section Cost Estimates
Appendix B: Detailed Route Option Sheets
Appendix C: Safety and Suitability Matrix
Appendix D: Castle Bridge Visual Inspection Memorandum
Appendix E: Reports of Meetings
Appendix F: Public Survey and Comments
Appendix G: Trail Design Typical Sections
Appendix H: Public Comments to the DRAFT Report
Introduction

Background and Purpose

The Naugatuck River Greenway (NRG) Trail is a planned multi-use trail along the Naugatuck River, extending from the City of Torrington to the City of Derby, Connecticut. The NRG Trail, once completed, will pass through eleven communities and extend approximately 44 miles. The corridor has been officially designated as a greenway by the Connecticut Greenways Council and the Connecticut Department of Energy and Environmental Protection (DEEP).

While a preferred alignment of the NRG Trail has been identified along a majority of its corridor, especially through the Naugatuck Valley planning region, the routing of the trail between Torrington and Thomaston has been less defined. The lack of a defined route diminishes the opportunities for receiving grant funds for trail design and construction. The goal of the NRG Torrington to Thomaston routing feasibility study is to establish a preferred route, with consensus from stakeholders, for the NRG Trail beginning at Bogue Road in Torrington that will connect to the future trail being constructed on Old Waterbury Road in Thomaston.

The Naugatuck Valley Council of Governments (NVCOG) received a Responsible Growth and Transit Oriented Development (TOD) Grant from the Connecticut Office of Policy and Management (OPM) to conduct the study in partnership with the Northwest Hills Council of Governments (NHCOG), and the municipalities of Thomaston, Harwinton, Litchfield and Torrington. The study was a collaborative effort with representatives of each of the host communities, the US Army Corps of Engineers (USACE), the Naugatuck Railroad, and other interested groups. Work focused on four main tasks:

- Catalogue existing conditions and inventory all possible routes.
- Conduct outreach to stakeholders and the public.
- Analyze all possible routes relative to their opportunities and constraints to identify a preferred NRG Trail route.
- Develop conceptual designs, cost estimates and phasing recommendations.

Over the past several years, sections of the Naugatuck River Greenway (NRG) Trail have been completed in Derby, Ansonia, Seymour, Beacon Falls, Naugatuck, Watertown and Torrington, with more than 5 miles of trail currently open to the public. Several other sections are currently under design, including a 2.2 mile section in Waterbury and a short section in Thomaston that are scheduled to advance to construction in 2020. Several towns have applied for federal and state funds to design and construct new sections, and efforts will continue to progress on planning and designing connections. Planning efforts are moving forward with oversight by the Naugatuck River Greenway Steering Committee (NRGSC), which consists of representatives from each community and stakeholders along the future route of the NRG Trail.

It has become increasingly evident that to compete for federal, state, local and private funding to develop NRG Trail segments, municipalities need to have a clearly defined plan for trail development that not only identifies impacts, but includes construction and design cost estimates. It is important to have a plan that includes a preferred route that has been publicly vetted, that has support from the community it will serve and that presents a good estimate of the required construction costs and level of design effort needed to develop the route. As state and federal agencies increasingly look to develop pedestrian and bicycle facilities as a means for active transportation, recreation, and economic development, more funding is being made available to municipalities. This study was conducted to provide...
information necessary for municipalities along the Torrington to Thomaston NRG Trail route corridor to be able to compete for future construction funding to close gaps in the NRG Trail.

In 2015, the NRGSC asked the NVCOG to prepare a “Naugatuck River Greenway Project Priorities” strategy to lay out and identify priorities going forward in the development of the NRG Trail. The report identified the lack of a defined route between Torrington and Thomaston Dam as a critical impediment to future trail construction in the corridor and listed the determination of a clear and agreed to alignment as a priority, and recommended conducting a study to designate a trail alignment.

In 2016, with support from the four involved municipalities (Harwinton, Litchfield, Thomaston, and Torrington), along with the Northwest Hills Council of Governments (NHCOG), and the USACE, NVCOG applied for and received a Responsible Growth and Transit Oriented Development grant from the Connecticut Office of Policy and Management (OPM). BSC Group was retained by NVCOG in 2017 to complete the routing feasibility study of the NRG Trail as described herein to establish a preferred route that will connect the northern terminus at Bogue Road in Litchfield to the existing WPCA facility in Thomaston, traversing through the City of Torrington and Towns of Harwinton and Litchfield. Multiple options were investigated along the 10-mile corridor and evaluated using specific selection criteria, with the goal of establishing a preferred route that could be used by the four municipalities to secure funding for design and construction.

The Naugatuck River Greenway and Trail

The NRG is an officially designated Connecticut State Greenway consisting of open and green spaces along the Naugatuck River. The NRG Trail is a partially constructed multi-use path within the greenway corridor. When complete, the NRG Trail will follow the Naugatuck River through the greenway corridor for approximately 44 miles. The NRG Trail will be an accessible multi-use trail, meaning that it will ideally be at least 10 feet wide, consisting of either a hard surface (typically asphalt paved) or compacted stone dust. In either case, the goal is to physically separate the trail from motorized vehicles. The trail will, where possible, be Americans with Disabilities Act (ADA) compliant, ensuring that the trail will be accessible to not only pedestrians and bicyclists, but also to non-motorized users of all abilities.

While a road separated facility is ideal, the reality of the geography and physical constraints of the Naugatuck River valley may dictate compromises. Sections of the trail could potentially be developed as on-road bike lanes for cyclists combined with sidewalks for pedestrians. Shared use roadways where motor vehicles, cyclists and pedestrians share the road could also be implemented where low motor vehicle volumes and speeds permit and are conducive to safe shared use. A ‘trail with trail’ option may be implemented within an active rail corridor. Proper safety measures and adequate setback and separation will be installed in those areas.

When complete, the NRG multi-use trail will link 11 municipalities, help reclaim the Naugatuck River for recreation, provide an alternate mode of transportation, support tourism and economic development in the region, and improve the quality of life of host community residents. The NRG Trail, as envisioned, starts in Torrington and follows the river south through Litchfield, Harwinton, Thomaston, Water- town, Waterbury, Naugatuck, Beacon Falls, Seymour, and Ansonia, before ending in Derby at the Housa- tonic River. As of 2019, there are eight sections of the NRG Trail open to the public in six communities, totaling more than five miles, and representing just over 12% of the total length of the planned trail. Additional sections are in various phases of design and conceptual planning, with construction expected in the coming years.

Long dismissed as a polluted and dead river due to a legacy of industrial abuse, the Naugatuck River has made a remarkable comeback over the last several decades, and is increasingly a destination for anglers, paddlers and sightseers. Where once river communities would turn their backs to the river, they are now more than ever embracing their riverfront lands and using it as a key component of their economic redevelopment programs. The NRG Trail will provide access and reconnect communities to the river, with waterfront promenades, overlooks, boat launches, and fishing access points all figuring into future Greenway plans. The multi-use trail will provide a high quality and attractive corridor that

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**Naugatuck River Greenway Trail Section Status**

- **Open Trail Section**
- **Under Design/Construction**
- **Planned Trail Section**
will safely accommodate all non-motorized users, including walkers, joggers, people riding bicycles, rollerblading, walking a dog and pushing a stroller. Since the trail will be built in compliance with ADA standards, persons with a mobility impairment will also be able to enjoy the facility. Frequent users will also benefit greatly from improved health that remaining active can provide. Trails are as less intimidating places to achieve moderate rates of exercise that is recommended by the US Surgeon General to maintain a healthy lifestyle. The communities along the Naugatuck River are also recovering from the loss of their industrial base that once thrived along the river and were once the drivers of local economies. The NRG Trail is envisioned as a catalyst to help communities reclaim the river to not only serve as an economic driver but a way to improve the quality of life for those who live near and/or use the trail.

The NRG Trail will undoubtedly draw a wide range of users who will use the trail for a variety of reasons. Trail user counts performed by the NVCOG reveal there are approximately 300,000 trail uses annually, equating to an estimated 150,000 visitors per year at the Division Street trailhead in Derby alone. Those figures show that use along the longest completed NRG Trail section in Derby is higher than on any other multi use trail in the state among those where trail use is being tracked. Trail traffic on the NRG Trail will provide opportunities for local businesses along the route. At the same time, the NRG Trail will give local residents a multi-use trail to recreate on rather than traveling to trails elsewhere, and will improve the health and quality of life of those who use it. Since many of the communities along the trail route are in close proximity to each other, the trail will provide a safe and convenient non-motorized alternative for commuting in the valley for those who cannot or would rather not use a personal motor vehicle. Because of its length and disparity within the corridor, public transit may not be available or a viable option. These benefits have already become evident along open sections of NRG Trail, as it has become a popular destination and meeting place among residents and non-residents alike, and as a means for transportation. These economic and quality of life benefits will increase as more trail sections are built and become interconnected and continuous.

The Study Area

The study area consists of approximately 10 miles of Naugatuck River Valley between Bogue Road near the Torrington/ Litchfield/ Harwinton border to the north and the location of a trailhead being constructed on Old Waterbury Road in Thomaston. Detailed descriptions of the natural and manmade features throughout the study area are presented in the “Route Discussion” chapter.

Previous Studies

This study builds upon work and studies previously completed within the Naugatuck River Greenway. The Litchfield Hills Council of Elected Officials (an NHCOG predecessor) published the “Naugatuck River Greenway Assessment – Phase Two (Rte 118 to Thomaston Dam)” in 2006, which focused on recreational opportunities and environmental issues along the Naugatuck River between Torrington and Thomaston Dam. The 2006 report was written before the concept of a contiguous multi-use trail began to gain traction, so the report does not look at that
possibility. Key recommendations from the 2006 study include expanding the use of existing trails on USACE land and the possible establishment of a hiking path along the east side of the Naugatuck River. It also detailed some of the opportunities and obstacles in the corridor.

In 2010 the Council of Governments of the Central Naugatuck Valley (COGCNV, an NVCOG predecessor), published the “Regional Naugatuck River Greenway Routing Study: Town of Thomaston, CT” that developed options for the routing of the trail through Thomaston south of Thomaston Dam. The study was conducted by a consultant, Alta Planning and Design, and was part of a larger multi-town routing effort completed for Watertown, Waterbury, Naugatuck and Beacon Falls. Since the study was published, the Thomaston Greenway Committee has identified several additional routes that may be preferable. The town also received funding for the design and construction of a trail and trailhead adjacent to the town’s Water Pollution Control Authority on Old Waterbury Road that was not investigated during the 2010 study. These new developments have clouded the originally developed routing, and the lack of a clear route has led to confusion and will continue to obstruct efforts to fund development of a trail in Thomaston. This section was revisited as part of this study in order to clarify routing through town in light of these new considerations. It was also necessary to expand the routing to include sections in Thomaston north of the dam. The 2010 Routing Study was a valuable resource to this current effort as it established a base of routes to investigate south of the Thomaston Dam, served as a guide to refining these routes, and expedited data collection.

In November 2015, the NRG Steering Committee endorsed NRG Trail priorities as outlined in the NVCOG planning document “Naugatuck River Greenway Project Priorities.” The project priorities were in part identified by the readiness of the project to advance to design and construction. A key determinant of project readiness was the designation of a preferred alignment. The report described the northern section of the study corridor and recommended a routing study as follows:

Litchfield/ Harwinton/ Thomaston: Bogue Road to Thomaston Dam; about 7 miles – Traverses the mostly undeveloped section of river upstream of Thomaston Dam. USACE maintained trails currently exist on the west bank of the Naugatuck River south of Spruce Brook along an abandoned rail bed and portions of old Route 8 that are open to the public for off-road motorcycle use, hunting, hiking, and fishing access. To avoid conflict with hunters and motorcycles, and to avoid frequent trail closure due to dam operations, routing the trail on the east side of the river through USACE land, private property, and CTDOT ROW (along Route 222) may be preferable. A detailed study of routing options for this section is recommended.

In 2017, NVCOG published “Pathway to Revitalization: Economic Impacts of the Phased Completion of the Naugatuck River Greenway.” The study addressed the primary question: “How will communities and residents along the Naugatuck River benefit from their investment in building the proposed trail?” The study involved a literature review, collection of new quantitative and qualitative primary data through trail counts, a trail user intercept survey, three focus groups, and deployment of the Regional Economic Impact Model (REMI) to estimate total economic impacts of the proposed trail. Considerations included in the impact analysis were construction costs, operating expenditures, user amenity benefits, user expenditures, as well as potential impacts on population, employment, income, and fiscal impacts. Overall, findings showed a very high return on investment, with economic benefits far outweighing expenditures to construct the trail. Breakdowns of benefits by community were also provided, including for the municipalities that are the focus of this routing study. You can download the report and municipal summary sheets at https://nvcogct.gov/what-we-do/naugatuck-river-greenway/naugatuck-river-greenway-economic-impact-study/

These studies and reports were instrumental to understanding previously established trail segments and routes, viability of these routes, physical and financial challenges, and known public support and or opposition to these routes.
Data Collection and Field Investigation

The existing conditions within the corridor were assessed through a combination of a desktop study using available Geographic Information Systems (GIS) data and other documentation, and a comprehensive field investigation. GIS data was compiled from numerous sources, including NVCOG, NHCOG, the four involved municipalities, the USACE, and DEEP, among others. Data included property boundaries, elevation, wetlands and watercourses, aerial imagery, roads, and existing trails where it was available. Beginning in January 2018, BSC Group, assisted by NVCOG staff and stakeholders, performed several site walks, utilizing data collectors to identify and tag specific locations along the study corridor, record photos, and note observations that were uploaded directly into the GIS map with ArcMap software. This information allowed direct assessment of existing site conditions including topography, roadways (active and abandoned), motorized and non-motorized trails, bridge/drainage structures, buildings, environmental resource boundaries (wetlands, riverbanks, flood zones), right-of-way (public and private), and obstacles to trail development.

Field walks provided information required to develop several new potential trail routes and eliminate routes that were simply not feasible or realistic. Additional focused site walks with key stakeholders took place throughout the project, including with the USACE Project Manager at Thomaston Dam, and with the Naugatuck Railroad along the active rail corridor. The compiled and created GIS data was developed into an interactive webmap that project staff used for a desktop review of potential trail routes. The webmap was posted to the project website and open to the public.

Identification of Potential Routes

Utilizing previous studies, input from stakeholders, and comprehensive site visits, a working trail map was developed showing several dozens of possible trail routes along the entire corridor. All the identified segments were investigated in the field and evaluated using basic design criteria to determine if the segment had a “fatal flaw” that would make the segment unviable, or if the segment warranted further consideration. For on-road segments, design criteria included physical space to build a trail, available right-of-way, available paved roadway/shoulder width, roadway profile grade, traffic volume, and sight distance. For off-road segments, design criteria included property ownership, terrain, floodplain, proximity to an environmental resource (e.g., wetland) or physical obstacle (e.g., state highway, building, bridge structure, terrain, etc). Working together, project staff and stakeholders worked to eliminate routes that were deemed infeasible, and add new or alter existing options, guided by the overall understanding of the landscape informed by

Methods
the totality of the information collected about the corridor. The identified potential trail routes were added to the project webmap, allowing users to turn on and off any of the spatial data layers used for the assessment, and view them in conjunction with trail routes.

Analysis and Assessment

BSC Group segmented viable potential routes by natural breaks (intersections, logical termini, crossings, etc.) and general prospective trail type:

- Bike Lane/Shared Travel Lane
- Off Road Trail
- Rail With Trail
- Renovate Existing Surface
- Roadside Bidirectional Trail
- Crossing Structure

The result was 82 individual trail segments throughout the corridor that were deemed to be viable for potential trail routing.

BSC Group developed a trail safety and suitability matrix to assess each of the trail segments based on several variables. The purpose of the matrix was to facilitate direct comparison of trail segments with varying attributes. Each segment was scored based on several variables selected to assess the safety, accessibility, connectivity, and environmental impact of each segment, and scores for each variable were totaled to provide a “Safety and Suitability” score for each segment on a 100 point scale. Refer to Appendix E to review the safety and suitability matrix and segment scoring.

Since the trail segments were typically too short to assess the larger trail routing question, BSC Group combined the trail segments into trail “route options” that covered larger sections of the study corridor. The study area was separated into ten study sections, and route options were developed by following contiguous segments within a study section. In total, 45 route options were identified across the ten study sections, with between two and twelve potential route options identified in each section. Safety and suitability scores were calculated using the weighted average of scores from the segments within that route option. Additionally, potential rights of way impacts were assessed for each route option relative to the other options in a given study section. For example, a route option that required easements or takings from private property owners would have a high ROW impact as compared to a route option that is entirely on public property. Relative design and construction costs were also developed for each route option in a similar manner, with high, moderate, and low cost options identified as compared to other options in each section.

Public and Stakeholder Engagement

The study was overseen by a project steering committee consisting of representatives from the City of Torrington and Towns of Litchfield, Harwinton and Thomaston, along with representatives from the NVCOG and NHCOG, the NRGSC, the USACE, and the Naugatuck Railroad (NRR). The study advisory committee met several times throughout the project as a group, and also with the Project Team separately. The Project Team conducted meetings and site walks with both the NRR and the USACE to discuss pertinent issues along the rail and on Corps-managed land, and also reached out to large property owners along the route. Meetings were held with representatives from O&G and Stewart EFI to discuss potential routing options. Project updates were provided at regular meetings of the NRGSC.

A public-facing interactive storymap was developed to present the 45 route options to the public. The storymap graphically described each project section and the route options developed within each section. Each route option was described and...
highlighted on the map, and the safety and suitability score, relative route option cost, and relative ROW impact are presented. The storymap was designed to provide the public more information than could be displayed on a static map, as it allows users to zoom, pan, and explore route options in detail.

On February 28th, March 6th, and March 7th, 2019, public information and feedback sessions were held in Thomaston, Harwinton, and Litchfield, respectively. The meetings were opened by the Chief Elected Official in each town, followed by a general description of the NRG Trail and the project by BSC and NVCOG staff. The storymap was used to walk attendees through each route option, and there was time allotted for questions and comments for each section. The three meetings were very well attended, with 196 attendees in Thomaston, 51 in Harwinton, and 23 in Litchfield, according to sign-in sheets. The majority of the attendees were off-road motorcycle enthusiasts and users of the designated OHV area at Thomaston Dam. Their concerns, as voiced by the President of the New England Trail Rider Association focused on, the potential impact to the existing OHV trail network and loss of access to the riding area. Much of the discussion and feedback at the meetings was centered on the objection to any routing that would impact the OHV area, with most speakers opposing any trail routing through the OHV area. Concerns were also raised about impact to private property, trail user experience, safety, security, and cost. Trail support was also expressed by attendees. Public information meetings and public comment overviews can be found in Appendix E.

Following the public information meetings, a link to a digital comment form was posted to the project website. The SurveyMonkey online survey tool was utilized to collect targeted answers to several questions. Again, most of the comments were from users of the OHV area expressing opposition to any impact to the OHV trail area and a multi-use trail within the OHV area. Survey questions and responses can be reviewed in Appendix F. The Project Team also received 178 unsolicited e-mail comments from OHV enthusiasts expressing opposition to impacts to OHV trail riding at Thomaston Dam.

The vocal public opposition to routing on the west side of the river on USACE land in general, and impact to OHV area at Thomaston Dam specifically, led to additional stakeholder engagement with the USACE and OHV trail rider representatives. In April, 2019, the Project Team conducted a field walk of the OHV trail area at Thomaston Dam with representatives from the USACE, the New England Trail Riders Association (NETRA), and the Connecticut Off Road Enthusiasts Coalition (COREC). The field walk helped the Project Team better understand how the OHV trails are laid out, how the system is used by riders, how the OHV trails intersect with the old Route 8 road bed, and how the property is managed by the USACE. As confirmed by the Thomaston Dam Project Manager, the Thomaston Dam property is currently operated as a multi-use facility, and it is open to all types of users, including walkers and bicyclists. These subsequent field discussions also allowed the group to discuss ways that motorized and non-motorized trail users could potentially be separated without negatively impacting OHV user experience, and how safety could be enhanced overall. The feedback and additional stakeholder engagement helped project staff refine segment routing and assumptions about trail feasibility.

Meeting reports can be found in Appendix E.

Cost Estimation

With assumptions refined by public and stakeholder comments, BSC engineers developed detailed cost estimates for each of the trail segments, and those segment costs were compiled to develop cost estimates for the 45 trail route options. Costs were developed by making assumptions about how the trail would need to be developed in the context of the surrounding landscape. Required site work and material quantities were estimated based on the existing conditions maps developed as part of this study, site walks, observations, and experience with design and construction of on-road and off-road bicycle facilities and multi-use trails. The latest CTDOT weighted average bid prices were used. Major items of work included Clearing & Grubbing, Unclassified Excavation, Ordinary Borrow, Gravel Borrow, Fine Grading & Compacting, Hot Mix Asphalt, Granite Curbs, Guardrail, Chain Link Fence, Pressure Treated Timber Rail Fence, Precast Modular Block Wall, Riprap, Composite Boardwalk (i.e. Pressure Treated Rails), Cement Concrete Sidewalk, Cement Concrete Wall & curb, Rectangular Rapid Flashing Beacons (RRFB), HAWK Signal, Signs, Pavement Markings (i.e. Sharrow, Edge, Centerline, Stop), Prefabricated Steel Pedestrian Bridge where anticipated and Police Details. Lump sum percentages were used for Minor Items, Incidents and Contingencies.

Bridge costs were developed using a unit cost of $3,000 per linear foot, multiplied by the estimated span between abutments, and rounded to the nearest $5,000. The cost includes new reinforced concrete abutment supports and fabrication/delivery/installation of a 12-foot wide, 225-foot maximum span, steel thru-truss bridge with a 6-inch concrete deck, horizontal safety rails at 4-inch maximum spacing to a height of 4 feet, IPE (rub rail), steel toe plate with a uniform live load of 90 psf, and a vehicle live load of 10,000 lbs. The exception is the former Castle Bridge crossing, that assumes the new pedestrian bridge structure will utilize the existing piers and abutments, but with the unit cost remaining the same due to the fact that the span of the bridge will be longer than 225 linear feet. Preferred route section Construction costs are presented in Appendix A.

Survey, environmental permitting, roadway design, and structural design costs were estimated at 2%, 1%, 9%, and 20% respectively of the construction cost.

Methods

Bridge Costs

The Route Option Interactive Storymap was made available to the public to help convey context and detailed information about all potential route options.
and with input from both the USACE and a NETRA representative, initial separation concepts were considered and altered to better suit OHV rider preferences and USACE management needs should routing be necessary along Old Route 8. The NETRA representative and USACE staff were helpful in developing a concept for safe separation between OHV and non-motorized paths along Old Route 8 as part of the NRG Trail. The concept would create new, dedicated trails for OHV riders, parallel to, but separated from, Old Route 8. The new OHV trails would be better suited to and provide a better OHV riding experience than the current path on the paved Old Route 8, and maintain access to OHV trails located on both sides of Old Route 8. The trail separation concept was agreed upon as feasible at the meeting by consensus, and the route option sheets were revised to reflect the changes. The resulting route and separation concepts can be reviewed in detail in the route narratives in the following chapter.

The Steering Committee met on September 24, 2019, to review and discuss the recommended route sections. The route sheet summaries for all potential route options, as well as recommendations, were presented by the Project Team. The recommendations were developed after reviewing all associated data, stakeholder input, and public comment collected during the study. The preferred route was selected by consensus by the project Steering Committee after thorough discussion and some minor alterations to routes or concepts.

Existing conditions within the corridor, options studied and details about the preferred route are presented in the following chapter.

Preferred Route Selection

The Project Team prepared route option summary sheets for each of the 45 potential route options that detailed the benefits, challenges, rights of way impacts, environmental impacts, and costs of each route. The summary sheets also presented a map of each route, photos of existing conditions, and renderings and diagrams of trail development concepts. These sheets were designed to give as much detail as possible in an easily digested format, so that options could be easily compared and contrasted.

Since the USACE owns and manages a substantial portion of the study area and possible routing of the trail through the Thomaston Dam area was contentious, as evidenced in public comments, a separate meeting was held with the USACE and a representative from NETRA to discuss potential routing options through USACE property. This allowed for an in-depth, focused discussion about possible impacts to current users of USACE land, the opportunities and challenges of possible trail alignments, and potential actions to resolve critical issues. The intent was to vet the preferred alignments with the stakeholders most likely to be affected by the recommendations and allow the subsequent full Steering Committee meeting to focus on the preferred alignments for trail sections north and south of the Thomaston Dam area. The Project Team presented the route option summary sheets involving USACE land and led a discussion about the viability of each route. The recommended route would avoid the majority of the OHV area entirely.

While NETRA maintains their stance that the proposed multi-use trail should be located on the east side of the river and no changes be made within the OHV use area on the west side, through discussion, and with input from both the USACE and a NETRA representative, initial separation concepts were considered and altered to better suit OHV rider preferences and USACE management needs should routing be necessary along Old Route 8. The NETRA representative and USACE staff were helpful in developing a concept for safe separation between OHV and non-motorized paths along Old Route 8 as part of the NRG Trail. The concept would create new, dedicated trails for OHV riders, parallel to, but separated from, Old Route 8. The new OHV trails would be better suited to and provide a better OHV riding experience than the current path on the paved Old Route 8, and maintain access to OHV trails located on both sides of Old Route 8. The trail separation concept was agreed upon as feasible at the meeting by consensus, and the route option sheets were revised to reflect the changes. The resulting route and separation concepts can be reviewed in detail in the route narratives in the following chapter.

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Existing conditions within the corridor, options studied and details about the preferred route are presented in the following chapter.
Overview

The existing conditions of the corridor and the preferred route for future development of the NRG Trail are presented in this chapter. The preferred route was determined by a consensus of the Project Steering Committee based on the best available information, and is being presented for planning purposes. Future trail development will be undertaken locally by the municipalities through which the trail will pass, and by the USACE on federal land. The information presented in this chapter is meant to inform future decisionmaking and provide a basis for funding requests for the design and construction of NRG Trail sections. The preferred route presented herein is a high level concept, and is subject to change as local conditions and community desires evolve.

For the purpose of presenting the preferred route option in a more cohesive manner, the 10 route option sections used to determine the preferred route were collapsed into seven route sections described in this chapter (see map on facing page). The seven route sections were determined based on logical beginning and end points, and further separated into phases based on constructability as stand alone sections.

For each route section, a detailed description of the existing conditions are provided in the following subchapters. Routes that were considered are described, focusing on obstacles and opportunities for trail development. The preferred route is presented and illustrated in maps and figures. Details about the preferred route are presented, including: opportunities and challenges, construction and design cost, property impacts, potential trail access points, and potential phasing. A discussion of other viable alternatives to the preferred route is also included to provide guidance should local route preferences change in the future.

Maps are presented for each section showing all routes that were studied, and highlighting the agreed upon preferred route for the future development of the NRG Trail. Points of interest are also presented to help orient readers. Additional map details including assessor parcels, state and federal property, topography, wetlands, and more can be viewed and explored on the interactive project webmap at https://arcg.is/1nG5zK.
Section 1: Bogue Road to Thomaston Road Park & Ride

Existing Conditions

The northernmost trail section in this study stretches along approximately one mile of the Naugatuck River from Bogue Road in the north to the park and ride lot on Thomaston Road just north of Route 118. The trail in this section will pick up where the Torrington NRG is currently planned to terminate at Bogue Road between the driveway to the Torrington WPCA and the Naugatuck River. The east bank of the Naugatuck River is in Harwinton, and is dominated by the O&G Harwinton Gravel Yard, with the company owning property between the River and Route 8, from Bogue Road to Route 118. The gravel yard is a large industrial operation where gravel and other earth materials are processed and cleaned. A containment berm separates the operation from the River, preventing silt-laden runoff from entering the river and instead directing it to a series of settling ponds in the southern part of the property. The west bank of the River is mostly in Litchfield, with a small piece just south of Bogue Road in Torrington. South of Bogue Road, the River makes a wide bend to the west, and Thomaston Road parallels the river closely for a stretch, before making way for businesses between the road and River. Thomaston Road is a state-maintained route (SR 800) and classified as a minor arterial, with an ADT of 4400 just south of Bogue Road and 4300 just north of Route 118. The businesses along Thomaston Road consist of a mix of commercial and industrial enterprises. Paralleling Thomaston Road to the west is an active rail line owned by CTDOT, and leased by the Naugatuck Railroad. It is used for both freight and for sightseeing excursions run by the Railroad Museum of New England.

Studied Options

Three main route options were considered in this corridor section, with a fourth, along the active rail line, dismissed early on due to physical constraints between the rail and several structures. A routing option with a separated bidirectional trail along the west side of Thomaston Road would provide access to businesses and offer an opportunity for economic development, but the route would require crossing Thomaston Road and several commercial driveways. Thomaston Road carries a high volume of large trucks, resulting in a dusty and loud corridor for a trail. A second proposed route option would follow the north side of Bogue Road east to Route 8, crossing Bogue Road, and following state right of way south along the highway. This option would remain within the public right of way, but would contend with some steep slopes and terrain. A third option would follow more closely to the River through O&G property. See Route Options 1-3 in Appendix B for additional details.

Preferred Route

The preferred route for this corridor section will cross Bogue Road between the River and the O&G driveway. At this location, a new crosswalk, including pedestrian-activated Rectangular Rapid Flashing Beacons (RRFBs), is recommended to create a safe pedestrian crossing. RRFBs are crosswalk signs with yellow flashing LED lights, activated by pedestrians, to warn drivers that there are people actively using the crossing. Upon crossing Bogue Road, the trail will travel south, along the west side of the O&G driveway, then follow on top of the containment berm around the gravel facility and towards the containment pond area. The trail will skirt the containment ponds then follow the toe of slope of Route 8 to a location opposite the River from the park and ride lot, where it would cross the River on a new pedestrian bridge (referred to as “X-0”). It was determined that this option would provide the best constraints along Thomaston Road include a steep dropoff between the road and River, and businesses and parking close to the road.
user experience, since it is level, separated from traffic, and close to the river. By occupying space along the top of the containment berm, the trail would minimally impact the gravel operation. For safety of trail users and security of the O&G property, the trail would be separated and visually shielded from the gravel operation with a tall security fence. This route is almost entirely within Harwinton, although the pedestrian span would land in Litchfield at the commuter lot. Most of the route would traverse through private property owned by O&G and would rely heavily on cooperation with the company. O&G is one of the area’s largest construction and construction materials companies, and this may present an opportunity for a partnership between the Town and property owner. See Route Option 3 in Appendix B for additional details.

Opportunities

- Re-use of the underutilized park and ride lot as a trailhead and parking area.
- Economic development opportunities around the park and ride lot along Thomaston Road.
- Partnership with O&G

Challenges

- Safe crossing of Bogue Road
- Private property - coordination with O&G

Overall Estimated Section Cost

- Design: $417,000
- Construction: $3,055,000
- Total: $3,472,000

Viable Alternatives

If the trail cannot be developed along the east bank of the river on the preferred route, both the route along the west side of Thomaston Road and the route along Route 8 are viable alternatives, although each have associated challenges. See Route Options 1 and 2 in Appendix B for details.

Potential Section Phasing

Due to a lack of logical termini between Bogue Road and the park and ride lot on Thomaston Road, development in this section will likely not be phased.
Section 2: Park and Ride to Campville Hill Road

Existing Conditions

This approximately 2.4 mile section of Naugatuck River valley is one of the most scenic and remote of the corridor, despite the close proximity of Route 8. It presents some challenges for trail development due to the limited space between the River and active rail line to the west, and between the River and Route 8 to the east. The section begins just south of the park and ride lot, where the first obstacle presents itself in Route 118, which crosses from west to east over the active rail line and River, proceeding to the Route 8 interchange. There is space under the Route 118 overpass to accommodate a trail, but it would require engineering and a bridge structure or retaining walls. Just south of Route 118, on the west bank of the River is the historical location of the East Litchfield Train Station. The active rail line still passes through, but the structure of the station has been removed. The rail line and station property is owned by the CTDOT and is leased to the NRR, which runs freight and scenic train tours between Waterbury and Torrington.

In the area of East Litchfield Station, there is a wide shelf between the rail and the River, but travelling south, that shelf narrows until the slope to the rail meets the river directly, around 3/10 mile south of the station. The rail remains tight against the River, with steep slopes and rock cuts along rail for about ½ mile to the south. At that point the active rail line gradually moves away from the River, and an abandoned section of rail follows more closely to the River. This abandoned rail bed, on federal land owned by the USACE, was created when the active rail was relocated uphill and out of the impoundment area of Thomaston Dam. This northern section of the abandoned rail is overgrown, but currently carries a foot trail. It would require minimal work to be repurposed as a multiuse trail. It follows the River south to Spruce Brook, where abutments and wooden piers are all that remain of the bridge that once carried the tracks over the Brook.

The abandoned rail line continues south of Spruce Brook as a gravel road, used as part of the recreation area at Thomaston Dam. Most notably, Spruce Brook is the northern extent of the Off Highway Vehicle (OHV) area. Two-wheeled motorized vehicles are permitted between Spruce Brook and Thomaston Dam on the west bank of the River. The abandoned rail line serves as the main artery of the OHV trail network in this northern part of the USACE property. The OHV area is narrow north of Campville, where it is squeezed between the active rail line and River. The abandoned rail line serves as the main and, in one area, only north-south route for OHVs. It is also used by USACE staff for maintenance and emergency access. As the abandoned rail line moves south, approaching Campville Hill Road, it passes under Route 8.

The east bank of the River, immediately south of Route 118, is very steep and narrow, sloping immediately towards the River from the Route 8 southbound entrance ramp. Beginning approximately 3/10 of a mile south of Route 118, the Naugatuck River turns slightly to the west, away from the highway, leaving more room for trail development. In this area, the abandoned rail line continues south of Campville Hill Road, providing a connection to the OHV area and Thomaston Dam. The trail then continues south towards Torrington, providing access to the recreation area and offering opportunities for scenic and recreational activities along the Naugatuck River.
area, a ¼ mile overgrown section of abandoned old Route 8 roadbed is evident, and could easily carry a trail. As the River turns back toward the highway, space between the River and highway narrows again, until the Route 8 slope meets the river about ¼ mile south of the southern end of the abandoned roadbed. It continues as such for another ¼ mile, before opening up once again, approximately east of the confluence of Spruce Brook and the Naugatuck River. South of that, the River and highway diverge again, making way for a broad shelf. There is evidence that this was once a gravel and fill borrow area, probably during the construction of Route 8. South of the borrow area, Route 8 crosses on two bridges approximately 70 feet over the River. South of the overpass, a paved section of abandoned Route 8 can be found running north-south on USACE land, terminating at a gate at the intersection of Campville Hill and Valley Roads.

Preferred Route

The preferred alternative will begin at the park and ride lot and the area of the East Litchfield station, options to get under Route 118 on either bank under the overpass were looked at, along with an option to cross Thomaston Road and follow the active rail under Route 118. From East Litchfield Station south, options on the east and west bank of the River were studied where feasible. The close proximity of the active rail to the river in one section of corridor would make trail development impossible so it was eliminated from consideration early on. To the south, reuse of the abandoned rail bed on the west bank was studied, as well as the development of the sections of Old Route 8 still evident between Route 8 and the river, and the paved section on federal land north of Valley Road. See Route Options 4-12 in Appendix B for additional details.

Between the park and ride lot and the area of the East Litchfield station, options to get under Route 118 on either bank under the overpass were looked line and River, where space allows. This section of trail will be physically separated from the rail with a fence for safety and security. Approximately ¾ mile south of the Route 118 bridge, the rail and River converge, and at that point a new pedestrian bridge, referred to as “X-1”, will carry the trail to the east bank. The trail will then follow between Route 8 and the River, and take advantage of the section of old Route 8 that is still evident in the wooded area. Approximately ½ mile south of X-1, the trail will cross again to the west bank on a new pedestrian bridge, referred to as “X-2”, to meet the northern extent of the abandoned rail bed on USACE land. The trail will follow the abandoned railbed south to Spruce Brook, avoiding the very steep and narrow east bank in this area.

South of Spruce Brook, the outwardly apparent easiest route would be to continue to follow the abandoned rail bed on public land along the west bank of the river. Following the railbed south would have been the least expensive and easiest route, but the property is being actively used by OHV riders, among other recreationalists. There was public opposition to this route among OHV users during the public information meetings and in comments, and the project team met with the USACE and OHV representatives to better understand the current use of the property. After discussing the potential for conflict, and with the USACE firmly stating that they would not support any disruption of the OHV area, a compromise was presented and selected as the preferred route. This route will cross the Naugatuck River to its east bank, north of Spruce Brook, to entirely avoid the northern section of the OHV area. The trail will travel between the River and Route 8 through the gravel borrow area, and pass under the Route 8 bridge over the River. This will require engineering and either retaining walls or a structure to navigate the very steep slope of the approach embankment without impacting the abutments or piers. After passing under the bridge, the trail will slope down to join the paved section of Old Route 8 on USACE property, following it south to the entrance gate at the intersection of Campville Hill Road and Valley Road.

Studied Options

Between the park and ride lot and the area of the East Litchfield station, options to get under Route 118 on either bank under the overpass were looked at, along with an option to cross Thomaston Road and follow the active rail under Route 118. From East Litchfield Station south, options on the east and west bank of the River were studied where feasible. The close proximity of the active rail to the river in one section of corridor would make trail development impossible so it was eliminated from consideration early on. To the south, reuse of the abandoned rail bed on the west bank was studied, as well as the development of the sections of Old Route 8 still evident between Route 8 and the river, and the paved section on federal land north of Valley Road. See Route Options 4-12 in Appendix B for additional details.

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Opportunities

- Reuse of the underutilized park and ride lot as a trailhead parking area.
- Potential for the Naugatuck Railroad to establish a stop at East Litchfield Station opens up the possibility for train and trail trips and partnerships.
- Reuse of abandoned sections of Old Route 8 and the abandoned rail bed.

Challenges

- High cost of three new pedestrian crossings over the river.
- Construction access to area between Route 8 and river may be difficult.
- Trail user safety on long remote section of trail will need to be addressed.
- Routing under the Route 8 bridges over the Naugatuck River will require engineered solutions due to steep slopes between the river and piers/abutment.

Overall Estimated Section Cost

- Design: $1,397,720
- Construction: $9,050,000
- Total: $10,284,800

Access

The park and ride lot on Thomaston Road is underutilized and would be a great location for a trailhead and trail parking. Some parking is available on Valley Road near Campville Hill Road, and federal land along Old Route 8, north of Campville Hill Road, could offer an opportunity to expand or formalize parking options. Partnering with the Naugatuck Railroad to develop platforms along the rail could provide access to the trail via sightseeing train.

II. East Litchfield Station to Campville Hill Road including three river crossings.

- Design: $5,358,120
- Construction: $7,815,000

Properties Potentially Impacted

- 16 Thomaston Road, Litchfield
- State of Connecticut property at Park and Ride lot on South Main Street (CT DOT)
- State of Connecticut property associated with the active rail line (CT DOT)
- State of Connecticut property associated with Route 8 (CT DOT)
- State of Connecticut properties between Route 8 and the River (CT DEEP, Mattatuck State Forest)
- Town of Harwinton property between Route 8 and the River.
- USACE property associated with Thomaston Dam

Potential Section Phasing

The high cost of developing this section of trail may require phased construction. One phasing scenario is presented below. Many funding sources require logical termini, and the nature of this trail section offers few logical breaks. East Litchfield Station may be a logical destination to access RMNE passenger train service. Additional phasing would be dependant on future design and funding.

I. Thomaston Road Park & Ride to East Litchfield Station

- Design: $234,600
- Construction: $1,235,000

Recommendations

- Work with Naugatuck Railroad and the Railroad Museum of New England to develop a stop on the trail. For instance, cyclists could be shuttled up to East Litchfield on the train and be dropped off for a return trip on the trail. A gated platform on the east side of the trail in the vicinity of East Litchfield Station could allow excellent access to the trail from the RR while maintaining safety and security.
- Work with CT DOT to develop portions of trail within state right of way along the active rail, Route 118 and Route 8.
- Utilize The Naugatuck Railroad for transport of construction materials and equipment by train to some of the more remote sections between the trail and river.
- Establish emergency access and/or call boxes along the largely isolated route.

Viable Alternatives

The trail could remain on the east side of the river, but steep grades and tight geometries would require costly retaining walls or other engineered solutions. See Route Options 4-12 in Appendix B for additional details.

Typical cross section of a trail constructed in the vicinity of the active rail line, known as a “rail with trail”. The trail would be separated horizontally and potentially vertically from the rail. Fencing would provide additional safety and security, and help avoid accidental or intentional trespassing onto the active rail. Any trail development along the rail would be done in close coordination with the Railroad and CT DOT.
Section 3: Campville Hill Road to Wildcat Hill Road

Existing Conditions

In this 1.8 mile section of Naugatuck River valley, the west bank of the River is completely owned by the USACE, and is open to OHV use, fishing, hunting, hiking, and other public recreation. The abandoned rail bed crosses under Northfield Road Bridge, and follows the River all the way south, past the historic location of the Old Route 8 Castle Bridge over the River. The railbed in this area is mainly gravel, and approximately 12-to-15 feet wide. It is the main north-south trail in the OHV trail system, and is also used for emergency access and by USACE staff for regular maintenance and patrols. Off-road OHV trails extend from the rail bed to explore wooded areas on both sides. The active railroad bounds the OHV area to the west, and is positioned up a steep slope above the maximum water level of the dam impoundment.

The east bank of the River is in Harwinton, and a local road, Valley Road, parallels the river. Valley Road was formerly designated as CT Route 8, before the expressway was built following Thomaston Dam’s construction. Valley Road is a low volume road, as evidenced by traffic counts that were conducted for this study. An average of between 80 and 90 vehicles per day (vpd) were recorded just north of Wildcat Hill Road and just south of Campville Road, respectively. Traffic counts were a bit higher between Campville Road and Campville Hill Road with an Average Daily Traffic count of 300 vpd, where Harwinton residents are likely passing through to access Route 8. The entire area is within the impoundment area for Thomaston Dam, and is subject to flooding during Dam operations. While Campville was once a village center, most of the buildings were removed prior to completion of the Dam, resulting in a sparsely populated area with only a few residences and one commercial structure along Valley Road. Between the road and the River, there is a mix of private, federal, and town-owned land, the public portions of which are currently providing access to the River for residents and visitors.

Studied Options

The two main options that were studied in this section were on the west side of the River following the abandoned railbed, and on the east side following abandoned Route 8 and Valley Road. See Route Options 7-12 in Appendix B for additional details.

Preferred Route

As in the section to the north, there is a seemingly ideal route on the west side of the River in the abandoned railroad bed, which is already serving as a multi-use trail, and would require minimal improvement. Existing OHV use and USACE opposition to any negative impact on that use required the project team to investigate alternatives. Valley Road is already used for River access and walking/biking, and it presented a very low cost viable alternative to the abandoned rail bed on the west bank of the River. As a compromise, it was decided to completely avoid the northern section of the OHV area by following Valley Road as a shared use facility.

Abandoned rail bed in the OHV area north of Castle Bridge.

Intersection of Valley Road and Northfield Road.
The preferred route in this section follows Valley Road as a shared use facility. The very low traffic volume makes the roadway an ideal candidate for using the existing surface of the paved road for shared motorized and non-motorized traffic with minor improvements. Proper signage indicating that motorists are likely to encounter cyclists and pedestrians, reduced and well-marked speed limits, and roadway markings are among the potential low cost improvements to improve user safety.

On the short section of Valley Road with higher traffic volumes between Campville Hill Road and the Campville Road Bridge, separation between motorized and non-motorized users might be preferred, although volumes are still relatively low. Separation techniques could be as minor as roadway marking, or use more intermediate methods like flexible delineators or removable barriers. The short, roughly 800 foot section of trail could also be constructed completely separated from the road, but at an additional cost. In any case, crosswalks, warning signs, and other safety measures should be implemented at crossings.

Opportunities

- Developing the NRG Trail as a shared use roadway would take advantage of the low volume and low speed nature of Valley Road.
- There are several opportunities to develop river access areas or trailhead parking on town or federally-owned land on the west side of Valley Road.

Challenges

- Even with the low volume nature of Valley Road, there is still potential for motorized/non-motorized user conflict.

Overall Estimated Section Cost

- **Design:** $3,000
- **Construction:** $25,000
- **Total:** $28,000

Potential Section Phasing

Phased development in this section will likely not be necessary due to the low cost of on road improvements recommended.

Properties Potentially Impacted

Entirely within public ROW along Valley Road.

Access

- There are several historical sites along Valley Road, including the remnants of inns, a clock shop, mills, and a church that once constituted Campville.
- Excellent opportunities for recreational river access already exist, and can be improved.

Recommendations

- Low cost safety improvements (signage and/or pavement markings) should be implemented along Valley Road. With easy, low-cost improvements, the Valley Road section of trail could be added to the officially "open" sections of NRG Trail.

Viable Alternatives

While there is no physical impediment to the development of a multi-use trail on the abandoned rail bed on the west bank of the river, it was determined by the project team with agreement by the Project Steering Committee that the current use and management of the OHV area renders any routing on the west bank on the rail bed infeasible. See Route Options 7-12 in Appendix B for additional details.

Universally accessible River and fishing access should be pursued in this area.
- Formal parking areas should be established along Valley Road to eliminate on-street parking that might impact shared use safety.
- The town and USACE should establish an interpretive signage program to educate about the history of Campville and purpose of the USACE flood risk reduction system.

Fishermen and other current users utilize informal parking all along Valley Road, and there are opportunities to develop formal trailhead parking on federal or locally-owned land on the west side of Valley Road.

Clear signage can inform motorists that they are likely to encounter pedestrians and cyclists. (roadtrafficsigns.com)
Section 4: Wildcat Hill Road to Vista Picnic Area

Existing Conditions

The 2.5 mile section of Naugatuck River valley between Wildcat Hill Road and Thomaston Dam Vista Picnic Area is characterized generally by the multi-use and OHV recreation area associated with Thomaston Dam on the west bank of the Naugatuck River. The east bank of the River is rugged, privately-owned land in the northern part of the section, giving way to the Leadmine Recreation Area on federally-owned land, and the Thomaston Dam Project Office and Vista Picnic Area to the south. The area is subject to inundation during Dam operations, more frequently in low-lying areas just north of the Dam and closer to the River's course.

On the east side of the River, Old Route 8, which is now Valley Road north of Wildcat Hill Road, continues south past an earthen berm and gate toward the location where Old Route 8 crossed over the river, known as Castle Bridge. Portions of the old roadbed are still in place on federal land. The bridge was demolished by the USACE in the 1970s, but abutments and piers still remain in place. Between Castle Bridge to just north of the Thomaston town line, more than one mile of the east bank of the river is privately owned. A stone and sand mining operation removed material from the river bank just south of Castle Bridge, resulting in a series of small ponds with partial causeways between them. South of that, the riverbank becomes rugged, with steep slopes meeting the river directly. Two additional ponds that were presumably material mining areas are also found immediately adjacent to the river. This section of riverbank covers seven parcels of privately-owned land. The USACE owns the riverbank beginning approximately one tenth of a mile north of the Thomaston town line, and moving south towards the Route 222 bridge over the River south of Thomaston Dam.

The USACE-owned land north of the Dam on the east side of the River is known as the Leadmine Brook Recreation Area. It is open to the public for walking, hiking and fishing, and features a model airplane airport that is used by the "RC Flyers" hobby group. There are several paved and gravel access roads within the recreation area, parts of which are currently open to public motor vehicle access when the area is open, and others that are gated and accessible only on foot or non-motorized means. Route 222 is located uphill to the east of the Leadmine Area, and access roads to the state route are steep.

Just south of the Leadmine Area is Thomaston Dam and the Thomaston Dam Project Office. The Project Office is accessed from Route 222, just north of where a public access road crosses the Dam to a turnaround spot and parking area on the west side of the Dam. South of the Dam, on the east side of the River, is the Vista Picnic Area, which offers a parking area and comfort station along with picnic tables, open grassy lawn areas and a scenic view of the dam.

The west side of the River is entirely owned by the USACE, and is managed as a multi-use recreation area. OHVs are permitted, and an extensive trail network is available for recreational use. The section of riverbank south of Route 222 has been extensively mined, resulting in large areas of bare soil and a series of ponds.

Entrance to Leadmine Brook Recreation Area from Route 222.
system has been developed by the USACE and the Pathfinders Motorcycle Group, which has a cooperative agreement with the Corps for use of the OHV area. An abandoned section of Old Route 8 runs parallel to the River, from the location where the highway once crossed the Naugatuck River (via Castle Bridge), running south towards the Dam. The roadway has an approximate paved width of 24-to-28 feet and has gravel shoulders. The road is used for staff access and for access to various OHV trails. Uphill from Old Route 8, to the west, is an active railroad corridor, owned by CT DOT and leased by the Naugatuck Railroad. The rail line marks the western boundary of the OHV Area. Between Old Route 8 and the River, an abandoned railbed runs parallel to the River towards a former crossing location, approximately 2300 feet north of the Dam. The OHV trail system is set up to be largely one way, with trails to the west of Old Route 8 for northbound traffic, and those to the east, including the abandoned railbed, for southbound traffic. Single track natural surface trails of varying difficulty run over varying terrain throughout the area. Old Route 8 is generally used by less experienced riders to avoid more difficult trails or to access the various singletrack trails that intersect it. It is also used for emergency access, maintenance, and for access by fishermen, hunters, and other recreationalists.

Studied Options

Various options on both sides of the River were considered during this study. On the east side of the River, a route was considered that would follow the River on private property through currently wooded steep terrain, leading to the Leadmine Brook Area, then using existing access roads within the Leadmine Area. Options parallel to Route 222 as road-separated trails over a short distance were looked at as well. This would be in the form of an access road bringing the trail from the east bank to the area north of the dam spillway, followed by a trail stepped into the hill west of Route 222 to bring the trail to the project office. Running a trail adjacent to Route 222 north of the Leadmine Brook Area was deemed infeasible due to space constraints and steep slopes, along with a very narrow Route 222 bridge over Leadmine Brook. See Route Options 13-16 in Appendix B for additional details.

West of the Naugatuck River, both Old Route 8 and the abandoned rail bed were considered in depth in this study, using the road on top of the Dam as a shared-use facility to cross the River to the Vista Picnic Area. A rail with trail routing option along the active rail line was dismissed early on due to space constraints and steep slopes.

Preferred Route

The preferred routing alternative is to follow the abandoned Old Route 8 roadbed onto USACE property from Valley Road at the intersection of Wildcat Hill Road, following the abandoned roadbed to the location where Route 8 once crossed the River. The existing Castle Bridge piers will carry a new pedestrian structure over the Naugatuck River, with the trail then following the Old Route 8 roadbed through the multi-use recreation area to the Dam, separated from OHV traffic. BSC conducted an initial condition assessment of the remaining piers that once held Castle Bridge, and found them to be in a condition capable of being repurposed to carry a pedestrian bridge (See Appendix F for the full report). The wide graded and paved Old Route 8 corridor presents a path for the NRG Trail, avoiding the difficult terrain and numerous private properties on the east side of the River. While there were concerns heard throughout the public information process for this study about disruption to the OHV area and rider experience, the Project Team worked with OHV representatives and the USACE to develop trail concepts for the safe separation of motorized and non-motorized users without negatively impacting OHV rider experience. The width of the paved roadway presents opportunities to physically separate...
motorized and non-motorized uses while preserving, or even improving, OHV flow. Where space is available on either side of the roadway, new vertically-separated OHV trails could be constructed parallel to the roadway to carry the OHV traffic currently using the paved roadway. These trails would be one way - northbound to the west of the roadway and southbound to the east of the roadway. These OHV-only paths would be constructed to limit speed and encourage safe riding. They would be relatively narrow, single-track and unpaved to enhance rider experience. Where there is limited space adjacent to the roadbed, due to steep slopes, watercourses, or wetlands, the roadbed could be shared, with the paved area narrowed to carry the multi-use trail and emergency vehicles, and unpaved trails separated by guardrails to carry OHV traffic on either side. New parallel OHV trails on either side would allow for the number of intersections of single track trails to be reduced, further increasing safety by limiting the areas of potential conflict. The USACE will ultimately be responsible for designing and developing the NRG Trail on federal land, and should do so in close consultation with current users of the recreation area to mitigate negative impact to recreational uses.

The trail would follow the access road from Old Route 8 to the top of the Dam, crossing the Dam on the road as a shared-use roadway, as it is currently used. East of the Dam, the trail would turn south, parallel to Route 222, as a separated bidirectional paved path towards the Vista Picnic Area.

Opportunities

- The remaining Castle Bridge supports can be used to carry a new pedestrian structure over the Naugatuck River.
- The Old Route 8 roadbed provides an excellent opportunity to develop a trail without extensive clearing, grading, or drainage improvements, and the area is already a multi-use recreation area open to the public.
- The Dam will be a focal point of the NRG Trail and there are scenic views from the access road on top of the Dam. There is an excellent opportunity for the USACE to expand the reach of their educational outreach about their flood risk reduction and resource management missions.

Challenges

- The safe separation of motorized and non-motorized uses along Old Route 8.
- Cost of new pedestrian crossing at Castle Bridge.

Overall Estimated Section Cost

- Design: $475,000
- Construction: $3,075,000
- Total: $3,550,000

Rendering of a converted Old Route 8 within the OHV area at Thomaston Dam. A portion of the paved roadway could be used to carry a multiuse path while retaining emergency and maintenance vehicle access. Separate parallel OHV trails would maintain OHV unidirectional traffic flow. OHVs and non-motorized multiuse trail users would be separated horizontally as much as possible where terrain allows, and vegetation could provide a physical separation as well.

Typical section depicting the separation of multiuse trail and OHV traffic on the Old Route 8 roadway in the OHV area at Thomaston Dam.
Potential Phasing

The high cost of developing this section of trail may require phased funding and construction. The following is one possible phasing scenario:

I. New multiuse path from Wildcat Hill Road to future bridge structure over river at former Castle Bridge location.
   - Design: $ 21,000
   - Construction: $ 175,000

II. New bridge structure over Naugatuck River at former Castle Bridge Location (x-5)
   - Design:  $ 265,000
   - Construction: $1,325,000

III. South side of new bridge over Naugatuck River to Vista Picnic Area
   - Design:  $ 189,000
   - Construction: $1,575,000

Properties Potentially Impacted

The entire route is on USACE land associated with Thomaston Dam.

Access

There is public parking at the Vista Picnic Area and Thomaston Dam. To avoid overcrowding at these existing parking areas, dedicated NRG Trail parking should be pursued. Existing parking areas on both sides of the dam could be expanded to accommodate additional users, and to better define dedicated parking areas and access points to OHV and multi-use trails. There are also opportunities on federal land north of Castle Bridge, on public land along Valley Road.

Recommendations

- The USACE should work closely with the Pathfinders Motorcycle Club when designing improvements and motorized/non-motorized separation to avoid negative impacts to riding, to improve

Alternate routing options in this section were deemed to be too costly and difficult to be considered viable. Constructing a trail through the steep terrain and former quarry areas east of the River would result in prohibitive construction costs, and the multiple private properties that would need to be crossed presents additional cost and difficulty to acquire rights of way. Routing along the abandoned rail bed would be more impactful to OHV use. See Route Options 13-16 in Appendix B for additional details.

Route 222 could be a short term route from Route 118 to Thomaston Dam for experienced cyclists, but would be unsafe for less experienced cyclists or pedestrians, due to the narrow road width, high speeds of motor vehicle traffic and steeper grades.

Thomaston Dam will be a focal point of the NRG Trail, offering panoramic views up and downstream. It is also a great opportunity for trail users to learn about the importance of the USACE mission of flood risk reduction, and the downstream protection that Thomaston Dam and other USACE projects provide.
Section 5: Vista Picnic Area to Elm Street

Existing Conditions

This section covers approximately 1.5 miles between the Vista Picnic Area and the intersection of East Main Street and Elm Street in downtown Thomaston, and is characterized by increased development along the River as you move north to south. The entire route in Thomaston south of Vista Picnic Area was investigated in the 2010 COGCNV routing study, and was revisited during this study due to additional routing ideas that had been proposed, and to update construction cost estimates.

On the east side of the river, the active Naugatuck Railroad crosses the Naugatuck River on Thomaston Dam, and turns south, passing under Route 222 and running parallel to the river. USACE land associated with the Dam extends between the river and Route 222 south to the Hill Road / Route 222 bridge over the river. Between the rail and River, the Corps property is undeveloped, but open to passive recreation. There is a gated access road from Route 222 to the Dam outflow. South of the Route 222 bridge, there is a commercial property (60 Hill Road) situated between the rail and River, with a low wetland area immediately adjacent to the river, and commercial development slated for higher-lying areas closer to the rail and Route 222. South of Route 222, the rail is generally situated on a raised bed with steep embankments. Traveling south, the River and rail converge more closely, although a shelf between the two remains. Two residential properties are located between the River and rail just north of Railroad Annex Street, a dead-end road. An unused culvert was located over a stream north of Railroad Annex Street that could carry a trail over the stream.

Route 8 crosses the river on two overpasses just south of Railroad Annex Street, and an access road travels under the overpasses along the River, leading to the former Plume and Atwood industrial property (235 East Main Street). This property is currently being used for commercial purposes. The southern half of this commercial property is currently used for limited commercial purposes, but additional development and redevelopment is expected in the coming years. The former Plume and Atwood property is bounded to the south by East Main Street, south of which is two additional commercial properties (196 and 200 East Main Street) and the Railroad Museum of New England along the rail.

To the west of the River, beginning at the Dam, the USACE owns approximately 1000 feet of riverfront,
bounded by commercial properties along North Main Street. North Main Street was once Route 8 prior to the construction of the Dam, but it now dead ends south of the Dam, connecting to Route 222. South of Corps property, commercial and residential properties line the River to the Route 222 bridge. Below the Route 222 bridge, a residential neighborhood is located between Route 222 and the River, bounded to the south by the Route 8 northbound exit 40 entrance ramp, just north of the location where Route 8 crosses the Naugatuck River on two overpasses. Approximately 1000 feet south of the Route 8 overpass, an industrial building housing Albea abuts the riverbank at 60 Electric Avenue. South of Albea, there is a vacant property, an electrical substation, and two commercial properties along the river north of East Main Street. Electric Avenue parallels the river to the west, fronted by mostly commercial and some residential properties.

At the southern end of this section, East Main Street crosses the Naugatuck River. The roadway is technically part of State Route 222, and classified as a minor arterial. The configuration of the bridge is unique, with unidirectional ramps taking traffic to and from the bridge to properties on the east side of the River. Only eastbound drivers on East Main Street can exit and ramp down to the Plume and Atwood Property, Railroad Museum and other commercial properties. Returning to East Main Street can only be done traveling westbound with a ramp up to the bridge to join westbound traffic on East Main Street. The one way ramps are narrow, but the eastbound ramp does have a narrow sidewalk connecting to the wider sidewalk on the south side of the bridge, and there are standard sidewalks on both sides of the bridge itself. The paved width of the roadway on the bridge is over 45 feet, with one lane in each direction, and wide shoulders on each side.

**Studied Options**

Between the Vista Picnic Area and the Route 222 river crossing, two options on the east side of the River were studied, one along Route 222, and one through the wooded area south of the picnic area. Between Route 222 and East Main Street, several options were looked at. All studied options shared a route between the River and rail to the residential prop-

**Preferred Route**

The preferred alternative between the Vista Picnic Area and Elm Street will travel through the wooded area to the south of the picnic area, crossing the active rail line on a new pedestrian bridge, between high rock cuts on either side of the rail. It will continue as an off road bidirectional trail connecting to an existing USACE access road, then paralleling Route 222 to a crossing with good sight lines. The trail will cross Route 222 and skirt wetlands through the commercial property at 60 Hill Road to the toe of slope of the railroad embankment. The trail will follow the toe of slope south, crossing an existing culvert and following to the east of the driveway to the two residential properties on Railroad Street Annex. The trail will then turn west, following Railroad Street Annex as a shared use roadway and turning south into the Plume and Atwood property along the access drive. The trail will follow the River through the Plume and Atwood property, where the town has indicated that the current owner of the property is supportive of including the trail in future redevelopment.

The trail will then cross on the East Main Street Bridge over the Naugatuck River. There are many ways that the bridge could be reconfigured to carry the trail. The cost estimates presented here assume that the trail will pass under the East Main Street bridge, and either ramp up on a new structure adjacent to the eastbound ramp, breaking through the side wall to access the bridge, or by widening the eastbound ramp to accommodate a 10 foot sidewalk. The East Main Street bridge is very wide, allowing for the reconfiguration of lanes and/or the sidewalk to allow for safe separated passage of cyclists and pedestrians across the bridge. While an option on the north side of the road was originally studied, the south side of the bridge was deemed safer by the Project Steering Committee since it would avoid crossing East Main Street, and was selected for the preferred route. The trail will then pass in front of Plymouth Glass as a separated bidirectional path to Elm Street.

**Opportunities**

- Connection to the Railroad Museum of New England at Thomaston Train Station.
- Incorporation of the NRG Trail into redevelopment plans for the former Plume and Atwood property and 60 Hill Road.
- Overly wide width of the East Main Street Bridge.
- Access to commercial properties in the Plume and Atwood area.

**Challenges**

- Safe crossing of Route 222.
- Potential impact to residential property on Railroad Street Annex.

**Overall Estimated Section Cost**

- Design: $462,600
- Construction: $3,855,000
- Total: $4,317,600

**Potential Phasing**

The high cost of developing this section of trail may require phased funding and construction. The following is one possible phasing scenario:

1. Vista Picnic Area to Route 222
   - Design: $129,000
   - Construction: $1,075,000
II. Route 222 to Railroad Annex
   - Design: $192,600
   - Construction: $1,605,000

III. Railroad Annex to Elm Street
   - Design: $141,000
   - Construction: $1,175,000

Properties Potentially Impacted
   - USACE land associated with Thomaston Dam south of the Vista Picnic Area
   - 60 Hill Road
   - 80 Hill Road
   - 60 Railroad Annex Street
   - 235 East Main Street (former Plume and Atwood property)
   - 196 East Main Street

Access
Public parking is available at Vista Picnic Area, but to avoid lot overcrowding, additional trail parking should be investigated along Route 222. The trail will be accessible from downtown Thomaston, and there are numerous public parking options. Additional parking and facilities should be considered with redevelopment of the Plume and Atwood property.

Recommendations
   - A pedestrian warning system (HAWK or RRFBs) should be installed to ensure safe crossing of Route 222.
   - Work with property owners and developers of 60 Hill Road and the Plume and Atwood Site to include the trail or provisions for the trail in development plans.
   - Work closely with the RMNE to design safe and easy access from the trail to the Thomaston Station and the Museum. The trail and the museum could benefit mutually from this connection. “Rail and Trail” train trips could bring trail users by train to destinations on the trail or retrieve trail users and return them to their origination point.
   - Work with CT DOT to implement improvements to the East Main Street Bridge. Any future improvements to the bridge or ramps to properties on the east side of the River should incorporate the NRG Trail.
   - Work with local businesses to provide for easy access to and from the trail and commercial areas, and foster cross promotion.

Viable Alternatives
The preferred route between the Vista Picnic Area and the Route 222 crossing is away from Route 222, but a trail could be run along Route 222 that would likely require widening of the rock cut to make room for a trail. A trail between the residences on Railroad Annex Street and the River is physically feasible, but would likely be more impactful to those residences.

Short term connections for experienced cyclists could follow Route 222 to downtown Thomaston, but a lack of sidewalk and the high speeds and volumes of motor vehicles would make the route unsafe for pedestrians and less experienced cyclists.

A short term low cost connection over the East Main Street Bridge could be accomplished using existing sidewalk on the bridge deck and the narrow sidewalk on the eastbound ramp for pedestrians, and by adding dedicated bike lanes on the bridge and shared travel lanes on the two ramps.
Section 6: East Main Street and Elm Street to Watertown Road

Existing Conditions

This section of corridor includes the commercial center of Thomaston and the residential and industrial areas between downtown and the Naugatuck River on the west side of the River. Just south of East Main Street, three roads parallel the River to the south. Commercial and industrial buildings along River Street front the River to Maple Street and the former Seth Thomas factory complex, with residential properties on the opposite side of River Street. Main Street runs from East Main Street south, turning into South Main Street, and passing in front of the Seth Thomas Building. Elm Street lies between the River and Downtown, and is residential in nature with a few commercial properties just south of East Main Street. Elm Street features nearly complete sidewalks on both sides of the road, and it intersects South Main Street in front of the Seth Thomas building. South of Maple Street, only South Main Street parallels the River, with mostly commercial properties fronting the River.

Traveling downstream along the riverbank from Maple Street, the rear parking lot of the Seth Thomas Building is perched on what seems to be fill above the river, bounded to the south by Northfield Brook. South of Northfield Brook, there is a wooded lot, followed by Thomaston Ambulance and the town firehouse, with a pavilion, open lot and training area, and open space above the riverbank. South of the firehouse, the space above the bank gets tight, with a self-storage facility (401 McMahon Drive) tight against the top of the riverbank for approximately 175 feet. South of this, the State of Connecticut owns a large parcel associated with the CTDOT District IV Headquarters, with space between buildings and the River once again opening up. Several commercial properties front South Main Street south of the CTDOT building, but development on these parcels is mainly found closer to the road, leaving a wide park-like corridor above the riverbank. The State of Connecticut owns the riverbank itself as part of the Route 8 right of way. This section ends where the Route 8 southbound Exit 38 offramp ends at the intersection of Watertown Road and South Main Street, just south of the location where Route 8 crosses the River.

To the east of the River, there are a few commercial properties immediately south of East Main Street. Moving south, however, the River, rail, and Route 8 converge, with very little space and steep grades between them. Route 8 crosses over the rail and River at the southern end of this section, with the rail continuing to follow the eastern bank of the River south.
Studied Options

Due to the physical constraints on the east side of the River, only options on the west side of the River were investigated during this study.

Options along Main and South Main, Elm, and Maple Streets were all considered, along with options along the top of the river bank behind commercial and industrial properties. Combinations of all of these options were also considered. See Route Options 25-42 in Appendix B for additional details.

Preferred Route

The preferred route follows Elm Street from East Main Street to Maple Street, making use of the existing sidewalks for pedestrians. Cyclists will be accommodated on Elm Street with the elimination of on-street parking and addition of bike lanes. The low speed/low volume nature of Elm Street would also make shared vehicle lanes acceptable if the town chooses to retain on-street parking. The preferred route turns east at Maple Street with a separated bidirectional path between Maple Street and the Seth Thomas Building parking lot.

The trail will follow along the back edge of the Seth Thomas parking lot, avoiding the steep ravine to the north, and following the rear of the lot around toward Northfield Brook. A new pedestrian bridge will carry the trail over Northfield Brook, following the top of the river bank behind Thomaston Ambulance and the firehouse. The trail will continue south, behind the self storage facility at 401 McMahon Drive, and behind the CTDOT District IV office, then follow along the top of the bank, behind businesses on South Main Street. The route then turns along the toe of slope to the Route 8 southbound Exit 38 offramp, connecting to the sidewalk network on South Main Street.

Opportunities

- Elm Street is an attractive residential street with near complete existing sidewalks.
- Low motor vehicle speeds and volumes on Elm Street could allow for low cost on-road accommodations for cyclists.
- Easy access to downtown businesses and the Thomaston Clock Walk.
- Underutilized parking lot behind CTDOT District IV office could be used for trail parking and potential trailhead.
- Open area at the top of the riverbank for much of the route is ideal for trail development.
- Businesses along South Main Street could benefit from trail traffic, and could capitalize on that traffic with signs and or easy access from the trail.
- This trail section would complete a nearly two mile pedestrian loop in downtown when paired with ongoing improvements to the South Main Street sidewalks.
- Potential for recreational river access all along the route.

Challenges

- Limited space behind 401 McMahon Drive.
- Potential impact to private properties.

Overall Estimated Section Cost

- Design: $191,400
- Construction: $1,415,000
- Total: $1,606,400

Potential Phasing

The Town may choose to pursue phased funding and construction. The following is one possible phasing scenario:

I. Elm Street from E. Main Street to Maple Street
   - Design: $2400
   - Construction: $24,000

II. Maple Street and Elm Street to McMahon Drive including bridge over Northfield Brook
   - Design: $117,000
   - Construction: $795,000

Elm Street looking north past the Union Street intersection. Note the sidewalks and wide paved width of the roadway.

Cross section of a potential reconfiguration of Elm Street, adding dedicated bike lanes to accommodate cyclists, with pedestrians using the existing sidewalks.

Cross section of a potential reconfiguration of Elm Street. This scenario would retain on street parking, with bicyclists sharing the roadway with motor vehicles.
III. McMahon Dr. to Watertown Road

- Design: $72,000
- Construction: $600,000

Properties Potentially Impacted

- 135 South Main Street
- 205 South Main Street
- 237 South Main Street (Town)
- 401 McMahon Drive
- 359 South Main Street (State of CT)
- 437 South Main Street (minimal if any)
- 455 South Main Street (minimal if any)
- 505 South Main Street (minimal if any)
- 19 Waterbury Road (minimal if any)
- DOT property associated with Route 8

Access

This trail section will be easily accessible from downtown Thomaston, where numerous surface parking opportunities already exist. There are opportunities for trail parking at the underutilized Seth Thomas Building parking lot and the CT DOT District 4 parking lot. The town controls property behind the firehouse where trail parking could be developed. Businesses along South Main Street might also see a benefit of including or allowing trail parking and access on their properties.

Recommendations

- Thomaston should work with property owners early to discuss rights of way issues.
- Work with the CT DOT to establish trail passage behind the District IV office building, along with a trailhead and trail parking in the underutilized rear parking lot.
- Work with businesses in downtown to help them benefit from trail traffic.

Viable Alternatives

A trail could be feasible along the river behind businesses on Elm Street and River Street, but with high associated construction costs. South Main Street could be a short term alternative for experienced cyclists, but vehicle speeds and volumes make the route unsafe for less experienced cyclists. Thomaston is currently working to complete sidewalks on the east side of South Main Street, which could be a good short term connection. See Route Options 25-41 in Appendix B for additional details about alternate routes.

Looking east at the Seth Thomas Parking lot along Maple Street.

View north behind South Main Street businesses.

Rendering of the proposed trail along Maple Street looking east. The trail would continue along the edge of the parking area behind the Seth Thomas Building, turning south to follow the top of the riverbank.

Rendering of the proposed trail behind businesses on South Main Street looking north. Businesses could benefit directly from NRG Trail traffic, and may be interested in providing direct trail access as depicted.
Section 7: Watertown Road to New Trailhead on Old Waterbury Road

Existing Conditions

The southernmost focus of this study stretches approximately one mile between the Route 8 southbound Exit 38 offramp at Watertown Road and the trailhead funded and set to be constructed on Old Waterbury Road, just north of the Thomaston Water Pollution Control and Animal Control facilities. Route 8 runs on the west side of the River, beginning just north of this section. The Exit 38 southbound offramp ends at the signalized intersection of Waterbury Road and Watertown Road. The Route 8 northbound entrance ramp runs from the signalized intersection of Pine Hill Road and Waterbury Road to Route 8 northbound very close to the riverbank, with a very narrow steep slope between them the ramp and the River. Between these ramps at Watertown Road and Pine Hill Road, there is a car dealership separated from the road with a median between eight and twelve feet wide.

South of Pine Hill Road, Waterbury Road passes under Route 8 with room on the east side of the roadway, under the bridges carrying Route 8. A CT DOT salt shed and materials yard fronts the River south of the Exit 38 interchange, and an access drive leads from Old Waterbury Road south through a materials storage area, leading to an abandoned trolley bed. The trolley bed is still evident, although overgrown, following the River and passing under Waterbury Road. Reynolds Bridge carries Waterbury Road over the trolley bed, the River and the active rail line on the east bank. The bridge is an open spandrel concrete arch bridge that was built in 1928, and is listed on the National Register of Historic Places. South of Reynolds Bridge, Old Waterbury Road parallels the River, lined with industrial, commercial and residential properties, the largest of which is Stewart EFI, just south of the bridge. At the south end of Old Waterbury Road, just north of the Thomaston Animal Control Facility, the Town of Thomaston has designed a trailhead and a short section of trail that will be constructed in 2020. The trailhead will include a parking area, and the trail will cross Branch Brook on new bridge to Mattatuck State Forest and trail system, and to a section of NRG Trail in Watertown currently being designed by the Town.

On the east side of the River, the Naugatuck Railroad runs close along the riverbank, between the River and Jackson Street to the north of Reynolds Bridge, and Waterbury Road south of Reynolds Bridge.

Studied Options

The tight geographies on the east bank were deemed not conducive to trail development, and route options studied were limited to the west side of the River. The potential to follow the River under the Route 8 overpass was limited due to steep slopes and limited space, and for the northern half of the route, the studied option was limited to looking at a trail following Waterbury Road, then...
transitioning to the abandoned trolley bed. South of Reynolds Bridge, a route that would follow the top of the riverbank behind businesses and residences was studied, along with an option to develop a separated, bidirectional trail along Old Waterbury Road, and combinations of portions of these routes.

**Preferred Route**

The preferred route will begin in the north, with a crosswalk and new pedestrian crossing phase added to the signal at the end of the Route 8 southbound Exit 38 off ramp. The trail will then pass in front of the car dealership at 59 Waterbury Road as a separated, bidirectional path. There is room on the paved median between the road and dealer parking to fit a trail with minimal disruption to the parking area. The trail will then follow Waterbury Road with a new crosswalk and signal improvements at the Route 8 Exit 38 northbound on ramp to follow under the Route 8 overpass. The trail will then leave Waterbury Road to follow an access road south of the CT DOT salt shed, connecting to the abandoned trolley bed that passes under Reynolds Bridge. South of Reynolds Bridge, the trail will follow the River behind Stewart EFI, likely requiring retaining structures in places to avoid impacting factory functions. South of Stewart EFI, the preferred route will follow the top of the riverbank behind properties at 71-95 Old Waterbury Road, then follow between the road and the River south, crossing Old Waterbury Road to the trailhead that will be constructed in 2020.

**Challenges**

- Safe crossings of the Route 8 exit and entrance ramps as well as parking lot entrances at Modern Motors
- Limited space behind businesses and residences on Old Waterbury Road.

**Overall Estimated Section Cost**

- Design: $225,000
- Construction: $1,875,000
- Total: $2,100,000

**Properties Potentially Impacted**

- 59 Waterbury Road (Modern Motors)
- State of Connecticut property associated with Route 8

**Opportunities**

- Route 8 overpass over Waterbury Road provides plenty of space for a trail on the east side of the road.
- The abandoned trolley bed can be repurposed to carry a trail under Reynolds Bridge, offering excellent views of the National Register of Historic Places listed bridge.
- Connection to the new trailhead being constructed north of the animal control facility.
Access

A trailhead parking area is designed and set to be constructed on Old Waterbury Road that will provide access to the south end of this trail segment. There could be additional opportunities for parking on state land, near the salt storage shed, just south of Exit 38.

Potential Phasing

The high cost of developing this section of trail may require phased funding and construction. The following is one possible scenario, and one potential phasing plan follows:

I. Watertown Road to Pine Hill Road
   - Design: $21,000
   - Construction: $175,000

II. Pine Hill Rd. to Trailhead on Old Waterbury Road
   - Design: $204,000
   - Construction: $1,700,000

Recommendations

- Work with businesses and residential property owners to minimize negative impacts of trail development
- Work with CT DOT to add pedestrian phases to signals at the on and off ramps to Route 8.
- Develop interpretive signage about the historic Reynolds Bridge.

Viable Alternatives

A trail behind the car dealership, either stepped into the slope surrounding the wetland area, or on a raised structure is possible if the route in front of the dealership is deemed too impactful, at a much higher cost. Routing the trail in front of businesses and residences on Old Waterbury Road is possible, but might be more impactful to Stewart EFI parking and site access. Old Waterbury Road is narrow just south of Reynolds Bridge Road, presenting difficulty in safe separation of the trail from motor vehicle traffic. See Route Options 43-45 in Appendix B for additional details.

Abandoned trolley bed under Reynolds Bridge looking South with Stewart EFI in the background.

Rear of Stewart EFI looking north.

Rendering of the proposed NRG Trail under Reynolds Bridge on the abandoned trolley bed.

Rendering of the proposed NRG Trail behind Stewart EFI. Rendering is illustrative - Additional fencing would likely be needed to meet EFI’s security needs.
Funding Opportunities

Development of multi-use trails can be an expensive endeavor, and there are numerous ways to fund trails. Most trail projects are funded with some mix of local, state and federal funding. Funds need to be accumulated for all aspects of trail development, from concept planning, design, property acquisition (if needed) and construction. While the state and federal governments have greatly increased the funding levels for non-traditional transportation projects, the amount of funds available to construct multi-use trails remains very limited, highly competitive and insufficient to meet all of the needs of communities wanting to build trail systems. However, the investment in trails returns substantial benefits in terms of economic measures, health benefits, and improved quality of life, that far exceed the direct costs incurred by the communities.

State Funding Sources

The State of Connecticut has recognized the funding needs for bicycle and pedestrian programs and included bicycle and pedestrian trails as a priority in the CTDOT’s long term goals and vision for transforming the transportation infrastructure in the state. The plan, referred to as Let’s Go CT!, was developed in 2015. It included a number of proposed programs targeted at regional trails, bicycle facilities, walkability and pedestrian safety in urban centers, closing gaps in trail systems, and on-going and periodic maintenance. Several of these programs were implemented and funding was provided under a 5-year ramp-up. However, continued and future funding is in doubt and reliant on state legislative and bond commission actions.

Community Connectivity Program

The program is administered through CTDOT and provides funds to municipalities for various projects and initiatives that enhance safety, mobility and access for bicyclists, pedestrians and persons with disabilities. The intent of the program is to make community centers more bicycle friendly, walkable, safe, livable, and prosperous. The program will help pay for various improvements such as the construction of sidewalks, pedestrian crossings, intersection improvements, ADA accommodations, bike lanes, sharrows, signage, and roadway safety audits, as well as other measures. As part of the CTDOT’s ramp-up, $32 million was authorized in 2016. In 2018 and 2019, DOT announced $12.4 million and $13.4 million respectively in awards to towns and cities under this program. It is expected that the Community Connectivity Program will become a perennial program with approximately $10 million per year available on average through the program.

Multipurpose Trails Program

The program is administered through CTDOT and focused on closing gaps in the State’s major trail corridors, as well as, addressing a longstanding issue of deferred trail maintenance. The program will allow for the strategic infill of the state’s prioritized trail network, including the spine of the East Coast Greenway and other major regional trail systems. State funds will be used to leverage other funding sources for trail construction. As part of the CTDOT’s ramp-up, $7.7 million was authorized in 2016.

Connecticut Recreational Trails Program

The program is administered through the Connecticut Department of Energy and Environmental Protection (CTDEEP) and provides funds to private...
nonprofit organizations, municipalities, state departments and tribal governments. Program funds can be used for the following activities:

- Planning, design and construction of new trails (motorized and non-motorized);
- Maintenance and restoration of existing trails (motorized and non-motorized);
- Access to trails by persons with disabilities;
- Purchase and lease of trail construction and maintenance equipment;
- Acquisition of land or easements for a trail, or for trail corridors; and
- Operation of educational programs to promote safety and environmental protection as related to recreational trails.

Project proposals and applications are solicited on an annual basis, pending the availability of funds, and awards are made based on a competitive selection process. A 20% local match of the grant amount is required, but it can be in the form of in-kind services. In past years, when funding has been available, there has been between $3 million and $5 million available statewide.

**Local Transportation Capital Improvement Program**

The Local Transportation Capital Improvement Program (LOTCIP) program was authorized under Section 74 of Public Act 13-239 and allocates State funds for capital improvements to local roads that are expected to be used for one purpose or project. This program is administered through the Councils of Governments (COGs). The COGs are responsible for soliciting project proposals from their member municipalities, reviewing applications, and ranking and setting regional priorities. The program requires the municipal sponsor to fund the design phase, but the costs to acquire any rights-of-way and construct the project are 100% state funded. Because of these funding arrangements, the LOTCIP program is expected to entail fewer constraints and requirements, thereby, streamlining project delivery and limiting costs.

Because the LOTCIP program mirrors the federal aid program in terms of project eligibility, bicycle and pedestrian projects can be implemented under the program. The one caveat is that the total LOTCIP funds allocated to all multi-use trail projects in a region are expected to be limited to a reasonable level. In other words, while there is no explicit cap on the use of LOTCIP funds for transportation alternative projects, the COGs are expected to allocate most of the LOTCIP funds to road projects and restrict the expenditure of LOTCIP funds to a few high priority transportation alternative projects.

**Federal Funding Sources**

The US Department of Transportation (USDOT) promotes safe, comfortable and convenient walking and bicycle facilities for people of all ages and abilities. Federal transportation acts provide funding assistance under various programs to states to implement a wide range of improvements to the surface transportation network. Bicycle facilities, including bicycle lanes on roads, paved shoulders on roads for bicycle use, recreational trails, road diets, signed bicycle routes, multi-use trails, and trail bridges, are eligible for funding under all major federal aid programs.

In December, 2015, the Fixing America's Surface Transportation (FAST) Act was signed into law, replacing the previous federal transportation act (MAP-21). The FAST Act authorizes federal spending for transportation improvements over five years through the end of Federal Fiscal Year 2020 (September 30, 2020). The FAST Act replaced the stand-alone Transportation Alternatives Program that was authorized in the MAP-21 Act with a set-aside of funds under the Surface Transportation Block Grant (STBG) program. The project eligibility and program requirements were unchanged. The FAST Act maintained bicycle and pedestrian project eligibility in the other federal aid transportation programs. A new federal transportation act is being developed, and initial drafts retain the set aside funding for Transportation Alternatives projects with increased funding and potentially more local control of funds in smaller urbanized areas.

**Surface Transportation Block Grant Program**

The Surface Transportation Block Grant (STBG) program provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel, including bridges on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. Program funds are allocated to states as a lump sum but divided by statutory percentages to apportioned programs. About half of STBG funds are sub-allocated to urbanized areas based on their relative population, referred to as the STBG: Urban program, and the other 50% of the STBG funds can be used anywhere in the state, referred to as the STBG: Anywhere program. Before these drawdowns are made, funds are set-aside for Transportation Alternatives (see below). The MAP-21 Act added “recreational trails” as eligible activities under the STP and TAP programs. This eligibility was continued in the FAST Act; therefore, it is not required to demonstrate a transportation purpose in order to be eligible for STBG funds. However, Connecticut decided to opt out of the federal Recreational Trails program in lieu of a state-funded program (see above).

**Transportation Alternatives Set-Aside Program**

The FAST Act eliminated the Transportation Alternatives Program (TAP), originally authorized in MAP-21, as a stand-alone program and replaced it as a set-aside or drawdown of STBG program funding. These set-aside funds can be used to implement all projects and activities that were previously eligible under TAP. Eligible activities encompass a variety of smaller-scale transportation projects, such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements, such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. Fifty percent of the TAP set-aside funds are sub-allocated to urbanized areas, with larger UZAs that are now in compliance (maintenance areas). CMAQ program funds may be used for bicycle and pedestrian activities, including constructing bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips. This requirement is different from the STBG program. Multi-use trail projects funded under CMAQ are required to demonstrate that they are primarily intended to provide a transportation function. In addition, these projects must also demonstrate that reductions in air pollutant emissions will result.

**National Highway Performance Program**

The National Highway Performance Program (NHPP) provides funds for improvements to highways included on the National Highway System (NHS). Under MAP-21 the NHS was enhanced to include: interstate highways, other expressways and all principal arterials. The NHPP was continued under the FAST Act. Bicycle projects funded under the NHPP must benefit an NHS corridor.
Funding does offer some advantages: less stringent design standards and regulatory requirements of local funds, as compared to state or federal funds. Local control of the design and construction are usually reflected in lower costs and shorter project completion times. However, with high projected construction costs, municipalities may not be able to commit 100% local funds to building NRG sections. Most state and federal grants require a local match, typically 20% and funding is likely to come from a variety of sources for larger projects.

Private Funding

As the economic benefits of trails becomes more evident, developers are looking to trail corridors for opportunities, opening the potential for private capital to develop some trail sections. Trails can draw residents to new residential development along the trail and trail traffic can directly benefit new businesses along the trail. Municipalities should work with developers of parcels along the preferred route that may be developed or redeveloped in the future. It may be possible to include the construction of the trail as part of the overall development. At the very least, room to construct the trail should be included in development plans. An excellent example in Thomaston is the opportunity to include the trail in plans for the redevelopment of the former Plum and Atwood property. Businesses may also assist with funding of trail development as a community service, or to promote a trail related business.

Some communities have set up trust funds for trail development, improvement, maintenance, and or operation of trails. These funds are typically administered by a non-profit or local commission. Trail trust funds can receive donations or grants as well as through municipal general funds.

Local Funding

While there are numerous state and federal programs that can be used to fund trail projects, the overall amount of funding is limited, and without exception grant programs are highly competitive. State and federal funds often come with specific contracting and design requirements that municipalities may find restrictive, or that may drive up costs. Funding trails locally through municipal bonding can work in some communities and local
Permitting

As each municipality works toward development of trail sections, they should keep in mind the various permits that may be required. The 2010 CGCNCV NRG Routing studies laid out permit requirements that may be encountered, depending on local conditions. The following is based largely on information published in those reports. A brief description of each anticipated permit is provided below. It should be noted that each permit may not be required for each individual section of the greenway trail.

Local Permitting

Municipal Inland Wetlands and Watercourses Permit for Regulated Activities

**Basis:** Delegated authority from the State based on Connecticut General Statutes.

**Threshold:** Any regulated activity within a State regulated wetland, or upland review area. It can also be required if the activity is in an upland area, drains to a regulated wetland area and/or is deemed to have a potential impact on the wetland.

**Process:** Application must be made to the Municipality and most include a Connecticut Department of Environmental Protection Reporting Form. At the first meeting after the application is received, it is formally accepted by the Commission. This begins the time periods as defined in the State Statutes and local bylaws. Certain activities require a special permit which requires a public hearing and must be held before a decision can be made by the Commission. Also, the Commission cannot make a decision until the Inland Wetlands Commission has made its decision. Following the formal publication of the decision, there is a 15-day appeal period. Plans must normally be approximately 70% construction document level in order to contain sufficient information to gain approvals.

**Time Line:** Normally takes three to six months, following submission, depending on whether a public hearing is required. The permit application cannot be submitted prior to the application for Inland Wetlands, although they can be submitted on the same day.

State Permitting

Connecticut Flood Management Certification (FMC)

**Basis:** Connecticut General Statutes and CTDEEP Regulations.

**Threshold:** Compliance with the General Permit is required for all projects that disturb one or more acres of total land area. Projects with five or more total acres of disturbance, regardless of phase must also file a registration with the CTDEEP. Projects exceeding one acre of total disturbance must obtain an approval of registration, including a detailed review of the required Stormwater Pollution Control Plan.

**Process:** Application is made to the Connecticut Department of Energy and Environmental Protection (CTDEEP). Upon receipt of a request for CTDEEP approval of a state agency’s flood management certification, the application is assigned to a project manager and is reviewed for sufficiency. If the application is sufficient, a detailed technical review is initiated. These reviews consist of an evaluation of the technical documentation provided in the application as well as an independent assessment of the site and of the project’s consistency with the flood management standards and criteria.

**Time Line:** Normally processed within three months. If other CTDEEP approvals are required, the FMC will be processed concurrently with the other applications.

Federal Permitting

FEMA Floodplain Development and Conditional Letter of Map Revision

**Basis:** Federal law with some review authority delegated to the municipality.

**Threshold:** Any earthwork or construction within a designated flood plain; work over, or in a designated floodway.

**Process:** A floodplain permit is required before construction begins within any Special Flood Hazard Area (SFHA), or any flood-prone areas if no SFHA has been defined. Permits are required to ensure that the proposed development project meets the requirements of the National Flood Insurance Program and the community’s floodplain management ordinance. In Connecticut, this review is usually performed by the Planning and Zoning or Wetlands Commissions. Generally, passive recreation, such as bicycle and pedestrian trails, are allowed as permitted use in flood-prone areas. However, if the proposed construction affects the elevation or horizontal spread of flood waters, the applicant may need to apply for a Conditional Letter of Map Change (CLOM). Application is made to...
FEMA with the concurrence of the municipality. The application must demonstrate that the water surface elevation will not increase by more than one foot (cumulatively with other developments) in the flood plain or by any amount in the regulatory floodway through use of hydraulic modeling software. It should be noted that some municipalities have floodplain-management regulation more restrictive than these requirements. Following construction, an application must be made for a Letter of Map Revision (LOMR) depicting actual “as-built” conditions and modeling demonstrating that the data presented in the application is valid.

**Time Line:** Normally takes twelve to eighteen months for LOMR.

### US Army Corps of Engineers Section 404 Permit

**Basis:** Section 404 of the Clean Water Act

**Threshold:** There are three categories of USACE permits based on the total area of disturbance of federally regulated wetlands. The federal definition of wetland will not impair the usefulness of the Civil Works project. The context of the trail corridor in this study, any trail development on property owned by USACE or land on which USACE has a flowage easement associated with Thomaston Dam would require a section 408 permit.

**Process:** Requests for 408 permission is preceeded by a pre-application review. Requests must include information about the proposed project, purpose and need, construction schedule, additional permitting requirements, impacts, etc. The USACE district Office or HQ reviews the request, depending on complexity and level of potential impact. Recent changes were aimed at streamlining the 408 process.

**Time Line:** Depends on level of review required. 6-8 months for a district level review. 2-3 years for a USACE HQ level review.

#### Design Considerations

With the exception of NRG Trail on federal land, which will be developed by the USACE, each municipality through which the NRG Trail will pass will be responsible for the future development of the trail within that respective municipality. Decisions about how the trail will look and function will be made locally, and municipalities are encouraged to develop a trail that works best locally, both aesthetically and functionally. As those decisions are made, however, the overall vision of the NRG trail should be regarded. The goal of the NRG Trail is to provide a continuous safe multi use path for users of all abilities between Torrington and Derby, and trail sections developed should support that stated goal.

The NRG Trail and trail amenities should meet the 2010 Americans with Disabilities Act (ADA) Standards of Accessible Design as much as is practical. For trails constructed under a federal program, adherence to ADA standards and guidelines is required. These standards set out acceptable width, slope, materials, etc. of trails, ensuring that users of all abilities will be able to benefit from and be able to use the trail. More information about ADA standards can be found at [https://www.access-board.gov/guidelines-and-standards/building-accessibility/](https://www.access-board.gov/guidelines-and-standards/building-accessibility/).

A hard trail surface is required to carry wheeled users, and trails in the northeast are typically asphalt paved or compacted stone dust. There are pros and cons to each of these surfaces. Compacted stone dust trails are typically less expensive to build, but require regular upkeep and grooming to maintain an accessible surface. Stone dust trails can suffer from erosion issues and can get rutted during wet periods. Paved surfaces are more expensive to build initially, but require less ongoing maintenance. Paved trails also support more varied wheeled uses including roller skates, in-line skates, scooters and small wheeled strollers, and can more easily be cleared of snow in the winter. While many runners prefer the softer stone dust surface, paved trails can be designed with soft shoulders to accommodate runners. The trail should be at least ten feet wide to carry bidirectional bicycle traffic, but can be as little as eight feet in constrained areas for short distances.

There are existing design standards available that should be referenced when developing the NRG Trail to ensure user safety and trail functionality. The American Association of State Highway and Transportation Officials (AASHTO) published the “Guide for the Development of Bicycle Facilities, 4th Edition” in 2010. The guide covers both shared use paths and on-road bike facilities, and also presents guidance on signalization improvements. Since most of the NRG Trail is envisioned as a shared use path, but some trail sections may need to be on-road, the AASHTO guide should cover most, if not all NRG Trail development scenarios. More information about the AASHTO guide can be found at [https://www.transportation.org/](https://www.transportation.org/), The National Association of City Transportation Officials (NACTO) publishes the “Urban Bikeway Design Guide”, focusing on on-road bicycle facilities in urban settings. The NACTO guide can be useful for sections in more urban settings, and can be found at [https://nacto.org/publication/urban-bikeway-design-guide/](https://nacto.org/publication/urban-bikeway-design-guide/).

Trail amenities are critical to the enjoyment and functionality of multiuse trails. Street furniture, comfort stations, kiosks, bike racks, and lighting are all important considerations when designing the NRG Trail. The 2017 NRG Economic Impact Study recommended including the “three Bs” when developing the trail: bathrooms, benches and bikeraoks. Similarly, respondents to the CT Trail Census (https://cttrailcensus.uconn.edu) annual statewide surveys of multiuse trail users most frequently cited more or improved amenities including bathrooms, water fountains and garbage cans as the improvements that would most greatly improve trail experience.
Also important is access to off-trail amenities for trail users. Easy access to local businesses, green spaces, and cultural resources can greatly improve user experience and benefit local communities, and should be considered during trail design.

The Naugatuck River Greenway Steering Committee (NRGSC) should be used as a resource when developing sections of NRG Trail. NRGSC meetings can be a great place to hear what is and is not working on open sections of NRG Trail, and can be a sounding board for what is planned or envisioned for trail sections going forward. The NRGSC meets quarterly, and a schedule and more information can be found on their webpage: https://nvcogct.gov/who-we-are/commissions-committees/nrg-steering-committee/. The Naugatuck Valley Council of Governments and Northwest Hills Council of Governments have assisted with numerous multi use trail projects and COG staff can be a valuable resource as trail sections are funded, designed and built.

Well placed amenities including bathrooms, kiosks and furniture like those along the Farmington Canal Heritage Trail in Cheshire, CT, can greatly improve user experience and can help attract trail users to local businesses.

Branding, Signage and Wayfinding

Since most of the planning and construction for the NRG Trail will be implemented at the local level, the materials, feel and look of the trail may undoubtedly vary from town-to-town based on local needs and desires. Regardless of these differences, it is important to emphasize that the NRG is a single entity that will traverse 11 communities. Visitors to the completed trail should know that they are on a section of the NRG, and be met with a familiar system of signage and wayfinding no matter which town they are in. A well designed and implemented unified brand and signage program is critical to the continuity of the NRG. In 2016, with support and assistance from the NRGSC and consultant Milone and MacBroom, NVCOG developed and published the “Naugatuck River Greenway Uniform Signage and Wayfinding Design Manual.” The manual was developed to assist NRG municipalities and partners in the development and installation of various signs to be used along the NRG route. It presents a branding policy, logo, color palette and graphics to be implemented on all NRG Trail sections. Various signage templates can be obtained free of charge from NVCOG.

The NRGSC can review and guide sign plans to ensure that signage guidelines are adhered to, that content is appropriate and properly presented, and that signs are installed at proper locations. Some assistance and guidance for signage design may be offered on a case by case basis by NVCOG staff.

While each town or partner is ultimately responsible for their signage, collaboration with regional partners will be critical in the development of a unified signage program. NVCOG will maintain an inventory of all NRG signage. It is recommended that signage be incorporated in the design and construction phases of trail development. Construction funding should be used to purchase and install a full suite of signage along each trail section. This will ensure that proper signage is in place when the trail section opens to the public, and will avoid the need for additional funding to design and purchase signs.

The Naugatuck River Greenway Uniform Signage and Wayfinding Design Manual can be found at: https://nvcogct.gov/what-we-do/naugatuck-river-greenway/nrg-signage-program/
Safety and Maintenance

One reason why multiuse trails are popular is because they are seen as, and generally are, a safe and secure place to walk, bike, and recreate. Like any other town park or facility, ongoing maintenance and upkeep is critical to the safety and enjoyment of the trail. That responsibility will fall to the local municipality or, for sections on federal land described in this report, the USACE. The USACE will require a cooperative agreement with an outside agency or organization to fulfill maintenance needs. Details about how trail segments will be maintained, by whom, and how that will be funded will be incorporated into maintenance plans that will be developed as part of the future designs of the trail.

The extent of maintenance needs and associated costs will vary widely based on trail design and local conditions. Regular maintenance is much the same as that of local parks, and could include keeping the trail surface free of obstacles including leaves in fall, mowing or string trimming of grassy areas along the trail, upkeep of landscaped areas and litter removal. Low lying trail sections within the Thomaston Dam impoundment area will require silt and debris removal after dam operations. Some municipalities clear snow and ice from the trail after winter storms, an effort that is especially important on trails that are used for commuting. If comfort stations, fountains and kiosks or other amenities are present, those will need to be maintained as well. In most municipalities, trail maintenance is typically undertaken by the Public Works or Parks Department. Volunteers and “friends of” groups can supplement municipal maintenance efforts. Proper and timely maintenance and removal of hazards greatly reduces local liability. For the purposes of estimating the economic impact of trail maintenance for the 2017 NRG Economic Impact Study, an annual maintenance cost of $5,000 per mile was used based on a literature review and focus groups with trail organization to fulfill maintenance needs. Details about how trail segments will be maintained, by whom, and how that will be funded will be incorporated into maintenance plans that will be developed as part of the future designs of the trail.

Trail design choices can heavily influence the extent and type of maintenance needed. For instance, while soft surface stone dust trails are more economically feasible to build, they require regular grooming and regrading, and are subject to rutting and erosion, especially after heavy rain events. Weed control is more of an ongoing effort to prevent encroachment onto the trail on stone dust trails. A 10-foot wide path can easily be reduced over time without a concerted effort to keep weeds at bay. Grassy lawn areas require regular mowing, whereas well-designed more natural vegetation landscaping can be more low maintenance. The desire for amenities or high maintenance landscaping should be balanced with the realistic ability to maintain those features. Department heads or workers that will ultimately be responsible for upkeep should be brought into the design process early on to provide insight about design features that may be difficult or costly to maintain in the future.

A clear set of well enforced rules is also important to enhance safety on multi-use trails. While the goal should be to accommodate as many types of users as possible, conflict between users is inadvisable. This conflict can be reduced by clearly delineating the rules and responsibilities of users and enacting a series of rules that can be enforced. The development of local trail rules and regulations can be facilitated by the NVCOG and the USACE (these regulations have been drafted for each of the local agencies). As part of the maintenance planning process, the NVCOG can provide design templates for all of these signs upon request.
as possible, municipalities may choose to limit or exclude certain uses to avoid conflict. For instance, dogs have been prohibited on some trails due to waste and safety concerns, and e-assist bicycles have been prohibited on many trails due to speed concerns. Municipalities may also choose the hours of operation, permitted and prohibited uses. Rules, regulations and any prohibitions should be clearly posted and enforced. Many municipal police departments have implemented bicycle patrols, a very visible enforcement presence that also allows for closer “community policing” contact with trail users. Busier trails can effectively become “self policing” with trail users reporting illicit activities, and the lack of privacy driving criminal activity away.

In the case of an emergency on the trail, it is important for trail users to be able to contact emergency responders and convey their location on the trail. An emergency locator system, can provide easy to understand location to emergency dispatchers. By installing markers with an address or universal location code along the trail approximately every 1/8 mile, trail users would always be within sight of a locator.

While maintenance and rule development and enforcement decisions will be made locally on the NRG Trail, continuity should be a goal. Long distance users of the completed trail should not be surprised by different rules when crossing municipal lines, or encounter unmaintained sections of trail. The towns should consult with the NRGSC and COGS to align these efforts.
Appendices

Due to size and complexity, the report appendices are presented as separate documents accessible at the project webpage: https://nvcogct.gov/nrg-thomaston-to-torrington-routing-study

Appendix A: Detailed Trail Section Cost Estimates
Appendix B: Detailed Route Option Sheets
Appendix C: Safety and Suitability Matrix
Appendix D: Castle Bridge Visual Inspection Memorandum
Appendix E: Reports of Meetings
Appendix F: Public Surveys and Comments
Appendix G: Trail Design Typical Sections
Appendix H: Public Comments to the DRAFT Report
For a physical copy, contact the Naugatuck Valley Council of Governments:

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