

# CONNECTICUT

## ACTIVE TRANSPORTATION PLAN



**DRAFT**  
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# TABLE OF CONTENTS

<b>Chapter One: Background</b>	<b>3</b>
A. Introduction	4
B. Pedestrian and Bicycle Accomplishments	4
C. Vision and Goals	10
<b>Chapter Two: Improving Pedestrian and Bicyclist Safety</b>	<b>11</b>
A. Crash Data and Analysis	12
B. Education and Awareness Initiatives	15
C. Strategies and Actions Plan	18
<b>Chapter Three: Enhancing Mobility for Pedestrians and Bicyclists</b>	<b>19</b>
A. Access to Transit	20
B. Americans with Disabilities Act (ADA) Compliance	20
C. Statewide Bicycle Planning Network	22
D. Trail Planning	25
E. Strategies and Actions Plan	26
<b>Chapter Four: Utilizing Resources to Achieve Meaningful Improvement</b>	<b>27</b>
A. Design Standards for Facilities in Connecticut	28
B. Internal and External Agency Coordination	28
C. Funding	30
D. Strategies and Actions Plan	31
<b>Chapter Five: Measuring Progress</b>	<b>33</b>

# CHAPTER ONE: BACKGROUND



Image credit: MomTrends - Mystic, Connecticut

## A. INTRODUCTION

The *Connecticut Active Transportation Plan*, known hereinafter as the “*Plan*”, is an action-oriented blueprint for meeting the needs of pedestrians and bicyclists in Connecticut. This includes their commuting, errands, and recreational trips. Connecticut’s population continues to diversify and with that diversity comes increasing variability in how people move through the State to meet their daily needs.

In recent years, the Connecticut Department of Transportation (CTDOT) has adapted its workflows, priorities, and programming to better meet the needs of active transportation users. This *Plan* outlines these efforts as well as how it will continue to do so over the next six years.

Specifically, the *Plan* presents the multitude of process-driven changes underway at CTDOT that will transform the way designers incorporate elements of active transportation facilities into construction projects. The result is safer, more accessible transportation systems. This *Plan* outlines CTDOT’s near-term goals in the areas of programs and infrastructure investments. It presents construction projects to be initiated over the next six years to improve safety and accessibility for pedestrians and bicyclists in the most critical locations in the State. It also incorporates new strategies and actions for these policies, programs, and infrastructure improvements as well as presents the first ever Statewide Bicycle Planning Network Map that designates routes based primarily on where bicyclists want to travel to.

The development of the *Plan* occurred over a 30-month period in 2016 - 2018. **Appendix A** provides more information on the *Plan* development process, including an overview of the public outreach efforts.

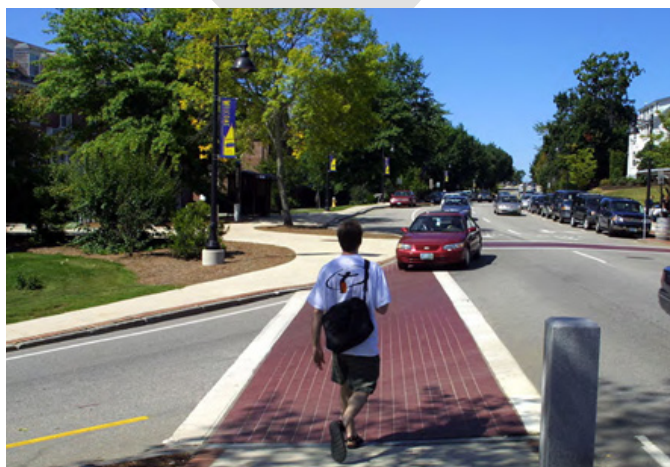


Image credit: Connecticut Metropolitan Council of Governments (MetroCOG)

## B. PEDESTRIAN AND BICYCLE ACCOMPLISHMENTS

The *Plan* builds on the many successes of the *2009 Connecticut Bicycle and Pedestrian Transportation Plan (2009 Plan)*. The *2009 Plan* started to bring active transportation needs into CTDOT’s design, construction, and operations offices.

Since the *2009 Plan*, there have been changes in federal laws and funding, state laws and policies, infrastructure design, as well as awareness of pedestrian and bicycle needs in Connecticut. The result is that many strategies and implementation options of the *2009 Plan* were realized.

### SUCCESS FROM THE 2009 PLAN

- ✓ The establishment of the Bicycle and Pedestrian Advisory Board allowed CTDOT to “coordinate with a Statewide Bicycle and Pedestrian Advisory Committee.” One key accomplishment of this group has been to work with the Department of Motor Vehicle to **include bicycle and pedestrian safety-related questions on the driver license exam.**

At the regulatory level, the State Legislature passed three landmark laws aimed to improve the travel experience for pedestrians and bicyclists. They include:

- An Act Improving Bicycle and Pedestrian Access (Public Act 09-154)
- Vulnerable User Law (Public Act 14-31)
- Bicycle Safety Bill (Public Act 15-41)

An Act Improving Bicycle and Pedestrian Access, (Public Act 09-154) included the Complete Streets legislation. When passed, Connecticut was only the 10th state to pass a Complete Streets law. **Appendix B** includes a description of these laws.

## CTDOT PLANS, POLICIES, AND PROGRAMS

CTDOT’s plans, policies, and programs related to active transportation have matured over the past decade. From the implementation of plans and policies to support pedestrians and bicyclists to regular engagement with stakeholders to training for the agency’s engineers and planners, CTDOT has advanced its capacity for planning, designing, and constructing projects that support and encourage active trips. Examples of CTDOT accomplishments are described on the following pages.

**Let's GO CT! - Connecticut's Bold Vision for a Transportation Future (CTDOT, February 2015)**

The *Let's GO CT! - Connecticut's Bold Vision for a Transportation Future* provides the “transportation foundation for the future of Connecticut’s economy” and emphasizes the need to secure dedicated transportation funding. It outlines long-term investments for the state’s transportation system and presents the “Connecticut 30-Year Vision.” The long-term pedestrian and bicycle planning projects, and their associated funding, are listed in **Table 1**.

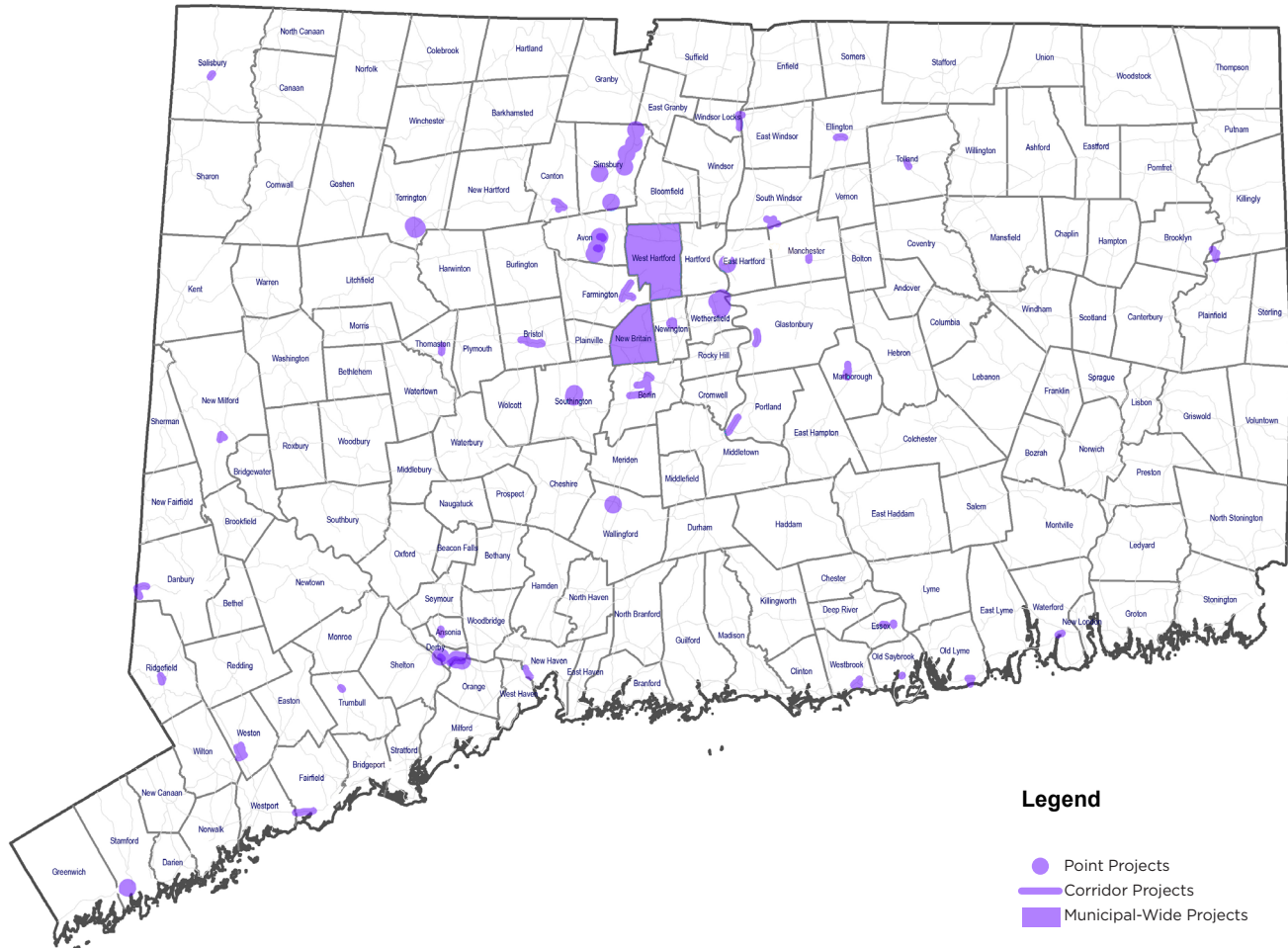


Image credit: CTDOT

*Table 1: Long-term Investment: Pedestrian and Bicycle Planning*

Project Description	Funds
<p><b>Community Connectivity Grant Program</b></p> <p>This program funds approximately \$10 M annually to construct sidewalks and on and off-road bicycle improvements in the state’s urban centers making them more walkable, livable, and safe.</p> <p>The program began in 2016 with Road Safety Audits (RSAs). The RSAs identified pedestrian and bicyclist needs at important corridors and intersections and recommended low-cost (short term) and high-cost (longer term) solutions to improve their conditions. More than 80 municipalities applied for and had RSAs completed through the summer 2017. These occurred on state and local roads in all areas (including rural) of the state.</p> <p>Many Connecticut communities, including those who completed RSAs, requested additional funding for infrastructure improvements through the Community Connectivity Grant Program (CCGP). Grants were awarded in August 2018. Figure 1 displays the communities and corridors that received the 40 grants. The program’s website (<a href="http://ctconnectivity.com">http://ctconnectivity.com</a>) includes more information on the program and the communities involved in it.</p>	\$250,000,000
<p><b>Multi-Use Trail Program</b></p> <p>This program funds \$10 M per year for 25 years and allows for gaps in the state’s prioritized trail network to be filled, including the East Coast Greenway (ECG) and major regional trail systems. Completing gaps in the statewide and regional trail system enhances opportunities for recreation as well as providing transportation options for non-motorists, increasing their access to employment as well as to other urban, suburban, and residential areas. Example projects funded through this program include:</p> <ul style="list-style-type: none"> <li>• Charter Oak Greenway from Finley Street in Manchester to the Hop River Trail at Bolton Notch Pond in Bolton</li> <li>• Upgrades to the Hop River State Park Trail to ECG standards in Columbia and Coventry</li> <li>• Farmington Canal Heritage Trail from Red Hill Road in Farmington to just south of the Plainville Town Line</li> <li>• Three new segments of the Moosup Valley State Park Trail in Plainfield and Sterling, totaling 14,000 feet</li> </ul> <p>More information on this program and projects is available at <a href="http://www.transformct.info/RampUpDashboard.html">http://www.transformct.info/RampUpDashboard.html</a></p>	\$250,000,000
<p><b>Trail Maintenance Program</b></p> <p>This program aims to maintain a state-of-good repair on the statewide regional trail network by funding \$1.2 M per year for 25 years for trail maintenance. The program addresses longstanding issues of deferred maintenance on trails, as many towns don’t have resources or specialized equipment necessary for routine maintenance.</p> <p>This program will mostly address surface condition, typically the most expensive component of trail maintenance. This effort includes the inventory, assessment, prioritization, and correction of surface-related maintenance issues to ensure proper serviceability of the trails. The program supports the current system of ADA accessible trail miles as well as the Connecticut Department of Energy &amp; Environmental Protection (CT DEEP) trail maintenance efforts.</p> <p>The State will be funding some of the trail maintenance efforts through this program, and the responsibility to oversee/complete the work is the obligation of the municipalities. This program is not yet authorized.</p>	\$30,000,000
<p><b>Route 15 / Merritt Parkway Trail Construction</b></p> <p>This program funds the construction of a multi-use trail along the Merritt Parkway to accommodate non-motorized transportation. A draft feasibility study of the corridor is underway.</p>	\$250,000,000
<b>TOTAL</b>	<b>\$780,000,000</b>

Figure 1: Let's GO CT! - Connecticut's Bold Vision for a Transportation Future - CCGP Awards



### Let's GO CT! - 5-Year Ramp Up Plan

The Let's GO CT! - 5-Year Ramp Up Plan is the first funding phase of the 30-year vision. It outlines immediate, short-term investments to be completed through 2020. **Table 2** displays the dedicated pedestrian and bicycle planning funding for years 2016-2020.



Image credit: Norwalk River Valley Trail

Table 2: Short-term Investment: Pedestrian and Bicycle Planning (2016 - 2020)

Capital Category	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	TOTAL
Bike / Ped Trails	\$14,200,000	\$17,200,000	\$20,200,000	\$23,200,000	\$26,200,000	\$101,000,000

Dedicated pedestrian and bicycle funding beyond 2020 is subject to future authorization by the state legislature.

## FHWA STEP Program: Every Day Counts-4

Through the Safe Transportation for Every Pedestrian (STEP) program, the Federal Highway Administration (FHWA) promotes the following pedestrian safety countermeasures through Every Day Counts (EDC-4):

- Road diets,
- Rectangular rapid flash beacons (RRFB),
- Pedestrian hybrid beacons,
- Pedestrian refuge islands,
- Raised crosswalks, and
- Crosswalk visibility enhancements.

In 2017, CTDOT began assessing countermeasures promoted through the program, as well as other opportunities to institutionalize changes which will improve pedestrian safety. CTDOT is also partnering with the CT Technology Transfer Center to launch an educational program that will provide training for public officials and technical professionals on the implementation of the safety countermeasures as well as raising awareness amongst the public.

## Walk It Bike It: Connecticut Safe Routes to School Program

The Safe Routes to School (SRTS) Program began in 2005 with the goal to empower communities to make walking and bicycling to school a safe and routine activity for children in kindergarten through eighth grade. The program has provided infrastructure projects and non-infrastructure services to over three dozen schools, as well as a statewide Crossing Guard Curriculum for the State Police and trainers since it was initiated. One SRTS project, on Main Street in Coventry, began as a walk audit through the non-infrastructure program and resulted in over 2,200 feet of sidewalks and driveway crossings constructed in 2015. This work provided safer walking for students headed to / from Capt. Nathan Hale Middle School and Coventry Village.

While a dedicated SRTS funding source is no longer available, there are still many initiatives to promote walking and bicycling to schools. While this dedicated funding source is no longer available, there are still many initiatives to promote walking and bicycling to schools. For example, the program’s website includes a collection of resources, such as a “Champion Toolkit” that contains ideas, templates, and other information to assist communities and schools in implementing a successful

### Rectangular Rapid Flash Beacon (RRFB)

A RRFB is a pedestrian-activated traffic control device that uses an irregular flash pattern similar to emergency flashers on police vehicles to increase driver awareness of potential pedestrian conflicts at unsignalized intersections or mid-block crossings.



Image credit: FHWA Safety Strategies Study - Michael Frederick, City of St. Petersburg, FL

SRTS Program.

## Complete Streets Policy

In October 2014, CTDOT responded to Public Act 09-154 by adopting its own Complete Streets Policy. The policy states how CTDOT will integrate Complete Streets into its work. In addition, a Complete Streets Standing Committee was established in 2017. With the adoption of the policy and establishment of the committee, the following key aspects are being implemented:

- Adherence to the Complete Streets Law throughout CTDOT
- Ongoing training on Complete Streets for CTDOT staff and partners
- Revisions to eligibility criteria to make complete streets easier to fund
- Improved designs that are supportive of pedestrians and bicyclists

With the establishment of the statewide Complete Streets Policy, CTDOT has set a precedent regarding the accommodation of all users, including pedestrians and bicyclists, in the design of any transportation facilities. The policy has encouraged municipalities and Regional

Conventional street design prioritizes mobility for automobiles. **Complete Streets** are designed for everyone, including pedestrians, bicyclists, motorists and transit riders. Complete Streets policies require or encourage a safe, comfortable, integrated transportation network for all users, regardless of age, ability, income, ethnicity, or mode of transportation.



Councils of Governments across the state to develop similar Complete Streets policies.

## Road Diet

An example of the incorporation of Complete Streets principles into practice is the 2016 implementation of a road diet on Burnside Avenue (Route 44) in East Hartford. Traffic has diminished on this road in recent years. The four 12-foot lanes were transformed into an 8-foot parking lane, 5-foot striped bicycle lane, and 12-foot travel lane in each direction. More importantly, other state roads are under review for road diet conversions.

CTDOT also incorporated bicycle education into the Burnside Avenue conversion through its SRTS Program. CTDOT developed Individual information

A classic **road diet** typically involves converting an existing four-lane, undivided roadway segment to a three-lane segment consisting of two through lanes and a center, two-way left-turn lane. The primary benefits of a road diet include enhanced safety, mobility and access for all road users.



Image credit: CTDOT

fliers specific to motorists, bicyclists, and police officers on how different modes can safely share the road.

### Vendor-In-Place Paving Program

One way CTDOT has implemented Complete Streets is by reducing lane widths to 11 feet through the Vendor-In-Place (VIP) Paving Program. CTDOT Offices of Maintenance and Traffic determine whether it is appropriate to reduce the lane width, allowing for wider shoulders, during the repaving and restriping of roads. This practice has allowed for many roadways to become more pedestrian- and bicycle-friendly.

There have been measurable differences in lane widths statewide since the 11-foot lane practice began in 2012. In recent years, the following mileage of two-lane secondary roadways have been restriped to 11 feet:

- 144 of 148 miles of VIP paved roads (97 percent) were restriped to 11-foot lanes in 2013
- 192 of 216 miles of VIP paved roads (89 percent) were restriped to 11-foot lanes in 2014
- 201 of 209 miles of VIP paved roads (96 percent) were restriped to 11-foot lanes in 2015
- 210 of 216 miles of VIP paved roads (97 percent) were restriped to 11-foot lanes in 2016

### Statewide Sidewalk Policy (Policy No. E&C-19)

The sidewalk policy at CTDOT historically was to consider whether sidewalks were needed for a project and / or requested by local municipalities. Upon such request, the municipality was required to provide the non-federal share of the cost of any new sidewalk, which was typically 20 percent.

This policy was updated in February 2011 and now states that funding for new sidewalks is regarded the same way as any other eligible feature of a project. For example, when 80 percent of a project is federally funded and the remaining 20 percent is provided by

the state, the cost of a new sidewalk would be included in that funding and the municipalities would not be responsible for its construction. Municipalities are, however, responsible for its maintenance.

The policy also requires the reconstruction of any existing sidewalks that are disturbed during construction. It encourages the construction of new sidewalks when road construction occurs and a sidewalk is deemed appropriate and safe. In addition, CTDOT now allows for exclusive sidewalk projects, which are prioritized along with traditional road projects.

### New Signal Technology Adoption

CTDOT has utilized innovative technology to enhance pedestrian and bicycle safety through various signal projects. For example, in 2014, CTDOT approved

**HAWK (High-intensity Activated crossWalk) beacons** are traffic signals that are installed where pedestrian or bicyclist paths cross a road and that turn red only when a person wishing to cross activates them.

the first HAWK beacons in Connecticut by allowing them in Cheshire and Stamford. HAWK beacons are now considered on state transportation projects on a case-by-case basis.

### Painted Bike Lane Installation

**Bike boxes** are areas where bikes wait ahead of cars at a light for positioning. CTDOT continues to evaluate the performance of both features and will consider their use in other parts of the state.



Image credit: Streetsblog USA

In 2014, CTDOT received federal approval to install green-painted bike lanes and bike boxes along a section of Broad Street in Hartford. The purpose is to improve the safety for bicyclist along this highly congested street.

### Crash Data Collection Initiative

In 2015, CTDOT developed a Connecticut Uniform Police Crash Report (PR-1) for police to use at crash scenes. The goal was to align Connecticut's system



## STATEWIDE AND REGIONAL FACILITIES

Since 2009, some of the greatest progress for bicycle and pedestrian travel in Connecticut has been around statewide and regional trail planning.

Prior to 2009, the construction of multi-use trails in Connecticut relied heavily on municipalities and regions to coordinate the planning, design, and construction of any segments of trails that are routed through their respective communities. This approach left many gaps in the overall network that are proving difficult to complete largely because of funding. CTDOT recently shifted its practice to assist communities in the pursuit of closing gaps in the trail network of statewide significance. CTDOT has initiated and/or advanced the design and construction activities on several projects, many of them smaller in size but costlier in nature because of design and / or right-of-way challenges.

An important element of the *Let's GO CT! - Connecticut's Bold Vision for a Transportation Future*

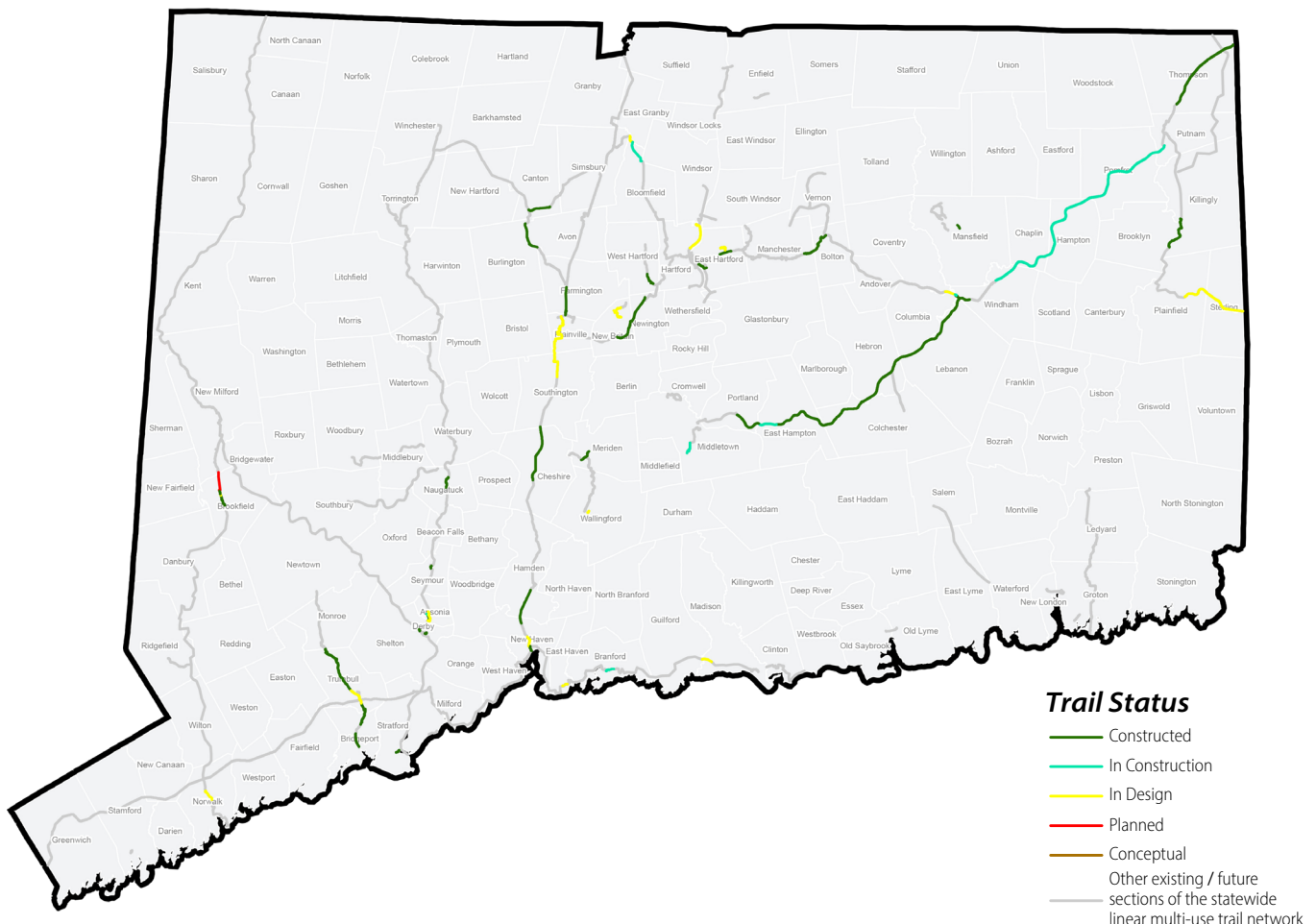
is to develop a more complete and connected multi-use trail network that is comparable to the state's vehicular roadway system.

Resources are focused on completing the East Coast Greenway, which is a trail of statewide significance, and secondly on trails of regional significance. **Figure 2** displays the trail sections that have received transportation funding since 2009.



Image credit: TrailLink Guest

Figure 2: Multi-Use Trail Sections Funded and Constructed Since 2009 (Last updated: October 14, 2018)



with national crash data guidelines and to leverage efficiencies gained with electronic reporting. These forms identify crashes that involve pedestrians and bicyclists. In some cases the forms also include the contributing factors that caused these crashes.

## STATEWIDE, REGIONAL, AND MUNICIPAL PLANNING EFFORTS

CTDOT has collaborated with other state agencies and organizations to advance pedestrian and bicycle causes. For example, CTDOT has collaborated with the Department of Health (DPH) and BikeWalk CT to create a Share the Road brochure. **Appendix C** includes CTDOT and other state agency examples related to pedestrian and bicycle transportation.

Regions, municipalities, and other organizations have also become more proactive in their planning and design for pedestrians and bicyclists. For example, municipalities have their own pedestrian and bicycle plans, advisory committees, and Complete Streets ordinances and policies. Many are repainting their roadways to be more inclusive to active users. **Appendix D** includes regional planning examples related to pedestrian and bicycle transportation. **Appendix E** includes municipal planning and accomplishments related to pedestrian and bicycle transportation. **Appendix F** includes other examples of collaborative planning efforts.

## EDUCATION PROGRAMS AND ADVOCACY GROUPS

Education programs and advocacy groups have contributed to enhanced knowledge and awareness of pedestrian and bicyclist safety. For example, *Watch for Me CT* is a comprehensive program that began in 2018 and is run by CTDOT in partnership with Connecticut Children's Injury Prevention Center. Its purpose is to reduce the number of pedestrians and bicyclists struck and injured in crashes with vehicles. It involves two key elements:

1. Safety and educational messages directed toward drivers, pedestrians and bicyclists, and

2. Enforcement efforts by area police to crack down on some of the violations of traffic safety laws.

**Appendix G** includes examples, descriptions, and accomplishments of several of these programs and groups.

These examples are some that highlight the progress seen in pedestrian and bicycle travel in Connecticut over the past decade. While there are continued challenges, the strategies and actions of the next three chapters identify additional ways to achieve safer, more connected walking and bicycling environments in Connecticut.

## C. VISION AND GOALS

CTDOT is committed to the principle that walking and bicycling promote healthy lives, strong communities, and more sustainable environments. CTDOT's vision for active transportation in Connecticut is:

*Connecticut Department of Transportation will encourage, promote, and improve walking, bicycling, and other forms of active transportation, so that any person, regardless of age, ability, or income will be able to walk, bicycle, or use other types of active transportation modes safely and conveniently throughout Connecticut.*

*An integrated network of on-road facilities and multi-use trails will connect key destinations, municipalities and regions, while strengthening Connecticut's links to neighboring states.*

The three goals to support the vision include:

**Goal #1 - Improve Pedestrian and Bicyclist Safety**

**Goal #2 - Enhance Mobility for Pedestrians and Bicyclists**

**Goal #3 - Utilize Resources to Achieve Meaningful Improvements**

Chapters 2, 3, and 4 provide information on the existing setting and how CTDOT will work to make progress on these goals over the next six years. After that time, a new plan will be developed.



Image credit: Justin Weekes / For the Record-Journal

# CHAPTER TWO: IMPROVING PEDESTRIAN AND BICYCLIST SAFETY



*Image credit: New Canaanite*

Actual and perceived pedestrian and bicycle safety can affect those considering these activities. For example, news of injuries and fatalities can aid perceptions that walking and bicycling are unsafe and discourage the public from engaging in these activities. Understanding the causes of crashes can lead to more effective road design countermeasures as well as guidelines to improve safety. Improving safety can ultimately encourage more people to walk and bicycle as a means of transportation.

## A. CRASH DATA AND ANALYSIS

Despite the growing popularity of walking and bicycling across the United States, National Highway Traffic Safety Administration (NHTSA) data reports that pedestrian and bicyclist safety continues to be a serious concern. About 17 percent of highway fatalities that occur in Connecticut, and nationwide, involve a pedestrian. In addition, the percentage of crash fatalities that involve bicyclists has remained steady at 1-2 percent since the 1960s.

CTDOT collects and monitors crash data on an annual basis for all roadway classes (interstate, U.S. route, state highway, and locally owned and maintained). CTDOT updated to an electronic data collection system in January 2015 and has been using this since that time.

While crash data is an important tool for researching problem areas, there are limitations to the data. Only crashes that are reported to the police are included in this data. Typically, only crashes involving motor vehicles, and those having fatalities, injuries, or property damage, are reported. Crashes involving bicycles-only or bicycles and pedestrians, as well as those that do not have fatalities, injuries, or property damage can often go unreported. The police are responsible for filing the crash reports, which are then entered into the statewide crash database.

### CRASHES INVOLVING PEDESTRIANS

Between 2013 and 2017 there were 533,842 reported crashes on all roadways in Connecticut. Of these 6,652 (1.2 percent) crashes involved pedestrians. Notably, in the 5-year span between 2013 and 2017 there was a 39 percent increase for all reported crashes involving pedestrians, and a 50 percent increase in reported fatal crashes involving pedestrians. This compares to a 20 percent increase in all reported crashes between 2013 and 2017.

In Connecticut, approximately four percent of crashes that involve pedestrians result in fatalities. The largest percentage of pedestrian crashes for all years occurred on local roads (60 percent). The smallest percentage of pedestrian crashes for all years occurred on interstate highways. **Appendix H** includes crash information categorized by road classification and municipality.

Pedestrian crashes are disproportionately high in the more urbanized areas of the state where large numbers



Image credit: Erik Trautmann, *The Hour*

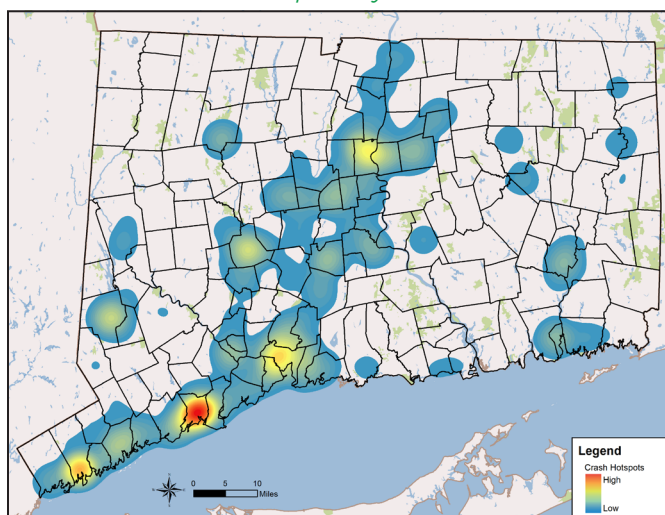
of users (pedestrians, bicyclists, and motorists) are all utilizing the same facilities. The cities of New Haven, Hartford, Bridgeport, Waterbury, and Stamford have the highest number of pedestrian crashes (each with more than 65 in any one year of the 2013- 2017 period). Forty-five percent of all crashes that involve pedestrians occurred in these five cities over the five-year period.

Suburban areas in Connecticut received the next greatest proportion of crashes. The municipalities of New Britain, Danbury, Norwalk, Meriden, Manchester, New London, and West Haven have all had a minimum of 15 crashes in any one year of the 2013-2017 period. Seventeen percent of all pedestrian crashes occurred in these seven municipalities over the five- year period. **Figure 3** displays hot spots of the pedestrian crashes on interstates, U.S. routes, and state roadways for years 2013 through 2017.

### Pedestrian Priority Crash Areas

The *Plan* development included a process to identify corridors with a history of frequent crashes involving pedestrians. **Table 3** displays these top 15 pedestrian crash corridors. These corridors total 28.5 miles and include 80 fatal and severe injury crashes (16 percent of state highway total) and 389 other crashes involving pedestrians (24 percent of state highway total),

Figure 3: Concentrations of Pedestrian Crashes on Interstates, US Routes, and State Roadways (2013-2017); Source: Connecticut Crash Data Repository



### Identifying High Pedestrian Crash Corridors

The following steps were used to identify high pedestrian crash corridors:

- 1) Use CTDOT-generated road segments (less than 100-foot in length).
- 2) Identify crashes involving pedestrians within 1/4 mile of each segment.
- 3) Highlight the segments which were within the top fifth percentile of a combined weighted crash score, weighted such that fatal and severe injury crashes counted three times that of other reported crashes involving pedestrians. A score of 17 or higher placed a segment into this category (i.e. 17 or more crashes involving pedestrians, not fatal or severe injury, within 1/4 mile of segment).
- 4) Combine the highlighted segments into an aggregate segment if segments were within 1/4 mile of each other.
- 5) Identify all crashes involving pedestrians within 100 feet of the aggregate segments and rank based on the weighted crash score.

between the five-year study period of 2012 – 2016. Due to availability of data at the beginning of the priority crash area analysis, 2017 crash data was not used.

## CRASHES INVOLVING BICYCLISTS

Between 2013 and 2017 there were 533,842 reported crashes on all roadways in Connecticut. Of these, 2,891 (0.6 percent) crashes involved bicyclists. During this

five-year span, there were an average of four fatal crashes involving bicyclists reported per year. During this period, there was a 11 percent decrease in crashes involving bicyclists, from 605 in 2013 to 539 in 2017.

In Connecticut, crashes that involve bicyclists are fatal in less than 0.7 percent of instances. Approximately 81 percent of all crashes that involve bicyclists result in injuries, often to the bicyclist. The largest percentage of bicycle crashes for all years occurred on local roads (61 percent and greater). The smallest percentage of crashes occurred on interstate highways (less than 0.7 percent), where bicyclists are legally not allowed.

**Appendix H** includes crash information categorized by road classification and municipality.

Crash reports that involve bicyclists include the age of the bicyclist involved. In the three-year period since the new crash report form was introduced (2015 – 2017), 39 percent of victims were 19 years old or younger. Another 15 percent of victims were 20-29 years of age. Approximately 86 percent of the bicyclists involved in crashes were male.

**Figure 4** displays hot spots of the bicycle crashes for years 2013 through 2017. Like pedestrian occurrences, bicycle crashes are disproportionately high in the more urbanized areas of the state where large numbers of the users (pedestrians, bicyclists, and motorists) are all utilizing the same facilities. The cities of New Haven,

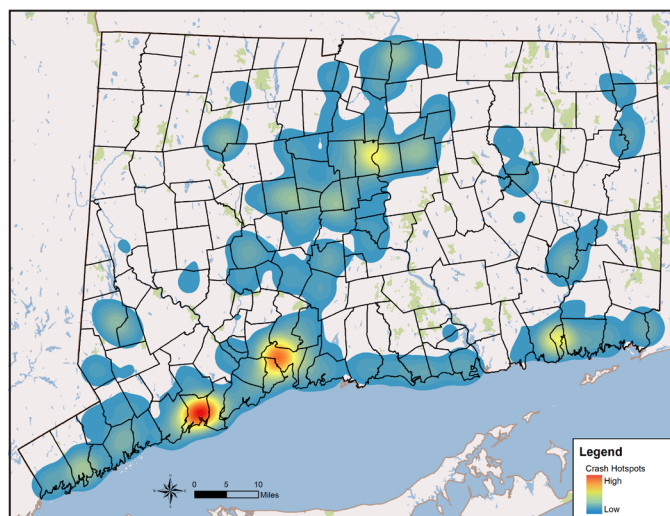
*Table 3: State Road Segments with High Crashes Involving Pedestrians (2012 – 2016)*

Rank	Municipality	Route	Segment Begin	Segment End	Length (Mile)	Fatal / Severe Injury Crashes	Non-fatal/non severe injury crashes	Weighted Total
1	Stamford	1	Alvord Ln.	Seaside Av.	3	12	59	95
2	Hartford	44	Columbus Blvd.	Westbourne Pkwy.	2.3	7	49	70
3	Bridgeport	127	Stratford Av.	Alpine St.	2	7	33	54
4	Danbury	53	South St.	Downs St.	1.5	6	30	48
5	Bridgeport	1	North Av.	Otis St. (Stratford)	2.3	6	21	39
6	New Haven	1	Admiral St. (West Haven)	Brown St.	2.5	4	27	39
7	Stamford	137	Tressor Blvd.	7th St.	1.2	4	25	37
8	Norwalk	1	0.1 Mi. South of Rampart Rd.	France St.	2.8	5	21	36
9	Bridgeport	130	Water St.	Florence St.	1.8	7	15	36
10	Bridgeport	700	Commerce Dr.	Water St.	1.7	5	21	36
11	Waterbury	847	Mill St.	0.5 Mi. North of Main St.	1.8	1	32	35
12	East Haven	80	Middletown Av.	Highland Av.	1.1	7	13	34
13	Bridgeport	1	Pacific St.	River St.	1.6	2	18	24
14	Bridgeport	130	Railroad Av.	Water St.	1.7	3	15	24
15	New Haven	10	Derby Av.	Fitch St.	1.2	4	10	22

Bridgeport, and Hartford have the highest number of bicycle crashes, each with more than 40 in any one year of the 2013-2017 period. These three cities represented thirty-three percent of the statewide total of bicyclist related crashes in this five-year period.

Other urban and suburban areas in Connecticut that had the next greatest proportion of crashes include Stamford, Waterbury, New Britain, Manchester, Norwalk, New London, and East Hartford. These municipalities have all had a minimum of nine crashes in any single year

Figure 4: Concentrations of Bicycle Crashes on Interstates, U.S. Routes, and State Roadways (2013-2017); Source: Connecticut Crash Data Repository



of the 2013-2017 period. Approximately 18 percent of all the crashes involving bicyclists occurred in these seven municipalities over the five-year period. This crash data was taken into consideration in the development of the statewide bicycle planning network. Chapter 3 contains more information on the statewide bicycle planning network.

### Bicyclist Crash Priority Areas

The *Plan* development included a process to identify corridors with a history of frequent bicycle crashes. **Table 4** displays the top 15 bicycle crash corridors. These corridors total 18.6 miles and include 13 fatal and severe injury crashes involving bicyclists (10 percent of state highway total) and 151 other crashes involving bicyclists (14 percent of state highway total), between the five-year study period of 2012 - 2016. Due to availability of data at the beginning of the priority crash area analysis, 2017 crash data was not used.

### Identifying High Bicycle Crash Corridors

Steps used to identify high bicycle crash corridors:

- 1) Highlight the Tier I segments (less than 100 feet) in the statewide bicycle planning network. See Chapter 3 for more information on the statewide bicycle planning network.
- 2) Combine the Tier I segments into an aggregate segment if segments were within 1/4 mile of each other.
- 3) Identify crashes involving bicyclists within 100 feet of these aggregate segments and ranked based on the weighted crash score.

Table 4: State Road Segments with High Crashes Involving Bicyclists (2012 - 2016)

Rank	Municipality	Route	Segment Begin	Segment End	On Bike Planning Network	Length (Mile)	Fatal / Severe Injury Crashes	Non-fatal/non severe injury crashes	Weighted Total
1	Stamford	1	Virgil St.	Lawn Av.	Yes	2.1	4	14	26
2	New Haven	1	Howard Av.	Tomlinson Bridge	Yes	1.8	2	12	18
3	New Haven	10	Edgewood Av.	Blake St.	No	1.2	1	13	16
4	Hartford	44	Morgan St.	Oakland Tr.	No	1.4	0	15	15
5	Bridgeport	127	Clarence St.	Berkshire Av.	No	1.4	0	15	15
6	Stonington	1	0.2 Mi. North of Mellow Ct.	CT / RI State Line	Yes	1	0	12	12
7	Bridgeport	130	Kings Hwy. (Fairfield)	Commerce Dr.	Yes	1.9	2	6	12
8	Manchester	6	W. Center St.	Holl St.	Partial	1.1	1	9	12
9	New London	641	Jefferson Av.	Gov. Winthrop Blvd.	No	0.7	0	12	12
10	New Haven	63	Fitch St.	Glenview Tr.	Yes	1.2	1	8	11
11	Stratford	1	N. Bishop Av. (Bridgeport)	California St.	No	1.2	0	9	9
12	Fairfield	1	Fairfield Pl.	0.2 Mi. North of Unquowa Rd.	Yes	0.9	0	8	8
13	Bridgeport	1	Colonial Av.	Brooks St.	No	0.8	1	5	8
14	Bridgeport	130	Wordin St.	Middle St.	No	0.9	0	8	8
15	Norwich	82	N. High St.	Banes Ct.	No	0.9	1	5	8

## PEDESTRIAN AND BICYCLIST SAFETY IMPROVEMENTS

Planners, engineers, and road designers next analyzed the top pedestrian and bicycle corridors in detail, displayed in Tables 3 and 4, to further identify the most critical ones in need of near-term improvements. From those corridors, recommendations and associated cost estimates were developed for a selected number of pedestrian and/or bicycle corridors. These top ten corridors were selected based on the corridor having one or more of the following:

- Very high crash history and severity
- Overlapping bicycle and pedestrian crashes and needs in the same area
- Potentially straightforward solutions, without the need for additional detailed planning studies

**Appendix I** includes more information on the corridor analysis.

**Table 5** lists the top pedestrian and bicycle safety project corridor recommendations. The recommendations generally fall into four categories of improvements:

1. Striping / painting
2. Signal upgrades
3. Network / facilities
4. Other (programmatic, plan development)

## B. EDUCATION AND AWARENESS INITIATIVES

An important goal of CTDOT is to continue to work with its partners to educate key stakeholders, designers, those traveling along the state’s roadways, and all residents and visitors of Connecticut about the laws and policies related to pedestrians and bicyclists. Increased education and awareness campaigns can promote walking and bicycling as a means of safe and active transportation.

There are several other on-going collaborative efforts between CTDOT, different levels of government, and other non-profit organizations to educate and increase awareness about walking and bicycling. These efforts are summarized in **Appendix G**. These successful efforts can be expanded, and new ones can be developed, to enhance safety in the coming years.



Image credit: CTDOT

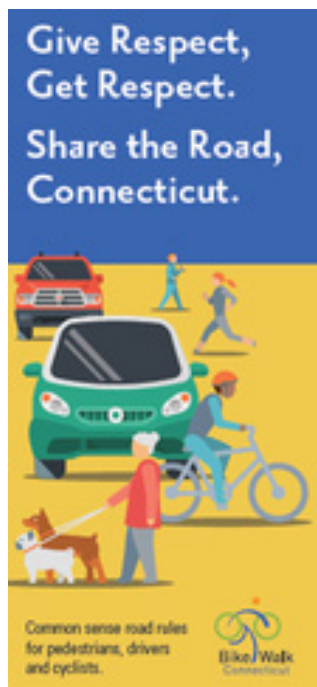


Image credit: Bike Walk Connecticut



Image credit: Bike East Bay

Table 5: Top 10 Pedestrian and Bicycle Safety Corridors

Rank	Municipality	Route	Segment Begin	Segment End	Length (Mile)	Proposed Improvements	Engineering Cost	Pedestrian / Bicycle Facilities Cost*	Resurfacing & ADA Ramp Cost	Total Construction Cost	Engineering + Pedestrian / Bicycle Facilities Cost	Total Cost
1	Stamford	1	Alvord Ln.	Seaside Av.	15,420	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Road diet</li> <li>Traffic and pedestrian signal upgrades</li> </ul>	\$1,200,000	\$11,500,000	\$4,500,000	\$16,000,000	\$12,700,000	\$17,200,000
2	Hartford	44	Bedford St.	Morgan St.	4,475	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Road diet</li> <li>Traffic and pedestrian signal upgrades</li> </ul>	\$800,000	\$1,600,000	\$1,600,000	\$3,200,000	\$2,400,000	\$4,000,000
3	Bridgeport	127	Cedar St.	Kingsbury Rd.	8,770	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Pavement markings to formalize shoulders</li> <li>Pedestrian signal upgrades</li> <li>Illumination</li> </ul>	\$1,200,000	\$1,100,000	\$2,300,000	\$3,400,000	\$2,300,000	\$4,600,000
4	New Haven	1	Gilbert St.	Brewery St.	11,990	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Selective roadway resurfacing</li> <li>Road diet</li> <li>Traffic and pedestrian signal upgrades</li> <li>Curbing</li> </ul>	\$1,400,000	\$7,600,000	\$1,700,000	\$9,300,000	\$9,000,000	\$10,700,000
5A	Bridgeport	130	Seaview Av.	Bruce Av.	6,230	<ul style="list-style-type: none"> <li>ADA ramp upgrades</li> <li>Road diet for bicycle lanes</li> <li>On street parking (both sides)</li> <li>Sidewalk bump outs</li> <li>Signal upgrades</li> </ul>	\$1,000,000	\$4,800,000	\$3,200,000	\$8,000,000	\$5,800,000	\$9,000,000
5B	Bridgeport		Kings Hwy.	Wordin Av.		<ul style="list-style-type: none"> <li>ADA ramp upgrades</li> <li>Road diet for bicycle lanes</li> <li>Dedicated left turning lane</li> <li>Shoulder markings for on street parking</li> <li>Signal upgrades</li> </ul>	\$1,200,000	\$9,400,000	\$3,400,000	\$12,800,000	\$10,600,000	\$14,000,000
6	Danbury	53	South St.	Liberty St.	3,720	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Road diet for bicycle lane</li> <li>Traffic and pedestrian signal upgrades</li> </ul>	\$800,000	\$800,000	\$1,700,000	\$2,500,000	\$1,600,000	\$3,300,000

\* Includes all “proposed improvements” listed in table other than “resurfacing and ADA ramp costs”



Table 5: Top 10 Pedestrian and Bicycle Safety Corridors (continued)

Rank	Municipality	Route	Segment Begin	Segment End	Length (Mile)	Proposed Improvements	Engineering Cost	Pedestrian / Bicycle Facilities Cost*	Resurfacing & ADA Ramp Cost	Total Construction Cost	Engineering + Pedestrian / Bicycle Facilities Cost	Total Cost
7	Bridgeport	1	Bruce Av.	Seaview Av.	4,790	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramp upgrades</li> <li>• Roadway resurfacing</li> <li>• Traffic and pedestrian signal upgrades</li> <li>• Selective full depth reconstruction</li> <li>• Concrete curbing</li> </ul>	\$1,100,000	\$9,300,000	\$2,600,000	\$11,900,000	\$10,400,000	\$13,000,000
8	Norwalk	1	Richards Av.	I-95 SB Ramps	6,020	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramp upgrades</li> <li>• Roadway resurfacing</li> <li>• Traffic and pedestrian signal upgrades</li> <li>• Selective full depth reconstruction</li> <li>• Curbing</li> </ul>	\$1,000,000	\$2,500,000	\$2,500,000	\$5,000,000	\$3,500,000	\$6,000,000
9	Stonington	1	May Flower Av.	CT/RI State Line	3,840	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramp upgrades</li> <li>• Roadway resurfacing</li> <li>• Road diet for bicycle lane</li> <li>• Roundabout</li> <li>• Selective full depth reconstruction</li> </ul>	\$800,000	\$3,500,000	\$1,200,000	\$4,700,000	\$4,300,000	\$5,500,000
10A	Manchester	6	Goodwin St.	Vernon Rd.	21,860	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramps upgrades</li> <li>• Road diet for two bicycle lanes, two travel lanes, and parking on alternating sides of roadway</li> <li>• Bump-outs</li> <li>• Minor intersection improvement at Porter St</li> <li>• Major intersection improvement at Pine St / West Center St</li> </ul>	\$1,100,000	\$8,600,000	\$4,300,000	\$12,900,000	\$9,700,000	\$14,000,000
10B	East Hartford	5	Burnside Av.	Pitkin St.	4,140	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramps upgrades</li> <li>• Roadway resurfacing</li> <li>• Road diet for bicycle lane</li> <li>• Pedestrian signal upgrade</li> <li>• Selective full depth reconstruction</li> <li>• Curbing</li> </ul>	\$700,000	\$1,000,000	\$2,200,000	\$3,200,000	\$1,700,000	\$3,900,000
Total										\$74,000,000	\$105,200,000	

\* Includes all "proposed improvements" listed in table other than "resurfacing and ADA ramp costs"

## C. STRATEGIES AND ACTIONS PLAN

Improving safety is the most important pedestrian and bicycle related goal for the Department. As such, CTDOT has outlined four strategies to support this goal. Key actions are identified for each of the four strategies. Implementation of these actions will allow the Department to realize its associated goal and make progress toward the ultimate vision of the *Plan*. To assist in implementation, a responsible office(s) and / or group(s) within the Department is identified to lead each action.

**Table 6** displays the strategies and actions to enhance safety for pedestrians and bicyclists.

*Table 6: Strategies and Actions Plan for Goal #1*

Goal #1 – Improve Pedestrian and Bicyclist Safety		
Strategy	Action	Lead Office(s) / Group
1.1 Develop and advance <b>manuals, plans, and strategies</b> to reduce bicycle- and pedestrian-involved crashes on state roads	1. Update the Traffic Control Signal Design Manual with guidelines for appropriate uses / contexts of concurrent vs. exclusive pedestrian phase signaling, with one goal to potentially reduce concurrent signal phasing at intersections with high turning movement pedestrian crashes	• Engineering and Construction - Traffic Engineering
	2. Discontinue the use of side street green for pedestrian crossings at new traffic control signals and at existing locations receiving full replacement. Review other existing locations with side street green indications for modification whenever the intersection is reviewed or when traffic signal modifications are proposed. Update the Traffic Control Signal Design Manual to reflect these changes for state-owned traffic control signals	• Engineering and Construction - Traffic Engineering
	3. Building upon the efforts of the Route 1 Road Safety Audit, conduct similar studies on portions of other needed corridors in the state	• Policy and Planning - Intermodal Planning
	4. Advance manuals, plans, and strategies that will improve pedestrian and bicyclist safety	• Complete Streets Standing Committee
1.2 Implement <b>infrastructure and facility improvements</b> to reduce bicycle- and pedestrian-involved crashes on state roads	1. Complete the upgrade of pedestrian warning signs and mid-block crossings on state roads	• Engineering and Construction - Traffic Engineering
	2. Include pedestrian elements with new traffic signal installations and major modifications	• Engineering and Construction - Traffic Engineering
	3. Implement countermeasures from the Federal Highway Administration's Safe Transportation for Every Pedestrian (STEP) initiative	• Engineering and Construction - Traffic Engineering, Traffic Safety Unit
	4. Implement recommendations from the Route 1 Road Safety Audit that address walking and bicycling deficiencies	• Engineering and Construction - Highway Design • Policy and Planning - Intermodal Planning
	5. Prioritize and implement improvements from the top ten pedestrian / bicycle safety corridors as identified in <b>Table 5</b>	• Engineering and Construction - Highway Design • Policy and Planning - Intermodal Planning
1.3 Improve pedestrian and bicycle <b>safety near rail stations, transit hubs, and bus stops</b>	1. Conduct safety audits at rail and transit facilities with high crash numbers	• Policy and Planning - Intermodal Planning
	2. Incorporate pedestrian and bicycle elements when upgrading rail and transit facilities	• Public Transportation • Engineering and Construction - Highway Design
1.4 Develop and provide <b>education for all</b>	1. Provide pedestrian and bicycle rights and responsibilities training for law enforcement classes annually	• Policy and Planning - Highway Safety, Law Enforcement Liaison
	2. Coordinate with existing (e.g. Watch for Me CT) or new advertising campaigns to influence and support future content	• Policy and Planning - Highway Safety
	3. Promote the completion of pedestrian and bicycle safety projects to the public and stakeholders through the Office of Communications	• Engineering and Construction - Highway Design
	4. Educate the public on the traffic movement changes and promotion of key bicycle improvements (e.g. road diets)	• Engineering and Construction - Highway Design • Policy and Planning - Intermodal Planning

# CHAPTER THREE: ENHANCING MOBILITY FOR PEDESTRIANS AND BICYCLISTS



*Image credit: Stamford Downtown*

The increasing number of residents and visitors who bicycle and walk for recreation and transportation have encouraged an expansion of facilities by which to do so. CTDOT has incorporated progressive facilities and street design into its projects that focus on the incorporation of bicycle and pedestrian improvements. These include lane narrowing to allow for greater shoulder width where applicable, implementation of the first road diet on a state highway, installation of new bike lane designs, and adoption of new signal technology.

Existing laws allow for the feasibility of these facilities and their appropriate use. The laws in place determine the location and type of facilities built as well as provide potential incentives to increase the development of such facilities. They also provide safety protections to bicyclists and pedestrians and assist in the enforcement of such laws. A complete list of statewide laws pertaining to bicyclists and pedestrians is in **Appendix J**.

In addition, programs and projects identified in *Let's GO CT! - Connecticut's Bold Vision for a Transportation Future* have assured that funds spent on pedestrians and bicyclists prioritize safety and connections. This is apparent in those projects selected as part of the *Community Connectivity Program* and the *Multi-Use Trail Program*.

The construction of on-the-ground facilities for pedestrians and bicyclists is an exciting visual indication of progress toward strengthening the walking and bicycling environment across the state. As part of the plan development process, four needs related to enhancing mobility were highlighted by stakeholders and agency representatives. They include access to transit, Americans with Disabilities Act (ADA) compliance, defining a statewide bicycle network, and closing the gaps in the trail network.

## A. ACCESS TO TRANSIT

To achieve a truly integrated multi-modal transportation network across Connecticut, facilities for pedestrians and bicycles need to be integrated with transit services. This includes providing comfortable and efficient pedestrian and bicycle networks to access transit stations as well as accommodating these users on transit services. Existing bicycle accommodations on transit vehicles and at stations are displayed in **Table 7**.

During the development of the *Plan*, the public and key stakeholders expressed a need to strengthen the accessibility and connections for pedestrian and bicyclists to transit stations. Input focused on the lack of pedestrian facilities, such as crosswalks, near transit stations, which impedes safety. Many cited difficulties following the different rules and times of the day that various transit services can or cannot accommodate bicyclists. In addition, municipalities have voiced a desire for CTDOT to gather and provide use data at bus stops at state roads.



Image credit: CTfastrak Year One Report, CTDOT Bureau of Public Transportation



Image credit: Ability Tools Blog






## B. AMERICANS WITH DISABILITIES ACT COMPLIANCE

Active transportation is more than just walking and bicycling for transportation. It includes any form of human-powered transportation including walking, bicycling, in-line skating, skateboarding, and using a wheelchair. Recently, CTDOT focused its efforts on supporting those who use wheelchairs and have other disabilities that require specific needs of the transportation system. Thus, CTDOT is overhauling its *ADA Transition Plan*, and it is expected to be released in 2020.

The ADA requires all public agencies with fifty or more employees (including CTDOT, CT municipalities, and transit agencies) to develop an *ADA Transition Plan*. The *ADA Transition Plan* helps ensure that the state-maintained transportation system, other publicly provided capital facilities, and state services are accessible to all. The *ADA Transition Plan* will evaluate existing practices and facilities and develop a framework for implementing the accessibility requirements across all CTDOT Bureaus.

Because of the overlapping interests and goals, several of the actions proposed for the development of the *ADA Transition Plan* are incorporated into the actions of this *Plan*.

Table 7: Transit Service Existing Bicycle Accommodations

Service	On-Board Accommodations	Station Accommodations
	<p>Bicycles are allowed on trains. They should be stored on the train in a safe and secure manner that allows for emergency egress for passengers</p>	<ul style="list-style-type: none"> <li>Berlin, Meriden, and Wallingford stations each have four hoop bike racks</li> <li>State Street Station in New Haven has 14 hoop bike racks</li> <li>Data forthcoming</li> </ul>
	<p>All buses are equipped to carry bicycles on a first-come, first-served basis:</p> <ul style="list-style-type: none"> <li>60-foot and 40-foot buses accommodate two bicycles inside each bus</li> <li>30-foot buses have bike racks on the front of the bus</li> </ul>	<ul style="list-style-type: none"> <li>All stations have bike racks</li> <li>A five-mile multi-use trail runs along the alignment connecting the Downtown New Britain Station and the Newington Junction Station. Pedestrians and bicyclists may use the trail to get to a CTfastrak station or simply for recreation</li> </ul>
	<p>All buses are equipped to carry bicycles on a first-come, first-served basis:</p> <ul style="list-style-type: none"> <li>Each bus has a rack attached to its front with a capacity for up to two bicycles</li> </ul>	<p>Automatic Vehicle Location (AVL) technology exists on all buses. This technology uses open source location data to provide transit patrons with accurate arrival and departure information via a smartphone application</p>
<p>CTrail, Shore Line East</p>	<p>Bicycles are allowed on trains operating between New Haven and New London only. They should be stored on the train in a safe and secure manner that allows for emergency egress for passengers</p>	<ul style="list-style-type: none"> <li>Data forthcoming</li> </ul>
<p>CTrail New Haven Line and Branch Lines</p> 	<ul style="list-style-type: none"> <li>Permit holders may bring bicycles aboard trains under certain conditions. Conditions include but are not limited to: restrictions on days of the year (including holidays), times of the day during which bicycles are permitted on outbound and inbound trains from / to Grand Central Station, and the maximum number of bicycles allowed</li> <li>Older rail cars have begun to be replaced with updated M8 railcars that have been designed with bicycle hooks to assist bicyclists</li> <li>Folding bicycles are allowed at any time on trains and do not require a permit</li> </ul>	<p>Bike racks are available at many stations along the New Haven Line</p> <ul style="list-style-type: none"> <li>Data forthcoming</li> </ul>
	<p>Options for traveling with bicycles depend on the available equipment and loading procedures that is specific to each train. These options include:</p> <ul style="list-style-type: none"> <li><i>Carry-on bicycle service:</i> Standard full-size bicycles may be carried on and stored onboard in bicycle racks on some trains. Some trains provide this service on a first-come, first-serve basis, while others require a reservation in advance with the potential for additional service fees</li> <li><i>Folding bikes as carry-on baggage:</i> True folding bicycles are allowed onboard certain passenger trains in lieu of a piece of carry-on baggage. Bikes must be folded before boarding the train and may not be stored in overhead racks</li> <li><i>Train-side checked bicycle service:</i> At select stations, standard full-size bicycles may be transported in bicycle racks located in the baggage car. Space is limited and must be reserved for a fee</li> <li><i>Boxed bicycles in checked baggage:</i> Bicycles may be checked on Amtrak if both the trip destination and origin stations are equipped to handle checked baggage. Bicycles / bicycle trailers must be checked in a bicycle container for a fee and passengers must supply their own bicycle container</li> <li><i>Bicycles on Amtrak Express:</i> Regular bicycles and unicycles may be shipped on Amtrak Express. Bicycles are generally exempt from Amtrak Express size requirements</li> </ul>	<ul style="list-style-type: none"> <li>Berlin, Meriden, and Wallingford stations each have four hoop bike racks</li> <li>Data forthcoming</li> </ul>

## C. STATEWIDE BICYCLE PLANNING NETWORK

The statewide bicycle planning network was developed to serve three purposes. First, the network was developed to identify key routes and connections which bicyclists want to travel on throughout the state. The network was not to be simply an inventory or reflection of all the bicycle facilities that currently exist. Second, the network also needed to provide CTDOT guidance on where future improvements should occur. Third, the statewide bicycle planning network should ultimately provide a foundation for regions and municipalities to expand upon and make local connections to.

The statewide bicycle planning network was developed with considerable input from the Steering Committee, the Councils of Government (COGs), and the public. **Appendix K** describes this process in detail. **Figure 5** displays the statewide bicycle planning network.

Once the draft network was developed and refined, a methodology was created to evaluate the network and ultimately prioritize segments, or corridors, for improvements. The evaluation for each bicycle network segment assessed such factors as safety, demand, equity, existing facilities, and opportunities. Each segment was ultimately placed into one of three categories, or tiers.

*Tier 1:* Segments that CTDOT could consider for stand-alone bicycle improvements

*Tier 2:* Segments that CTDOT could consider the incorporation of bicycle improvements as part of maintenance and other road projects

*Tier 3:* Segments that generally meet criteria and should not be a Department priority, however, CTDOT should maintain existing level of service for bicyclists on these routes in future road projects

**Appendix L** describes this analysis in detail. **Figure 6** displays the priority tiers.

## EXISTING STATE FACILITIES NOT ON THE NETWORK

Planners, highway designers, and engineers must also recognize the need for and realize opportunities for improvements and connections on roadways and state-maintained facilities that are not part of the statewide bicycle planning network. Many of the greatest needs on roads that are not part of the network are those related to safety. These needs are reflected in Chapter 2 and in the priority tiers.

Other needs not on the network are those connections that can, and should be, considered during planning for regular maintenance and reconstruction projects, such as facilities that may be candidates for road diets based on roadway width and average daily traffic volumes. In addition, those connections that are simply not on the network because there is an impassible area (e.g. limited access highway only) in that location should also be considered for improvements when opportunities arise. Both categories above were identified in the priority tier development process and should be referenced or consulted during planning and maintenance of roadway projects.



Image credit: Tom O'Brien, Adventure Cycling Blog



Image credit: Gap Closure Trail Study: Farmington Canal Heritage Trail Section, Mobility Tour, July 2016

Figure 5: Statewide Bicycle Planning Network

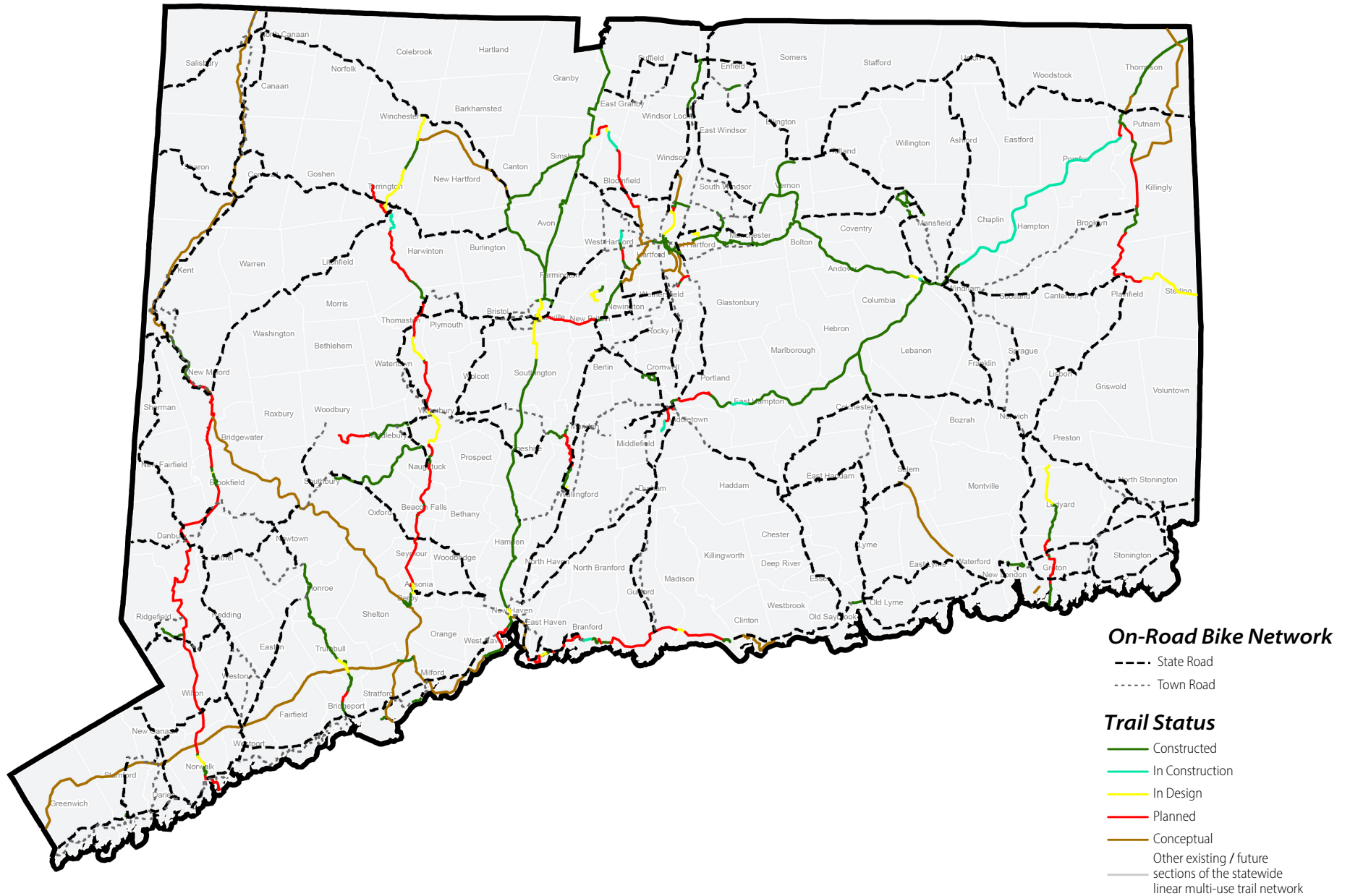
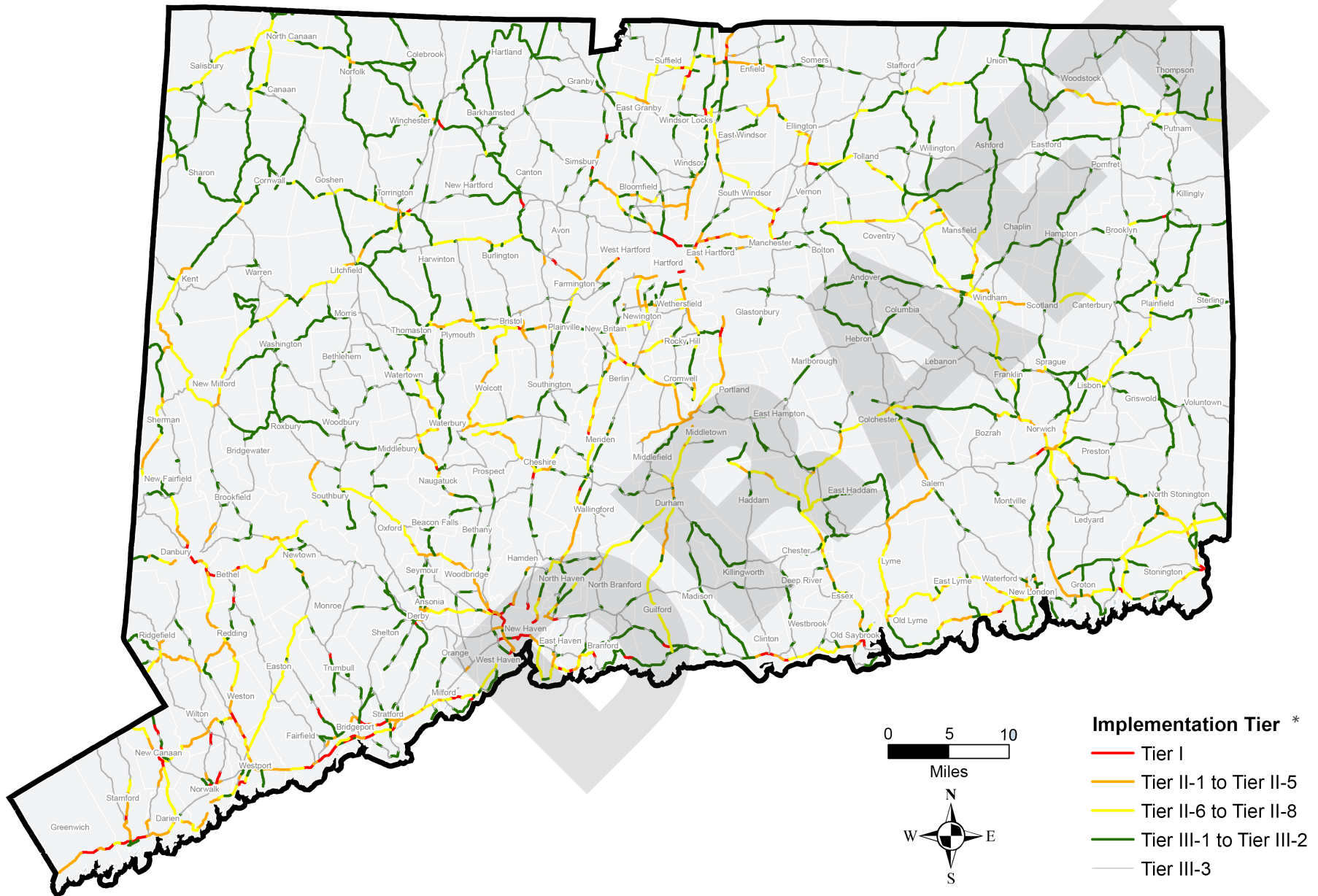


Figure 6: Implementation Priority Tiers



\*Please see Appendix L for more details on the priority tiers.



## D. TRAIL PLANNING

Closing the gaps in the trail network continues to be a significant priority of CTDOT. Many of these gaps are smaller in size but costlier in nature because of such factors as design or right-of-way challenges. CTDOT is particularly committed to closing gaps in the trails of statewide and regional significance.

**Figure 7** displays the statewide linear multi-use trails, which include the trails of statewide and regional significance as well as those trails that are included in the statewide bicycle network. **Appendix M** includes descriptions of key trails of statewide and regional significance and recent changes to their networks.

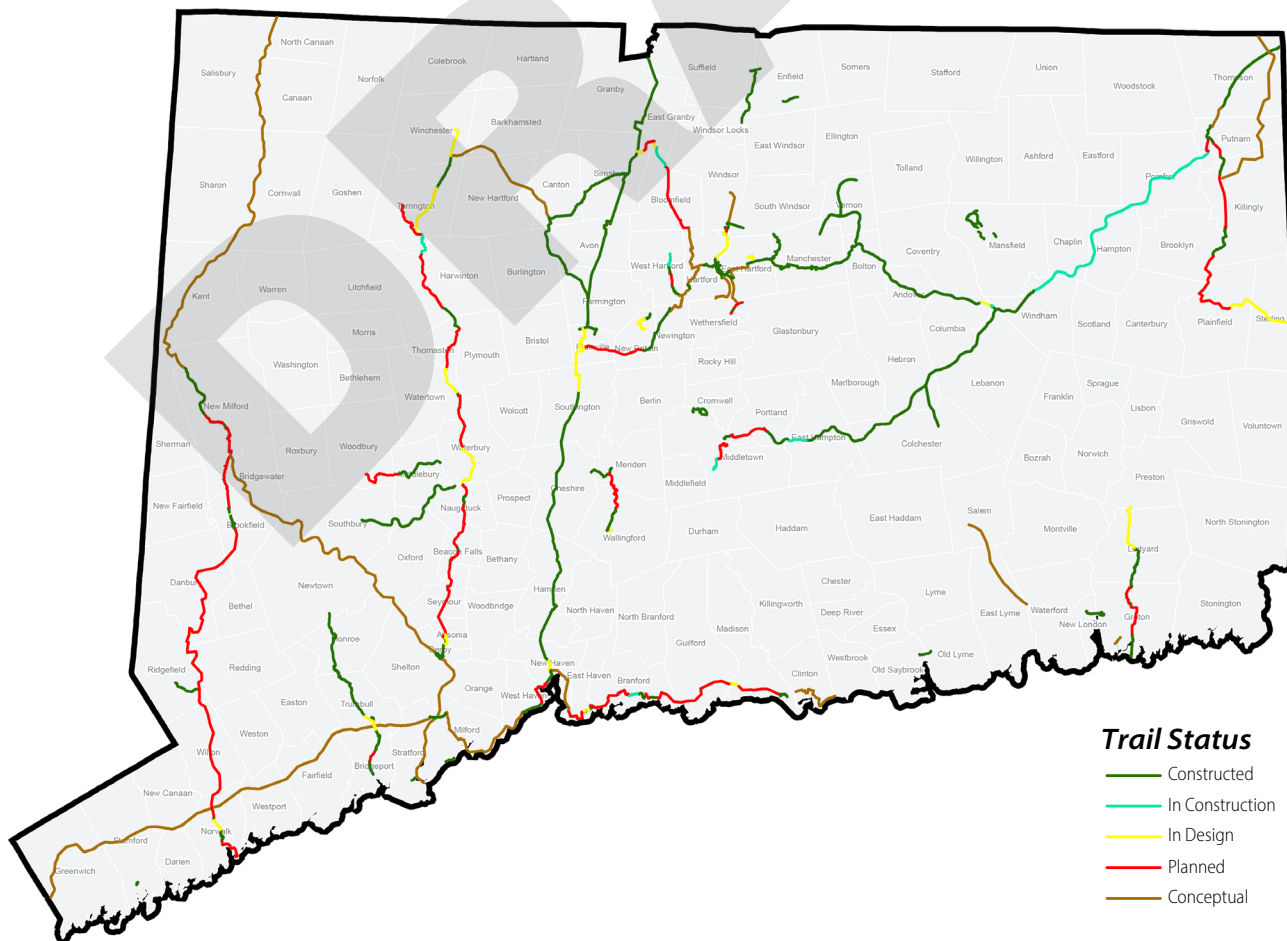


*Image credit: East Coast Greenway Alliance*

### Connecticut Trails of Regional Significance (as of early 2012)

- Air Line Trail (both north and south of the ECG alignment)
- Farmington River Trail
- Five Mile River Greenway
- Housatonic River Trail
- Naugatuck River Greenway
- Pequonnock River Greenway
- Norwalk River Valley Trail
- Route 11 Extension Trail
- Shoreline Greenway Trail
- Tri-Town Trail

*Figure 7: Statewide Linear Trails*



## E. STRATEGIES AND ACTIONS PLAN

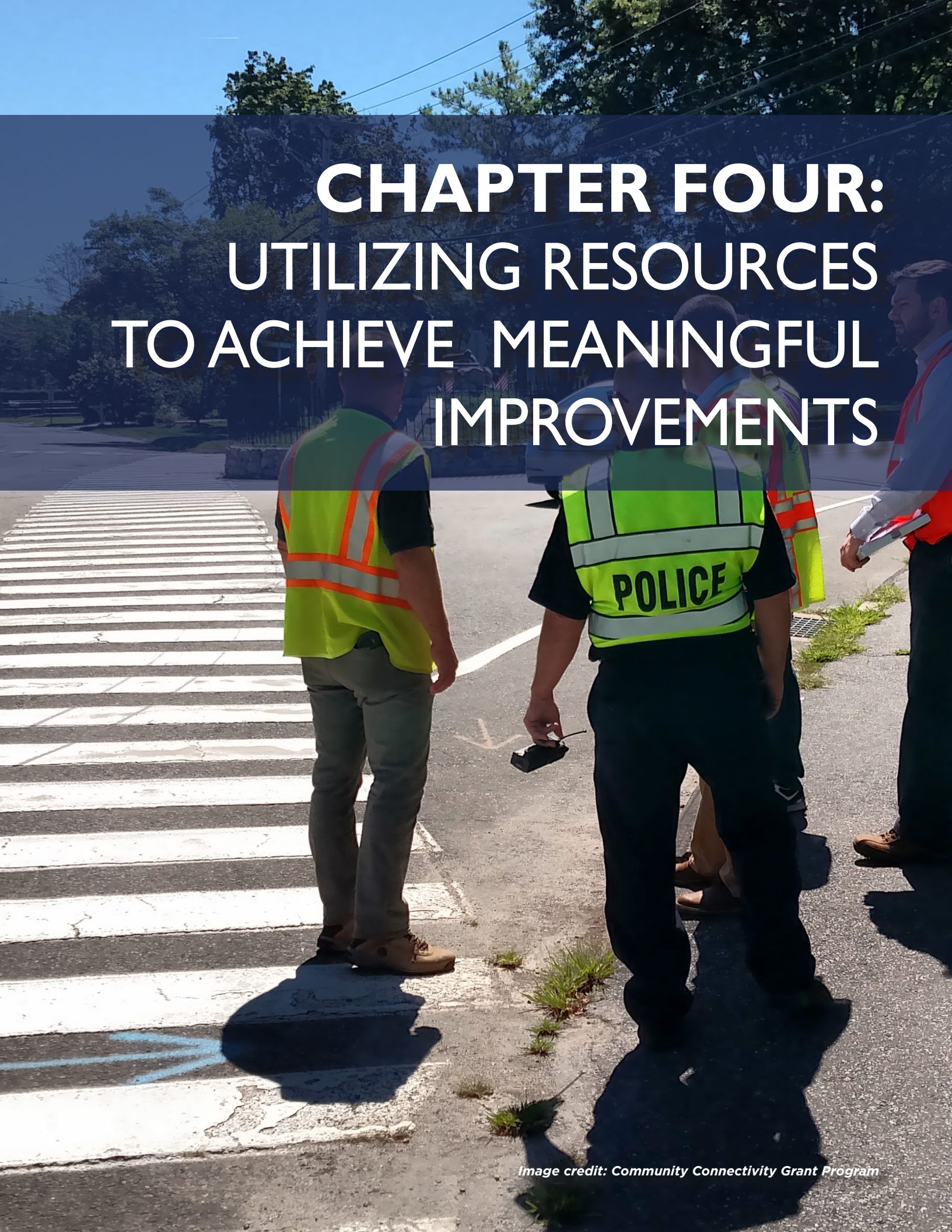
Enhancing mobility is a key goal for the CTDOT. As such, CTDOT has outlined four strategies to support this goal. In addition, key actions are identified for each of the four strategies. Implementation of these actions will allow CTDOT to realize its associated goal and make progress toward the ultimate vision of the *Plan*. To assist in implementation, a responsible office(s) and / or group(s) within CTDOT is identified to lead each action.

Table 8 displays the strategies and actions to enhance mobility for pedestrians and bicyclists.

Table 8 Strategies and Actions Plan for Goal #2

Goal #2 – Enhance Mobility for Pedestrian and Bicyclists		
Strategy	Action	Lead Office(s) / Group
2.1 Improve pedestrian and bicycle <b>access and connections to rail stations, transit hubs, and bus stops</b>	1. Assess Department maintained bus stops and shelters for accessibility barriers	• Public Transportation • Highway Operations
	2. Inventory and assess the need for bicycle storage facilities (racks and/or lockers) at transit stations	• Public Transportation
	3. Provide needed bicycle storage facilities (racks and/or lockers) to accommodate the demand at transit stations	• Highway Design
	4. Maintain, via an asset management program, bicycle storage facilities (racks and/or lockers) at state-operated transit stations	• Public Transportation
	5. Gather use data at transit stops on state roads and provide to municipalities	• Public Transportation
	6. Incorporate pedestrian and bicycle elements when upgrading rail and transit facilities	• Public Transportation • Engineering and Construction - Highway Design
	7. Provide wayfinding signage for pedestrian and bicycle amenities at state owned rail and transit facilities	• Public Transportation • Engineering and Construction - Highway Design
2.2 Enhance <b>mobility for those with disabilities</b>	1. Create a committee to set priorities, assign responsibilities, and establish deadlines for the development and implementation of ADA policies	• Commissioner • Bureau Chiefs
	2. Complete a field inventory of curb-ramps, sidewalks, and traffic signals within the State right-of-way to assess barriers	• Engineering and Construction - Highway Design • Highway Operations
	3. Fund a priority-based ADA accessibility program to install curb ramps and remove other barriers	• Engineering and Construction - Highway Design
	4. Adopt and implement the <i>ADA Transition Plan</i>	• Commissioner • Bureau Chiefs
2.3 Enhance the <b>on-road statewide bicycle planning network</b> to better accommodate the needs of commuting, recreational, touring, and utility bicyclists of all ages, abilities, and incomes	1. Establish a public interactive, online mapping resource for the statewide bicycle planning network	• Policy and Planning - Intermodal Planning
	2. In new local applications, include a scoring or mechanism to prioritize to those project applicants that include a segment of road designated as a 1) “Tier 1” segment or 2) “Potential Local Alternative” route on the Statewide Bicycle Planning Network	• Policy and Planning
2.4 Improve the <b>linear network of multi-use trails</b>	1. Complete a trail inventory for trails of statewide and regional significance. Include such information as facility description, condition, past funding description, funding year, maintenance responsibility, etc	• Policy and Planning
	2. Create a video log of the State’s trails of statewide and regional significance	• Policy and Planning - Roadway Information Systems
	3. Advance maintenance projects through the Trails Maintenance Program	• Policy and Planning
	4. Develop Proposed Project Summary Reports for non-passable state highway sections to document potential opportunities for multi-use trail connections in these corridors	• Engineering and Construction - Highway Design

# CHAPTER FOUR: UTILIZING RESOURCES TO ACHIEVE MEANINGFUL IMPROVEMENTS



*Image credit: Community Connectivity Grant Program*

CTDOT has had several accomplishments related to policy shifts and infrastructure improvements for pedestrians and bicyclists. There is, however, a finite amount of staff resources and funding to draw from. During the *Plan* development process, several stakeholders cited the need to continue to enhance the current processes and tools. These enhancement strategies could be the most consistent opportunity to improve safety and mobility for pedestrians and bicyclists.

Three major topics should be considered when exploring opportunities to enhance processes and tools. They include best practices and guidelines, internal and external CTDOT collaboration, and financing.

## A. DESIGN STANDARDS FOR FACILITIES IN CONNECTICUT

CTDOT refers to a collection of documents to provide guidance when designing transportation facilities. These guides, displayed in **Table 9**, are not strict standards, but guidelines for the development of facilities that accommodate all users and are sensitive to the surrounding environment. Some of these guidelines are in the process of being updated. These updates are necessary to ensure the principles of Complete Streets are a systematic part of CTDOT's project and design development process.

Designers must also rely on their experience, technical expertise, and judgment. As such, FHWA published a memorandum in August 2013 that expresses explicit support for "taking a flexible approach to bicycle and pedestrian facility design."

Regular updates to process reporting as well as continual training and other educational opportunities will ensure designers utilize the appropriate guides to develop context-sensitive and innovative designs that ensure the accommodation of pedestrians and bicyclists within Connecticut's transportation network.

## B. INTERNAL AND EXTERNAL AGENCY COORDINATION

### CTDOT COORDINATION

#### Bicycle and Pedestrian Coordinator

At CTDOT, bicycle and pedestrian planning efforts and issues fall under the responsibility of the Intermodal Planning Unit. This unit is responsible for effective coordination both internally with other CTDOT offices and externally with other state agencies, COGs, local governments, and interest groups to ensure bicyclists and pedestrians are considered when planning transportation facilities.



Image credit: Bike Walk CT

A Bicycle and Pedestrian Coordinator is a position described under the Federal Highway Administration's Bicycle and Pedestrian Program, which promotes safe, comfortable, and convenient walking and bicycling for people of all ages and abilities. Through this program, each state is directed to use a portion of its Federal surface transportation funding to maintain a Bicycle and Pedestrian Coordinator position in its State DOT.

Typical responsibilities include the promotion and facilitation of pedestrian and bicycle facilities; facilitation of public education and safety programs; development of connected pedestrian and bicycling networks; management of the collection of data on the use of pedestrian and bicycle facilities; and the evaluation of the performance of such facilities. **Appendix N** includes a detailed list of these tasks. Due to the significance, and the ever increasing importance of these responsibilities, no one individual is tasked with all these, rather it is a team effort taken on by all staff members in the Unit.

#### Bicycle and Pedestrian Travel Needs Assessment Form

The Bicycle and Pedestrian Travel Needs Assessment Form and process ensures that the various Bureaus and Offices within the CTDOT consider pedestrian and bicycle needs when planning and designing their projects.

The form requires documentation and information to determine the "...need and extent of bicycle and pedestrian features." It requires such information as a description of existing bicycle and pedestrian facilities within or near the project limits, a review of bicycle and pedestrian crash data in the project area, and a review of existing or planned bicycle or pedestrian traffic generators, such as parks and schools. The form is expected to be completed to the extent possible during a project's scoping phase with continual review throughout the Preliminary Design. Upon completion

Table 9: Design Guidelines and Standards for Facilities in Connecticut

Sponsoring Agency	Publication	Description	Date
CTDOT	Highway Design Manual	<ul style="list-style-type: none"> <li>Contains design standards for streets and highways</li> </ul>	2019 update in progress
AASHTO	Guide for Development of Bicycle Facilities 4th edition (aka: “Green Book”)	<ul style="list-style-type: none"> <li>Provides information on the development of facilities to enhance and encourage safe bicycle travel</li> <li>Illustrates how to accommodate bicycle traffic in most riding environments, including roadways and shared use paths</li> </ul>	2012
AASHTO	Guide for the Planning, Design, and Operation of Pedestrian Facilities	<ul style="list-style-type: none"> <li>Identifies effective and appropriate measures for accommodating pedestrians on various public rights-of-way</li> <li>Includes information on the effect that land use planning and site design have on pedestrian mobility</li> </ul>	2004
FHWA	Planning, Design, and Maintenance of Pedestrian Facilities	<ul style="list-style-type: none"> <li>Provides information on pedestrian facilities for purposes of planners and engineers</li> <li>Identifies additional relevant publications for more in-depth information "</li> </ul>	1989
FHWA	Manual on Uniform Traffic Control Devices (MUTCD)	<ul style="list-style-type: none"> <li>Guides the appropriate signage and lane markings to ensure safe and efficient travel for all users</li> </ul>	2009 (Revision 1 and 2, May 2012; ongoing revisions online)
CTDOT	The Connecticut Strategic Highway Safety Plan (SHSP)	<ul style="list-style-type: none"> <li>Coordinates statewide safety initiatives of the Highway Safety Improvement Program, the Highway Safety Plan, and the Commercial Vehicle Safety Plan</li> <li>Serves to achieve long-term crash reduction goals and performance measures</li> </ul>	2010 Adoption (revised in 2013); updated SHSP released for 2017-2021
NACTO	Urban Bikeway Design Guide	<p>Provides cities with state-of-the-practice solutions to create Complete Streets for bicyclists. For each treatment, three levels of guidance are provided:</p> <ul style="list-style-type: none"> <li>1) Required - elements for which there is a strong consensus that the treatment cannot be implemented without;</li> <li>2) Recommended - elements for which there is a strong consensus of added value;</li> <li>3) Optional - elements that vary across cities and may add value depending on the situation"</li> </ul>	2011
ITE	Designing Urban Walkable Thoroughfares guide	<ul style="list-style-type: none"> <li>Provides guidance on context sensitive solutions for roadway improvement projects that are consistent with physical settings, especially where community objectives support walkable communities, compact development, mixed land uses, and support for pedestrians and bicyclists</li> </ul>	
NACTO	Designing for All Ages and Abilities	<ul style="list-style-type: none"> <li>Provides guidance on types of bike infrastructure to build bike networks that are safe and comfortable for riders of all ages and abilities</li> <li>Focuses on two key safety factors —vehicle speeds and traffic volume—in addition to design factors like street width"</li> </ul>	2017
FHWA	Small Town and Rural Multimodal Networks	<ul style="list-style-type: none"> <li>Applies existing national design guidelines in a rural setting and highlights small town and rural case studies</li> <li>Addresses challenges specific to rural areas, recognizes how many rural roadways are operating today</li> <li>Focuses on opportunities to make incremental improvements despite the geographic, fiscal, and other challenges that many rural communities face</li> </ul>	2016
FHWA	Designing Sidewalks and Trails for Access-Part 2, Best Practices Guide	<ul style="list-style-type: none"> <li>Provides guidance on how to design and regularly maintain sidewalks and trails for all users</li> </ul>	2001

of Preliminary Design, the form is also completed and attached to the Preliminary Design Report for each project. **Appendix O** displays the blank 2018 version of the form.

### Environmental Review Form

The Environmental Review Form continues to be improved to better accommodate pedestrians and bicyclists in projects. In years past, the Environmental Review Form only required that the Bicycle and Pedestrian Travel Needs Assessment Form be completed if a project was in an urbanized area. Since 2017, it now must be completed for all projects that “contain, or has the potential to contain, design elements that could impact the function of the facility by non-motorized users, as defined by CTDOT’s Complete Streets Policy.”

## ADDITIONAL AGENCY COORDINATION

CTDOT currently coordinates with various other agencies to promote pedestrian and bicycle safety and awareness. These agencies include DPH, CT DEEP, and Department of Motor Vehicles (DMV). **Appendix C** includes descriptions of these efforts. Continuing and strengthening these existing coordination efforts, as well as seeking out new opportunities, is imperative to enhancing safety and mobility for pedestrians and bicyclists.

## C. FUNDING

The landmark Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 was the first federal transportation funding law that required state Departments of Transportation to adopt a more collaborative and multi-modal paradigm. Many of ISTEA’s provisions have been carried forth in subsequent federal transportation laws, including the Fixing America’s Surface Transportation (FAST) Act that was adopted in 2015.

**Appendix P** provides a summary of current funding sources for pedestrian and bicycle transportation.

In addition, CTDOT, regional agencies, and local agencies should consistently consider evaluating and providing information on new and innovative funding sources and / or strategies for bicycle and pedestrian projects. Examples of innovative funding strategies being used in other states are listed below.

- The East Coast Greenway Adopt-a-Mile Program offers sponsors an opportunity to adopt a mile of the trail that spans approximately 3,000 miles from Maine to Florida. Each donor is recognized at the kiosks in each State along the Greenway. This strategy could be applied in Connecticut for trail projects requiring funding. Individual paving

stones or naming rights to a trail could also be sold to raise funds.

- The *National Scenic Byways Program* provides grants and technical assistance for projects that are on highways designated as National Scenic Byways. This funding source could be used to plan, design, and develop bicycle and pedestrian facilities along Connecticut’s National Scenic Byways, which include the Merritt Parkway and Route 169.
- The *Transit-Oriented Development Technical Assistance Initiative* supports efforts to create mixed-use and walkable communities near transit centers. In 2017, the States of Alabama, Nebraska, New Mexico, North Carolina, and Washington all received funding to improve bicycle and pedestrian infrastructure around rail and bus stations.
- A *Dedicated Sales Tax* was issued in Mammoth, California to secure a stable funding source for the development and maintenance of local trails, parks, and recreation. The city increased the local sales tax by half a percent. The revenue is used only for the construction, operation, and maintenance of recreational infrastructure around Mammoth Lakes. This has also been implemented in San Diego, California.
- A *Moving Violation Surcharge* is being used in Portland, Oregon to help fund Portland’s pedestrian education and advocate programs. Traffic fine revenues are distributed to local jurisdictions to dedicate to programs that focus on increasing awareness of pedestrian and bicycle safety as well as Safe Routes to School.
- *Tolling Strategies* have been implemented by numerous international cities around the world to raise money for bicycle and pedestrian infrastructure along major corridors. In London, private vehicles are charged a fee to enter the central district of the city. This money is then allotted to transit, bicycle, and pedestrian improvements on the same corridor that they were driving.
- A *Bicycle Tax* has been implemented in Colorado Springs, Colorado which mandates a \$4 charge on each newly sold bicycle in the State. This tax goes towards funding bicycle trails and facilities across the Town of Colorado Springs.

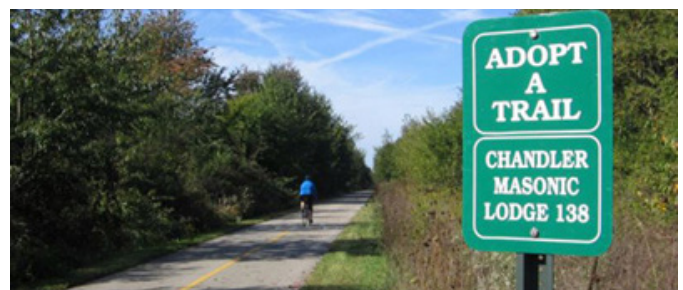


Image credit: Friends of Madison County Parks and Trails

## D. STRATEGIES AND ACTIONS PLAN

Working with and expanding on existing resources is a key goal for CTDOT. CTDOT has outlined five strategies to support this goal. In addition, key actions are identified for each of the four strategies. These may include actions such as updating existing manuals to include bicycle friendly policies, providing guidance to the Bureau of Highway Operations to discuss maintenance topics, and regularly updating existing plans to stay current with trends.

Implementation of these actions will allow the Department to realize this third major goal and make progress toward the ultimate vision of the *Plan*. To assist in implementation, a responsible office(s) and / or group(s) within the Department is identified to lead each action.

In most cases, any number and / or combination of the actions can be implemented to build toward the overall vision of the *Connecticut Active Transportation Plan*. **Table 10** displays the strategies and actions to enhance mobility for pedestrians and bicyclists.

*Table 10: Strategies and Actions Plan for Goal #3*

Goal #3 – Utilize Resources to Achieve Meaningful Improvements		
Strategy	Action	Lead Office(s) / Group
3.1 Explore best practices and <b>develop select design, construction, and maintenance manuals or procedures</b>	1. Develop Connecticut Bicycle Design Guidance for eventual incorporation into the Highway Design Manual. Include information on such features as signage, shared lane markings, dashed lines through intersections, shared right turn lanes, other pavement markings, and a flexible design for facilities that serve as emergency alternates to interstates (e.g. Route 1 to I-95)	<ul style="list-style-type: none"> <li>• Engineering and Construction - Highway Design</li> <li>• Engineering and Construction - Traffic Engineering</li> <li>• Policy and Planning - Intermodal Planning</li> </ul>
	2. Incorporate best practices, including the National Association of City Transportation Officials (NACTO) guidelines and treatments, into the Bicycle Design Guidance	<ul style="list-style-type: none"> <li>• Engineering and Construction - Highway Design</li> <li>• Policy and Planning - Intermodal Planning</li> </ul>
	3. Prepare and issue guidance on ADA standards to be used to evaluate facilities and design projects	<ul style="list-style-type: none"> <li>• Engineering and Construction - Highway Design</li> <li>• Policy and Planning - Intermodal Planning</li> </ul>
	4. Develop a new sidewalk policy to address ADA, side paths, and municipal maintenance responsibilities	• Complete Streets Standing Committee
	5. Develop maintenance guidelines for the Office of Operations for bicyclist facilities on existing roadways	• Complete Streets Standing Committee
	6. Establish maintenance guidelines for all trails of statewide significance to ensure trails remain in an appropriate state of good repair	• Complete Streets Standing Committee
3.2 Provide <b>guidance on the use of federal and state program funds</b> for bikeway, trail, and walkway projects	1. Develop a clearinghouse of information on traditional and non-traditional funding sources for pedestrian and bicycle projects	• Policy and Planning
	2. Develop training, guidance, manual(s) on: successful submissions for pedestrian and bicycle projects; project development process, and others as needed	• Complete Streets Standing Committee
	3. Communicate with regional planning agencies and municipalities at the COG Coordination Meetings on any new clearinghouses, trainings, and / or guidelines	• Policy and Planning - COG Coordination

Table 10: Strategies and Actions Plan for Goal #3 (continued)

Goal #3 - Utilize Resources to Achieve Meaningful Improvements		
Strategy	Action	Lead Office(s) / Group
3.3 Provide <b>regular information, technical assistance, and training on pedestrian and bicycle maintenance, planning, and design practices</b> to CTDOT staff, regional and municipal staff, consultants, and other members of the public	1. Attend a minimum of two Maintenance Managers Meetings per year to discuss current pedestrian and bicycle topics (e.g. VIP paving program expectations and benefits, ADA inventory requirements, new / revised guidelines)	<ul style="list-style-type: none"> <li>• Policy and Planning - Intermodal Planning</li> <li>• Complete Streets Standing Committee</li> </ul>
	2. Attend the annual District Inspector Training classes scheduled through the Office of Construction and discuss such current pedestrian and bicycle topics (e.g. new / revised guidelines, lessons learned)	<ul style="list-style-type: none"> <li>• Policy and Planning - Intermodal Planning</li> <li>• Complete Streets Standing Committee</li> </ul>
	3. Encourage RPOs to make pedestrian and bicyclist priorities part of their study processes and selection criteria	<ul style="list-style-type: none"> <li>• Policy and Planning - COG Coordination</li> <li>• Policy and Planning - Intermodal Planning</li> </ul>
	4. Attend RPO transportation committee (or Board) meetings quarterly to report on the scheduled VIP paving projects in the coming year	• Policy and Planning - COG Coordination
	5. Send 6-month look ahead letter for VIP paving projects to Local Traffic Authority (LTA) in addition to the first elected official	• Highway Operations
	6. Establish a public, online resource that includes information related to VIP paving	<ul style="list-style-type: none"> <li>• Policy and Planning - Intermodal Planning</li> <li>• Highway Operations</li> </ul>
	7. Participate in regular community walk and bike audits across the state with community leaders and advocates	• Complete Streets Standing Committee
3.4 Regularly <b>update critical pedestrian and bicycle resources</b> to keep them effective and relevant	1. Review / update the Statewide Sidewalk Policy annually	<ul style="list-style-type: none"> <li>• Engineering and Construction - Highway Design</li> <li>• Complete Streets Standing Committee</li> </ul>
	2. Review /update the Bicycle and Pedestrian Travel Needs Assessment Form annually	<ul style="list-style-type: none"> <li>• Engineering and Construction - Highway Design</li> <li>• Complete Streets Standing Committee</li> </ul>
	3. Schedule and update the Connecticut Active Transportation Plan every six years	• Policy and Planning - Intermodal Planning
	4. Establish public, interactive, online mapping resource for the Statewide Bicycle Planning Network	• Policy and Planning - Intermodal Planning
	5. Review and update the public, interactive, online mapping resource quarterly	• Policy and Planning - Intermodal Planning
	6. Coordinate with responsible parties (e.g. regional planning agencies, other state agencies, interest groups) through regular, on-going meetings to maintain current mapping data	<ul style="list-style-type: none"> <li>• Policy and Planning - COG Coordination</li> <li>• Policy and Planning - Intermodal Planning</li> </ul>
	7. Expand the capabilities / features of the interactive resource with newly available information	• Policy and Planning - Intermodal Planning
	8. Coordinate with the State Legislature to authorize pedestrian and bicycle funding in <i>Let's GO CT! - Connecticut's Bold Vision for a Transportation Future</i> beyond 2020.	<ul style="list-style-type: none"> <li>• Commissioner</li> <li>• Bureau Chiefs</li> </ul>



# CHAPTER FIVE: MEASURING PROGRESS



*Image credit: Weston and Sampson*

The strategies and actions set forth in Chapters 2, 3, and 4 provide specific direction to continue to improve the conditions for walking and bicycling on state-maintained roadways and statewide linear multi-use trails.

It is critical to track the progress of these strategies and actions in the coming years. The *Plan* will only be implemented if there is a CTDOT Office responsible for tracking progress. Thus, the Intermodal Planning Office in the Bureau of Policy and Plan will track the fulfillment of actions. This reporting will occur to the Complete Streets Standing Committee on an annual basis. This information will be included in the plan updates, which are scheduled to occur every six years.



Image credit: Christian Abraham / Hearst Connecticut Media



Image credit: Fitzgerald & Halliday, Inc.

Table 11: Strategy and Action Plan to Measure Progress

Chapter 5: Measuring Progress		
Strategy	Action	
5.1 Conduct <b>progress reviews</b> of the <i>Connecticut Active Transportation Plan</i>	1. Track and report on the fulfillment of actions annually	<ul style="list-style-type: none"> <li>• Policy and Planning - Intermodal Planning</li> </ul>



Image credit: Community Connectivity Grant Program

# CONNECTICUT

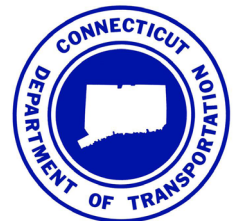
## ACTIVE TRANSPORTATION PLAN

### APPENDICES



January 2019

*A Plan for the Connecticut  
Department of Transportation*



# TABLE OF CONTENTS

<b>Appendix A: Plan Development Process and Public Involvement</b> _____	<b>3</b>
A.1 - Plan Development and Public Involvement	4
A.2 - Steering Committee Members	7
A.3 - Steering Committee and Public Meeting Agendas and Summaries	9
A.4 - Other Outreach Meetings	61
A.5 - Project Newsletters	62
<b>Appendix B: Recent Statewide Legislation</b> _____	<b>75</b>
<b>Appendix C: Agency Pedestrian and Bicycle Planning Efforts</b> _____	<b>77</b>
<b>Appendix D: Regional Pedestrian and Bicycle Planning Efforts</b> _____	<b>80</b>
<b>Appendix E: Municipal Pedestrian and Bicycle Planning Efforts</b> _____	<b>83</b>
<b>Appendix F: Other Collaborative Planning Efforts</b> _____	<b>86</b>
<b>Appendix G: Educational Programs and Advocacy Groups</b> _____	<b>89</b>
<b>Appendix H: Pedestrian and Bicycle Crash Data</b> _____	<b>95</b>
<b>Appendix I: Identification of Top Ten Safety Corridors</b> _____	<b>112</b>
<b>Appendix J: Statewide Laws Related to Pedestrians and Bicycles</b> _____	<b>118</b>
<b>Appendix K: Development of Statewide Bicycle Planning Network</b> _____	<b>124</b>
<b>Appendix L: Bicycle Planning Network Evaluation Process</b> _____	<b>132</b>
<b>Appendix M: Trails of Statewide and Regional Significance</b> _____	<b>148</b>
<b>Appendix N: Bicycle and Pedestrian Coordinator Responsibilities</b> _____	<b>152</b>
<b>Appendix O: Bicycle and Pedestrian Travel Needs Assessment Form</b> _____	<b>154</b>
<b>Appendix P: Review of Current Funding Program</b> _____	<b>162</b>

# APPENDIX A: PLAN DEVELOPMENT PROCESS AND PUBLIC INVOLVEMENT



*Image credit: New Canaanite*

# APPENDIX A.1 - PLAN DEVELOPMENT PROCESS AND PUBLIC INVOLVEMENT

## PLAN DEVELOPMENT PROCESS

The *Plan* was prepared by the Project Team, consisting of staff from Fitzgerald & Halliday Inc. (FHI) and CTDOT. Federal and state funding was provided by the Federal Highway Administration (FHWA) and CTDOT. This planning effort benefited from the extensive outreach that was done to prepare Connecticut's first ever long range strategic transportation plan, formerly known as *TransformCT*, and more recently referred to as *Let'sGoCT!* During that extensive engagement campaign, user groups of all modes, and across the entire state were convened to develop a cohesive long range strategy across all modes. The pedestrian and bicycle community were well represented in that process and their recommendations and goals have been incorporated into this *Plan*.

The *Plan* development reflects the partnership between the state, regions and local municipalities. All levels of government and their agencies and staff were responsible for the recent accomplishments related to bicycle and pedestrian travel, and all participated in the planning process for the *Plan*.

The Project Team worked with a Steering Committee to update the action strategies and implementation options that can advance bicycle and pedestrian accommodations and opportunities in the state. The draft implementation options, as well as the proposed bicycle network, were provided for public review in the *Draft Plan*. After the public review process and appropriate updates are made, the *Plan* will be updated and

its goals, action strategies, implementation options and network will be incorporated into CTDOT's broader processes and procedures.

This *Plan* was developed over an 18-month period, through an extensive public outreach and involvement process. The Project Team worked closely with a Steering Committee, advocacy organizations, and the public to update the vision goals, and action strategies for bicycle and pedestrian planning in Connecticut. Local, regional, and statewide planning efforts were researched. The data collection effort included gathering information for the nine regions' Council of Governments (COGs), local governments, special interest / advocacy groups, and the public on the issues, needs, and opportunities for improvement in bicycle and pedestrian planning and networks.

### Public Involvement

Providing the public with opportunities to participate in the *Plan* development was an important aspect of this initiative. The outreach effort intended to provide interested parties



with a means to communicate their bicycle and pedestrian needs and desires with CTDOT and to remain familiar with developments throughout the study process. The goal was to create a plan that responds to those needs and desires so that it is relevant and useful to communities, residents, and users throughout Connecticut. The public outreach program of the *Plan* entailed several components, including the following:

*Steering Committee*

The Steering Committee consisted of representatives from various agencies, regional organizations, municipalities, advocacy groups, and other interests whose leadership and expertise are specific to bicycle and pedestrian planning within the state, such as the Connecticut Department of Environmental Protection (CT DEEP), Bike Walk Connecticut, and the East Coast Greenway Alliance. A list of all members and the organizations they represent is in **Appendix A.2**.

The Steering Committee met with the Project Team four times, at periodic intervals throughout the project, to guide the development of the *2017 Plan*

*Update* by reviewing and providing input on Plan materials. Committee members provided expertise on local and regional issues, deficiencies in the statewide network, and improvement alternatives. The Steering Committee meeting summaries are included in **Appendix A.3**.

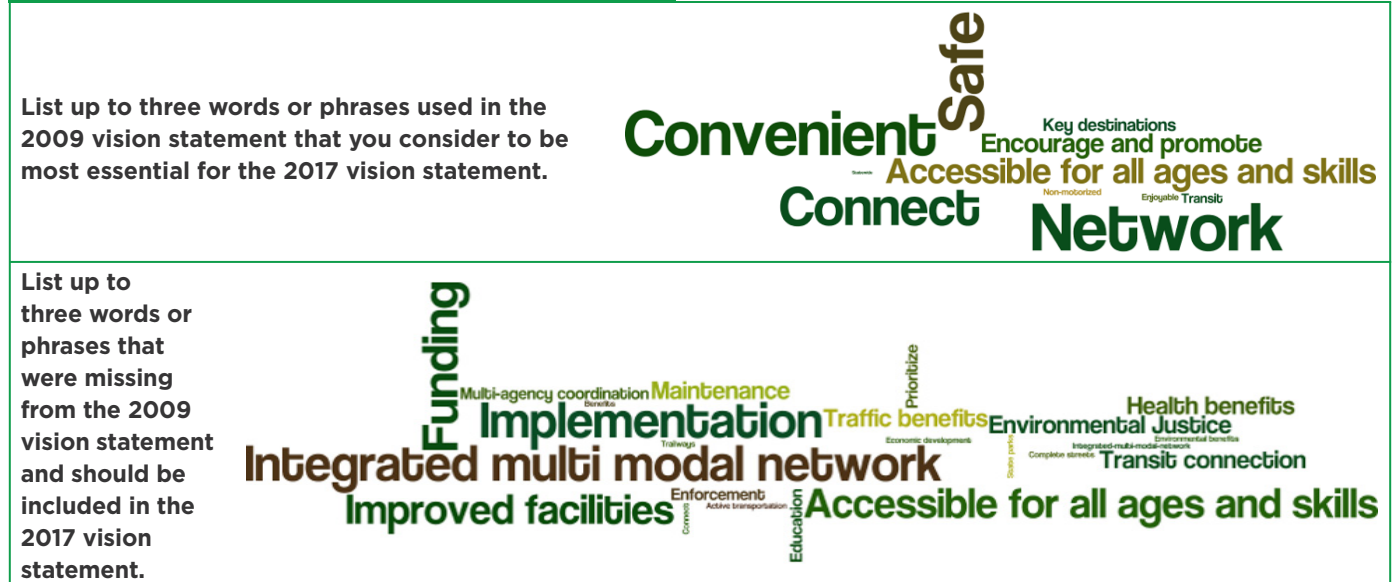
*Public Meetings*

Four meetings were conducted during Plan development to provide the public with the opportunity to provide the study team with input on bicycling and walking in Connecticut, and to review and comment on published materials. The four identical outreach meetings were hosted throughout the state in West Hartford, New Haven, Willimantic, and Fairfield in November 2016. The format of these meetings was an open house, with visual materials, a presentation, and open discussion. The public outreach meeting summaries are included in **Appendix A.3**.

*Other Outreach Meetings*

Meetings were held with each of the nine COGs to hear their concerns, interests, and suggestions for the revisions for the *Plan*. In addition, several discussions were conducted with local municipalities (e.g. New Britain, Torrington, New Haven) and other organizations (CT Bicycle and Pedestrian Advisory Board and CT Greenways Council) to hear their concerns, interests, and suggestions for the *Plan*. An up-to-date list of these outreach meetings and dates is included in **Appendix A.4**.

The two images below are ‘wordles’ that represent the Steering Committee members’ responses to the two prompts associated with the image. The size of each word is proportional to the number of people who answered with that word.



## Project Newsletters

Three printed newsletters were created and distributed over the course of the *Plan*. The distribution of the newsletters occurred at the following time periods:

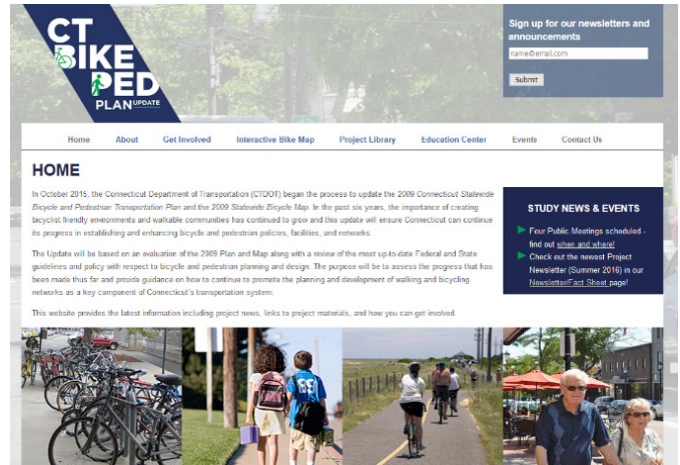
- Initiation / announcement of the *2017 Plan Update* (Winter 2016)
- Development of vision and mission statement (Summer 2016)
- Announcement of public meetings, draft bicycle network (Winter 2017)

The newsletters are included in **Appendix A.5**.

## Project Website

An interactive project website, accessed via [www.ctbikepedplan.org](http://www.ctbikepedplan.org), was developed and publicly accessible. Here, people could learn about the *Plan*, view meeting announcements and related materials, review published material and draft documents, and submit comments.

In addition, business cards with the project name, logo, and website address were distributed to Steering Committee members, interest / advocacy groups, and the public at various meetings and events during the *Plan*.





## APPENDIX A.2 - STEERING COMMITTEE MEMBERS

Name	Organization
Aaron Budris	Naugatuck Valley Council of Governments (NVCOG)
Anna Stokes	Bike Walk Connecticut
Bonnie Vangilder	Western New England Greenway
Bruce Donald	East Coast Greenway Alliance
Charlie Beristain	Bicyclist
Chris Faulkner	VHB
Dan McGuinness	Northwest Hills Council of Governments (NHCOG) - affiliated; bicyclist
Emily Gordon	Stamford 2030 District
Emily Hultquist	Capitol Region Council of Governments (CRCOG)
Eric Sanderson	Northeastern Connecticut Council of Governments (NECCOG)
Eugene Nichols	Connecticut Department of Public Health (DPH); Nutrition and Physical Activity Program
Francis Pickering	Western Connecticut Council of Governments (WestCOG)
Grayson Wright	CTDOT, RPO Coordination
James Kulpa	VHB
Jennifer Carrier	Capitol Region Council of Governments (CRCOG)
Joseph Balskus	CT Bicycle and Pedestrian Advisory Board (CT BPAB)
Katherine Rattan	Southeastern Connecticut Council of Governments (SECCOG)
Ken Shooshan-Stoller	FHWA, CT Division - Bicycle and Pedestrian Program
Kerry Ross	CTDOT, Bureau of Policy & Planning - Crash Data & Analysis
Laurie Giannotti	Connecticut Department of Energy & Environmental Protection (CT DEEP); CT State Parks Trails and Greenways Program

Name	Organization
Mark Nielsen	Naugatuck Valley Council of Governments (NVCOG)
Matt Fulda	Connecticut Metropolitan Council of Governments (MetroCOG)
Molly Henry	East Coast Greenway Alliance
Ned Connell	Southeastern Connecticut Council of Governments (SECCOG)
Neil Pade	Town of Canton; Connecticut Bicycle and Pedestrian Advisory Board
Philip Fry	CT Transit
Ray Rauth	Weston Bicycle And Pedestrian Committee, Sound Cyclists; Connecticut Bicycle and Pedestrian Advisory Board
Richard Lynn	Northwest Hills Council of Governments (NHCOG)
Roxane Fromson	CTDOT, RPO Coordination
Sam Gold	Lower Connecticut River Valley Council of Governments (RiverCOG)
Sandy Fry	City of Hartford
Sara Radacsi	CTDOT, RPO Coordination
Stephen Dudley	South Central Regional Council of Governments (SCRCOG)
Tim Malone	Capitol Region Council of Governments (CRCOG)
Will Britnell	CTDOT Highway Design

# APPENDIX A.3 - STEERING COMMITTEE AND PUBLIC MEETING AGENDAS AND SUMMARIES

Agendas and discussion summaries are included for the following list of meetings:

## 1. Steering Committee Meetings

- Meeting #1 - February 3, 2016
- Meeting #2 - May 5, 2016
- Meeting #3 - October 5, 2016
- Meeting #4: June 14, 2017

## 2. Public Meetings

- Meeting #1 - November 14, 2016 in West Hartford
- Meeting #2 - November 15, 2016 in New Haven
- Meeting #3 - November 29, 2016 in Willimantic
- Meeting #4 - November 30, 2016 in Fairfield



## Steering Committee Meeting #1

February 3, 2016

### AGENDA

1. Welcome / Introductions
2. Plan Update Overview and Schedule
3. Steering Committee Roles and Membership
4. Key Work Tasks / Progress
  - a. Vision, Goals, Action Strategies
  - b. Data Collection Efforts
  - c. Bicycle Network and Map
  - d. Outreach
5. Next Steps / Other Items
6. Adjourn



CONNECTICUT STATEWIDE BICYCLE & PEDESTRIAN  
TRANSPORTATION PLAN UPDATE

# STEERING COMMITTEE MEETING #1

## Meeting Minutes

Time: Wednesday, February 3<sup>rd</sup>, 2016 at 9:00 AM

Location: Connecticut Department of Transportation, Conference Room B, 2800 Berlin Turnpike, Newington, CT 06111

### Attendees

Name	Affiliation
Ken Shooshan-Stoller	FHWA
Bruce Donald	Farmington Valley Trails Council; CT Greenways Council
Kelly Kennedy	Bike Walk Connecticut
Molly Henry	East Coast Greenway Alliance
Charlie Beristain	Bicyclist
Ray Rauth	Weston BikePed Committee; Connecticut Bicycle and Pedestrian Advisory Board
Laurie Giannotti	CT Department of Energy and Environmental Protection (DEEP); CT State Parks Trails and Greenways Program
Eugene Nichols	CT Department of Public Health; Nutrition and Physical Activity Program
Neil Pade	Town of Canton; Connecticut Bicycle and Pedestrian Advisory Board
James Kulpa	VHB
Chris Failkner	VHB
Philip Fry	CT Transit
Alex Karman	WESTCOG; Stamford, CT
Samuel Alexander	NECCOG
Ned Connell	SECCOG
Sam Gold	RiverCOG
Stephen Dudley	SCRCOG
Matt Fulda	MetroCOG
Mark Nielsen	NVCOG

Lisa Rivers	CTDOT, Bureau of Public Transportation
Aaron Budris	NVCOG
Anna Bergeron	CTDOT
Kevin Tedesco	CTDOT
Melanie Zimyeski	CTDOT, Intermodal Planning
Colleen Kissane	CTDOT, Policy and Planning
Roxane Fromson	CTDOT, RPO Coordination
Grayson Wright	CTDOT, RPO Coordination
Sara Radacsi	CTDOT, RPO Coordination
Marcy Miller	Fitzgerald & Halliday, Inc.
Ken Livingston	Fitzgerald & Halliday, Inc.
Shawna Kitzman	Fitzgerald & Halliday, Inc.
Mary Miltimore	Fitzgerald & Halliday, Inc.

### Presentation

Marcy Miller gave a presentation that included information on the project purpose, vision, goals, and the progress that has been made thus far. The presentation can be viewed at the following link:

<http://www.ctbikepedplan.org/documents/SteeringCommPresentation1.pdf>

### Visioning Activity

Meeting attendees were asked to participate in a visioning activity to identify whether the 2009 Vision Statement still resonates for the 2017 Plan Update. Each attendee was provided with a printed copy of the 2009 Vision Statement, a blue note card, and a red note card.

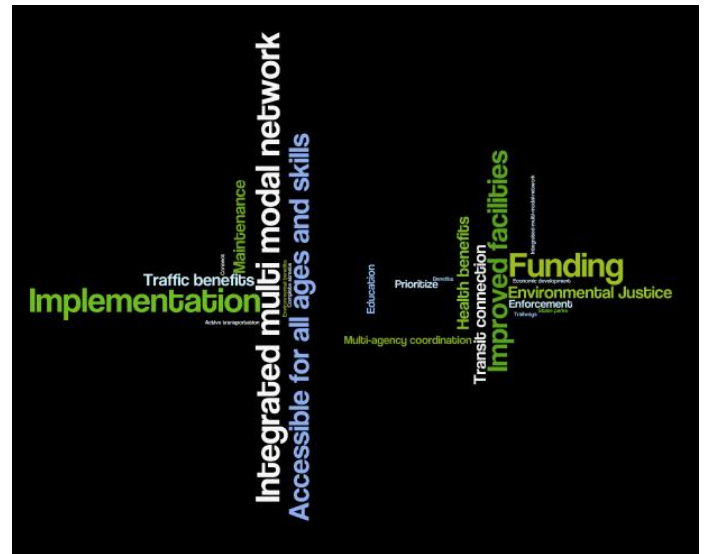
Attendees were asked to use the blue note cards to write the top three words or key phrases used in the 2009 vision statement that they consider to be the most essential for the 2017 vision statement. Next, attendees were asked to use the red note cards to write up to three words or key phrases that are missing from the 2009 vision statement and that should be included in the 2017 vision statement.

The project team then led a discussion based on what people had written on each card. These cards were collected at the end of the activity and were organized into categories to create the summary word clouds below, which give greater prominence to the words that appear the most often.

Essential words:



Missing word:



A complete list of all the responses received during this activity is included at the end of this document.

### [Steering Committee Input and Discussion](#)

The project team led a discussion following the presentation and visioning activity. The bullets below summarize the major points of discussion.

#### *2017 Bicycle Map Update and State Designated Bicycle Routes*

- The 2009 Bicycle Map only showed bicycle routes on state roads; the 2017 Map Update should include the consideration of local roads when identifying bicycle routes to more effectively create a safe and connected bicycle network.
- If network of state designated bicycle routes, CTDOT should ensure it's designated with appropriate signage and consistently maintained.
  - A signage plan should be incorporated into the plan for any recommended bike routes.
  - While there is a US Bike Route System, no segments in Connecticut have been included.
- CTDOT should facilitate the ownership and maintenance of State Designated Bicycle Routes in a similar way that CTDOT currently oversees state roadways.
  - This suggestion would address the existing issue of gaps in the statewide bicycle network due to varying amounts of effort municipalities are willing to dedicate to bicycle and pedestrian planning.
  - Municipality coordination can be especially challenging because there is typically a change in leadership every two years.

### *Integrated multi-modal system*

- The Plan and Map Update should both emphasize the importance of a “non-single occupancy vehicle network”, aka: a multimodal network that includes pedestrian, bicycle and transit connections.
- Transit connections should to be incorporated into the Plan and Map Update with a focus on key destination points.
  - This point also highlights issues related to environmental justice and equity.

### *Design Guidance*

- The 2017 Plan should include guidance on Transit-Oriented Development (TOD) design guidelines with a focus on how bicycle and pedestrian planning is incorporated.
- The 2017 Plan should guidance on standard zoning language that can be incorporated on a municipal level to encourage bicycle and pedestrian planning.
  - Bike Walk Connecticut offers currently some resources through its website on policy language.

### *Implementation*

- The 2017 Plan and Map Update should focus on “making it happen” and detail guidance regarding implementation.
  - Key decisions makers should be involved in the development of the Plan so they can champion implementation efforts after the Plan has been completed.
- The 2017 Plan Update should identify ways to ensure that CTDOT bicycle and pedestrian planning efforts are well integrated across agencies with high levels of coordination. CTDOT should also avoid developing multiple different plans to achieve the same purpose of identifying projects, funding, and such.

### *Funding Opportunity: Community Connectivity Program*

- Community Connectivity Program is part of the Let’s Go CT! Transportation Program and its purpose is to improve accommodations for bicyclists and pedestrians in urban, suburban, and rural community centers.
- As part of the program, CTDOT is accepting applications to from municipalities for Road Safety Audits (RSAs).
  - Deadline to submit is March 1<sup>st</sup>, 2016 and more information is provided at: [www.CTconnectivity.com](http://www.CTconnectivity.com)



### *STRAVA Data*

- Data has been purchased from Strava that contains bicycle and pedestrian counts, time of day, origin and destination points, and more. All the necessary information is included in the purchased package of data to create heat maps.
  - The Strava data will provide a useful baseline of information in regards to people’s preferences and the suitability of various roads. It is a starting point and will be supplemented with additional information and data.
  - This type of data was not available during the development of the 2009 Map. The availability of this data will be a very useful tool that will allow the 2017 Map Update to be driven by data and local information.
  - CTDOT and FHI also do recognize that the Strava data is limited in some significant ways.
    - The people who use the Strava app are usually the most enthusiastic, “aggressive” cyclists who don’t necessarily represent a majority of people.
    - The data doesn’t capture routes where people would like to ride, if it was safe to do so.
    - Strava is primarily used in Connecticut for recreational bicycle and walking trips so it does not capture commuter routes.
- Vehicular crash data will also be incorporated into the development of the 2017 Map Update.
  - While this information is valuable, it is also important to recognize the limits of this data. For example, if a pedestrian is involved in a crash, the crash is often labelled “improper use of highway or roadway.” The crash data is dependent on the reporting officer providing complete and reliable information about each crash.
  - The cause of any crashes involving pedestrians is less important than the location it occurred. This data will be useful in identifying key locations that need improvements.
- The data that is collected for the 2017 Map Update should be fed back into Google Maps.
- Other data and information that will be incorporated into the development of the 2017 Map Update includes things such as vehicular speed, ADT, and more. A specific safety analysis is not included in the project but the information that is collected will allow the project team to identify trends regarding bicycle and pedestrian safety.

### *Outreach Meetings & Next Steps*

- Suggestions for additional stakeholder outreach meetings: Connecticut State Department of Education (SDE); various schools across the state; Connecticut Office of Policy and Management (OPM); CTDOT Safe Routes to School Coordinator
- Suggested future Steering Committee locations: New Britain, Steering Committee ride, Union Station
- Steering Committee Meeting #2 will be held in the spring of 2016 with a specific date TBD.

### [Visioning Activity: Complete List of Responses](#)

#### *Essential Words from the 2009 Vision*

Instructions: Write the top three words or key phrases used in the 2009 vision statement that you consider to be the most essential for the 2017 vision statement.

#### Responses:

- Safe
- Convenient
- Any person
- Connect
- Encourage and promote
- Safely
- Conveniently
- Network of destinations
- Specifically, residential areas, employment centers, shopping areas, transit...both within the development and to nearby destinations
- Convenient (people need to want to do it)
- Encourage (through policy and capital improvements)
- Safe
- Any person
- Network of destinations
- Any person
- Conveniently
- Network of on-road facilities and multi-use trails

- Convenient
- Throughout the state
- Any person will be able
- Promote bicycling and walking throughout Connecticut by providing safe, convenient throughout the state
- Specifically, residential areas, employment, etc.
- Encourage and promote
- Safe
- Network
- Convenient
- Connect
- Safe
- Network
- Connect
- Connect
- Network
- Convenient
- Transit Centers
- Recreation/ Residential
- Employment Centers
- Connect
- Connect towns, regions
- Safe
- Convenient
- Network of on-road facilities and multi-use trails
- Any person
- Connect towns, regions, and CT neighboring states
- Safe
- Convenient
- Network
- Network of on-road facilities

- Safety
- Convenient
- Encourage and promote
- Encourage and promote bicycling and walking
- Convenient
- Enjoyable
- Network of on-road facilities and multi-use trails to connect
- Safe
- Network - on road; multi-use trails
- Connect
- Network of on-road facilities
- Convenient
- Will accommodate
- Safety
- Non-motorized
- Connect
- Encourage and promote
- Non-motorized
- Transit centers
- Network
- Any person
- Safety
- Convenient
- Accessibility of roads and multi-use trails to all bicyclists and pedestrians
- Connections/ connectivity
- Safe
- Convenient
- Enjoyable
- Safety for bicyclists
- Transit centers
- Convenient network of trails

- Connections?
- Logical Termini: mis-use has/ is causing bad connections; making future connections nearly impossible

*Missing Words from the 2009 Vision*

Instructions: Write the up to three words or key phrases that are missing from the 2009 vision statement and that should be included in the 2017 vision statement.

Responses:

- Complete streets
- CTDOT funding
- Environmental justice
- Construction
- Implementation
- State parks: a focus on using public and bicycle/ pedestrian to get to these (3rd paragraph)
- Implementation / verification
- Prioritize growth areas as defined by the STATE POCD
- Prioritize areas with an immediate NEED
- Make facilities (trails, bridges, etc.) ATTRACTIVE
- Support access to bicycles and safety equipment, perhaps targeting low-income populations
- How is this incorporated into OSTA and state-designed projects
- Lowering the threshold to new bicyclists and pedestrians
- Information
- Bike and pedestrian amenities
- Interconnection with placemaking and economic development
- Support - Financially and technically
- Across all ages and abilities
- Physical activity
- Health benefits
- Reduce VMTs
- Reduce congestion

- Reduce greenhouse gas pollution
- 1 - Plan
- 2 - Integrate
- 3 - Create
- Reduce congestion
- Improve health
- Promote funding for improvements
- Make bike walk etc. as a viable choice/ option to motorized transportation
- Tourism - enhance tourist destinations
- Integration of bicycle and pedestrian
- Maintain existing facilities
- East Coast Greenway
- Multi-modal/ integrated bicycle/ walk facilities with public transportation
- Equity
- Connectivity
- Increase bicycle/ pedestrian use
- Provide accommodations for bicyclists on all forms of public transit
- Enhance pedestrian crossing of streets and roads.
- Education - teach how to share the road.
- Enforcement of traffic laws for all
- Funding priority
- Engineering standards at all levels of government
- Maintenance
- Enforcement
- Transit/ Rail connection
- implementation
- Routine
- Utilized
- Multi-modality
- Connected, safe facilities
- Active transportation

- Encourage, lobby, and promote funding for non-motorized transportation
- A better connection between non-motorized transportation and transit center
- Maintain
- Mention of need to address needs of increasing numbers of senior citizens who would like to ride their bicycles more frequently
- Multi-modal connections
- Funding
- Bike sharing



## Steering Committee Meeting #2

May 5, 2016

### AGENDA

1. Welcome / Introductions
2. Recap of Steering Committee Meeting #1
3. Vision and Goals Update
4. Data Collection and Mapping Progress
5. Mapping Activity
6. Next Steps / Other Items
7. Adjourn





CONNECTICUT STATEWIDE BICYCLE & PEDESTRIAN  
TRANSPORTATION PLAN UPDATE

## STEERING COMMITTEE MEETING #2

### Meeting Minutes

Time: Thursday, May 5<sup>th</sup>, 2016 at 9:00 AM

Location: Connecticut Department of Transportation, Conference Room B, 2800 Berlin Turnpike, Newington, CT 06111

#### Attendees

Name	Affiliation
Ken Shooshan-Stoller	FHWA
Bruce Donald	Farmington Valley Trails Council; CT Greenways Council; East Coast Greenway Alliance
Anna Stokes	Bike Walk Connecticut
Mark Jewell	VHB-CLE (local roads)
Tom O'Brien	New Milford River Trail; Western New England Greenway
Alex Karman	WESTCOG; Stamford, CT
Samuel Alexander	NECCOG
Ned Connell	SECCOG
Sam Gold	RiverCOG
Nate Hougrand	RiverCOG
Emily Hultquist	CRCOG
Tim Malone	CRCOG
Stephen Dudley	SCRCOG
Matt Fulda	MetroCOG
Mark Nielsen	NVCOG
Eric Jarboe	CTDOT, Engineering
Patrick Zapatka	CTDOT, Policy and Planning
Mark Carlino	CTDOT, Policy and Planning
Anna Bergeron	CTDOT
Kevin Tedesco	CTDOT
Colleen Kissane	CTDOT, Policy and Planning
Roxane Fromson	CTDOT, RPO Coordination
Grayson Wright	CTDOT, RPO Coordination
Sara Radacsi	CTDOT, RPO Coordination
Marcy Miller	Fitzgerald & Halliday, Inc.
Eric Smith	Fitzgerald & Halliday, Inc.
Mary Miltimore	Fitzgerald & Halliday, Inc.

## Introduction and Vision Update

\*The agenda and presentation for this meeting can be viewed at the following link:  
[http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

Marcy Miller gave a presentation that included a review of the previous meeting as well as the progress that has been made on the project since the previous meeting. She presented the draft updated project vision and explained how the Committee's input was incorporated into either the updated vision, the project goals, or other sections of the Plan Update.

The draft updated 2017 Vision Statement is as follows (updated words and phrases are bolded):

*The Connecticut Department of Transportation will encourage, promote and **continue to improve the condition of bicycling, walking, and other forms of active transportation**, so that any person, regardless of **age, ability, or income** will be able to walk, bicycle, or use other types of active transportation modes safely and conveniently throughout the State of Connecticut.*

*An **integrated network of on-road facilities and multiuse trails** will connect **key destinations, municipalities, and regions**, while strengthening Connecticut's links to neighboring states. Specifically, walking and biking will be accommodated at residential areas, employment centers, shopping areas, transit centers, recreational and cultural attractions, and schools.*

*The Department believes that bicycling and walking encourage healthy, sustainable, and resilient lives and communities.*

The Committee provided comments on the draft updated vision, which are summarized below.

- The 2017 Plan Update should include a reference to statutes that provide guidance on how to implement items such as this vision.
- If this Vision Statement will guide the content of the 2017 Plan Update, we should ensure that the Department approves of and will support the vision before progressing too much further.
- The 2017 Vision Statement is too long and should be accompanied with a brief mission statement that is included on all project materials.
- The 2017 Vision Statement should be more holistic when referring to the "State of Connecticut."
  - The updated vision is too focused on CTDOT and should be inclusive of all the organizations and agencies working together on behalf of the state of Connecticut, including DEEP, the Department of Housing, etc.
  - For example, "The Department will encourage, promote, and continue..." could be replaced with "The State of Connecticut will encourage, promote, and continue..."

- The 2017 Plan Update should be used to influence or direct policy, and the updated vision statement should more clearly reflect this.

The project team will revise the 2017 Vision Statement based on this input and submit it for review within CTDOT to ensure the Department’s approval and agreement with the Vision.

### 2017 Map Elements

Next, Marcy described the elements that were included in the maps for the Connecticut Statewide Bicycle and Pedestrian Plan from 1999 and 2009, in order to ask Committee members to consider what elements should be included in the 2017 Map. She also clarified that if the Committee decided that a bicycle network should be included on the map, they would need to clarify which type of network. One type of bicycle network illustrates existing and planned facilities, while a second type of bicycle network defines priority corridors by focusing on desired connections and assists in future planning efforts.

The project team led a discussion to reach a consensus on what the 2017 map should include. The following bullets summarize the major points of discussion.

#### *Priority Corridor Bicycle Network*

- The Map Update reflect the update vision statement and focus on the development of an active transportation network that focuses on priority corridors.
  - The 2017 Map Update should reflect the updated Vision statement (which doesn’t reference anything about tourism) and should not include loop routes or cross state routes.
- The 2017 Map should provide a tool by which the state can communicate where they will focus their efforts and as a tool to secure funds.
  - The 2017 Map should be a prioritization tool to clarify where the Department will focus its efforts.
- The 2017 Map should last up to 25 years if it is designed as a planning tool.
- The 2017 Map Update needs to provide information that is not already accessible through other applications and that will assist in the future planning of bicycle facilities for the State.

#### *Existing and Planned Facilities Bicycle Network*

- The Map Update should include all the various bicycle facilities and connections on one map that allows people to choose their own routes.
  - The Map Update should include all facilities to highlight where the existing gaps are today.
- The Map should reflect the major progress that has been made for many of the major off-road bike corridors, such as the East Coasts Greenway.

- Marcy explained that the project will definitely include an updated multi-use trail map.
- With today's advancing technology, there are numerous apps (such as Map My Ride) that people already use as a resource for existing facilities. There is no need to duplicate these efforts.
- Google already provides much of the suitability data so there is no need to duplicate it. The 2017 Map should focus on meaningful routes that we can improve and on filling in the gaps in the network.

#### *Data elements*

- When accessing the shoulder width and ADT for the suitability map, the project team should make sure to separate out roads that have wide shoulders versus any roads with bicycle facilities.
  - Marcy explained that while there are very few bicycle facilities on state roads today, this is something that will be important in future suitability maps.
- For targeting investments, potentially include other department's data.
- Transit information, including train stations and CT*fastrak*) should be included on the Map Update to further emphasize TOD.

#### *Utilization of 2009 Map*

- CTDOT currently uses the 2009 Map as a planning and design tool, but recognize that a better option would be more useful.
- 2009 Map rarely used by regions or municipalities.

#### *Other comments*

- 2017 Map should include information on an improved procedure for coordination and communication between the Department, regions and municipalities.
- Regions should develop and frequently update their regional bicycle maps so they can clearly identify their priorities.
- The feasibility analysis should be reframed as a performance measure.

#### Mapping Exercise & Next Steps

A series of maps that illustrated a variety of data, including suitability, economic clusters, Strava weekday and weekend trips, and trails was then presented to Committee. This information was also printed on four sets of 36" x 48" maps that were distributed to the group. Committee members were asked to engage in a mapping exercise in which they identified all key destinations with a blue "X" and any desired connections with a green line.

Upon completion of this activity, a member of each group briefly described their discussion and what they mapped to the Committee. These maps were collected by the project team and are currently being incorporated into the 2017 Map.

Marcy closed the meeting by describing some of the key trends that stood out from the discussion and mapping exercise, including a focus on transit and the importance of interagency cooperation. Specifically, there was discussion about a potential State Plan of Conservation and Development as well as a statewide bike-share program.

Steering Committee Meeting #3 will be held in summer/fall 2016 and more details on a specific day and location will be announced at a later date.



## Steering Committee Meeting #3

October 6, 2016

### DRAFT AGENDA

1. Welcome
2. Recap of Steering Committee Meeting #2
3. Bicycle Mapping Progress Update
4. Mapping Activity
5. Next Steps / Other Items
6. Adjourn



## STEERING COMMITTEE MEETING #3

### Meeting Minutes

Time: Wednesday, October 5<sup>th</sup>, 2016 at 9:00 AM

Location: Connecticut Department of Transportation, Conference Room A, 2800 Berlin Turnpike, Newington, CT 06111

#### Attendees

Name	Affiliation
Ken Shooshan-Stoller	FHWA
Bruce Donald	East Coast Greenway Alliance (ECGA); CT Greenways Council (CGC)
Anna Stokes	Bike Walk Connecticut
James Kulpa	VHB
Charlie Beristain	Bicyclist
Dan Bolognani	Upper Housatonic Valley National Heritage Area
Laurie Giannotti	CT Department of Energy & Environmental Protection (CT DEEP); CT State Parks Trails and Greenways Program
Ray Rauth	Weston Bicycle & Pedestrian Committee, Sound Cyclists; CT Bicycle and Pedestrian Advisory Board (CT BPAB)
Neil Pade	CT Bicycle and Pedestrian Advisory Board (CT BPAB)
Sandy Fry	City of Hartford
Francis Pickering	WestCOG
Samuel Alexander	NECCOG
Eric Sanderson	NECCOG
Sam Gold	RiverCOG
Emily Hultquist	CRCOG
Stephen Dudley	SCRCOG
Matt Fulda	MetroCOG
Rick Lynn	NHCOG
Mark Nielsen	NVCOG
Will Britnell	CTDOT Highway Design
Charles Harlow	CTDOT, Traffic Engineering
Anna Bergeron	CTDOT
Kevin Tedesco	CTDOT
Melanie Zimyeski	CTDOT, Policy and Planning
Roxane Fromson	CTDOT, RPO Coordination
Grayson Wright	CTDOT, RPO Coordination
Sara Radacsi	CTDOT, RPO Coordination
Marcy Miller	Fitzgerald & Halliday, Inc.
Ken Livingston	Fitzgerald & Halliday, Inc.
Mary Miltimore	Fitzgerald & Halliday, Inc.

## Introduction and Presentation Overview

\*The agenda and presentation for this meeting can be viewed at the following link:  
[http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

Marcy Miller gave a presentation that included a review of the previous meeting, including the updated and finalized vision and mission statement as well as the decision that the Map Update will define a Statewide Bicycle Network. Marcy then reviewed the “nodes and lines” activity that occurred during the previous Steering Committee and explained that the Project Team used this input along with additional data layers to define the Draft Statewide Bicycle Network.

Marcy then explained each step in the Project Team’s methodology to define the Draft Bicycle Network. These steps, also clearly illustrated in the presentation material, are summarized below.

1. Define the key destinations and connections that should be included in the network
  - Data layers included in defining the key nodes for the statewide network:
    - Nodes from the Steering Committee
    - Major transit facilities
    - Population density
    - Employment density
    - Isolated major employment locations
    - Colleges and universities
  - Data layers considered in drawing the lines (or connections) of the network
    - Lines from the Steering Committee
    - Additional lines from Project Team
- \*For the purposes of this exercise, the lines on the map are oversimplified for clarity.
2. Overlay the ‘draft network’ with existing and planned facilities to see if there is already a way for bicyclists to travel along the connection defined in the bicycle network.
  - Existing and planned facilities that the network were compared to:
    - Off-road paths: existing, under construction, in design, planned
    - 2009 Cross State Routes
    - Regional On Road Facilities
3. Identify the ‘remaining segments’ of the network on which there is no defined route for bicyclists to travel
4. Identify the best route along state roads for each of the remaining segments.
  - While routing the segment is subjective to some level, the following information is taken into consideration:
    - CT Bicycle Suitability (ADT and width of shoulder); CT Strava rides
  - If applicable, identify the preferred local alternative route
    - The preferred local alternative route will identify a route that is already frequently used by bicyclists but travels along local roads or a combination of local and state roads.
    - The identification of this route acknowledges the importance of local roads in the bicycle network, while allowing for the identification of a state route that will assist CTDOT to determine which roads to prioritize for bicycle improvements.



Marcy emphasized that the main objective of this meeting is to determine if the draft network has been identified correctly and whether the Committee has any questions or comments regarding the methodology. The project team asked for input on these topics and the following bullets summarize the major points of discussion.

## Discussion

### Purpose of Statewide Bicycle Network

- The statewide bicycle map will serve two primary purposes: (1) the network identifies key connections for bicyclists across the state; and (2) it provides CTDOT guidance as to where future improvements should be focused.
- An attendee asked how the statewide bicycle network should be considered. Should it be the main network that deserves the primary focus of all government and advocacy groups? Or should it be considered the main bicycle arterials and local routes should build off of it?
  - Marcy stated that the draft bicycle network should be considered the main arterial and local routes should build off of it. She also clarified that the statewide bicycle network does not include every regional and local bicycle facility; its primary goal is to provide connections between key destinations across the state.
- An attendee asked whether there were criteria that verified that the 2009 cross state routes are safe routes for bicyclists.
  - Marcy clarified that the cross state routes are a planning tool and don't necessarily indicate safe bicycling routes. They were one result of the 2009 Statewide Bicycle and Pedestrian Plan and Map.
  - The focus of the 2017 Statewide Bicycle and Pedestrian Plan and Map Update is to define a statewide bicycle network, which CTDOT will use to prioritize.

### Segment Routing: State Routes & Preferred Local Alternative

- An attendee asked for clarification on the relationship between the priority state route and the preferred local alternative route. For example, if a local alternative is sufficient for safe bicycling, will the state still prioritize improvements on the state route?
  - Marcy clarified that there won't always be a local preferred route. These are only identified when the state route is considered unsafe by bicyclists, who clearly prefer an alternative route along local roads or a combination of state and local roads.
  - The question of how states routes will be prioritized when a preferred local alternative has been identified will be addressed at the next Steering Committee meeting.
- Attendees were pleased that local roads will be considered in the Bicycle Network.

### Data considered in defining key destinations and connections

- Following connections across CT River:
  - Bridge connection between Glastonbury and Wethersfield
  - Connection between Rocky Hill and Glastonbury ferry

- Putnam Bridge has a sidewalk but no connections on either side of it
    - Kevin Tedesco stated that a project is already in place to install bicycle and pedestrian amenities on either side of this.
- High schools
- Census blocks of low car ownership
- Abandoned rail lines
- Lightly used freight lines
- Utility corridors that can be used for bicycle routes
  - Consider production of schematic maps to show opportunity areas regarding utilities
- Frequently used bicycle trails used in adjacent states
  - The quickest way to travel to a location in CT often involves routes or trails that exist in an adjacent state.
  - Francis Pickering offered to provide this data layer.
- Input from local businesses
  - There might be opportunities for economic development if network provides access to local businesses.
- Mountain biking locations

#### *Loop Trails*

- Loop trails were previously considered in the 1996 Bicycle Plan and the Committee discussed whether they should be included in the Bicycle Network as destinations or nodes.
  - Some Committee members felt it was important to acknowledge loop trails that are preferred by recreational bicyclists.
  - Other Committee members expressed that the bicycle network cannot include everything; it needs to remain focused on establishing key connections.
- Much of the Committee agreed on the following points:
  - Loop rides should be considered if part of one exists along a state route and can be incorporated into the bicycle network.
    - Potential test case could be a project that is currently in active design: Hartford spur of East Coast Greenway provides a connection from Terryville through Bloomfield along Routes 187 and 189 from Route 315.
  - A different statewide department should be responsible for the promotion of loop rides. Two suggestions were either the CT Office of Tourism or the Department of Energy and Environmental Protection (DEEP). Currently, it is unclear if there is any department that is responsible for focusing on recreational trails.
- Laurie Giannotti explained that DEEP has recently released the “CT Rail Trail Explorer,” which is a pilot program of an online mapping tool to assist people in planning their route along one of four State Park Rail Trails in Connecticut.
  - While this is a pilot program, there was discussion about the possibility to start adding regional recreational routes.

### *Limited access roads*

- Committee members requested information on limited access roads. How were they defined? Once a road has been identified as a limited access road, can it be re-designated? Can the network travel along limited access roads?
- Marcy explained that it is possible to identify certain segments of the Bicycle Network in the Plan that travel along limited access roads and recommend that their designation be reconsidered.
- Limited access roads that could be considered for re-designation are as follows:
  - Route 187 and Route 189 in Bloomfield is designated as a limited access road because it has on- and off-ramps, but it has very low levels of traffic and is frequently utilized by bicyclists.
- Case study in Portland, Oregon:
  - Bicyclists are permitted along roads similar to CT's limited access roads as long as there are clear markings and signage to help guide bicyclists
  - Potential to suggest similar recommendation on a case by case basis.

### Rails to Trails

- The Committee discussed the desire for improvements to the Rails to Trails process and program in Connecticut.
  - Rails to Trails currently exists in Derby and there is potential for another project to occur in Southington and Plainville.
- Many expressed a need for guidance on how to address that proposals for such projects are frequently rejected without thorough consideration because it is assumed there are too many challenges and hurdles.
- Request to include an appendix in the 2017 Plan Update that highlights the best practices for Rails to Trails projects. Potential content would include:
  - How to get access to utility ROW; how to combat preconception that Rails to Trails projects have too many challenges; policies already in place; case studies

### Interim Updates

- An attendee suggested that the Map Update should be a living document so that local and regional stakeholders would have the opportunity to either update the map or submit amendments.
  - Another attendee suggested that all RCOGs could be supplied with the mapping files to continually update.
- While CTDOT has discussed the potential for mechanisms that allow for continual updates, it would be challenging to ensure that all the RCOGs remained consistent in providing updates and avoided submitting multiple versions of updates.
- An attendee suggested the possibility of preserving part of state connectivity funding for interim updates.
- Regions and municipalities will be encouraged to build upon the Statewide Bicycle Network and focus their efforts accordingly.

### Additional Comments

- An attendee asked why pedestrians weren't also being considered in the mapping effort since this is a Statewide Bicycle and Pedestrian Plan and Map.
  - Connecticut is a complete streets state so the ultimate goal is that every state road will be appropriate and user friendly for all modes, including pedestrians.
  - However, due to the limited of funding, it is necessary to prioritize what improvements will be made first. Defining a bicycle network will provide the state with that guidance while also defining improvements that are achievable within the next 5 – 10 years. This kind of incremental progress is necessary to improve conditions for both bicyclists and pedestrians across the state.
- In response to an attendee's question, Marcy confirmed that policy recommendations, such as the inclusion of safe crossings for pedestrians at transit stops, will be included in the 2017 Plan.

### **Mapping Exercise & Next Steps**

Four 36"x48" posters focused on the following four missing segments in the draft bicycle network:

1. Danbury segment
2. Meriden to Middletown
3. Middletown to Manchester
4. Willimantic to Norwich to New London

The posters highlight the two points that needed to be connected on maps that include information on the existing roadways and on-street bicycle network as well as bicycle suitability data and Strava data for those roads. Attendees were asked to pick the map that they are most familiar with and identify the best route for bicyclists to travel between the two points using only state routes. If there was also a commonly used route that is comprised of local roads or a combination of local and state roads, attendees were also asked to identify this as the preferred local alternative.

Upon completion of this activity, a member of each group briefly described their discussion and what they mapped to the Committee. These maps were collected by the project team and are currently being incorporated into the Draft Bicycle Network, which will be updated accordingly.

The updated Draft Bicycle Network will be presented during the four public meetings in November so the public can provide their input. The four public meetings will take place from 5:30 PM to 7:30 PM with a presentation at 6:15 PM. They will cover the same content and take place in the following cities and towns: Fairfield, New Haven, Hartford, and Willimantic. The Project Team recognizes that these locations aren't ideal for everyone in the state but an effort was made to choose locations that are centrally located and easily accessible by all modes (including bicycling and walking) to make it as convenient to as many people as possible. The limited number of public meetings is due to the very large outreach effort that recently took place for *Let's Go CT*.

Steering Committee Meeting #4 will be held in the winter of 2017 and the meeting topic will likely focus on a prioritization system for the Statewide Bicycle Network. More details on a specific day and location will be announced at a later date.



## Steering Committee Meeting #4

June 14, 2017

### DRAFT AGENDA

1. Welcome
2. Recap of Steering Committee Meeting #3 / Public Meetings
3. Recent Plan Progress
  - a. Goals and Action Strategies Update
  - b. Statewide Bicycle Network
4. Remaining Tasks / Schedule for Plan Adoption
5. On-line Map
6. Bicycle Network Facilities Analysis and Design
7. Open Discussion
8. Adjourn



## STEERING COMMITTEE MEETING #4

### Meeting Minutes

Time: Wednesday, June 14<sup>th</sup>, 2017 at 9:00 AM

Location: Connecticut Department of Transportation Training Center, Classroom #3,  
2780 Berlin Turnpike, Newington, CT 06111

#### Attendees

Name	Affiliation
Ken Shooshan-Stoller	FHWA
Bruce Donald	East Coast Greenway Alliance (ECGA); CT Greenways Council (CGC)
Anna Stokes	Bike Walk Connecticut
Joe Balskus	CT Bicycle and Pedestrian Advisory Board (CT BPAB)
James Kulpa	VHB
Eugene Nichols	Connecticut Department of Public Health (DPH); Nutrition and Physical Activity Program
Dan McGuinness	Upper Housatonic Valley National Heritage Area Bike Committee
Ray Rauth	Sound Cyclists Bicycle Club; Weston Bicycle & Pedestrian Committee; CT Bicycle and Pedestrian Advisory Board (CT BPAB)
Neil Pade	CT Bicycle and Pedestrian Advisory Board (CT BPAB)
Sandy Fry	City of Hartford
Francis Pickering	WestCOG
Eric Sanderson	NECCOG
Sam Gold	RiverCOG
Nate Hougrand	RiverCOG
Emily Hultquist	CRCOG
Tim Malone	CRCOG
Stephen Dudley	SCRCOG
Kate Rattan	SECCOG
Ben Muller	NVCOG
Anna Bergeron	CTDOT
Marlon Pena	CTDOT
Matt Blume	CTDOT
David Elder	CTDOT
Will Britnell	CTDOT Highway Design
Kerry Ross	CTDOT, Policy and Planning - Crash Data and Analysis
Roxane Fromson	CTDOT, RPO Coordination
Grayson Wright	CTDOT, RPO Coordination
Sara Radacsi	CTDOT, RPO Coordination
Marcy Miller	Fitzgerald & Halliday, Inc.
Parker Sorenson	Fitzgerald & Halliday, Inc.

Mary Miltimore	Fitzgerald & Halliday, Inc.
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## Introduction and Presentation Overview

\*The agenda and presentation for this meeting can be viewed at the following link: [http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

Anna Bergeron, the Project Manager at the Connecticut Department of Transportation (CTDOT) for this planning effort, welcomed attendees to the meeting and for their participation in the Steering Committee throughout the Plan Update. She then introduced Marcy Miller, the Project Manager at Fitzgerald & Halliday, Inc. (FHI), which is the consultant for this project.

Marcy Miller gave a presentation that began with a review of the October 2016 Steering Committee meeting that focused on the Draft Bicycle Network. At this meeting attendees were asked to provide comments on both the methodology that was used to develop the network as well as to help identify routes for various network segments. Marcy also provided a summary of the feedback and discussion that the project team received during four public meetings that occurred in November 2016.

Marcy presented an update on the development of the Bicycle and Pedestrian Plan Update. She explained that the project team has worked on revising the statewide bicycle network and updating the goals and action strategies to reflect the input received during both the previous Steering Committee meeting and the four Public Meetings.

Parker Sorenson next explained how the Draft Bicycle Network was updated in more detail. He highlighted key routes that had been added and stated why others had not been incorporated.

Marcy then reviewed the planning ‘hierarchy’ for the Plan Update, including a description of the purpose of each of the items in that hierarchy as follows:

- Project mission - why are we doing this?
- Vision - what do we want to be?
- Goals - what must we achieve to realize the vision?
- Action strategies - how will we get there?
- Implementation options - what specific things can we do?

She then described each of these planning items in more detail as they specifically related to this Plan Update, including a review of the goals, which have been updated and refined since the previous Committee meeting.

Next, Marcy explained the following process that will take place before the Plan Update is finalized and adopted.

- Summer 2017:
  - CTDOT will complete the review of the Plan Update and the project team will update accordingly (June)
  - Steering Committee to review the Plan Update (July)
  - All comments on the Plan Update will be due (August)
- Fall 2017
  - Plan Update will be revised in accordance with input
  - Plan Update adopted by CTDOT

Marcy stated that in response to input the project team received during from the Steering Committee and other stakeholder meetings, the project team has sought to develop an online map that can complement the Rail Trail Explorer resource developed by the Connecticut Department of Energy & Environmental Protection (CT DEEP). Marcy asked for input as to

what to include on this online map and emphasized the importance of identifying who the end user should be.

Marcy then explained that a new phase of this project has been developed during which the project team will build upon the work that has been done to identify the Draft Bicycle Network and perform a Network Analysis. The results of this analysis will be (1) to identify which areas in the network are problematic and need improvements, and (2) to develop specific design guidelines that are specific to Connecticut and that can be applied to various areas of the bicycle network. The next steps will include more extensive data collection on the conditions along the network, a safety analysis and additional coordination with the regions and key stakeholders.

The project team asked for input throughout the presentation and the following bullets summarize the major points of discussion.

## Discussion

### Draft Bicycle Network

- An attendee asked about the methodology for identifying non-passable state routes for inclusion in the draft network.
  - Parker explained that certain segments were identified if there was no viable alternative but there was a need for a connection in that vicinity. Marcy added that the identification of these segments can be reviewed as a case-by-case basis to reach a consensus as to whether they should be included in the network.
- An attendee suggested that the draft bicycle map should incorporate transit information, including bus stops and train stations.
  - Marcy explained that transit nodes were incorporated into the methodology used to define the network.
- An attendee stated that it should be clarified that the route shown in the statewide network are not exclusive of routes included in local networks.
  - Marcy emphasized that the draft bicycle network is not all inclusive and that the hope is that regions and municipalities will develop local routes off of the statewide network that best serve their communities.
  - The bicycle network is intended to be used by CTDOT as they determine which state roads should be prioritized for bicycle improvements.
- An attendee asked whether it has been verified that the routes identified in the draft bicycle network are safe for bicyclists.
  - Marcy emphasized that the network is focused on desired lines of connectivity. Some routes are not currently suitable for bicyclists but people wish that it was suitable so improvements to this route should be prioritized going forward.
- An attendee asked why pedestrians weren't also being considered in the mapping effort since this is a Statewide Bicycle and Pedestrian Plan and Map.
  - Connecticut is a complete streets state so the ultimate goal is that every state road will be appropriate and user friendly for all modes, including pedestrians.
  - However, due to the limited of funding, it is necessary to prioritize what improvements will be made first. Defining a bicycle network will provide the state with that guidance while also defining improvements that are achievable



within the next 5 – 10 years. This kind of incremental progress is necessary to improve conditions for both bicyclists and pedestrians across the state.

- Marcy emphasized that there is overlap between corridors that bicyclist and pedestrians prefer to travel upon. In these cases, both bicyclists and pedestrians will benefit when improvements are made.
- Ray Rauth emphasized the importance of Route 1 along Connecticut’s coast for bicyclists because it’s the only realistic route along which to ride across the state. He understands that there are areas that present safety challenges, such as those around interchanges, but there is the potential to identify alternate routes when necessary.
  - Bruce Donald stated that Route 1 is also the on-road route that has been identified for much of the East Coast Greenway in Connecticut. He recognized that improvements for pieces of this route might take time but agreed that it’s an important connection between Connecticut’s communities.

Goals, Action Strategies, and Implementation Options

- An attendee asked whether the development of this Plan has been coordinated with other agencies at the statewide level. The attendee suggested that effort should be made to coordinate with organizations that maintain and develop utilities to explore the potential to coordinate bicycle and pedestrian improvements with their work schedule.
  - Marcy stated that representatives from other statewide organizations, such as the CT DEEP, are on the Steering Committee. The project team can further explore the potential for additional outreach with other agencies with CTDOT.
  - An attendee added that CT DEEP is in the process of updating their Statewide Comprehensive Outdoor Recreation Plan (SCORP) so it is an ideal time to coordinate with them on this Plan Update.
- In regards to the updated goals and action strategies, attendees noted that economic vitality and encourage equitable access to transportation should be re-incorporated into the goals.
- An attendee questioned whether complete streets is referenced in the goals.
  - Marcy stated that complete streets is included in various sections throughout the Plan Update, including the goals and action strategies.
- Attendees recognize the value of the Plan Update and Draft Bicycle Network but are unclear how the action strategies will be implemented.
  - Marcy emphasized that as the Plan Update transitions to a new phase of work, FHI will analyze the draft bicycle network in detail to understand where and what the issues are and to develop Connecticut-specific design guidelines for various network areas. These guidelines will be incorporated into the state highway guidebook.
- In response to a question about who will formally adopt the Plan Update, Anna Bergeron explained the following process:

- The Plan Update is currently being reviewed by CTDOT, after which it will be updated accordingly and made publicly available. During that time, the Steering Committee will be asked to provide their review.
- After the Plan Update has been updated according to this input, it will be adopted by CTDOT. It is expected that the Plan Update will be utilized as a guiding document by the Department for the next 5-8 years.

### Online Network

#### *Online Map as a resource for the public*

- Sam Gold stated that the online map should not duplicate the mapping information that Google already provides and that many people use.
  - Bruce Donald stated that Google's bicycle route information is still in beta and is often inaccurate. He stated that the information that Google provides should not be a reason to not develop an online map that can be used as a resource.
- An attendee pointed out that it will be important for the online map to clearly explain that planned routes might be unsuitable for bicyclists in their existing condition.
- Kate Rattan suggested that CTDOT should coordinate with CT's Office of Tourism to develop an online map that is a tool for visitors. She emphasized the number of people who visit CT to ride recreational bicycle routes. Kate also suggested that innovative technology such as crowdsourcing data could be used to keep the content up to date.
  - Marcy clarified that the Draft Bicycle Network map is not intended to be a static piece of information. She stated that FHI has been scoped to keep this map up to date over the next five years. In addition, Marcy stated that crowdsourcing could be problematic since it would be difficult to track the data sources and confirm their viability. This would create legal challenges for CTDOT since the online map will be a resource provided by CTDOT.
- Roxane Fromson stated that CTDOT already compiles an inventory of all modes in the existing transportation system, including bicycling and walking.
- Emily Hultquist suggested that CTDOT could coordinate with Google to update the map they currently have of existing bicycle routes. CTDOT could provide Google with information to update that map instead of duplicating their efforts.

#### *Online Map as a planning tool*

- Roxane Fromson stated that it's important that the online map will be able to be utilized as a planning tool and to identify routes that are being planned in the future. She pointed out that it is especially important to identify future routes so that the online map can be referenced in applications for grants or other funding sources.
- Francis Pickering stated that the online map could be a useful resource for municipalities as a planning tool since it will provide information on future routes and allow cities and towns to develop local bicycle networks that build on those future routes. Francis also suggested that a process should be developed to officially sanction local bicycle routes and include them on the online map.

- Marcy stated that such an effort would require a standardization of terminology and other information since communities often use different naming conventions.
- Sandy Fry stated that she found the online Bicycle Suitability Map that was developed as part of the previous Plan in 2009 to be very useful as a planning tool. It would be beneficial if this Plan Update continued with that progression.
- Tim Malone stated that the online map could provide an opportunity for interactive progress reports in that it would highlight when routes went from design to construction and so on.

*Data to include in the online map*

- Sam Gold suggested that cross-state hiking trails should be considered for inclusion on the online map. This would be a way to incorporate pedestrian-relevant information. Sam also stated that the Connecticut Forest & Park Association (CFA) already has an online map of this data and CTDOT could coordinate with them to incorporate that information.
- Francis Pickering stated that people would like visit this online map and the CFA's online map for different reasons so there is a valid reason for both to exist as two separate things.

*Data collection and sharing for the online map*

- Sam Gold stated that there should be a process by which regions and municipalities can provide updated information with which to keep the map as current as possible. He stated that this would allow the map to include more detailed data and that it would be especially important when localities perform corridor studies on state routes. He emphasized how important it is that local communities are provided with an opportunity to share results of that work and make sure it is reflected in work being done at a statewide level.
  - Marcy emphasized that the development of this Plan Update, the Draft Bicycle Network, and the online map have all been collaborative efforts in which CTDOT has worked with the regions and municipalities. There has been an effort to avoid a 'top-down approach' in regards to the process.
- Sam Gold suggested that the online map should be capable of 'zooming' in to each town or city on a local scale. The map would be especially useful for municipalities if their planning departments could utilize it at a local scale and layer on their planning department's data, such as zoning or special districts.
- Sam Gold asked whether the GIS files used to create the online map will be shared with the regions and municipalities.
  - Marcy stated that that is something that will be discussed within CTDOT and that no decision has been reached at this time.

Additional Comments

- Ray Rauth emphasized the importance of expediting the development an updated Highway Design Manual for Connecticut. He is concerned that if this effort is not

completed before a new administration is elected to the governor's office, it might not be updated at all.

- Will Britnell acknowledged that while the updated Highway Design Manual has been in development for some time, he expects that it will be completed in the next 6-12 months.
- Sandy Fry emphasized that the Plan Update needs to clearly state that every transportation project in Connecticut is an opportunity for a complete streets improvement. She stated her concern that targeting certain priority segments along the Network will prevent the rest of the state's transportation system to be considered for bicycle or pedestrian improvements.

## Next Steps

This is the fourth and final Steering Committee meeting for the development of the Plan Update but all committee members will be contact once the Draft Plan Update is available for review, which will be in July 2017. Committee members will be provided with instructions on how to submit their comments and a deadline by which to do so. These comments will be incorporated into the Plan Update before it's finalized and adopted by CTDOT in the fall of 2017.

The project team thanks the Committee members for their contributions and participation throughout this planning effort. Their insights and guidance has been invaluable and are deeply appreciated.



CONNECTICUT STATEWIDE BICYCLE & PEDESTRIAN  
TRANSPORTATION PLAN UPDATE

## Welcome to the November 2016 Public Meetings

<b>Monday, November 15</b>	Elmwood Community Center 1106 New Britain Ave, West Hartford
<b>Tuesday, November 16</b>	New Haven Free Public Library - Ives Main Library 133 Elm Street, New Haven
<b>Tuesday, November 29</b>	SC Theatre at Eastern Connecticut State University 83 Windham Street, Willimantic
<b>Wednesday, November 30</b>	Fairfield Public Library - Main Branch 1080 Old Post Road, Fairfield

## AGENDA

1. Open House (5:30 PM)
2. Presentation (6:15 PM)
  - A. Welcome / Introductions
  - B. Plan and Map Update Overview and Background
  - C. Components of Plan and Map Update
  - D. Needed Input
  - E. Next Steps
3. Question and Answer / Discussion (6:45 PM)
4. Adjourn (7:30 PM)



# PUBLIC MEETING #1: Meeting Summary

## Meeting Location and Time

Date and Time: Monday, November 14<sup>th</sup> at 5:30 PM – 7:30 PM

Location: Elmwood Community Center, 1106 New Britain Avenue, New Hartford, CT

## Introduction and Presentation Overview

Anna Bergeron, the Project Manager for this project at CTDOT, welcomed meeting attendees and provided a brief overview of the project, including its background, purpose, and team. Anna then introduced Marcy Miller, the Consultant Team Project manager. Marcy asked attendees to introduce themselves before beginning the presentation.

\*The agenda and presentation for this meeting can be viewed at the following link:  
[http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

During the presentation, Marcy covered the following key ideas:

- Purpose of the Statewide Bicycle and Pedestrian Plan and Map Update (2017 Plan Update)
- Statewide progress in bicycling and walking efforts since 2009
- Public outreach efforts for the 2017 Plan Update
- Updated vision, mission, goals, and action strategies
- Data collection for development of Draft Bicycle Network Map
- Methodology for development of Draft Bicycle Network Map
- Draft Bicycle Network Map
- Action strategies
- Next steps

Marcy stated that a key objective of this meeting is to gather feedback and input on both the Draft Bicycle Network and the action strategies for the 2017 Plan Update before opening up the meeting for questions and comments. The following bullets summarize the major points of discussion.

## Discussion

### Coordination between CTDOT and Local Agencies

#### *VIP Paving Program*

- Attendees asked about CTDOT VIP Paving Program after providing the following information about the implementation of the program in their municipalities:

- Plainville: There was little to no communication between CTDOT and the town prior to a major repaving last year. It was unclear how the town was supposed to provide input on the repaving.
- Simsbury: There was confusion over how many feet from the yellow centerline a state road was required to be. This question was in reference to Route 185.
- CTDOT explained that the VIP Program is a policy, not a law. The policy is intended to encourage communication between CTDOT and the municipality or region when state roads within that area are scheduled to be repaved. This provides the local agency an opportunity to request a narrowing of the road and widening of the shoulder. CTDOT's traffic engineers review these requests and consider the roadway geometry, ADT, and other variables to determine whether the restriping is safe.
- Marcy stated that while it is possible miscommunications occurred in the situations described by attendees, the program has been successful overall and is continuing to improve. It's important to note that progress is happening and meetings such as this one allow CTDOT to become aware of any miscommunications that have occurred.

#### *Sharrows and Signage*

- An attendee asked whether municipalities are responsible for the paint and maintenance for sharrows and restriping efforts.
- Attendees discussed whether sharrows were permitted on state roads.
  - Marcy stated that while sharrows are successful at raising a certain amount of awareness, it is unclear whether they do improve safety for bicyclists. Many municipalities are in the process of trying to replace sharrows with protected bike lanes.
  - Examples of bike lanes in Connecticut:
    - New Haven is in the process of constructing a protected bike lane near the train station.
    - Hartford has painted bike lanes (though not protected) on Broad Street.
    - Burnside Avenue is the first road diet and bike lanes on state route.
- In response to an attendee's comment about the desire for more signage in Bolton, Marcy stated that the purpose of the Plan Update is to help guide CTDOT's engineers and to identify roads that need improvements for bicycling, including signage.

#### *Local Bicycle and Pedestrian Plans*

- CTDOT recommended that municipalities and regions develop a Bicycle and Pedestrian Plan that outlines the local priorities. Once that has been approved, it signals to CTDOT that the Plan has the support of the political officials and the community.
- An attendee asked about State Routes which serve as a critical link in a local network, and gave the Route 44 bridge of the Park River North Branch in Hartford as an example.

### Draft Bicycle Network

- An attendee stated that Route 44 is not safe and should not be included as a preferred route in the Draft Bicycle Network.
- An attendee noted that it will be important to consider that people who bicycle as a mode of transportation are much more diverse than the representation at public meetings.
- An attendee noted that many of the longer-term segments proposed in the Draft Bicycle Network could more frequently be used by recreational bicyclists. He stated that bicyclists who are commuting usually do so in urban areas. This attendee requested additional focus on the state's cities.
  - Marcy stated that the Draft Bicycle Network is focused on creating those longer-term segments across the state as the foundation for more local bicycle networks. Hopefully municipalities and regions will build off of this statewide network to strengthen local connections for bicyclists. The focus also must be on state routes since they are under CTDOT's jurisdiction.
- An attendee suggested that the Draft Bicycle Network should indicate the bicyclist skill or comfort level in some way for each connection. This would help bicyclists choose routes that were appropriate for them.
  - Marcy stated that an updated suitability map of all state roads will be produced as part of the 2017 Plan and Map. This map illustrates how suitable a road is for bicyclists based on the width of the shoulders and the average vehicle miles travelled (ADT) on it.
  - However, the suitability map is limited because it doesn't provide CTDOT's engineers with clear direction as to where bicycling and walking efforts should be focused.
- An attendee suggested a virtual version of the Bicycle Network Map that includes a list of contacts by geography that the public could access to learn about bicycling opportunities in their areas.
  - Marcy explained that such an effort would likely be difficult due to the expense and time required to keep all the relevant information up-to-date.

### Roadway Design and Speed Limits

- Attendees discussed the need to reduce speeds on roads that encourage bicycling through both design and posted speed limits.
  - Attendees discussed the opportunity to learn from other states where speed limits have been changed on state roads to increase safety for all modes.
  - Attendees discussed the need to design and engineer for the type of road that CTDOT wants in the future, instead of according to existing traffic speeds.
- Marcy stated that many other elements can encourage slower speeds along roadways.
  - Increased development and land uses that encourage pedestrian traffic provide visual cues for vehicles to slow down.
  - Traffic calming efforts, such as those in West Hartford, can also slow speeds.



- Attendees requested that traffic calming and other methods to encourage slower speeds be included in the 2017 Plan Update.

#### Enforcement

- An attendee stated that the 2017 Plan Update should include recommendations for improved enforcement of laws intended to protect bicyclists by police and other officials.
- One attendee stated that he and five of his co-workers have been hit by vehicles while bicycling. This attendee felt that law enforcement officers did not act on his behalf and that there was a need for improved training of such officers.
  - Attendees discussed enforcement of laws such as the Vulnerable Users Law as a local issue.
- Most police departments update their training manuals annually. Municipalities can reach out to police departments to provide educational material on the latest safety laws so these updates are included in the updated police manuals.
- Attendees cited the following organizations that have developed resources that municipalities can provide to law enforcement to encourage education laws related to bicyclists and pedestrians:
  - CTDOT:
    - Website with numerous safety tips, resources, training workshops, etc.: <http://www.ct.gov/dot/cwp/view.asp?a=2314&q=433254>
  - Bike Walk Connecticut:
    - Website: <http://www.bikewalkct.org/share-the-road.html>
    - “Share the Road” Rules Brochure (8.5” x 14”) <http://www.bikewalkct.org/uploads/1/1/8/5/11852691/saferoads4.pdf>
  - Town of Simsbury
    - Bicycle and Pedestrian State Law Guide 2016: <http://www.simsbury-ct.gov/police-emergency/files/bicycle-and-pedestrian-state-law-guide-0>
    - Bicycle Safety – Share the Road Presentation: <http://www.simsbury-ct.gov/police-emergency/files/bicycle-safety-share-the-road-presentation>
- Attendees also discussed the need for improvements to the process by which crashes involving bicyclists are reported.



## PUBLIC MEETING #2: Meeting Summary

### Meeting Location and Time

Date and Time: Tuesday, November 15<sup>th</sup> at 5:30 PM – 7:30 PM

Location: New Haven Free Public Library – Ives Main Library, 133 Elm St, New Haven

### Introduction and Presentation Overview

Anna Bergeron, the Project Manager for this project at CTDOT, welcomed meeting attendees and provided a brief overview of the project, including its background, purpose, and team. Anna then introduced Marcy Miller, the Consultant Team Project manager. Marcy asked attendees to introduce themselves before beginning the presentation.

\*The agenda and presentation for this meeting can be viewed at the following link: [http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

During the presentation, Marcy covered the following key ideas:

- Purpose of the Statewide Bicycle and Pedestrian Plan and Map Update (2017 Plan Update)
- Statewide progress in bicycling and walking efforts since 2009
- Public outreach efforts for the 2017 Plan Update
- Updated vision, mission, goals, and action strategies
- Data collection for development of Draft Bicycle Network Map
- Methodology for development of Draft Bicycle Network Map
- Draft Bicycle Network Map
- Action strategies
- Next steps

Marcy stated that a key objective of this meeting is to gather feedback and input on both the Draft Bicycle Network and the action strategies for the 2017 Plan Update before opening up the meeting for questions and comments. The following bullets summarize the major points of discussion.

### Discussion

#### Draft Bicycle Network

##### *Connections*

- Attendees expressed a positive reaction to the methodology behind the creation of the Draft Bicycle Network, which was based on creating connections between destinations of statewide significance.

- An attendee stated that Draft Bicycle Network should include enough locations where bicyclists can cross rivers, such as the Connecticut River, when travelling east or west. There are a limited number of bridges but improvements can be made.
- An attendee stated his opinion that if the Draft Bicycle Network is primarily focused on accommodating bicycling as a mode of transportation (as opposed to only recreational bicycling), greater consideration should be given to urban location since this is where the majority of this kind of “commuter bicycling” occurs.
  - This attendee feels that a local, fine grain bicycle network is more important for people who use bicycling as a mode of travel than a broad, statewide network since the majority of people don’t commute via bicycle for such long distances.
  - Marcy stated that while a strong local network is certainly important, this project is focused on establishing a statewide bicycle network that can serve as a solid foundation for the regions and municipalities to build off of. Additionally, local agencies often aren’t able to focus on these statewide connections between these regions and municipalities.
- An attendee stated that Route 146 on shoreline should be added to the network due to high volume of cyclists on road regardless of presence of Shoreline trail.
- The same attendee also noted that Atkins Street be added as a local alternative between Meriden and Route 160 in Berlin.
- An attendee noted that the Hartford Turnpike towards Wallingford be added as a local alternative.

*State Roads and Concept of ‘Preferred Local Alternative’*

- Attendees requested clarification on the idea of a potential “Preferred Local Alternative” for certain routes on the Draft Bicycle Network Map.
  - Attendees highlighted the following examples of state routes that people would be unlikely to use since there is already a better, local option:
    - Connection between New Haven and Waterbury: most bicyclists choose to ride along Hartford Turnpike (local) instead of Route 5 (state).
    - Connection between New Haven and Southington: most bicyclists would take the Farmington Canal Trail as opposed to any state road.
- Marcy explained that the concept of a ‘preferred local alternative’ is a new one and details as to how it is implemented are still being determined.
  - We’ve identified Route 5 but recognize that it isn’t the best option, which is why we’ve identified the preferred local alternative. While it’s important to note that the preferred local alternative exists, a state route needs to be identified in order to guide CTDOT where to focus resources to improve bicycle and pedestrian facilities.
- It is notable that CTDOT is making an effort to acknowledge the importance of these local connections in some way. It has been challenging to do so in the past since CTDOT only has jurisdiction over state roads.
  - It would be inappropriate for CTDOT to make any recommendations about the design of any local streets since they are the responsibility of municipalities and regions.

- Since this project is focused on determining what CTDOT can do to improve bicycling and walking, recommendations need to be focused on roads and facilities on which CTDOT has authority to implement such recommendations.
  - The hope is that regions and municipalities will adopt complementary plans that strengthen the local bicycle networks.
- The Draft Bicycle Network provides CTDOT with clear guidance as to where resources should be focused for bicycle and pedestrian improvements.

### *Implementation*

- An attendee requested information on what kinds of recommendations will be made to improve conditions for bicyclists along the segments identified in the Draft Bicycle Network.
  - Marcy emphasized that recommendations would not simply be limited to recommendations to increase the shoulder width by restriping the road in coordination with CTDOT's VIP Paving Program. Recommendations will be much more comprehensive and an effort will be made to prioritize improvements.
  - Marcy stated that recommendations will set the foundation for CTDOT to further examine the identified segments to develop detailed design recommendations.

### Transit

- Attendees stated that the connection between bicycling and walking, and transit should be a primary focus of this Plan Update.
  - Many individuals expressed vocal support for an emphasis on this connection, especially the 'first-mile, last-mile' issue, within the action strategies.
  - Attendees also stated that the Bicycle Network should make sure to align with the location of existing and planned transit stops and lines, such as the New Haven-Springfield commuter line.
- Attendees discussed which transit lines allow for people to easily travel with their bikes. The rules for which lines allow this and at what times of the day can be confusing and create difficulties. Additionally, the facilities to accommodate bicycles on transit is often limited.

### Education

- Attendees responded positively that CTDOT is working to encourage a stronger bicycle and pedestrian culture across the state.
- An attendee suggested that one key method to encourage such a culture is through education and discussed whether it's possible to incorporate cycling education into the school system.
  - This attendee stated that cycling education for children should be a priority action strategy because it is important to teach children to consider all modes when they use the road. This will encourage them to be safer bicyclists and future drivers.

- Attendees discussed the need to raise awareness of the Vulnerable Users Law as another way to educate more drivers.

#### Roadway Design and Speed Limits

- An attendee stated that New Haven is in the process of advocating for reduced speed limits in certain areas of the city. Efforts have been made to reduce speed limits to 20 MPH on neighborhood streets, but the process has been tedious and challenging.
  - CTDOT’s engineers set speed limits on state routes by assessing numerous variables, including the most up-to-date design standards, ADT, and more in order to ensure safety for all users of the road.
    - A road is defined as ‘safe’ if there are no or very few speed tickets, crashes or fatalities in recent data trends.
  - Additionally, any road in CT cannot be lower than 25 MPH at this time.
    - An attendee suggested that the project team look to Seattle as a case study for how CT can progress on this issue. Seattle recently passed the Greenway Act, which allows neighborhood streets to be below 25 MPH.

#### Pedestrian Facilities

- An attendee requested that further consideration be given to pedestrian and that CTDOT consider the development of a separate Statewide Pedestrian Plan.
- Attendees suggested that better data should be developed to illustrate facilities to accommodate pedestrians on statewide level. This data should be illustrated on a map and initial data suggestions include:
  - Existing pedestrian infrastructure, such as crosswalks or pedestrian signals at crossings, on all state routes; and
  - Transit shelters that have pedestrian refuges along state routes.



## PUBLIC MEETING #3: Meeting Summary

### Meeting Location and Time

Date and Time: Tuesday, November 29<sup>th</sup> at 5:30 PM – 7:30 PM

Location: Student Center, Eastern Connecticut State University, Willimantic, CT

### Introduction and Presentation Overview

Anna Bergeron, the Project Manager for this project at CTDOT, welcomed meeting attendees and provided a brief overview of the project, including its background, purpose, and team. Anna asked attendees to introduce themselves before beginning the presentation. Anna then introduced Marcy Miller, the Consultant Team Project manager.

\*The agenda and presentation for this meeting can be viewed at the following link: [http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

During the presentation, Marcy covered the following key ideas:

- Purpose of the Statewide Bicycle and Pedestrian Plan and Map Update (2017 Plan Update)
- Statewide progress in bicycling and walking efforts since 2009
- Public outreach efforts for the 2017 Plan Update
- Updated vision, mission, goals, and action strategies
- Data collection for development of Draft Bicycle Network Map
- Methodology for development of Draft Bicycle Network Map
- Draft Bicycle Network Map
- Action strategies
- Next steps

Marcy stated that a key objective of this meeting is to gather feedback and input on both the Draft Bicycle Network and the action strategies for the 2017 Plan Update before opening up the meeting for questions and comments. The following bullets summarize the major points of discussion.

### Discussion

#### Coordination between CTDOT, Regions, and Municipalities

##### *Municipal and Regional Bike Networks*

- An attendee from Columbia, asked if the state plan will include a “primer” for town leadership on how to get started on a local bike network. The attendee noted that a “how-to” section in getting buy-in from local residents and advocates, as well as a section with “best-practices” case studies for towns of different sizes would be helpful.

- CTDOT responded that next year the project team will be going to the regions to work with them to get buy in from the regions, towns, and elected officials there. CTDOT wants this to be a bottom-up process and wants to see these communities support the Plan, which will likely include examples that appropriate for urban, suburban, and rural communities.
- Another attendee suggested that CTDOT should begin these meetings with the Northeast and Northwest COGS, each of which are comprised of towns of that are relatively similar in character.

#### *CTDOT VIP Repaving Program*

- An attendee commented that they have noted the successes of the 11' repaving program, but that many roads' lane widths could still be reduced.
- Another attendee said that a simple fix for storm drains would be to have the longer opening span across the road to prevent bike tires from getting stuck.
  - CTDOT responded that this is currently the standard, and is included in the VIP program.

#### *Community Connectivity*

- An attendee from Bolton has noted that a proposal for a multi-use pathway along Route 44 has divided the town along issues relating to bicycle and pedestrian planning. She stated that there should be a mechanism in place to ensure that these routes aren't harmful to the communities that host them.
  - CTDOT responded that the Community Connectivity Program encourages communication between local officials and community members to work towards a shared vision for bicycle and pedestrian facilities.

#### Draft Bicycle Network

#### *Strava Data and Other Source Data*

- An attendee thanked the project team for the work thus far. He requested additional information on how the Strava data was used, He noted that Strava is limited because it only shows the routes cyclists ride today and does not include the desired routes.
  - Marcy responded that we are using the Strava as one tool among many, including suitability as well as input from members of the public during meetings such as this one.
- An attendee asked how the Preferred Local Alternatives were determined.
  - Marcy responded that these were selected with a variety of information, including suitability, Strava, and local knowledge.
- An attendee asked how many people had attended the other Public Meetings for the project and suggested that Strava be used as a communication tool to discuss ideas with other Strava users.
  - Ken responded that Public Meetings are one methods through which we are doing outreach for this project. Other methods include a project website where people can submit comments about the Plan or the Map, the development of newsletters, Steering Committee Meetings, as well as other stakeholder outreach.

### *“Missing Links”*

- An attendee asked if CTDOT will be looking at adding bike facilities on state routes that are “limited-access” and where no reasonable alternative exists. The attendee noted Route 9 on the plan was highlighted as “Not Passable”. Will this mean that the state will look at including bike facilities on this section in the future?
  - CTDOT responded that these connections are being considered when possible, even if it goes beyond the project limits of an existing project. CTDOT also noted that the Intermodal Planning Office reviews designs at stages of completion (30%, 60%, and 90% completion) and that all staff members are working to integrate bicycle and pedestrian plans. Marcy also noted that unlike the suitability map that gave engineering an ‘out’ to not include bike facilities, this network plan will provide clarity.
- An attendee from the CT Bike/Ped Advisory Board reiterated the boards desire to focus on 1) critical links without adequate bike access (e.g. Rt. 187/189 connector, Rt. 2 pass in Glastonbury), 2) focus on the interconnectivity between transit (esp. fixed transit) and Bike/Ped facilities, and 3) should include a broad goal such as “X% of CT Residents should be within 20 minutes of a trail by the year 20XX”.

### *Recreational Routes on Bike Network*

- An attendee asked if Bigelow Hollow or Mansfield Hollow would be included as a destination in the statewide bike network. The attendee noted that since recreation is a big part of cycling, there should be some significant recreational points-of-interests included as destinations. He also noted that in many parts of the state, there are more recreational riders than purpose-based riders, and they can’t be ignored as they are using the roads as well.
  - Marcy responded that the steering committee talked a lot about the recreational and tourism aspect, but many believed that these routes belonged on a different sort of network.

### *Routing of Recreational Trails*

- An attendee asked what the process was for determining the routes of multi-use trails, and noted that she would like to see the East Coast Greenway routed on Main Street in Willimantic rather than behind the stores as is currently proposed. She noted that a Main Street facility would have greater impacts for tourism and have greater economic benefits.
  - Marcy noted that much of the decision making process for these trails lie with the stakeholder, East Coast Greenway in this case. CTDOT, the town, and ECG work together to determine the appropriate route of these trails.

### Bike Facilities and Design

#### *Signage*

- An attendee said it would be helpful for bicyclists and motorists if warning signs appeared before an intersection with a steep downhill section of roadway where users of the roadway can pick up speed.
- An attendee asked why there are not 3 Foot Passing Law signs on state roads.



- The project team responded that it is not considered to be a legal sign by CTDOT as it is not included in the MUTCD manual

*Bike Facilities*

- An attendee asked if CTDOT and the project team are looking at other facilities besides shoulder width.
  - Marcy explained that the first step is to determine whether the routes that have been identified are the correct ones. The next step will be to determine what facilities will be appropriate for each segment by looking at each one in further detail. The facilities will be determined based on what is contextually appropriate and it is expected that many will include recommendations besides an adjustment to the shoulder width.



## **PUBLIC MEETING #4: Meeting Summary**

### **Meeting Location and Time**

Date and Time: Wednesday, November 30<sup>th</sup> at 5:30 PM – 7:30 PM

Location: Fairfield Public Library – Main Branch, 1080 Old Post Road, Fairfield, CT

### **Introduction and Presentation Overview**

Anna Bergeron, the Project Manager for this project at CTDOT, welcomed meeting attendees and provided a brief overview of the project, including its background, purpose, and team. Anna then introduced Marcy Miller, the Consultant Team Project manager. Marcy asked attendees to introduce themselves before beginning the presentation.

\*The agenda and presentation for this meeting can be viewed at the following link: [http://www.ctbikepedplan.org/meeting\\_materials.html](http://www.ctbikepedplan.org/meeting_materials.html)

During the presentation, Marcy covered the following key ideas:

- Purpose of the Statewide Bicycle and Pedestrian Plan and Map Update (2017 Plan Update)
- Statewide progress in bicycling and walking efforts since 2009
- Public outreach efforts for the 2017 Plan Update
- Updated vision, mission, goals, and action strategies
- Data collection for development of Draft Bicycle Network Map
- Methodology for development of Draft Bicycle Network Map
- Draft Bicycle Network Map
- Action strategies
- Next steps

Marcy stated that a key objective of this meeting is to gather feedback and input on both the Draft Bicycle Network and the action strategies for the 2017 Plan Update before opening up the meeting for questions and comments. The following bullets summarize the major points of discussion.

### **Discussion**

#### Draft Bicycle Network

- An attendee asked how recommendations will be decided and implemented on the routes identified in the Draft Bicycle Network.
  - Marcy explained that the first step is to determine whether the routes that have been identified are the correct ones. The next step will be to determine what

facilities will be appropriate for each segment by looking at each one in further detail.

- Marcy announced that input and feedback on the Draft Bicycle Network can be submitted by submitting a comment on the website ([http://www.ctbikepedplan.org/contact\\_us.html](http://www.ctbikepedplan.org/contact_us.html)) or by emailing Mary Miltimore at [mmiltimore@fhiplan.com](mailto:mmiltimore@fhiplan.com). If possible, please mark up the worksheets that illustrate the Network and then submit a photo or scan of the marked up sheet by email to [mmiltimore@fhiplan.com](mailto:mmiltimore@fhiplan.com).
- Marcy explained that the Preferred Local Alternatives will not be developed very extensively because CTDOT only has jurisdiction over state roads (not local roads).
  - Since this project is focused on determining what CTDOT can do to improve bicycling and walking, recommendations need to be focused on roads and facilities on which CTDOT has authority to implement such recommendations.
- Attendees from both Norwalk and Stamford expressed that they were pleased that Route 1 was included in the Draft Bicycle Network.
  - They stated its importance in connecting commercial centers and that the majority of Route 1 from Bridgeport to Stamford is bicycle friendly with wide shoulders. The attendee from Stamford also explained that many people who live along it in Stamford do not have access to a car and rely on bicycling as their primary mode of transportation.
- An attendee stated his concern that the Draft Bicycle Network includes a relatively small number of routes in southwestern Connecticut. He stated that while the area does likely have a stronger bicycle network than other parts of the state, it's possible that there is a greater need for additional routes since this area of the state has a denser population.
- An attendee suggested that an additional segment should be added to account for the length of time it will take for the development of the Merritt Parkway Trail.

#### Education and Encouragement

- Attendees discussed the importance of improved education for planners and engineers at both CTDOT and municipalities to help encourage a stronger bicycle and pedestrian culture across the state.
  - Attendees discussed the potential to focus on active transportation and the newest legislation, such as the complete streets law.
- The need for continuing education and potential training for engineers was emphasized since Connecticut is one of the few states in the country that does not have any continuing education requirements for engineers.
- Attendees discussed whether bicyclists frequently ride in Connecticut during the winter. Many factors contribute to bicyclists' decision to do so, including personal preference and comfort level.
  - Attendees emphasized that if the facilities exist and are well maintained, people will use it. The high number of bicyclists during the winter in Wisconsin was cited as an example of a successful encouragement program.

## CTDOT

### *VIP Repaving Program & Construction Project Review*

- Attendees expressed concerns with the VIP Repaving Program. One attendee described the difficulty in gaining approval for a lane that is under 11 feet.
  - Anna at CTDOT explained that the VIP Program is a policy that is intended to encourage communication between CTDOT and the municipality or region when state roads within that area are scheduled to be repaved. This provides the local agency an opportunity to request a narrowing of the road and widening of the shoulder. CTDOT's traffic engineers review these requests and consider the roadway geometry, ADT, and other variables to determine whether the restriping is safe.
- Anna stated that CTDOT will pay for sidewalk construction as part of the repaving as long as the municipality is willing to maintain that sidewalk and take ownership of it.
- An attendee asked what the process was at CTDOT to review road construction projects to ensure that elements to encourage safety for bicyclists and pedestrians are incorporated when appropriate.
  - Anna stated that the Intermodal Department reviews all road construction projects at 30% completion of the design, 60%, and 90%. This allows the Intermodal Department to review each project multiple times and provide comments and suggestions such as adding sidewalks or providing ADA accommodations.
- Anna stated that approval is needed from CTDOT before any new facility can be placed on a state road.

### *CTDOT and Communication*

- Attendees expressed frustration with the process for communicating with CTDOT. Many municipalities end up spending a significant amount of time finding the right person to talk to at CTDOT.
  - Attendees felt that there should be a clearer process established for municipalities to contact CTDOT.
  - Anna stated that she understands these concerns and explained that while CTDOT is understaffed at the moment, the Department is working to hire a full-time Bicycle & Pedestrian Coordinator.
  - Other attendees expressed that while it may appear that CTDOT isn't changing fast enough, people need to understand that the process of change is inherently slow. It's important to note that CTDOT has greatly improved in their communication as well as in their investment and attitude towards bicycle and pedestrian planning over the last twenty years. It is clear that they are continuing to progress in the right direction.
- An attendee stated that there should be a better process through which municipalities and the public can report items that should and can be quickly fixed, such as a malfunctioning signal.

### *Safe Routes to School*

- An attendee stated that CTDOT should be careful to avoid outsourcing work to engineering firms who don't prioritize bicycle and pedestrian planning.
  - He suggested that an organization like Bike Walk CT could earn revenue from managing a program like Safe Routes to School. Bike Walk CT would then be in charge of working with school districts to join the program. This would be pending Bike Walk CT's agreement to do this.
- Anna explained that the Safe Routes to School contract ended in September 2016 because CTDOT did not choose to continue it. However, towns across the state can create their own Walkability Audit.

### Facilities

- An attendee expressed that the Western New England Greenway will need signage along Route 7.
- Attendees described the unique ways that they have successfully undertaken projects to improve bicycle facilities in their towns:
  - Stamford received approval to put buffered bicycle lanes on High Ridge Road as long as the city paid for them.
  - Stamford received approval for a painted bicycle lane through a federal funded project, which has higher standards than the state.
  - Fairfield partnered with the Health Department to create various bicycle routes, including the Fairfield Shoreline Bike Route.
  - An attendee stated that each town has a Local Traffic Authority (LTA) and it can be very helpful to work with them on any bicycle and pedestrian planning efforts.
- In response to an attendee's question, Marcy explained that an ADA Transition Plan will not be included in the 2017 Plan Update.
- An attendee suggested that the 2017 Plan Update consider incorporating guidance on the use of advisory lanes, which have been FHA approved.
  - An advisory bike lane is used on low volume, narrow streets. It is similar to a regular bike lane except that it is marked with a dotted line to the left side of the road. The markings are intended to give a space for bicyclists to ride, but also indicate that motorists are permitted to use the space to pass oncoming traffic if needed.
  - Danbury is considering advisory bicycle lanes.
- An attendee from Norwalk stated that while separated bicycle lanes are becoming increasingly popular, their cost should be considered in any recommendations.
  - Additionally, new research has recently been released that demonstrates that since bike lanes are often implemented in a piecemeal way due to their high cost, the result can be a disjointed bike network.
- An attendee recommended that consideration be given to e-bikes in the 2017 Plan Update as they grow in popularity. For example, there is a vendor in South Norwalk.

- Benefits include assisting those with mobility challenges as well as the elderly. They also allow commuters to do difficult rides without needing to take a shower.

### Economic Development

- Attendees recommended that economic development should be emphasized in the Action Strategies. An example are the opportunities that exist along the Western New England Greenway, which connects NYC to Montreal.

### Transit

- Attendees stated that the connection between bicycling and walking, and transit should be a primary focus of this Plan Update.
  - Attendees discussed the difficulty in successfully implementing basic improvements and infrastructure to areas around train stations. Many suggested the process for submitting a proposal to CTDOT for such things needs to be improved.
- An attendee suggested that an inventory of all bicycle and pedestrian facilities around transit stops should be done. The inventory would include ADA accessibility, pedestrian push buttons, crosswalks, and more.
  - An attendee suggested such an inventory could be done in cooperation with municipalities by using something like a Google form.

### Next Steps

- Anna and Marcy thanked all attendees for their attendance and explained that the input heard throughout all four Public Meetings would be incorporated into the 2017 Plan and Map Update. The project team will work to develop a draft Plan and updated Draft Map in the upcoming weeks. Once completed, the Draft Plan will be shown to all the regions to ensure that it is line with the vision that the regions and municipalities have the area.

# APPENDIX A.4 - OTHER OUTREACH MEETINGS

## 1 Regional Council of Government (RCOGs) Meetings

These meetings were conducted to hear the concerns and desires of the Regional Council of Governments (RCOGs) and municipalities for the Plan and Map revisions. The following is a list of these meetings and the date they occurred.

- Capitol Region Council of Governments (CRCOG) - February 3, 2016
- Connecticut Metropolitan Council of Governments (MetroCOG) - February 1, 2016
- Lower Connecticut River Valley Council of Governments (RiverCOG) - January 28, 2016
- Naugatuck Valley Council of Governments (NVCOG) - February 1, 2016
- Northeastern Connecticut Council of Governments (NECCOG) - January 29, 2016
- Northwest Hills Council of Governments (NHCOG) - January 22, 2016
- Southeastern Connecticut Council of Governments (SECCOG) - January 28, 2016
- South Central Regional Council of Governments (SCRCOG) - February 2, 2016
- Western Connecticut Council of Governments (WestCOG) - January 20, 2016

## 2. Advocacy/Special Interest Group Meetings

These meetings were conducted to gain more information on specific topics and/or to hear the concerns and desires of advocacy and special interest groups for the Plan and Map revisions. The following list includes the groups that were met with and the date of each meeting.

- CRCOG Transportation Committee Meeting - February 22, 2016
- City of New Britain’s Public Works Department - May 3, 2016
- Connecticut Cycling Advancement Program (CCAP) - May 4, 2016
- City of Torrington Bicycle and Pedestrian Advocacy Groups - May 9, 2016
- CT Greenways Council - September 12, 2016
- East Coast Greenway Alliance (Bruce Donald) - September 16, 2016
- City of New Haven - September 19, 2016

## **APPENDIX A.5 - PROJECT NEWSLETTERS**

Appendix A.5 displays the project newsletters generated in support of the *2017 Connecticut Statewide and Pedestrian Plan Update (2017 Plan Update)*. A total of three newsletters were produced throughout the course of the project, all of which were distributed in both English and Spanish. Only the English versions have been included in the Appendix.



## Welcome to the Statewide Bicycle and Pedestrian Plan Update!

Can you envision a network of roads and trails throughout Connecticut where bicyclists and pedestrians are provided a safe, continuous, and enjoyable experience?

Providing quality routes and updating our roads to accommodate all users encourages opportunities for physical health, increased economic development opportunities, community cohesion, and social equity. Whether large city or small coastal town, all communities benefit from accommodating non-motorized transportation.

The CT Department of Transportation and local consulting firm Fitzgerald & Halliday, Inc. (FHI) are undertaking the Statewide Bicycle and Pedestrian Plan and Map Update.

This effort has two prongs: the first is the Update to the 2009 Statewide Bicycle and Pedestrian Transportation Plan. Goals include review of the existing plan and policies, and updating them to be consistent with today's regulations, infrastructure, and Connecticut residents' needs and desires.

The second project is the update to the map that was completed in 2009, reflecting the changes in Connecticut's bicycling infrastructure. The Statewide Bicycle Map will detail amenities, regional trail networks, and suggested on-street bicycle routes. This interactive map, available for both desktop and mobile viewing, will assess streets' suitability for bicycling based on factors such as posted speed limit and truck traffic volumes.



### What's changed since 2009?



Multiple federal initiatives have been implemented to help communities create safer, better connected bicycling and walking networks.



New Connecticut legislation aims to make the streets safer for all users.



CTDOT is exceeding statewide bicyclist and pedestrian funding targets.



CTDOT makes continuous progress in Complete Streets policy and design.



Local municipalities are making strides to adopt policies, programs, and designs that support bicyclist and pedestrian planning.



A growing number of advocacy groups and communities are championing implementation of safer streets.



## Who's Steering This Project?

While everyone in Connecticut is invited to participate throughout the 18-month Plan Update process, a Steering Committee has been selected to advise the project team and guide the process.

The Steering Committee represents the Nutmeg State's diverse regions and interests. Committee members come to the table from various agencies, municipalities, advocacy groups, and non-profits to share their local knowledge and insights.

Specifically, the Steering Committee will:

- Provide expertise on local and regional issues and priorities
- Help raise awareness about the Plan and Map Update across the state
- Offer insight on deficiencies in the statewide network
- Assess improvement alternatives
- Review the Plan and Map Update

Our Project Team and Steering Committee held a kick-off meeting in early February. We conducted an interactive exercise to revisit the 2009 Vision Statement, and outlined project goals and milestones. Attendees were asked to choose three key words or phrases from the 2009 Vision that are most essential for our future going forward, and three words or phrases that are missing from that 2009 Vision. The results from



this exercise are illustrated in the word clouds below, which give greater prominence to the words that were selected most often. The room was brewing with excitement and ideas to create a more robust culture of bicycling and walking coordinated with transit here in Connecticut.

Visit the project website to learn more, including meeting minutes, agendas, and a full list of Committee members.

### Key Words Essential for the Future



### Key Words Missing From the 2009 Vision



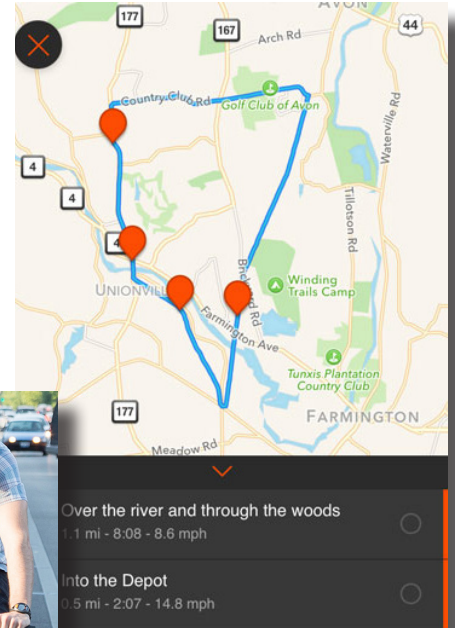
Visit [CTBikePedPlan.org](http://CTBikePedPlan.org) to Stay Informed!



# Track Your Rides and Runs With Strava!

Strava is a leading website and smartphone app that allows users to track their bicycle rides, runs, walks, and more, and to share their favorite routes with other users. One of the app's most popular features is the Global HeatMap, which provide compelling map imagery to illustrate the most popular roads and routes for its users.

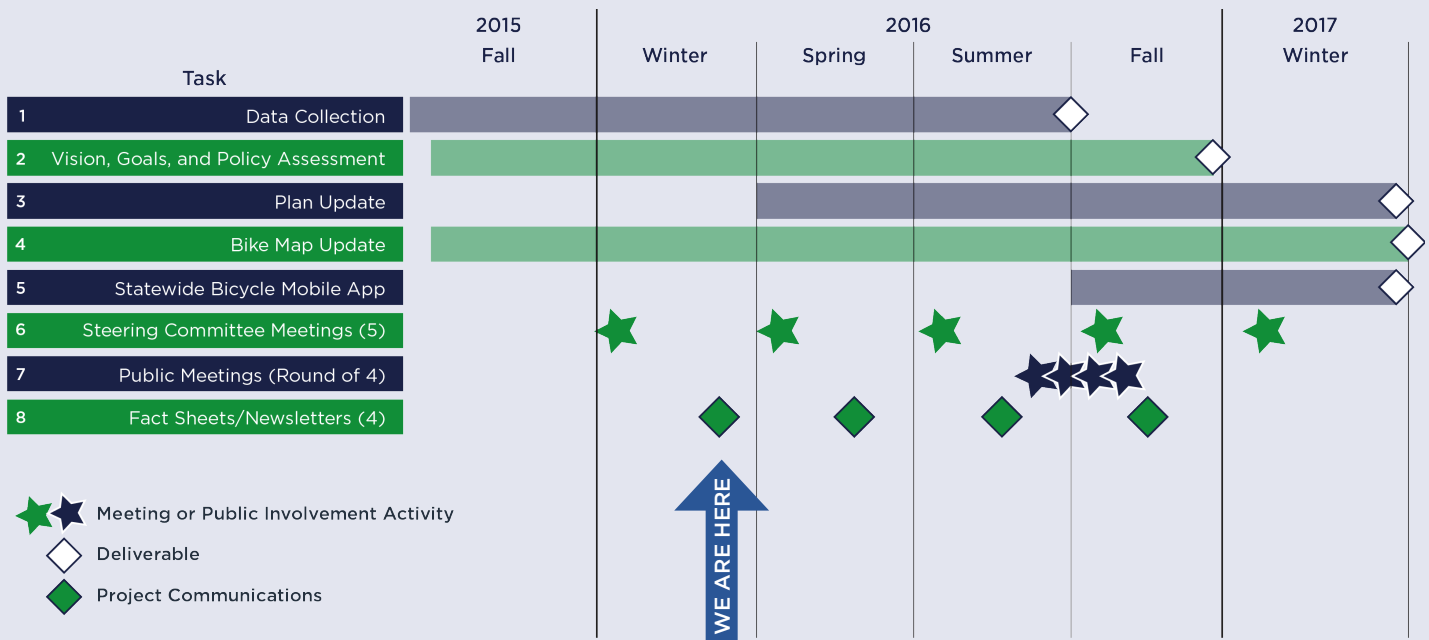
valuable baseline of information and will be utilized in conjunction with various other sources, such as crash data and local knowledge, to develop the Map Update. The more registered Strava users there are in Connecticut, the better informed we'll be, so download the free Strava app today and start tracking!



The app also collects anonymous data from its users, including information when people are traveling and general origin and destination points. As part of this Map Update, CTDOT has purchased Strava's Connecticut dataset so planners and engineers can have a better understanding of where people are actually riding today. This data will provide a



## Project Schedule

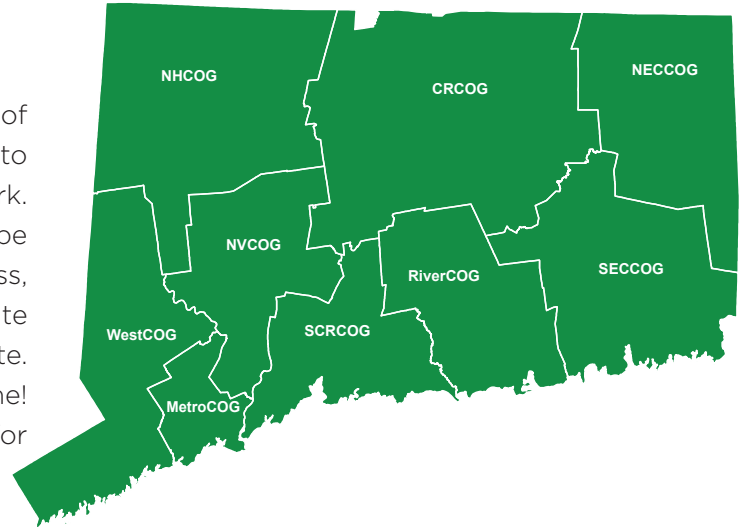


## Meeting With Connecticut's RPOs

The Project Team met with all nine of Connecticut's Regional Planning Organizations (RPOs), who provide transportation and community planning support to the municipalities in their regions. The purpose of these meetings was to gather insights on current efforts in the entire region and specific municipalities. The Project Team was eager to learn of each RPOs desires for the Plan and Map Update.

## Who Loves Data?

We do! We are developing an inventory of planning documents and data resources to assess our facilities and develop our network. If you have materials that you think should be incorporated or part of our planning process, please send them our way. This will help us create a more accurate, robust Plan and Map Update. Database and GIS files are especially welcome! Contact Marcy Miller at [mmiller@fhiplan.com](mailto:mmiller@fhiplan.com) for questions or to provide information.



### Visit the Project Website

at [CTBikePedPlan.org](http://CTBikePedPlan.org) to learn more, share your ideas, insights, and concerns, and provide feedback on draft recommendations.



### Join our Email List

and we'll keep you informed. We promise not to flood your inbox!

## Get Involved!

Improving the Plan and Map Update depends on input from YOU! You know your communities best. We want to hear what's working, and what isn't. So how can you get involved?



### Read the Project Newsletter

so you can impress your friends with your knowledge of the Statewide Bicycle and Pedestrian Plan Update.



### Spread the Word!

Tell your friends about this effort, and bring them along for the ride. We'd like to hear from the novice to the expert, the kids and the octogenarians, and everyone in between. The more the merrier!



### Attend a Public Meeting

We're hosting series of four public meetings this fall. The meetings will be held throughout the state in bike-friendly locations, so everyone can join. The dates and locations are to be determined.

## Updating the Vision

*An aspirational statement of where we want to go...*

Identifying or updating a vision is typically the first step in any planning process. The crafters (us!) can outline a dream for that mode, system, or process in writing. For our 2017 Plan Update, we have been working closely with our Steering Committee to identify and update our dream for walking and bicycling in Connecticut.

Yes, the Connecticut Department of Transportation (CTDOT) already has a vision for walking and bicycling in Connecticut. It was crafted in 2008 and adopted in 2009. Eight years later, is that dream still a reflection of what people want? We asked our Steering Committee this very question in our first meeting! We heard that the 2009 vision is fairly accurate, but it could be improved upon. We set out to do that.

We learned that 2009 “vision words” that remain relevant include *convenient, safe, network, connect, accessible for all ages and skills, encourage, promote, and key destinations.*

Additionally, we were told that there were new or missing concepts that should be included. A number of new or missing concepts, such as *improved facilities, maintenance,*

*education, funding, and health benefits* are discussed elsewhere in the current plan – namely in the Goals and Action Strategies. In instances where these concepts are specific and detail-oriented, the Goals and Action Strategies are likely where they belong.

Other missing concepts, such as Complete Streets and active transportation, were not yet mainstream in Connecticut 2009, and thus were not included in the

plan. Furthermore, the Department was not ready to tackle evaluation and prioritization strategies in a bicycle and pedestrian plan back then.

Rest assured, this 2017 Plan update will indicate which Action Strategies have been implemented. And we heard that the Bicycle Network developed this time must include priority corridors. (More on that in future newsletters!)

*(continued on page 4)*



*“Some concepts, such as Complete Streets and active transportation, were not mainstream in Connecticut when the original plan was created in 2009, and were thus not included.”*

## PROGRESSIVE PLACES // Profiles of Connecticut communities that are on the forefront of bicycle and pedestrian planning.

### Discovering Torrington, a Little City With Big Ideas

Communities where people have ample opportunities to walk and bike tend to be healthier, happier places to live. Whether a small town or large city, the common denominator is often an impassioned group of citizens leading the way.

Look no further than the City of Torrington, where two key groups are helping the City champion progressive practices. Located in Litchfield County, the former mill town is a community of about 36,000. Torrington is home to an active downtown, a rich arts scene, and a wealth of recreational trails and outdoor amenities throughout rural land.



The Torrington Trails Network is a group of local volunteers who helped bring many of these recreational trails and walkways to fruition. Instrumental to the success of this advocacy group is the strong partnership with the local government, the Torrington YMCA, and historical and cultural institutions.

Another group of local volunteers, the Bike Advocacy Group, is hoping to build off the success of the Torrington Trails Network and will focus on improvements to Torrington's infrastructure, amenities, and policy for bicyclists in town.

To support a useful, connected network beyond City boundaries, both groups strive to capitalize on regional resources. New and improved amenities are aligned with the Open Space and Greenways chapter of the Torrington Plan of Conservation and Development. Regional planning efforts are also factored in.



Common among both groups is the unwavering commitment and camaraderie of the volunteers. Rista Malanca, the Zoning & Wetlands Enforcement Officer, cites them as the best resources to communicate the needs and wishes of the community. It is a mutually beneficial relationship.

The groups also manage tasks, easing staff and commission resources. In turn the Planning and Zoning, Public Works, Street, and Economic Development Departments, provide teeth to the initiatives and technical support. For example, volunteers assisted City staff by leading efforts to write grants to secure funding. Communication early and often is essential.

Today, there are ever-growing routes to safely walk or bike around Torrington. Together with the City, the two volunteer groups have no plans to stop improving. How might this progressive town look in five, or ten, or twenty years? We can't wait to find out!

Today, there are ever-growing routes to safely walk or bike around Torrington, and no one has no plans to stop improving. How might this progressive town look in five, ten, or twenty years? We can't wait to find out!

#### Save the Date!

The CT Trails Symposium, presented by the CT Greenways Council, will be held on October 20<sup>th</sup> in Torrington! Stay tuned for details.

# What Will the 2017 Bike Map Be?

What kinds of questions should the 2017 Map answer? What information should it include? Our project team brought these questions to the project's Steering Committee meeting on May 5<sup>th</sup>. We engaged in a discussion of the possible elements to include, such as loop rides, cross state routes, and suitability. A suitability map and updated trails map will be created as part of this project, but the general consensus was that the 2017 Map should focus on defining a statewide bicycle network.

...but what is a bicycle network?

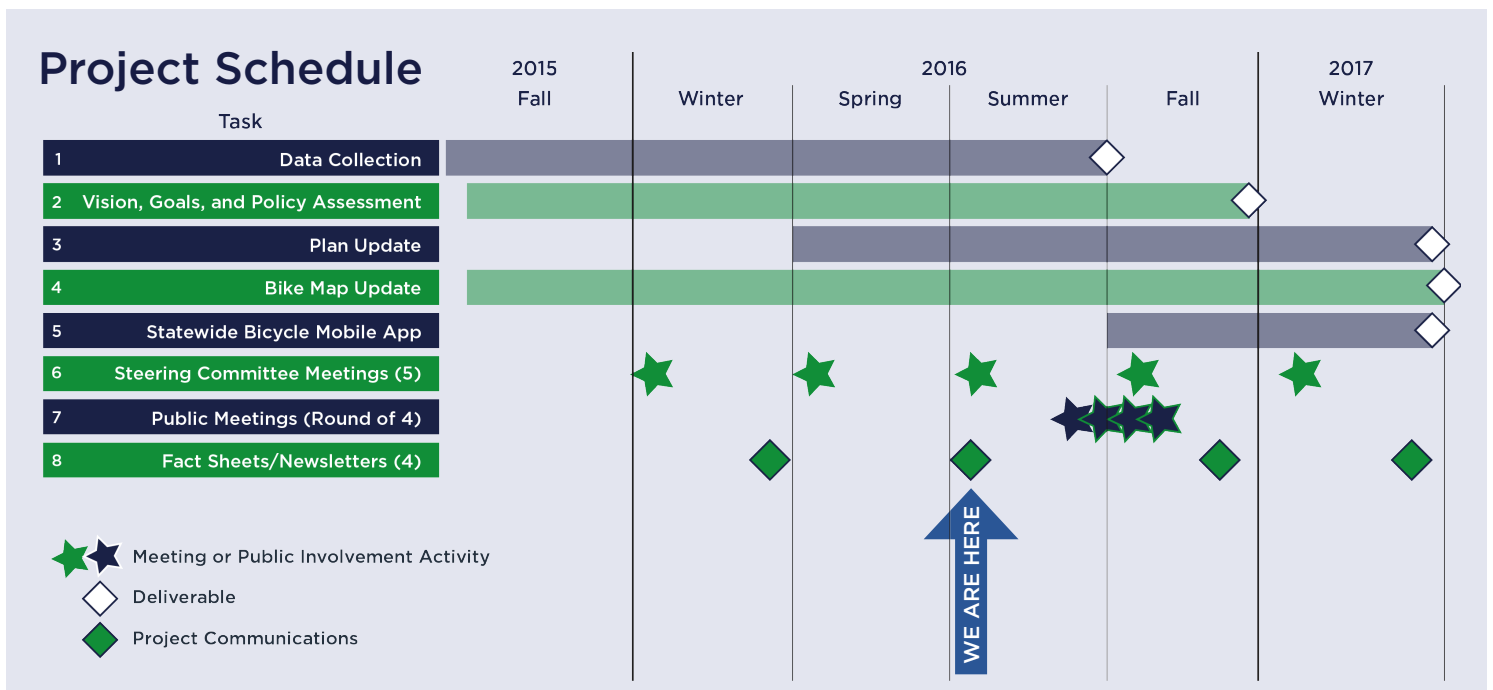
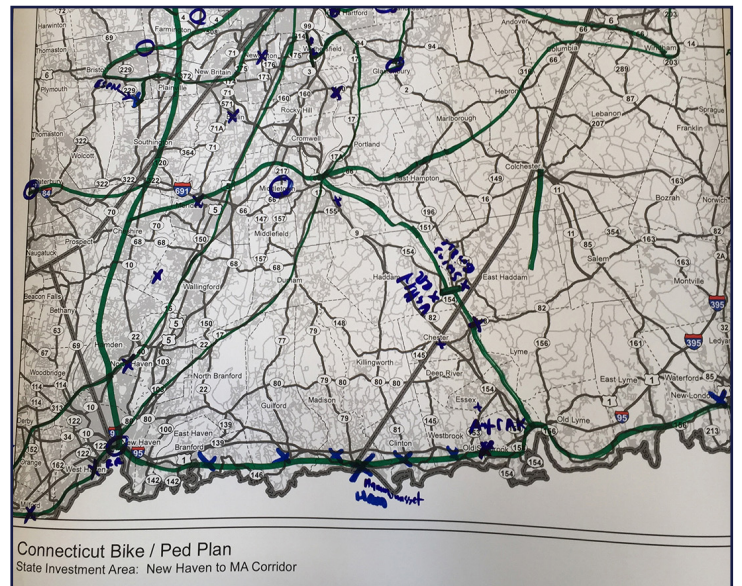
Good question, because there are two distinct types. The first type of network is an aggregate of all existing and planned bicycle facilities. The network would answer such questions as, "What's the best and safest route to bike to work?" or "Where are the best trails for a long bike ride on a Sunday with friends?"

You may have a favorite mapping website or app, like Strava, to answer these inquiries. Those resources are continuously updated, with data gathered from thousands of users, and we can't discount their usefulness.

The second type of bicycle network defines priority corridors and desired connections, irrespective of facility condition. This network is focused on the future, and

answers questions like "Where should the state focus funding investments?", and "What pieces are missing to create a bicycle network that is convenient, safe, and accessible for everyone?" These are the inquiries we are excited to answer! In fact, we are so excited that we got right to work with our Committee. Together, we identified key destinations and critical connections on large maps of the state.

Our project team is working to incorporate the input and data we've received into the development of a draft Priority Corridor Bicycle Network. Please stay tuned!



## Updating the Vision, continued



(continued from page 1)

And, in some cases, some of these suggested aspirations merit more discussion in the plan chapters. For example, it may be appropriate to outline the merits of walking and bicycling. This section could be a good place to discuss the traffic, environmental, economic, and health benefits of walking and bicycling.

Finally, after discussing a revised vision at Steering Committee Meeting #2 in May, a guiding principal is to keep the Vision short and simple, and include the nitty-gritty details in the Goals and Action Strategies. A clear Mission Statement would add value, outlining the *what and why* of the Vision statement.

With help from the Steering Committee, below is a draft Vision of where we think we want to go:

### Draft Vision

The **State of Connecticut** will encourage, promote and **continue to improve the conditions** of bicycling, walking, and other forms of active transportation, so that any person, **regardless of age, ability, or income** will be able to walk, bicycle, or use other types of active transportation modes safely and conveniently throughout the State of Connecticut.

An **integrated** network of on-road facilities and multi-use trails will connect **key destinations, municipalities, and regions**, while strengthening Connecticut's links to neighboring states.

In response to our Steering Committee's suggestion to identify the *what and why* of the Vision, a draft Mission Statement was created:

### Draft

### Mission Statement

The Connecticut Department of Transportation believes that walking and bicycling promote healthy lives, strong communities, and more sustainable environments.

What do you think of these working drafts? Please email your thoughts to Marcy Miller at [mmiller@fhiplan.com](mailto:mmiller@fhiplan.com), or submit your comments via the website!

### Get Involved!



Visit [CTBikePedPlan.org](http://CTBikePedPlan.org) to learn more, share your ideas, insights, and concerns, and provide feedback.

Read the newsletter, and impress friends with your knowledge of the Plan Update. (Share with them, too!)



Let others know about this planning effort. Everyone from the novice to the expert are invited to participate!

Join our email list to stay informed. We promise not to flood your inbox!



Stay tuned for a series of public meetings this fall, held throughout the state.



**Taking the Show on the Road** 2016 PUBLIC MEETINGS RECAP



*Throughout November, public meetings were held in Fairfield, New Haven, West Hartford, and Willimantic.*

Over the past year, the Project Team has collected data and worked closely with the Steering Committee to update a number of key items from the Plan, such as the draft Vision and Mission for bicycle and pedestrian travel in Connecticut (see inset).

In addition, the Committee provided guidance on how to potentially update the bicycle map, which led to the development of the Draft Bicycle Network Map.

With some preliminary items developed, the Project Team was eager to get public input. The team hosted four public meetings in November 2016 to introduce the Plan Update and its process. These four meetings were held in various locations across the state and included the same content at each event. Attendees learned about the project with informational boards and in a brief presentation.

They were also encouraged to provide their input by drawing on map handouts, participating in an interactive exercise about the action strategies, and engaging in a group discussion, sharing feedback and ideas. Check out the project website to view a detailed summary of these discussions. Thank you to all who attended for this valuable input!

**Bicycle Network Identification and Analysis**

Past versions of the Bicycle Map contained various features. In 1999, the Map included cross-state routes, loop (or recreational) rides and roadways not recommended for riding. A suitability analysis was included in the 2009 Update that highlighted the condition of *(continued on page 4)*

**Draft Project Vision & Mission**

**Vision**

The State of Connecticut will encourage, promote and continue to improve the conditions for bicycling, walking, and other forms of active transportation, so that any person, regardless of age, ability, or income will be able to walk, bicycle, or use other types of active transportation modes safely and conveniently throughout the State of Connecticut.

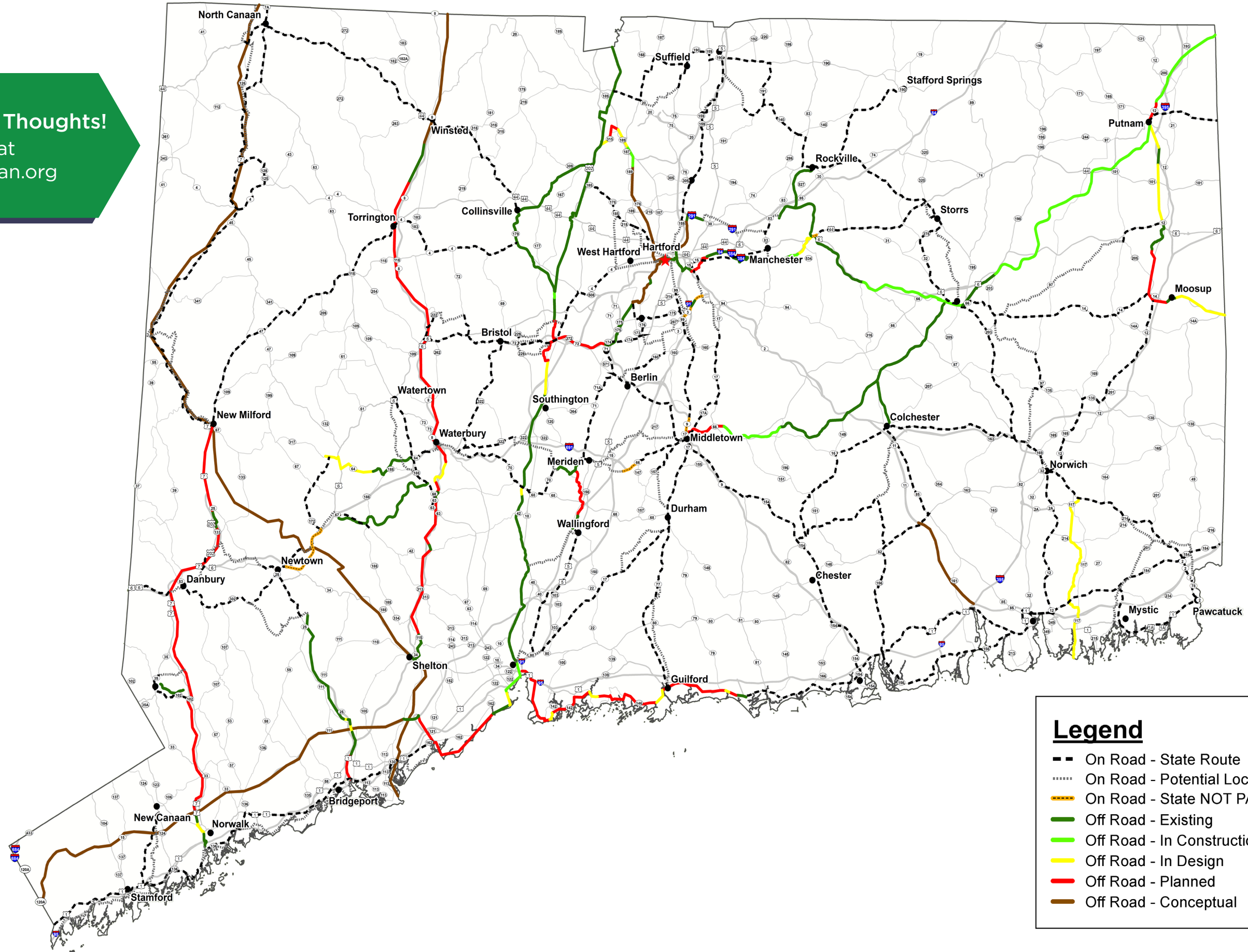
An integrated network of on-road facilities and multi-use trails will connect key destinations, municipalities, and regions, while strengthening Connecticut's links to neighboring states.

**Mission**

The Connecticut Department of Transportation is committed to the principle that walking and bicycling promote healthy lives, strong communities, and more sustainable environments.

Draft Bike Network

Share Your Thoughts!  
Take a look at  
[ctbikepedplan.org](http://ctbikepedplan.org)



**Legend**

- On Road - State Route
- ..... On Road - Potential Local Alternative
- - - On Road - State NOT PASSABLE
- Off Road - Existing
- Off Road - In Construction
- Off Road - In Design
- Off Road - Planned
- Off Road - Conceptual

## Taking the Show on the Road, *continued*



(continued from page 1)

bicycling on all state routes by assessing shoulder widths and traffic volumes.

When the Project Team started this Map Update, we learned that while the suitability might be useful for cyclists, it didn't provide clear guidance to designers and engineers about how to responsibly make improvements with limited resources. A missing element was a statewide network indicating where designers and engineers should focus bicycle planning efforts.

The Draft Statewide Bicycle Network Map was thus developed through a combination of data collection, technical analysis; and input from the Steering Committee, stakeholders, and the public. This Network is not a detailed compilation of existing conditions, but rather a statewide foundation that local networks can build from. The focus is on connecting key destinations such as transit stations, major employment or population hubs, and universities. It is also meant to provide guidance on future planning efforts. Therefore, some identified connections might require improvements to be accessible to all bicyclists.

Have we missed any key connections?

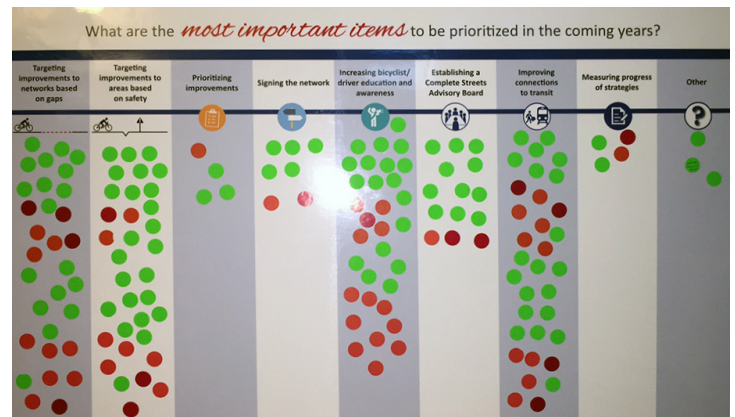
### Attendees Discuss Action Strategies

In addition, The Project Team asked the public to provide input on which action strategies they felt should be emphasized in the 2017 Plan Update. A list of potential action strategies was developed after meetings with many stakeholder groups. The Project

Team displayed these potential strategies on a board and provided each attendee with four sticker dots. The public was asked to place these dots beneath the action strategies they thought should be emphasized – they were welcome to disperse the dots evenly or place them all underneath one. Four action strategies that clearly stood out:

- Targeting improvements to areas based on **safety**
- Improving connections to **transit**
- Increasing bicyclist/driver **education and awareness**
- Targeting network **improvements based on gaps**

This input helps guide the development of the Plan Update, and there's still time to provide your input! **Share which action strategies matter most before March 31, 2017, by submitting a comment via the project website: <http://ctbikepedplan.org>.**



Attendees marked action strategies with a dot exercise.

### What's Next?

The Project Team will soon enter a new phase of work (once the network is officially defined). It is expected that this effort will build upon the current scope of the Statewide Bicycle Network Update by providing additional details and information on the network from a transportation connectivity and safety perspective. We will develop bicycle facility design, including guidance specific to the Connecticut bicycle network and a methodology for selecting appropriate treatments.

The outcome of this work will provide roadway designers specific guidance to create safe bicycling accommodations based on data, information, and implementation best practices.



YOU'RE INVITED!

## Public Meetings

*Learn about the project and share your thoughts!*

Join us at an upcoming public meeting for the **Connecticut Bicycle and Pedestrian Plan and Map Update**. These meetings are an opportunity to learn more about the project and provide your input on draft recommendations thus far, including a review the draft Bicycle Network Map.

Date	Location
Mon, November 14 <sup>th</sup> 5:30 PM - 7:30 PM	Elmwood Community Center 1106 New Britain Avenue, West Hartford, CT 06110
Tue, November 15 <sup>th</sup> 5:30 PM - 7:30 PM	New Haven Free Public Library - Ives Main Library 133 Elm Street, New Haven, CT 06510
Tue, November 29 <sup>th</sup> 5:30 PM - 7:30 PM	SC Theatre at Eastern Connecticut State University 83 Windham Street, Willimantic, CT 06226
Wed, November 30 <sup>th</sup> 5:30 PM - 7:30 PM	Fairfield Public Library - Main Branch 1080 Old Post Road, Fairfield, CT 06824

All meetings will have the same content and format. **Doors open at 5:30 PM** with an informal interactive **open house session**. Stay for a **brief presentation at 6:15 PM**, followed by a **question and answer** period.



Visit [ctbikepedplan.org](http://ctbikepedplan.org) for more info, and to join the mailing list.

# APPENDIX B: RECENT STATEWIDE LEGISLATION



*Image credit: Weston and Sampson*

In recent years, the Connecticut state legislature passed three laws that influence pedestrian, bicycle, and transit-friendly design and culture. They are listed below.

## **AN ACT IMPROVING BICYCLE AND PEDESTRIAN ACCESS (PUBLIC ACT 09-154)**

This 2009 law established the statewide Bicycle and Pedestrian Advisory Board, an appointed, administrative, 11-person board. Its role is to examine the need for bicycle and pedestrian transportation, promote programs and facilities for bicycles and pedestrians in this state, and advise appropriate agencies of the state on policies, programs and facilities for bicycles and pedestrians. This law also established minimum funding targets which required CTDOT to designate no less than one percent of its funding to bicycle and pedestrian projects. (This one percent funding requirement is no longer in effect, though the Department has continued to report on it.) In addition, this law required that pedestrians, cyclists, and transit users be routinely considered in the planning, designing, construction, and operation of all roads. This is a concept known as Complete Streets.

## **VULNERABLE USER LAW (PUBLIC ACT 14-31)**

This law, passed in October 2014, provides a level of protection for pedestrians and bicyclists by defining them as vulnerable users. While vulnerable users accept some level of risk by walking or bicycling on a roadway, drivers are required to accept some level of responsibility if a crash does happen. This law provides an added, financial disincentive to irresponsible behavior that puts vulnerable users at risk. A fine is prescribed for any driver who fails to exercise reasonable care and causes the serious physical injury or death of a vulnerable user.

## **BICYCLE SAFETY BILL (PUBLIC ACT 15-41)**

Signed into law in June 2015, this law requires cyclists to ride as close to the right side of the road “as is safe, as judged by the cyclist.” This supersedes the previous law that required cyclists to ride as far right “as practicable”, which could have included instances where a bicyclist is preparing to make a left turn at an intersection or onto a private road. Drivers are also allowed to cross double yellow lines to pass slower-moving bicyclists when it’s safe to do so. Additionally, this law allows two-way bicycle lanes, buffered bike lanes, and cycle tracks to be designed in Connecticut.

## **AN ACT CONCERNING ELECTRIC BICYCLES, TRAFFIC CONTROL AND PARKING AND TRAFFIC AUTHORITIES (FILE NO. 451 / SUBSTITUTE HOUSE BILL NO. 5485)**

More information about this legislation, passed in April of 2018, can be found at the following website: <https://cga.ct.gov/2018/fc/2018HB-05485-R000451-FC.htm>

# APPENDIX C: AGENCY PEDESTRIAN AND BICYCLE PLANNING EFFORTS



*Image credit: Community Connectivity Grant Program*

CTDOT has advanced numerous plans and maps that focus on or include bicycle and pedestrian planning efforts. Some of these key plans and maps include:

- CTDOT, *Connecticut On the Move: Strategic Long-Range Transportation Plan 2009 – 2035*, June 2009.
- CTDOT, *Highway Design Manual*, 2003 (Revised February 2013).
- CTDOT, *Merritt Parkway Trail Study*, May 2013.
- CTDOT, *Strategic Highway Safety Plan*, September 2010 (Revised May 2013).
- CTDOT, *Putnam Bridge Multimodal Trail Connections Feasibility Study*, July 2014.
- CTDOT, *2015 Statewide Transportation Improvement Program (STIP)*, 2015.
- CTDOT, *Interactive Projects Map*, 2009.

In recognition that the state's bicycle and pedestrian networks are affected by several concurrent and complementary planning and development efforts, the list below includes bicycle- and pedestrian-related planning efforts that are spread across more than one agency.

- Connecticut Department of Energy and Environmental Protection (....CT DEEP, *Connecticut Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2011 - 2016*, September 2011.
- CT DEEP & Governor's Steering Committee on Climate Change (GSC), *Connecticut Climate Change Preparedness Plan*, 2011.
- CT DEEP, *Recreational Trails Program Grants: 2013 - 2014*.
- Department of Health (DPH), *Healthy Connecticut 2010 Final Report*, June 2010.
- DPH, *Healthy Connecticut 2020 1. State Health Assessment*, March 2014.
- DPH, *Healthy Connecticut 2020 2. State Health Improvement Plan*, March 2014.
- DPH, *Live Healthy Connecticut: A Coordinated Chronic Disease Prevention and Health Promotion Plan*, April 2014
- CT Association of Directors of Health, Inc, *Healthy Livable Communities: Web-based toolkit to help communities to improve healthy eating and active living*.

Additional agencies that the Department may coordinate with as needed include:

- Connecticut State Department of Education (CSDE)
- Department of Economic and Community Development (DECD)
- Department of Motor Vehicles (DMV)



## OTHER AGENCY COORDINATION

### Department of Health

DPH’s Nutrition, Physical Activity and Obesity Program is committed to supporting education and public health policies, system’s, and environmental change strategies aimed at reducing obesity. A key component of this is the promotion of active living for Connecticut residents of all ages, including regular exercise and healthier environments. DPH is encouraging the strategies outlined in the recently released Step It Up! The Surgeon General’s Call to Action to Promote Walking and Walkable Communities that calls on Americans to be more physically active through walking and calls on the nation to better support walking and walkability.

DPH has partnered with Bike Walk CT and CTDOT to support initiatives surrounding the promotion of Complete Streets. This has included a 2015 workshop that addressed urban, suburban, and rural bikeway design scenarios to promote safe access for all users of all ages and abilities. In addition, a “Share the Road” brochure was created to raise awareness about the rights and responsibilities of drivers, bicyclists and pedestrians.



Image credit: Bike Walk CT

### Department of Energy & Environmental Protection

CT DEEP is responsible for improving and protecting the natural resources and the environment of the state as well as making more affordable, cleaner and more reliable energy available for the people and businesses of the state. The Bureau of Outdoor Recreation is charged with the conservation and management of statewide recreation lands and resources through the acquisition of open space and the management of resources, including state parks, to meet the outdoor recreation needs of the public.

CT DEEP has led or been highly involved with numerous efforts to expand and improve upon the statewide trail network, including the designation of greenways, the promotion of bicycling as both recreation and transportation, the development of information about existing rail trails, and more. One such example is the promotion of the Bike to Work challenge, which it previously sponsored. Another example is the recent development of trail network online mapping tool. Additionally, CT DEEP has provided funding to support various trail projects through its CT Recreational Trails Grants Program, which was established in 2015. Through this program, grants have been available for up to 80 percent of total projects costs (with a 20 percent required match) for projects such as the planning, design, and construction of new trails, maintenance and restoration of existing trails, and operation of educational programs to promote safety and environmental protection as related to recreational trails.

### Department of Motor Vehicles

The Department of Motor Vehicles (DMV) worked with the input from the Connecticut Bicycle and Pedestrian Advisory Board (CBPAB) and other organizations to improve the 2016 Connecticut Driver’s Manual. The Share-the-Road section was revised, information on pedestrian and bicyclist facilities was added, and changes were made to reflect the new bicycle and pedestrian legislation.

# APPENDIX D: REGIONAL PEDESTRIAN AND BICYCLE PLANNING EFFORTS



*Image credit: East Coast Greenway Alliance*

## LONG RANGE TRANSPORTATION PLANS (LRTPS)

The RCOGs have developed LRTP that define the region's future transportation vision and outline regional transportation funding priorities. The issues and goals of the LRTP remain consistent with past long range transportation plans and provide the framework for making transportation investment decisions. Each RCOG and its associated LRTP(s), is listed below:

1. Capitol Region Council of Governments (CRCOG), *Capitol Region Transportation Plan*, 2015.
2. Connecticut Metropolitan Council of Governments (MetroCOG), *Regional Transportation Plan for the Greater Bridgeport Planning Region: 2015 - 2040*, 2015.
3. Lower Connecticut River Valley Council of Governments (RiverCOG), *Long Range Regional Transportation Plan 2015 - 2040*, April 2015.
4. Naugatuck Valley Council of Governments (NVCOG),
  - o *Regional Transportation Plan for the Valley Planning Region: 2015 - 2040*, April 2015.
  - o *Central Naugatuck Valley Long Range Regional Transportation Plan: 2015 - 2040*, March 2015.
5. Northeastern Connecticut Council of Governments (NECCOG), *Northeastern Connecticut Comprehensive Plan*.
6. Northwest Hills Council of Governments (NHCOG), *Regional Transportation Plan*, 2016.
7. South Central Regional Council of Governments (SCRCOG), *Long Range Transportation Plan*, 2015.
8. Southeastern Connecticut Council of Governments (SCCOG), *Long Range Regional Transportation Plan - 2015 - 2040*, April 2015.
9. Western Connecticut Council of Governments (WestCOG),
  - o *South Western Region Long Range Transportation Plan 2011 - 2040*, 2011.
  - o *2015 - 2040 Regional Transportation Plan for the Housatonic Valley Region*, 2015.

## BICYCLE & PEDESTRIAN PLANS

A large number of the RCOGs have built upon the information included in the LRTP to develop plans and studies focused on bicycle and pedestrian efforts for either the region overall or a specific portion of it. These efforts help guide municipal efforts, which is especially important for municipalities with little available resources. Additionally, these regional plans and studies can highlight various areas within the region with a notable amount of potential to help attract various funding sources. A sampling of such regional efforts are described below:

### CRCOG

- *2015 CRCOG Pedestrian and Bicycle Plan Addendum*, June 2015 - A minor update was made to the *2009 Plan* and adopted by the CRCOG Transportation Committee and Policy Board in 2015. CRCOG is currently in the process of updating this plan in full.
- *Bike Pedestrian Safety Analysis*, 2012 - This report summarizes an analysis of pedestrian and bicycles crashes between January 1995 and January 2010 using the Connecticut Crash Data Query Tool. The findings have been summarized for overall regional statistics and a more in depth analysis has been done for the four towns that have the highest rates of pedestrian and bicycle crashes.

## **RiverCOG**

- *Route 1 Corridor Study*, November 2014 - This study examined the portion of the Route 1 corridor that travels through the coastal communities of Clinton, Westbrook, and Old Saybrook. The resulting recommendations called for the creation of a multimodal corridor that would fill key gaps in the region's bicycle network, strengthening connections within towns and to one another.

## **SCCOG**

- *Tri-Town Trail Master Plan: Bluff Point to Preston Trail Committee*, June 2009 - This Plan focused on the development of the first area's first regional multi-use recreational trail, which would travel through Groton, Ledyard, and Preston. At approximately 17 miles, the trail would connect municipalities, economic centers, open spaces, and natural resources by providing a recreational resource as well as an alternate transportation corridor.

## **SCRCOG**

- *Regional Bicycle and Pedestrian Plan* (June 2017) - This effort assessed the progress made in the region since the original plan was adopted in 2007. It considered the shifting needs, concerns, and desires of the Region's communities, and identify issues and opportunities that exist today.

## **WestCOG**

- *Bicycle and Pedestrian Safety Corridor*, June 2012 - This report focuses at the seven high priority corridors identified in the *South Western Region Bicycle and Pedestrian Plan* as well as one additional corridor. The report examines existing pedestrian and bicycle safety deficiencies along these corridors and recommends engineering countermeasures to address these deficiencies.
- *South Western Region Bicycle and Pedestrian Plan*, August 2013 - This report examines safety deficiencies on state highway segments in the South Western Region with elevated rates of bicycle and pedestrian accidents. For each corridor, the report recommends well established engineering countermeasures to address the identified safety issues.
- *Greater Danbury Regional Bike Plan*, January 2015 - This plan provides an overview of cycling in the context of Greater Danbury, an inventory of routes and plans, a toolbox for planners and elected officials and recommended steps to encourage the growth of cycling.

# APPENDIX E: MUNICIPAL PEDESTRIAN AND BICYCLE PLANNING EFFORTS



*Image credit: MomTrends - Mystic, Connecticut*

Many municipalities have built upon the statewide and regional efforts for bicycle and pedestrian planning to provide guidance that is specific for their communities and further reflect their character. The following section provides a sampling of the various efforts Connecticut's municipalities have implemented in recent years to promote a stronger and safe bicycle and pedestrian environment.

## PLANS, POLICIES, AND REGULATIONS

A number of cities and towns have developed their own bicycle and / or pedestrian plans. Examples include:

- City of Norwalk, *Norwalk Connectivity Master Plan*, March 2012.
- City of Norwalk, *Norwalk Pedestrian and Bikeway Transportation Plan*, January 2012.
- Town of Fairfield, *Fairfield Bicycle and Pedestrian Master Plan*, June 2013.
- City of Meriden, *Meriden Comprehensive Sidewalk Analysis and Strategy Report*, May 2014
- City of Norwalk, *Bicycle Safety and Engineering Study to and through South Norwalk*, May 2014.
- Town of Glastonbury, *Bicycle Master Plan*, June 2006 and updated July 2014
- Bike Mansfield, *Mansfield Bicycle and Pedestrian Master Plan*, (in progress).
- City of Stamford, *Stamford Bicycle and Pedestrian Plan*, (in progress).

A number of municipalities have also enacted town- or area-wide complete streets policies or adopted complete streets resolutions. Examples of such municipalities are as follows:

- City of New Haven, *City of New Haven Complete Streets Design Manual*, March 2010
- Connecticut Metropolitan Council of Governments (MetroCOG), *Bridgeport Complete Streets*, August 2011
- City of Middletown, *Middletown Complete Streets Master Plan*, March 2013
- Town of West Hartford *Complete Streets Policy*, July 2015.
- Town of Stratford, *Complete Street Plan: Stratford Center* (in progress)

In addition, many municipalities have developed additional regulations or zoning polices to encourage bicycle and pedestrian friendly design. Some examples of this include:

### *Bicycle and Vehicular Parking*

- Fairfield requires bicycle parking in some zones.
- New Haven requires bicycle parking in some zones.
- Torrington has added regulations for bicycle parking for the following land uses:
  - o New multi-family dwellings over 4 units; new office, retail, institutional developments over 10,000 sq. ft.; all transit transfer stations; and park and ride lots.
- Bolton has adopted bicycle accommodation standards for all business, industrial and mixed use zones.
- Bolton has draft regulations to support Transportation Demand Management (TDM) strategies that are pending approval.
- Waterbury will reduce parking requirements if TDM strategies are employed, such as the proximity to transit or transit subsidies.

### *Sidewalk Requirements*

- Plainville has included requirements in its zoning language for sidewalks and alternate modes of transportation.

### *Form-based Codes*

- Hamden was the first town in Connecticut to adopt a form-based zoning code in 2010. The Hamden code covers the whole town but focuses on the three commercial corridors. The code has a few key tenants. The first is that buildings must be at or near the street line, which often pushes parking to the rear and creates a better pedestrian environment. Second, buildings must be two to five stories high. This increases the chance for mixed use development. Third, buildings must have windows and doors facing the street, which enhances the feeling of safety. Finally, parking requirements were reduced, which can increase the density and walkability of an environment.
- Simsbury next adopted a form-based code for its Town Center that requires bicycle parking, joint vehicle parking, shared vehicle parking, in addition to maximum vehicle parking, car sharing and tandem vehicle parking. Hartford has also adopted a Form-Based Code that includes best practices for complete streets. These practices are designed to encourage more walkable, bike-friendly neighborhoods and includes elements such as curb extensions on busy streets and streetscape improvements.
- Hartford adopted a form-based code in January of 2016 that demonstrates the city’s priority towards more walkable, bike-friendly neighborhoods. The Code, called ZoneHartford, includes best practices for complete streets, and reduces parking minimums for new developments downtown or near transit hubs, while expanding bike parking minimums.

Others, including Canton and Manchester, have followed suit.

## INFRASTRUCTURE

Many municipalities have invested in infrastructure that encourages a more bicycle and pedestrian friendly environment. In fact, there were types of infrastructure improvements that were implemented for the first time in Connecticut since the 2009 Plan. Some examples include:

- First **sharrow**, in New Milford - Shared Lane Markings (SLMs), or sharrows, are road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits shared lane markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance.
- First **bike box** pavement marking, in New Haven at the corner of Church Street and Crown Street - Bike boxes allow cyclists a place to collect in front of vehicles at a red light, elevating their visibility to motorists and facilitating left turns.
- First use of **back-in/head-out diagonal parking**, in New Britain - This parking has similar dimensions to front-in diagonal parking, but is safer due to better visibility when exiting the space.

First **cycle track**, in New Haven from Olive Street, along Water Street and over the Tomlinson Bridge to Nathan Hale Park - A cycle track is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk.

While these investments were the first of their kind in Connecticut, they are becoming more prevalent as communities have recognized the need to design for all modes of transportation. Other types of bicycle and pedestrian friendly infrastructure improvements include road diet projects, pedestrian bridges, streetscape improvements, and more.

# APPENDIX F: OTHER COLLABORATIVE PLANNING EFFORTS



*Image credit: Fitzgerald & Halliday, Inc.*



# OTHER FACILITIES PLANNING EFFORTS

Since 2009 there have been numerous local projects that have been constructed or will be soon that significantly improve facilities for bicyclists and pedestrians. Most of these projects have involved the coordination of various agencies and organizations on a state, regional, and municipal level. The following examples are not an exhaustive list of all the projects that have been implemented throughout the state. Instead they are a sampling of the type of work that has progressed to significantly improve the bicycle and pedestrian environment.

## Waterbury Active Transportation and Economic Resurgence (The W.A.T.E.R. Project)

This is a TIGER funded project and includes five major parts: (1) Riverfront Trail and Park (Naugatuck River Greenway); (2) Freight Street Complete Street Downtown Connector; (3) Reconstruction / Extension of Jackson Street; (4) Library Park to Train Station to Riverfront Park Connector; (5) Meadow Street / Train Station Access Improvements.

## Derby-Shelton Route 34 Reconstruction Project

Route 34 exists as a primary artery through much of the lower valley and operates as key connection between the downtown of Shelton and Derby as well as the “Main Street” for Derby. As such, one aspect of the project recognizes that the project should facilitate and encourage both pedestrian and bike use. This is being done through the deployment of infrastructures to support these multi-modal uses with design practices to restrict the speeds of vehicular traffic. Status: Preliminary Design Plans have been submitted to NVCOG on July 8, 2016 for review. Scheduled Design Completion Date: December 2017. Construction scheduled to start in 2018.

## Transportation Plan for Lower Route 202 (Brookfield)

After a comprehensive study of Brookfield’s Lower Route 202 corridor, improvements were recommended to provide for better motorist, pedestrian, and bicyclist safety along the corridor and to promote the economic welfare of the surrounding businesses. As a result, various improvements have been made to improve the pedestrian and bicyclist environment.



Image credit: Luchs Consulting Engineers - Route 34 (Main Street) Reconstruction, Derby, CT

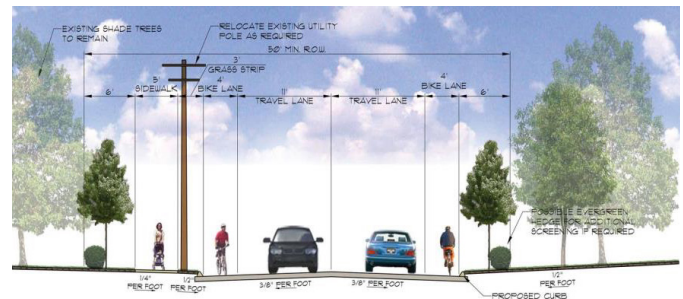


Image credit: Western Connecticut Council of Governments, Transportation Plan for Lower Route 202, Brookfield, CT - Appendix A - Route 202 Complete Streets Evaluation



Image credit: City of Waterbury - Waterbury Active Transportation and Economic Resurgence (WATER) Project - TIGER VI

## East Bridgeport-Seaview Avenue Development Corridor

This project is intended to improve Seaview Avenue to support a variety of transportation options to efficiently connect the Port of Bridgeport, Bridgeport Regional Maritime Center, vacant and industrial lands prime for redevelopment and the Lake Success EcoBusiness Park.

## Proposed Roundabout at the Intersection of Route 110 (Shelton Road) and Route 111 (Monroe Turnpike)

The project will consist of removing the existing flashing beacon and constructing a modern roundabout. The proposed work will include converting Hurd Avenue to a cul-de-sac, as well as installing sidewalks throughout the project area. Landscaping and other decorative features will also be included. The estimated construction cost for this project is approximately \$4.1 million. Status: Design expected to be completed in fall 2016, with construction anticipated to begin in spring 2017.



*Image credit: Governor Dannel Malloy's office via Bridgeport Daily Voice*



*Image credit: CTDOT*

# APPENDIX G: EDUCATIONAL PROGRAMS AND ADVOCACY GROUPS



*Image credit: Stamford Downtown*

# EDUCATION AND AWARENESS INITIATIVES

Much of the collaboration that exists between various departments, levels of government, and across different types of organizations are centered on efforts to educate and increase awareness about bicycling and walking.

## Collaborative Share-the-Road Campaign

CTDOT has launched a collaborative Share-the-Road Campaign which “strives to improve the knowledge of all roadway users - motorists, bicyclists, equestrians, motorcyclists, and pedestrians - to promote safe travel and minimize the likelihood of crashes.” Thus far, CTDOT has collaborated with the Connecticut Department of Public Health (DPH) and Bike Walk CT to create a “Share-the-Road” brochure. Additionally, CTDOT maintains a Facebook page to increase awareness with social media.

This Campaign is intended to provide continuing education about the rules of the road to reduce potential conflicts between drivers, bicyclists, and pedestrians. Continuing education for all roadway users about their rights and responsibilities is key to improving road safety.



Image credit: CTDOT

## Watch for Me CT

Each year, about 1,500 pedestrians and 550 bicyclists are hit by cars on Connecticut roadways. Watch for Me CT is a comprehensive program, run by the Connecticut Department of Transportation (CTDOT) in partnership with Connecticut Children’s Injury Prevention Center, aimed at reducing the number of pedestrians and bicyclists hit and injured in crashes with vehicles.

The Watch for Me CT program involves two key elements: 1) safety and educational messages directed toward drivers, pedestrians and bicyclists, and 2) enforcement efforts by area police to crack down on some of the violations of traffic safety laws. Local programs are typically led by municipal, county, or regional government staff with the involvement of many others, including pedestrian and bicycle advocates, city planners, law enforcement agencies, engineers, public health professionals, elected officials, school administrators and others.

All Connecticut communities are encouraged to use Watch for Me CT campaign materials to improve pedestrian and bicyclist safety in their communities. More information and safety materials are viewable on the campaign website at <http://www.watchformect.org/>.

## Public Workshops for Local Officials

Many workshops have been held in Connecticut to provide resources to local officials, engineers, and designers on topics ranging from available funding sources to facility design for bicyclist and pedestrians. The following list provides a sampling:

- inaugural Multimodal and Transit Summit (November 2018), hosted by Transport Hartford Academy, the CT Chapter of the American Planning Association and CTDOT
- Annual Connecticut Bike Walk Summit (2016, 2015, 2014, 2013), hosted by Bike Walk CT
- Complete Streets Workshop (2015), hosted by DPH, Bike Walk CT & CTDOT
- NACTO Bicycle Design Guide Workshop (2015), hosted by Bike Walk CT

- Torrington Talks Seminar (follow-up up to Torrington Walks Bicycle and Pedestrian Charrette Series) (2015), hosted by the City of Torrington
- Complete Streets Workshop, 3-part series (2012), hosted by Connecticut Main Street
- Bicycle Safety and Design for Town Engineers, a four-hour workshop developed by CRCOG

Additionally, in June 2017 the CT Technology Transfer Center sponsored two days of STEP training for the implementation of FHWA’s EDC-4 program. Engineers and planners from both CTDOT and municipalities participated in this training session, which provided a valuable opportunity for discussion and exchange of ideas surrounding pedestrian improvements on a state and local level.

## Bicycle Classes

In 2010, CRCOG was awarded a National Highway Traffic Safety Administration (NHTSA) grant to establish a bicycle education program in the region, after which it was transitioned to be overseen by Bike Walk CT and implemented throughout the state. Today, Bike Walk CT offers a variety of classes throughout different venues for all ages and levels of bicyclists. The classes are taught by certified League Cycling Instructors (LCI) and based on League of American Bicyclists curriculum. Over the last 10 years, Bike Walk CT has held classes including Traffic Skills 101 (the League of American Bicyclists’ standard bicycle education course); Bicycle Education (an 8-hour workshop for K-12 physical education teachers); Intro to Bikes (a 5-hour class for those who are new to biking); youth bicycle workshops (a 4-6 hour program targeted to 4th grade physical education

students); specialized classes tailored to the needs of individual groups; and LCI seminars. There are currently 39 LCIs in CT.

In addition, many local bicycle shops and advocacy groups provide educational workshops and classes for all ages and abilities to enhance their knowledge and confidence level in bicycle riding. For example, BiCi Co. offers a bicycle safety course for adults called Traffic Skills 101 (an 8-hour course that covers classroom material, parking lots drills, road ride, and basic bicycle maintenance) approximately twice a year. BiCi Co. also offers numerous bicycles safety programs for youth and has had over 275 teenagers and young adults participate in these programs since 2015. The programs include their Summer Internship, BIKELIFE, Earn-a-Bike Cohorts, and a short 1-hour bicycle safety course.

## Bicycle Events

Many advocacy groups, bike shops, and other organizations organize regularly scheduled group rides and annual events to help connect riders of similar interests and abilities. A list of regularly scheduled rides as well annual events that occur throughout the state can be found on the *2017 Connecticut Statewide Bicycle and Pedestrian Plan Update* website: [www.ctbikepedplan.org/events.html](http://www.ctbikepedplan.org/events.html) This list provides a sampling of the bicycle events across the state and is not intended to be all inclusive. It was last updated in the fall of 2016.

## UConn Technology Transfer Center

The Technology Transfer Center at the University of Connecticut provides education and technical assistance on transportation related issues. It serves members of Connecticut’s Transportation and Public Safety Community, including municipal public works directors, street and road maintenance superintendents and staff, city and town engineers, CTDOT employees, transportation planners and law enforcement professionals serving as local traffic authorities. Examples of trainings related to bicycle and pedestrian safety and mobility include Road Safety Assessment: The Importance of Non-motorized Users and Complete Streets.



Image credit: Bike East Bay

# Bike Share Systems

## Existing Examples

- Mystic Community Bikes in Mystic - Program managed through nonprofit, bicycle-sharing program
- UCONN Recreation Cycle Share, Storrs campus - In 2011, UCONN Cycles began offering twenty Raleigh Circa i8 bikes to be used by the UCONN community. The aim of the program is to provide a convenient and environmentally friendly mode of transport on campus and in the surrounding community. The program is part of a larger effort to improve transportation congestion at Storrs. In parallel, signage and markings will increase the organization and safety of bikers on the roads
- Madison Bike Share Program - Program managed through collaborative initiative between Vista Vocational & Life Skills Center is partnering with the Town of Madison, the Madison Chamber of Commerce, Madison Beach Hotel, Scranton Seahorse Inn and Tidewater Inn



Image credit: This is Mystic Blog - Community Bikes



Image credit: Vista Life Innovations - Madison Bike Share

- Simsbury - Simsbury Free Bike manages the states only multi-town bike share. The program has over 7,000 people registered to use their 50 bicycles in nine locations. It is targeted for recreational trail users
- Fairfield BikeShare - Initiated by the Fairfield Health Department and Fairfield Public Libraries, and sponsored by Fairfield University and Sacred Heart University, Fairfield BikeShare is operated by Zane's Cycle, and includes ten 3-speed, custom designed bikes for the public to use for free.
- Yale Bike Share: Yale has had bikeshare on campus for nearly ten years. Beginning with the departmental Y-Bike program in 2008, then a multi-year partnership with Zagster, they have recently entered a collaboration with Noa Technologies to bring the most technologically advanced bikeshare system to campus by fall 2017.
- Hartford LimeBike - In June 2018, Hartford launches a dock less bike-share program. The program initially launch with 300 bikes stationed in the City, and soon expanded by another 100 bikes to meet demand. Users need a smartphone to rent bicycles with LimeBike.
- Bike New Haven - The bike share is run by New Haven Smart Mobility LLC, a subsidiary of P3 Global Management. Users must download the app on an Android or iPhone to create an account and activate the bikes. Customers use their smartphone to locate and rent a bicycle at one of the stations throughout the city and then return the bike at one of the other stations.

## Bicycle Friendly Communities (BFC)

A community recognized by the League of American Bicyclists as a BFC welcomes bicyclists by providing encouragement and safe accommodation for all forms of cycling. A BFC is committed to making biking a safe, enjoyable transportation option and recreational activity. A BFC values bicycling for its many benefits, which include improving citizen's health, well-being and quality of life; reducing traffic congestion and

pollution; and boosting community spirit and sense of place. Through collaborations between town officials, advocates and businesses, a BFC addresses the areas of engineering, education, encouragement, and enforcement to improve conditions so that more people bicycle.

Per the League of American Bicyclists, Connecticut has eight BFCs and one bicycle friendly university as of July of 2017. As of August 2018, there are eleven bicycle-friendly businesses. They are listed in **Tables 1 through 3**.

*Table 1: Bicycle-friendly communities, Connecticut (League of American Bicyclists)*

City or Town	Award Level	Population Level
Simsbury	Silver	23,498
Farmington	Bronze	25,340
Glastonbury	Bronze	34,427
New Britain	Bronze	73,153
New Haven	Bronze	130,741
South Windsor	Bronze	24,409
West Hartford	Bronze	63,066
Hartford	Bronze	124,512
East Hartford	Honorable Mention	51,252



*Table 2: Bicycle-friendly universities, Connecticut (League of American Bicyclists)*

University	City or Town	Award Level	Students
Yale University	New Haven	Silver	12,109

*Table 3: Bicycle-friendly businesses, Connecticut (League of American Bicyclists)*

Business	City or Town	Award Level	Employees	Industry
SUBURBAN SPORTS	Berlin	Gold	5	Bicycle Shop
Children & Adult Mobility Project, Inc.	Simsbury	Gold	N/A	Non-profit
Mitchell Auto Group	Simsbury	Gold	150	Transportation
SeeClickFix	New Haven	Silver	31	Technology & Info.
Bicycles East LLC	Glastonbury	Silver	8	Bicycle Industry
The Devil's Gear Bike Shop	New Haven	Silver	8	Bicycle Shop
The Bicycle Cellar of Simsbury, CT, LLC	Simsbury	Silver	4	Bicycle Industry
Connecticut Mental Health Center	New Haven	Bronze	500	Medical / Health
The Travelers Companies, Inc. (Corporate Office)	Hartford	Bronze	6,227	Financial and Insurance
HEI Hotels & Resorts	Norwalk	Bronze	50	Hospitality / Food / Retail
Pratt & Whitney	East Hartford	Bronze	7,086	Manufacturing / Research

# OTHER GROUPS AND INITIATIVES

## Advisory Committees

Various regions and municipalities throughout the state have adopted advisory committees within their governance structure that specifically focus on bicycle and pedestrian planning initiatives. These committees typically meet on a regular basis and often post their meeting minutes and agendas online.

The decision to form these committees is another example of how regions and municipalities across the state have increasingly recognized the importance of bicycle and pedestrian planning for their communities. The benefits of partnerships with grass-roots organizations, governments, and other stakeholders, at varying geographic and jurisdictional scales are being realized. The collective momentum is progressing projects, designs, and education at all levels of government, at all ages, and within most communities faster than an any single entity, or jurisdiction could produce. The list provided below is not all-inclusive and provides a sample of some of the regions and towns that have adopted such committees:

- CRCOG Region: Bicycle / Pedestrian Committee
- Lower Connecticut River Valley Council of Governments; Regional Bicycle-pedestrian Subcommittee
- Town of Simsbury; Bicycle Pedestrian Advisory Committee
- Town of Plainville; Bicycle Friendly Committee
- City of Norwalk; Mayor's Bike / Walk Task Force
- Town of Darien; Pedestrian Committee
- Town of Fairfield; Bike Walk Coalition

## Advocacy Organizations

There are several non-profit advocacy organizations that have continued to encourage and promote

bicycling in the state of Connecticut. These groups are interested in improving the quality of bicycling in Connecticut as well as raising bicyclists' and motorists' awareness of their rights and responsibilities on roadways. The following groups are not an exhausted list but rather examples organized by geography below:

### National and Statewide

- Appalachian Mountain Club Connecticut Chapter (Bicycling)
- Bike Walk CT
- Connecticut Horse Council
- League of American Cyclists
- Connecticut Cycling Advancement Program (CCAP)
- East Coast Greenway Alliance

### Regional

- Farmington Canal Rail to Trail Association
- Shoreline Greenway
- Pequot Cyclists: southeastern Connecticut (New London County)
- Sound Cyclists Bicycle Club: Fairfield County
- Upper Housatonic Valley National Heritage Area Bicycle Committee

### Local Organizations

- Bike West Hartford
- Elm City Cycling: New Haven
- Hat City Cyclists: Danbury
- New Milford River Trail Association
- People Friendly Stamford
- Bicycle advocacy group: Bike Mansfield
- Transport Hartford Academy



# APPENDIX H: PEDESTRIAN AND BICYCLE CRASH DATA



## PEDESTRIAN CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 1 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
Andover			1	3		4
Ansonia	5		3	7	3	18
Ashford				2		2
Avon	3		2	2	4	11
Beacon Falls	1	1	1		1	4
Berlin	3	1	7	3	3	17
Bethany			2			2
Bethel	3	2	3	5	3	16
Bethlehem				1		1
Bloomfield	4	9		2	12	27
Bolton	1	1				2
Bozrah				1		1
Branford	8	8	10	9	10	45
Bridgeport	108	100	118	148	169	643
Bridgewater	1			1		2
Bristol	17	10	19	20	20	86
Brookfield	4	1	3	7	3	18
Brooklyn	4	3	3	1	1	12
Burlington				1		1
Canaan					1	1
Canterbury			1			1
Canton			3		2	5
Cheshire	2	2	3	2	9	18
Chester	1		1			2
Clinton	3	2			1	6
Colchester		4	3	1	3	11
Columbia		3		3		6
Coventry		1	1	1		3
Cromwell	3	1	9	4	9	26
Danbury	28	45	49	44	36	202
Darien	6	1	8	10	8	33
Deep River	1	1		1		3
Derby	6	5	10	10	7	38
Durham		2		1	1	4
East Granby			1		1	2
East Haddam		1				1
East Hampton	4	5	1	2	1	13
East Hartford	22	21	17	27	20	107
East Haven	4	5	16	5	14	44
East Lyme	2	2	3	1	1	9

## PEDESTRIAN CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 2 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
East Windsor	1	1	1	3		6
Eastford					1	1
Easton				3	1	4
Ellington		1	2			3
Enfield	7	6	11	10	16	50
Essex			1	1		2
Fairfield	15	13	21	26	14	89
Farmington	6	3	1	5	5	20
Glastonbury	5	7	4	6	2	24
Goshen					1	1
Granby	1	1		1	2	5
Greenwich	9	17	27	24	22	99
Griswold	1	2	1			4
Groton	9	3	3	10	4	29
Guilford		2	5	1	2	10
Haddam	1	1			1	3
Hamden	20	16	19	25	22	102
Hartford	122	128	135	176	165	726
Hartland			1			1
Hebron	1	1	1		1	4
Killingly	2		3	3	4	12
Ledyard	4	1	3	1		9
Lisbon			1		2	3
Litchfield		1	1		1	3
Madison	1	2	1	1	1	6
Manchester	23	24	19	44	30	140
Mansfield	3	4	3	9	2	21
Marlborough				1		1
Mashantucket				1		1
Meriden	17	22	29	49	29	146
Middlebury	1	2	2	1	3	9
Middlefield		1	1	1		3
Middletown	11	15	24	15	24	89
Milford	2	8	20	25	16	71
Monroe	1	2	2		2	7
Montville	5	3		3	2	13
Naugatuck	1	7	12	9	8	37
New Britain	28	28	58	49	80	243
New Canaan	2	6	3	5	1	17
New Fairfield	1	1				2

## PEDESTRIAN CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 3 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
New Hartford				2	1	3
New Haven	103	140	137	177	175	732
New London	17	21	26	33	26	123
New Milford	7	9	7	3	8	34
Newington	3	3	5	9	6	26
Newtown	3		4	4	2	13
North Branford	1		1	2	1	5
North Canaan	1	1	1		1	4
North Haven	7	3	12	3	6	31
North Stonington	1	1			2	4
Norwalk	38	35	29	42	46	190
Norwich	20	19	15	11	14	79
Old Lyme			2	3	1	6
Old Saybrook	1	1	2	4	3	11
Orange	7	4	6	3	3	23
Oxford					1	1
Plainfield	1	3	4	1		9
Plainville	6	3	4	5	5	23
Plymouth				3		3
Pomfret					1	1
Portland			1	1	1	3
Preston	2		2	1	1	6
Prospect	3	1	2	1	1	8
Putnam	6	3		1	2	12
Redding	1	1		1		3
Ridgefield	3	1	4	3	2	13
Rocky Hill	3	5		6	8	22
Salem		1			1	2
Salisbury	1	1	1		4	7
Scotland			1			1
Seymour	4	4	4	1	1	14
Shelton	2	6	4	10	7	29
Sherman				1		1
Simsbury		2	1	3		6
Somers			1	1	1	3
South Windsor	4	4		8	4	20
Southbury	2	2	1	3	1	9
Southington	5	5	5	7	6	28
Stafford	3		2		1	6
Stamford	69	70	99	119	73	430

**PEDESTRIAN CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 4 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Stonington	1	5	1	3	1	11
Stratford	10	13	21	16	17	77
Suffield	2	2		5	1	10
Thomaston			1		2	3
Thompson		1	1		1	3
Tolland			3	3		6
Torrington	18	9	13	16	11	67
Trumbull	4	5	6	5	6	26
Union					1	1
Vernon	6	9	7	9	5	36
Wallingford	11	12	10	10	22	65
Warren					1	1
Waterbury	89	85	98	90	118	480
Waterford	3	1	5	3	6	18
Watertown	4	2	1	4	2	13
West Hartford	11	17	29	26	28	111
West Haven	24	25	19	21	28	117
Westbrook	1		3	3	1	8
Weston		1				1
Westport	9	5	10	7	5	36
Wethersfield	4	1	9	16	3	33
Wilton	5	2	2	3	7	19
Winchester	1	1	2			4
Windham	5	4	6	6	7	28
Windsor	5	3	3	3	10	24
Windsor Locks	2	6	5	11	3	27
Wolcott	1	2		2	1	6
Woodbridge	1	1	2		1	5
Woodbury	1	1	2	1	1	6
Woodstock	1	1	1			3
<b>Grand Total</b>	<b>1,087</b>	<b>1,129</b>	<b>1,356</b>	<b>1,568</b>	<b>1,512</b>	<b>6,652</b>

## BICYCLE CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 1 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
Andover	1					1
Ansonia				2		2
Avon	3	1	1	1		6
Barkhamsted			1			1
Beacon Falls	1					1
Berlin	4	3	1	1	1	10
Bethany	1	1	1			3
Bethel	7	2	1	4	2	16
Bethlehem					1	1
Bloomfield	5	6			1	12
Bolton		1				1
Branford	6	5	3	3	4	21
Bridgeport	48	50	53	55	53	259
Bridgewater	1					1
Bristol	7	14	9	5	8	43
Brookfield	1	1				2
Brooklyn	1		1	2		4
Burlington	2	1	1	1	1	6
Canton	1		1	2		4
Cheshire		4	7	6	5	22
Chester			1			1
Clinton	1	6	1		1	9
Colchester			1			1
Columbia	1	1			1	3
Coventry	1			3	1	5
Cromwell	1	2	1		4	8
Danbury	10	8	5	7	7	37
Darien			2	4	8	14
Deep River				1	1	2
Derby	4	2	1	2		9
Durham	1	1		1	2	5
East Granby		1	1		1	3
East Haddam	1	1	1	1		4
East Hampton			1	2		3
East Hartford	13	12	13	14	10	62
East Haven	7	2		3		12
East Lyme	1	1	5			7
East Windsor	1	1	1			3
Easton	1					1
Ellington	2	2	3			7

## BICYCLE CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 2 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
Enfield	8	7	8	9	7	39
Essex	2				1	3
Fairfield	7	7	8	16	6	44
Farmington	1	4	2	1	2	10
Franklin		1				1
Glastonbury	5	3	6	5	3	22
Goshen	1					1
Granby		1	2	1	1	5
Greenwich	8	7	12	5	9	41
Griswold		1			2	3
Groton	9	5	2	4	7	27
Guilford	1	4	2	3	1	11
Haddam		1		1		2
Hamden	9	4	15	13	5	46
Hartford	40	59	48	57	42	246
Harwinton	2					2
Hebron	2	1				3
Kent	1					1
Killingly	4	4	2	1	2	13
Killingworth	1					1
Lebanon	3		1			4
Ledyard	2	1		1	3	7
Lisbon	1		1	1		3
Madison	5	3		1	3	12
Manchester	17	15	14	16	9	71
Mansfield	2	4		3	1	10
Meriden	11	7	12	12	8	50
Middlebury		2		1		3
Middlefield				1		1
Middletown	3	5	7	5		20
Milford	4	10	6	6	4	30
Monroe	1		2			3
Montville	2			3	1	6
Morris			1			1
Naugatuck	1	4	5	2	4	16
New Britain	11	16	15	20	17	79
New Canaan	4	1	2	2	1	10
New Fairfield					1	1
New Hartford	1				1	2
New Haven	82	84	89	81	99	435

## BICYCLE CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 3 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
New London	10	9	13	12	19	63
New Milford	2	1	2	1	3	9
Newington	3	4	1	4	1	13
Norfolk		1				1
North Branford	1		1	1		3
North Canaan		1				1
North Haven	5	2	4	3	3	17
North Stonington	1	2		1		4
Norwalk	19	15	11	11	15	71
Norwich	5	8	7	3	2	25
Old Lyme	1		1			2
Old Saybrook	1	4	3	5	3	16
Orange	1	3	4	2	3	13
Oxford					1	1
Plainfield		3	1			4
Plainville	6	3	4	2	5	20
Plymouth	2	2			1	5
Portland				1	1	2
Preston				2		2
Prospect	1		1			2
Putnam	1	3	1		1	6
Redding	3	2	1	3	1	10
Ridgefield		4			4	8
Rocky Hill			1	1	1	3
Salem			2			2
Salisbury		1				1
Seymour		2			1	3
Shelton	3	2	1	1	3	10
Simsbury	1	2		2		5
Somers	1		2	1		4
South Windsor		3	1	1		5
Southbury	1	2	1		1	5
Southington	8	6	2	6	3	25
Sprague		1				1
Stafford		1	1	1	1	4
Stamford	21	21	22	17	16	97
Stonington	8	11	2	3	2	26
Stratford	13	17	6	4	6	46
Suffield		2	4	1	4	11
Thomaston		1		1		2



## BICYCLE CRASHES ALONG ALL ROADS BY MUNICIPALITY (PAGE 4 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
Tolland		1		1	2	4
Torrington	7	11	8	5	8	39
Trumbull	2	1	1	4	2	10
Vernon	2	6	2	6	1	17
Voluntown			1			1
Wallingford	6	5	3	2	10	26
Waterbury	15	26	15	21	14	91
Waterford	2	1	2	4	3	12
Watertown	2		1		1	4
West Hartford	15	15	6	8	16	60
West Haven	14	17	9	9	13	62
Westbrook	1	3	1	1	1	7
Weston	2	2	1	1		6
Westport	3	6	3	4	1	17
Wethersfield	3	3	1			7
Wilton	3	2		1	1	7
Winchester	2	2		1	1	6
Windham	3	8	4	3	3	21
Windsor	5	4	2	2	6	19
Windsor Locks	9	2		2	1	14
Wolcott				1	1	2
Woodbridge	2	1	1	1	1	6
Woodbury	1			1		2
Woodstock	3			3		6
<b>Grand Total</b>	<b>605</b>	<b>645</b>	<b>540</b>	<b>562</b>	<b>539</b>	<b>2,891</b>

BIKE CRASHES

**PEDESTRIAN CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 1 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Andover				1		1
Ansonia	3		2	1	1	7
Ashford				1		1
Avon	2					2
Beacon Falls		1	1		1	3
Berlin	1	1	2	1	1	6
Bethany			2			2
Bethel	1	1	2	2	2	8
Bloomfield	2	4		2	6	14
Branford	3	6	4	7	4	24
Bridgeport	46	40	21	34	43	184
Bristol	5	6	5	8	7	31
Brookfield	3	1	1		2	7
Brooklyn	4	2	2	1		9
Canaan					1	1
Canton			2		1	3
Cheshire	1	1	3	1	5	11
Chester	1		1			2
Clinton	2	1				3
Colchester		3	1	1		5
Columbia		3				3
Coventry		1	1	1		3
Cromwell	2	1	2	1	4	10
Danbury	7	20	17	14	7	65
Darien	3	1	4	2	4	14
Derby	3	4	2	4	6	19
Durham		1		1	1	3
East Hampton	3	4	1	2	1	11
East Hartford	12	9	7	13	10	51
East Haven	4	3	8	2	6	23
East Lyme	1	2	1	1	1	6
East Windsor			1	2		3
Easton				2	1	3
Ellington			1			1
Enfield	4	2	5	2	3	16
Fairfield	7	8	6	11	6	38
Farmington	4	3		2	3	12
Glastonbury	1	3			1	5
Granby	1	1		1		3
Greenwich	4	2	9	8	3	26

**PEDESTRIAN CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 2 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Griswold	1	1	1			3
Groton	7	2	1	5	2	17
Guilford		2	4	1	1	8
Haddam	1	1				2
Hamden	13	11	6	10	10	50
Hartford	9	18	13	19	13	72
Hartland			1			1
Hebron	1				1	2
Killingly	1			2	3	6
Ledyard	2		1	1		4
Litchfield		1	1			2
Madison		1				1
Manchester	6	14	4	9	10	43
Mansfield	2	3		6	1	12
Meriden	8	10	7	14	5	44
Middlebury	1	2	2		2	7
Middlefield		1				1
Middletown	4	9	12	6	5	36
Milford	2	6	6	8		22
Monroe	1					1
Montville	4	3		1	1	9
Naugatuck	1	4	6	5	1	17
New Britain	9	6	11	6	7	39
New Canaan	1	4		2		7
New Fairfield	1	1				2
New Hartford				2	1	3
New Haven	20	32	22	24	21	119
New London	7	7	4	7	6	31
New Milford	4	6	3		5	18
Newington	1	1	2	5	5	14
Newtown	1		2	3	1	7
North Branford	1		1	1		3
North Canaan	1	1			1	3
North Haven	3	3	5	1	4	16
North Stonington		1			2	3
Norwalk	15	11	7	11	12	56
Norwich	9	8	5	8	10	40
Old Lyme				2	1	3
Old Saybrook	1		1	3		5
Orange	4	4	6	3	1	18

**PEDESTRIAN CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 3 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Plainfield	1	3	3	1		8
Plainville	5	2	4	3	1	15
Plymouth				2		2
Pomfret					1	1
Portland				1		1
Preston	2		1	1	1	5
Prospect		1				1
Putnam	4	1			2	7
Redding				1		1
Ridgefield	3		2	1		6
Rocky Hill	1	2		2	2	7
Salem		1			1	2
Salisbury	1	1			3	5
Seymour	3	3	1	1	1	9
Shelton	1	5	2	6	5	19
Simsbury		2	1	2		5
Somers				1		1
South Windsor	2	2		1	2	7
Southbury	1			1		2
Southington	4	5	1	3	1	14
Stafford			1		1	2
Stamford	23	18	22	33	20	116
Stonington	1	1		2	1	5
Stratford	4	6	12	4	5	31
Suffield	1			4	1	6
Thomaston			1		2	3
Thompson			1			1
Tolland			1	1		2
Torrington	9	6	5	4	7	31
Trumbull	1	5			1	7
Union					1	1
Vernon	5	7	1	6	4	23
Wallingford	6	4	2	2	8	22
Warren					1	1
Waterbury	12	21	11	14	24	82
Waterford	1		2	1	1	5
Watertown	3	1	1	2	2	9
West Hartford	1	5	5	5	3	19
West Haven	4	10	4	8	9	35

**PEDESTRIAN CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 4 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Westport	7	4	6	4	4	25
Wethersfield	3		5	6	1	15
Wilton	1	2	1	2	3	9
Winchester			1			1
Windham	3	3	2	1	4	13
Windsor	4	1	2	2	6	15
Windsor Locks		3	1	5	2	11
Wolcott	1	1			1	3
Woodbridge	1	1	2			4
Woodbury	1	1	1			3
Woodstock		1	1			2
<b>Grand Total</b>	<b>393</b>	<b>438</b>	<b>356</b>	<b>429</b>	<b>396</b>	<b>2,012</b>

## BICYCLE CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 1 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
Andover	1					1
Avon	2	1		1		4
Beacon Falls	1					1
Berlin	4	3				7
Bethany	1		1			2
Bethel	7	1		2	1	11
Bethlehem					1	1
Bloomfield	2	4				6
Bolton		1				1
Branford	4	2	3		1	10
Bridgeport	16	18	16	19	14	83
Bridgewater	1					1
Bristol	2	10	3	1	5	21
Brookfield		1				1
Brooklyn	1		1	2		4
Burlington	2	1			1	4
Canton	1		1			2
Cheshire		3	3	1	1	8
Chester			1			1
Clinton	1	6	1		1	9
Colchester			1			1
Columbia	1					1
Coventry	1			1		2
Cromwell	1	2	1		2	6
Danbury	6	1	2	3	2	14
Darien			1	3	2	6
Deep River				1	1	2
Derby	1	1		1		3
Durham	1	1				2
East Granby			1		1	2
East Haddam	1		1			2
East Hampton			1	1		2
East Hartford	7	6	6	7	4	30
East Haven	4	1		2		7
East Lyme	1	1	3			5
East Windsor	1	1				2
Easton	1					1
Ellington	1	1				2
Enfield	6	7	2	3	4	22

**BICYCLE CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 2 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Fairfield	5	4	4	3	4	20
Farmington	1	3	2	1	1	8
Franklin		1				1
Glastonbury		1	3			4
Goshen	1					1
Granby		1	2	1	1	5
Greenwich	2	2	5	1	2	12
Griswold					2	2
Groton	6	4		2	4	16
Guilford		3	2	2	1	8
Haddam		1		1		2
Hamden	6	1	6	6	1	20
Hartford	4	10	5	5	5	29
Harwinton	1					1
Hebron	2					2
Kent	1					1
Killingly	4		2		2	8
Killingworth	1					1
Lebanon	2		1			3
Ledyard	2	1		1	1	5
Lisbon	1		1	1		3
Madison	3	3		1	1	8
Manchester	6	5	5	3	5	24
Mansfield	1	3		2	1	7
Meriden	4	3	2	1	2	12
Middlebury		2				2
Middlefield				1		1
Middletown	1	1	1	1		4
Milford	1	4	2	3	1	11
Monroe			1			1
Montville				2	1	3
Naugatuck		2	2	2		6
New Britain	2	4	3	7	3	19
New Canaan	2	1		1	1	5
New Fairfield					1	1
New Hartford	1				1	2
New Haven	13	18	10	13	18	72
New London	7	6	6	4	8	31
New Milford	1	1	1		1	4
Newington	2	1	1	1	1	6

## BICYCLE CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 3 OF 4)

TOWN	2013	2014	2015	2016	2017	Grand Total
Norfolk		1				1
North Branford	1		1	1		3
North Canaan		1				1
North Haven	4	1	1	2		8
North Stonington	1	2		1		4
Norwalk	6	3	2	2	3	16
Norwich	4	7	4	2	1	18
Old Lyme	1		1			2
Old Saybrook	1	3	2	4		10
Orange	1	3	3	2	3	12
Plainfield		2				2
Plainville	4	2	2	1	3	12
Plymouth	2	1			1	4
Portland				1	1	2
Preston				1		1
Prospect	1		1			2
Putnam	1	3	1		1	6
Redding		1		2	1	4
Ridgefield		3			3	6
Rocky Hill			1			1
Salem			2			2
Salisbury		1				1
Seymour		2				2
Shelton	2	1	1			4
Simsbury	1	2		1		4
Somers			2	1		3
South Windsor		1		1		2
Southbury	1	2			1	4
Southington	6	3		2		11
Stafford		1		1		2
Stamford	11	3	3	4	3	24
Stonington	7	8	1	3	2	21
Stratford	6	12	3	3	3	27
Suffield		2	3		2	7
Thomaston				1		1
Tolland					2	2
Torrington	6	5	3	2	2	18
Trumbull	2	1		3	1	7
Vernon	1	3	1	4		9



**BICYCLE CRASHES ALONG INTERSTATES, US ROUTES, OR STATE ROUTES BY MUNICIPALITY (PAGE 4 OF 4)**

TOWN	2013	2014	2015	2016	2017	Grand Total
Waterbury	3	6	3	1	1	14
Waterford	2	1	1	2	3	9
Watertown	1					1
West Hartford	6	2	2	3	2	15
West Haven	5	9	3	5	7	29
Westbrook		3		1	1	5
Weston	1	2	1			4
Westport	1	2	2	1	1	7
Wethersfield	1	2				3
Wilton	3	1		1	1	6
Winchester	1	2		1		4
Windham	1	3	2	2	1	9
Windsor	4	4		1	2	11
Windsor Locks	6	2		1	1	10
Wolcott					1	1
Woodbridge	2	1			1	4
Woodbury	1			1		2
Woodstock	2			3		5
<b>Grand Total</b>	<b>277</b>	<b>280</b>	<b>169</b>	<b>183</b>	<b>168</b>	<b>1,077</b>

# APPENDIX I: IDENTIFICATION OF TOP TEN SAFETY CORRIDORS



*Image credit: Stamford Downtown*

As part of a supplemental work effort for the statewide bicycle planning network, the project team created a priority list to highlight the state-maintained road segments that had the highest record of pedestrian and bicycle crashes. The methodology and details of these locations is provided below.

## PEDESTRIAN CRASH PRIORITY AREAS

The project team conducted a methodical process to identify state segments with a history of frequent crashes involving pedestrians. While pedestrian facilities were outside the overall scope work for the bicycle network evaluation, analysis of the pedestrian crashes was a natural extension of the bicycle planning work completed to date.

The project team utilized the following process to identify the high pedestrian crash segments:

1. Use the same segment length ( $\leq 100$  feet) methodology as the bicycle network evaluation.
2. Identify all crashes involving pedestrians on state roads within 1/4 mile of each segment.
3. Highlight the segments which were within the top fifth percentile of a combined weighted crash score – weighted such that fatal and severe injury crashes counted three times that of other reported crashes involving pedestrians. A score of 17 or higher placed a segment into this category (i.e. 17 or more crashes involving pedestrians, not fatal or severe injury, within 1/4 mile of segment).
4. Combine the highlighted segments into an aggregate segment if segments were within 1/4 mile of each other.
5. Identify all crashes involving pedestrians within 100 feet of the aggregate segments and rank based on the weighted crash score.

The aggregate segments highlighted about 60 miles of state highway, which represents 151 of 494 (30.6%) fatal and severe injury crashes involving pedestrians within 100 feet of all state highways and 663 of 1,592 (41.6%) of other crashes involving pedestrians within 100 feet of all state highways.

**Table 1** displays the top 15 pedestrian crash segments. These consist of a total of 28.5 miles, 80 fatal and severe injury crashes involving pedestrians (16% of state highway total), and 389 other crashes involving pedestrians (24% of state highway total).

*Table 1: State Road Segments with High Crashes Involving Pedestrians (2012 – 2016)*

Rank	Town	Route	Segment Begin	Segment End	Length (Mile)	Fatal / Severe Injury Crashes	Non-fatal / Severe Injury Crashes	Weighted Total
1	Stamford	1	Alvord Ln.	Seaside Av.	3	12	59	95
2	Hartford	44	Columbus Blvd.	Westbourne Pkwy.	2.3	7	49	70
3	Bridgeport	127	Stratford Av.	Alpine St.	2	7	33	54
4	Danbury	53	South St.	Downs St.	1.5	6	30	48
5	Bridgeport	1	North Av.	Otis St. (Stratford)	2.3	6	21	39
6	New Haven	1	Admiral St. (West Haven)	Brown St.	2.5	4	27	39
7	Stamford	137	Tressor Blvd.	7th St.	1.2	4	25	37
8	Norwalk	1	0.1 Mi. South of Rampart Rd.	France St.	2.8	5	21	36
9	Bridgeport	130	Water St.	Florence St.	1.8	7	15	36
10	Bridgeport	700	Commerce Dr.	Water St.	1.7	5	21	36
11	Waterbury	847	Mill St.	0.5 Mi. North of Main St.	1.8	1	32	35
12	East Haven	80	Middletown Av.	Highland Av.	1.1	7	13	34
13	Bridgeport	1	Pacific St.	River St.	1.6	2	18	24
14	Bridgeport	130	Railroad Av.	Water St.	1.7	3	15	24
15	New Haven	10	Derby Av.	Fitch St.	1.2	4	10	22

# BICYCLIST CRASH PRIORITY AREAS

The project team first conducted a process to identify state segments with a history of frequent crashes involving bicyclists. The team utilized the following process to identify the high crash segments:

1. Highlight the Tier I segments (<= 100 feet) as determined in the bicycle network evaluation.
2. Combine the Tier I segments into an aggregate segment if segments were within 1/4 mile of each other.
3. Identify all crashes involving bicyclists within 100 feet of these aggregate segments and ranked based on the weighted crash score as described above.

The aggregated Tier I segments highlighted about 60 miles of state highway which represents 70 of 127 (55.1%) fatal and severe injury crashes involving bicyclists within 100 feet of all state highways, and 302 of 1,093 (27.6%) of other crashes involving bicyclists within 100 feet of all state highways. This total of 60 miles was higher than the values presented in the Priority Implementation Matrix table since additional distance was added when these smaller segments were aggregated together if they were within 1/4 mile of each other.

**Table 2** represents the top 15 crash segments involving bicyclists. These consist of a total of 18.6 miles, 13 fatal and severe injury crashes involving bicyclists (10% of state highway total), and 151 other crashes involving bicyclists (14% of state highway total).

*Table 2: State Road Segments with High Crashes Involving Bicyclists (2012 - 2016)*

Rank	Town	Route	Segment Begin	Segment End	On Bike Planning Network	Length (Mile)	Fatal / Severe Injury Crashes	Non-fatal / Severe Injury Crashes	Weighted Total
1	Stamford	1	Virgil St.	Lawn Av.	Yes	2.1	4	14	26
2	New Haven	1	Howard Av.	Tomlinson Bridge	Yes	1.8	2	12	18
3	New Haven	10	Edgewood Av.	Blake St.	No	1.2	1	13	16
4	Hartford	44	Morgan St.	Oakland Tr.	No	1.4	0	15	15
5	Bridgeport	127	Clarence St.	Berkshire Av.	No	1.4	0	15	15
6	Stonington	1	0.2 Mi. North of Mellow Ct.	CT / RI State Line	Yes	1	0	12	12
7	Bridgeport	130	Kings Hwy. (Fairfield)	Commerce Dr.	Yes	1.9	2	6	12
8	Manchester	6	W. Center St.	Holl St.	Partial	1.1	1	9	12
9	New London	641	Jefferson Av.	Gov. Winthrop Blvd.	No	0.7	0	12	12
10	New Haven	63	Fitch St.	Glenview Tr.	Yes	1.2	1	8	11
11	Stratford	1	N. Bishop Av. (Bridgeport)	California St.	No	1.2	0	9	9
12	Fairfield	1	Fairfield Pl.	0.2 Mi. North of Unquowa Rd.	Yes	0.9	0	8	8
13	Bridgeport	1	Colonial Av.	Brooks St.	No	0.8	1	5	8
14	Bridgeport	130	Wordin St.	Middle St.	No	0.9	0	8	8
15	Norwich	82	N. High St.	Banes Ct.	No	0.9	1	5	8

## FURTHER REVIEW OF CORRIDORS

The project team next conducted a series working sessions with Department highway designers to discuss the crash characteristics, existing facilities, and potential solutions at each of the top ten bicycle and pedestrian corridors. In many instances, all or a portion of a pedestrian corridor overlapped with a bicycle corridor.

From those twenty corridor discussions, the project team recommended ten pedestrian and/or bicycle corridors for implementation. These recommendations were based on the corridor having one or more of the following:

- Very high crash history and severity
- Overlapping bicycle and pedestrian crashes and needs
- Straightforward solutions, without the need for additional detailed planning studies

**Table 3** displays the ten corridors.

Table 5: Top 10 Pedestrian and Bicycle Safety Corridors

Rank	Town	Route	Segment Begin	Segment End	Length (Mile)	Proposed Improvements	Engineering Cost	Resurfacing & ADA Ramp Cost	Additional Pedestrian / Bicycle Facilities Cost	Total Construction Cost	Engineering + Pedestrian / Bicycle Facilities Cost	Total Cost
1	Stamford	1	Alvord Ln.	Seaside Av.	15,420	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Road diet</li> <li>Traffic and pedestrian signal upgrades</li> </ul>	\$1,200,000	\$4,500,000	\$11,500,000	\$16,000,000	\$12,700,000	\$17,200,000
2	Hartford	44	Bedford St.	Morgan St.	4,475	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Road diet</li> <li>Traffic and pedestrian signal upgrades</li> </ul>	\$800,000	\$1,600,000	\$1,600,000	\$3,200,000	\$2,400,000	\$4,000,000
3	Bridgeport	127	Cedar St.	Kingsbury Rd.	8,770	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Pavement markings to formalize shoulders</li> <li>Pedestrian signal upgrades</li> <li>Illumination</li> </ul>	\$1,200,000	\$2,300,000	\$1,100,000	\$3,400,000	\$2,300,000	\$4,600,000
4	New Haven	1	Gilbert St.	Brewery St.	11,990	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Selective roadway resurfacing</li> <li>Road diet</li> <li>Traffic and pedestrian signal upgrades</li> <li>Curbing</li> </ul>	\$1,400,000	\$1,700,000	\$7,600,000	\$9,300,000	\$9,000,000	\$10,700,000
5A	Bridgeport	130	Seaview Av.	Bruce Av.	6,230	<ul style="list-style-type: none"> <li>ADA ramp upgrades</li> <li>Road diet for bicycle lanes</li> <li>On street parking (both sides)</li> <li>Sidewalk bump outs</li> <li>Signal upgrades</li> </ul>	\$1,000,000	\$3,200,000	\$4,800,000	\$8,000,000	\$5,800,000	\$9,000,000
5B	Bridgeport		Kings Hwy.	Wordin Av.		<ul style="list-style-type: none"> <li>ADA ramp upgrades</li> <li>Road diet for bicycle lanes</li> <li>Dedicated left turning lane</li> <li>Shoulder markings for on street parking</li> <li>Signal upgrades</li> </ul>	\$1,200,000	\$3,400,000	\$9,400,000	\$12,800,000	\$10,600,000	\$14,000,000
6	Danbury	53	South St.	Liberty St.	3,720	<ul style="list-style-type: none"> <li>Sidewalk and ADA ramp upgrades</li> <li>Roadway resurfacing</li> <li>Road diet for bicycle lane</li> <li>Traffic and pedestrian signal upgrades</li> </ul>	\$800,000	\$1,700,000	\$800,000	\$2,500,000	\$1,600,000	\$3,300,000

Table 5: Top 10 Pedestrian and Bicycle Safety Corridors (continued)

Rank	Town	Route	Segment Begin	Segment End	Length (Mile)	Proposed Improvements	Engineering Cost	Resurfacing & ADA Ramp Cost	Additional Pedestrian / Bicycle Facilities Cost	Total Construction Cost	Engineering + Pedestrian / Bicycle Facilities Cost	Total Cost
7	Bridgeport	1	Bruce Av.	Seaview Av.	4,790	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramp upgrades</li> <li>• Roadway resurfacing</li> <li>• Traffic and pedestrian signal upgrades</li> <li>• Selective full depth reconstruction</li> <li>• Concrete curbing</li> </ul>	\$1,100,000	\$2,600,000	\$9,300,000	\$11,900,000	\$10,400,000	\$13,000,000
8	Norwalk	1	Richards Av.	I-95 SB Ramps	6,020	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramp upgrades</li> <li>• Roadway resurfacing</li> <li>• Traffic and pedestrian signal upgrades</li> <li>• Selective full depth reconstruction</li> <li>• Curbing</li> </ul>	\$1,000,000	\$2,500,000	\$2,500,000	\$5,000,000	\$3,500,000	\$6,000,000
9	Stonington	1	May Flower Av.	CT/RI State Line	3,840	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramp upgrades</li> <li>• Roadway resurfacing</li> <li>• Road diet for bicycle lane</li> <li>• Roundabout</li> <li>• Selective full depth reconstruction</li> </ul>	\$800,000	\$1,200,000	\$3,500,000	\$4,700,000	\$4,300,000	\$5,500,000
10A	Manchester	6	Goodwin St.	Vernon Rd.	21,860	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramps upgrades</li> <li>• Road diet for two bicycle lanes, two travel lanes, and parking on alternating sides of roadway</li> <li>• Bump-outs</li> <li>• Minor intersection improvement at Porter St</li> <li>• Major intersection improvement at Pine St / West Center St</li> </ul>	\$1,100,000	\$4,300,000	\$8,600,000	\$12,900,000	\$9,700,000	\$14,000,000
10B	East Hartford	5	Burnside Av.	Pitkin St.	4,140	<ul style="list-style-type: none"> <li>• Sidewalk and ADA ramps upgrades</li> <li>• Roadway resurfacing</li> <li>• Road diet for bicycle lane</li> <li>• Pedestrian signal upgrade</li> <li>• Selective full depth reconstruction</li> <li>• Curbing</li> </ul>	\$700,000	\$2,200,000	\$1,000,000	\$3,200,000	\$1,700,000	\$3,900,000
										Total	\$74,000,000	\$105,200,000

# APPENDIX J: STATEWIDE LAWS RELATED TO PEDESTRIANS AND BICYCLES



*Image credit: New Canaanite*



*Bicyclist rights and responsibilities (Section 14-286a):*

- Bicyclists traveling on roadways have same rights and responsibilities as motorists.
- Bicyclists are permitted to travel on sidewalks and along crosswalks; when doing so, they have the same responsibilities and rights as pedestrians. For example, they need to wait for the proper cross walk signal.
- Parents may not authorize children to violate statutes related to bicycle travel.

*Operation of bicycles (Section 14-286b):*

- Bicyclists are to ride as close to the right side of the road “as is safe, as judged by the cyclists.” This permits cyclists to move to the center of the lane when he/ she judges that the lane is too narrow for a bicycle and car to safely share the road side-by-side. (Public Act No. 15-41)
- Bicyclists may not ride two abreast on roadways, except on paths or parts of roadways set aside for the exclusive use of bicycles.
- Bicyclists may not attach themselves to moving motor vehicles.
- Carrying large packages, bundles, and passengers is restricted. One hand must remain on the handlebars when bicycling

*Left and right turns (Section 14-286c):*

- Bicyclists must use hand or mechanical signals to communicate with other travelers.
- Signals need not be given continuously.

*Bicycle helmet law (Section 14-286d)*

- Bicyclists who are under the age of sixteen are required to wear a bicycle helmet that meets the minimum specifications of the American National Standards Institute or the Snell Memorial Foundations Standard for Protective Headgear for Use in Bicycling. (Public Act No. 97-46)
- Parents may not authorize their children to violate statutes related to bicycle travel.
- A person, firm or corporation engaged in the business of renting bicycles shall provide a bicycle helmet that conforms to the minimum specifications described above to any person under sixteen years of age who will operate the bicycle. (Public Act No. 97-46)
- The Commissioner of Consumer Protection may establish a public awareness campaign to educate the public about the dangers of riding bicycles without helmets and to promote the use of bicycle helmets.

*“Share the Road” public awareness campaign (Section 14-286f)*

- The Commissioner of Transportation shall, within available appropriations and in consultation with groups advocating on behalf of bicyclists, develop and implement a state-wide “Share the Road” public awareness campaign to educate the public concerning the rights and responsibilities of both motorists and bicyclists as they jointly use the highways of this state.

*Lights, reflectors, and brakes on bicycles (Section 14-288):*

- During nighttime and times of low visibility, bicyclists must utilize a front light visible from 500 feet, a rear red reflector or light visible from 600 feet, and reflective material on bike visible from 600 feet on either side.
- Bicycles must have a brake which can stop within 25 feet when traveling at 10 miles per hour.

### *Electric bicycles (Section 14)\**

- “An Act Concerning Electric Bicycles, Traffic Control, and Parking and Traffic Authorities” (File No. 451 / Substitute House Bill No. 5485) was passed in April of 2018 and became effective on October 1, 2018. For more information about the laws pertaining to electric bicycles, also known as motor-driven cycles, please visit the following website:

<https://cga.ct.gov/2018/fc/2018HB-05485-R000451-FC.htm>

### *Local jurisdiction regulations (Section 14-289):*

- Local jurisdictions, remaining consistent with Sections 14-286, 14-288 and any regulation issued followed Section 14-298, may regulate bicycle uses in their jurisdiction.

### *Motorists passing bicyclists:*

- Motorists overtaking / passing a bicyclist must allow a minimum of three feet separation (Section 14-232 Section 13).
- Motorists overtaking / passing a bicyclist in the same direction may not make a right turn, unless it can be done safely without impeding the travel of the bicyclist (Section 14-242a).
- Drivers are allowed to cross double yellow lines when passing slow moving vehicles, including bicycles, when it's safe to do so. (Public Act 15-41)

### *Vulnerable User Law (Public Act No. 14-31)*

- The definition of a ‘vulnerable user’ includes (but is not limited to) pedestrians and persons riding a bicycle.
- Motorists must exercise reasonable care when operating a motor vehicle on a public way. Any motorist that fails to do so and causes the serious physical injury or death of a vulnerable user shall be fined no more than \$1,000.00.

### *Pedestrian and roadway crossings:*

- Pedestrians must adhere to pedestrian control signals where they exist at intersections. Pedestrians shall not cross the highway against a red or “Stop” signal or at unmarked locations. A pedestrian starting across the highway on a “Walk” signal or on any such crosswalk or on a green or “Go” signal shall have the right of way over all vehicles, including those making turns (Section 14-300).
  - o Any crosswalk designated by a traffic authority on or after October 1, 2010 that constitute a potential danger to pedestrian crossing (such as specialty marked crosswalks in the vicinity of school) are required to have markings, signage, or any control signals deemed necessary by such authority to provide sufficient time for the safe crossing of pedestrians. (Section 14-300).
  - o Special pedestrian street or sidewalk markings should be provided in areas with high proportions of elderly persons (Section 14-300a).
  - o Motorists must yield to pedestrians at the entrance to, or in, marked and unmarked crosswalks (Section 14-300b and Section 14-300c).
  - o Pedestrians may not cross an intersection diagonally unless directed by pedestrian signal or officer (Section 14-300b).
  - o Pedestrians crossing a roadway at any point other than within a crosswalk or at a location controlled by police officers shall yield the right of way to each vehicle upon such roadway (Section 14-300b).
  - o Pedestrians crossing a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right-of-way to each vehicle upon such roadway (Section 14-300b).
  - o Pedestrians in a crosswalk shall travel whenever practicable in the right half of the crosswalk (Section 14-300b).
  - o Pedestrians must walk along a sidewalk whenever one is present along at least one side of the roadway. If a sidewalk is

not present, pedestrians must walk in the shoulder or as far as practicable from the edge of the roadway. (Section 14-300c)

- o Pedestrians are not permitted to suddenly leave the curb, sidewalk, cross, or other place of safety adjacent to a roadway when they would pose an immediate hazard to such pedestrian to an oncoming vehicle. (Section 14-300c)
- o Pedestrians will yield the right-of-way to any authorized emergency vehicle that is operating in an emergency situation. (Section 14-300c)
- o Vehicle operators must exercise due care to pedestrians and provide audible signals when passing them (Section 14-300d).
- o Vehicle operators must stop at least 10 feet from a crossing when directed to do so by a school crossing guard (Section 14-300f).
- o Motorists emerging from an alley, driveway, or building must stop prior to driving onto the sidewalk area extending across any alleyway or driveway to yield the right-of-way to any pedestrian (Section 14-247a).
- o No vehicle shall be permitted to remain parked within twenty-five feet of an intersection or a marked crosswalk thereat, or within twenty-five feet of a stop sign caused to be erected by the traffic authority in accordance with the provisions of section 14-301 (Section 14-251).

*Bridle paths; pedestrian walks; bicycle paths. (Section 13a-141)*

- Upon receipt of application, the commissioner can issue permits to construct and maintain bridle paths, pedestrian walks, bicycle paths, and suitable entrances to, and exits from, such walks and paths on state-owned land along any highway maintained by the state.
  - o The permittee(s) can be a private individual, corporation, organization, town or other public authorities or agencies.
  - o No fee shall be charged by any resident of the state for the use of such walks and paths.
- All construction and maintenance work pursuant to each permit is subject to the supervision and control of the commissioner.

- o The permittee(s) are responsible for the expenses associated with construction and maintenance of the walk or path.
- o If the permittee is a town or other public authority or agency, the commissioner is authorized to contribute 1/2 of the construction cost from funds available to the Department, provided the permittee assume maintenance, responsibility, liability, and supervision of such path or walk.

*State liability for bridle paths, pedestrian walks and bicycle paths and injuries thereon. (Section 13a-153)*

- The state is not liable for any injuries or payment outside of what has been agreed for any person, firm, or corporation that is performing work on paths or walks in accordance with Section 13a-141.
- Each person, firm, or corporation using the pedestrian walks, bicycle paths, bridle paths, entrances, or exits; or using a facility provided by the state for bicycle traffic shall do so at his or her own risk, and no liability shall accrue to the state or agency.

*State-wide footpath and bicycle trail plan (Section 13a-141a)*

- The Commissioner of Transportation shall prepare and revise when necessary a statewide plan for footpaths and bicycle trails to be located adjacent to state and local roads except if (1) such paths would be contrary to public health and safety; (2) the cost would be disproportionate to need or probable use; or (3) sparse population or other indicators indicate the absence of such need.
- Commissioner shall construct and maintain such footpaths and bicycle trails.

*Permitted bicycle facilities*

- The design of two-way bicycle lanes (also known as contra flow bicycle lanes), buffered bike lanes, and cycle tracks is permitted on state roads in Connecticut. (Public Act No. 15-41)

*Mandatory use of separated facilities (Section 14-298-238):*

- Bicyclists are not required to use bicycle paths when they are provided.
- Bicycles cannot use parkways and other limited access state highways except on paths specifically provided for bicycles.

*Bicyclists on state highways:*

- The State Traffic Commission shall adopt regulations, in cooperation and agreement with local traffic authorities, governing the use of state highways, and the operation of vehicles including but not limited to motor vehicles and bicycles (Section 14-298).

*Riding with animals on highways (Section 14-293a):*

- Any person who rides any horse or other animal upon a public highway shall conform to the rules of Chapter 293 and 249, unless such provisions clearly do not apply from the language or context.

*Motor vehicles passing equestrians (Section 14-293b):*

- Approaching motor vehicle operators must reduce speed appropriately or stop, if necessary, to avoid endangering the equestrian or frightening or striking the horse. A statement concerning such responsibilities is included in the 2008 Motor Vehicle Driver Manual.

*Bicycle and Pedestrian Planning Funding (Public Act 09-154)*

- Established minimum funding targets which require CTDOT to designate no less than one percent of its funding to bicycle and pedestrian projects.

*Specialty License Plates*

- “Share the Road” specialty license plates (CGS § 14-21w)
  - o Enacted in 2009, the plates are expected to cost \$60 with the money to go into a fund to enhance public awareness of the rights and responsibilities of bicyclists and motorists and to promote bicycle use and safety.

- o While the law requires the DMV and CTDOT to develop this plate in consultation with a bicyclist advocacy organization, this has not happened yet and the plates are not currently available through the CT DMV.
- Greenways (CGS §§ 14-21i and 22a-27h and 27o)
  - o Enacted in 1997, this specialty plate was intended to increase public awareness of state and local efforts to preserve, restore, and protect greenways. The cost ranged from \$50 for an off the shelf greenway plate, \$70 for a remake, or \$139 for a greenway vanity plate.
  - o Revenue had been directed to the Greenways account until June 2009 when it was eliminated. Now all revenue goes to General Fund.

*Bicycle and Pedestrian Advisory Board (Public Act No. 09-154) (Section 13b-13a)*

- Established the statewide Bicycle and Pedestrian Advisory Board, an appointed, administrative, 11-person board in CTDOT for administrative purposes.
- Per subsection (h), the Board must submit annually a report to the Governor, the Commissioner of CTDOT, and the Transportation Committee of the Connecticut General Assembly on: (1) the progress made by State agencies in improving the environment for bicycling and walking in this State; (2) recommendations for improvements to State policies and procedures related to bicycling and walking, and; (3) specific actions taken by the Department of Transportation in the preceding year that affect the pedestrian and cyclist environment.”
- Subsection (e) requires the Board to examine the need for pedestrian and bicycle transportation and to advise appropriate agencies of the State on policies, programs, and facilities for pedestrians and bicyclists.

*Including bicycle and pedestrian in transportation planning*

- The Transportation Commissioner shall, whenever possible, encourage the inclusion of areas for bicycles and pedestrians when creating the layout of a state highway or relocating a state highway. (Section 13a-57b):
- Pedestrians, cyclists, and transit users be routinely considered in the planning, designing, construction, and operation of all roads. This is a concept known as Complete Streets. (Public Act 09-154)

*Complete Streets Law*

- “Accommodations for all users shall be a routine part of the planning, design, construction and operating activities of all highways, as defined in section 14-1, in this State.” (Section 13a-153f(b))
- “From funds received by CTDOT or any municipality for the construction, restoration, rehabilitation or relocation of highways, roads or streets, a reasonable amount shall be expended to provide facilities for all users, including, but not limited to, bikeways and sidewalks with appropriate curb cuts and ramps. On and after October 1, 2010, not less than one per cent of the total amount of any such funds received in any fiscal year shall be so expended. CTDOT or municipality shall take future transit expansion plans into account where appropriate. Notwithstanding the provisions of this subsection, such provisions shall not apply in the event of a State or municipal transportation emergency.” (Section 13a-153f(c))

# APPENDIX K: DEVELOPMENT OF STATEWIDE BICYCLE PLANNING NETWORK



*Image credit: Community Connectivity Grant Program*

## CURRENT SETTING

The increasing number of residents and visitors who bicycle and walk for both recreation and as a means of transportation have encouraged a large growth in facilities by which to do so. In recent years, as in accordance with the adopted Complete Streets Policy, CTDOT has incorporated progressive facilities and street design into its projects that focus on the incorporation of bicycle and pedestrian improvements. These are related to the restriping to 11-foot lanes where applicable as part of the VIP Paving Program, implementation of the first road diets on a state highway, installation of new bike lane designs, and adoption of new signal technology. These programs, and their recent accomplishments are described in detail in Chapter 4: The State of Bicycle and Pedestrian Planning in Connecticut.

Additionally, regions and municipalities have improved the facilities for non-motorized travelers. Examples include (1) on-road facilities for bicyclists, such as protected bike lanes in New Britain; (2) improvements to the pedestrian environment, such as the enhanced streetscape, safe pedestrian crossings, and public plaza in Storrs Center, Mansfield; and (3) facilities for multi-use trails, such as the design and / or construction of various segments along the Farmington Canal Heritage Trail to fill in missing gaps.

The construction of on-the-ground facilities and other infrastructure for bicyclists and pedestrian can often be an exciting and satisfying visual indication of the progress that is being made in strengthening the bicycle and pedestrian environment across the state.

One must consider, however, the underlying laws, policies and other initiatives that have been previously put in place that allow for the feasibility of these facilities and their appropriate use. The laws in place determine the location and type of facilities built as well as provide potential incentives to increase the development of such facilities. They also provide safety protections to bicyclists and pedestrians and assist in the enforcement of such laws. A complete list of statewide law pertaining to bicyclists and pedestrians is in **Appendix L**.

## STATEWIDE BICYCLE NETWORK PLANNING

The statewide bicycle network has been defined to serve two primary purposes: (1) identify key connections for bicyclists across the state; and (2) provide CTDOT guidance as to where future improvements should be focused. The statewide bicycle network aims to provide the foundation for regions and municipalities that they can build off of in order to strengthen local connections for bicyclists. The network is not an inventory or reflection of all the bicycle facilities that currently exist. The network is intended to guide the improvement and creation of bicycle connections in the future.

### Methodology

This statewide bicycle network was developed with a significant amount of input from the project's Steering Committee, the COGs, and the public. The process is described in the following steps, though it should be noted that these steps were not necessarily linear and refinements were continually made as additional input was received.

The first step was to identify the key destinations within the state that people frequently travel to and from. Destinations included major transit facilities, areas with high population density, areas with high employment density, isolated major employment locations, colleges and universities, and 'key nodes' as defined by the Steering Committee. Simple, straight lines were then drawn between these destinations to illustrate the most direct connections



*Image credit: Tom O'Brien, Adventure Cycling Blog*

between the points, as illustrated in the diagrammatic statewide bicycle network shown below.

Next, the straight-line connections were compared to existing and planned facilities to determine if there was already an established bicycle route along various segments. For example, the diagrammatic network had identified the need for a connection between New Britain and Hartford,

which exists in part by way of the CT **fastrak** Trail. Another example is that a necessary connection was identified between New Haven and Southington, which was largely accommodated by way of the Farmington Canal Heritage Trail. The diagrammatic network was compared with the following existing and planned facilities:

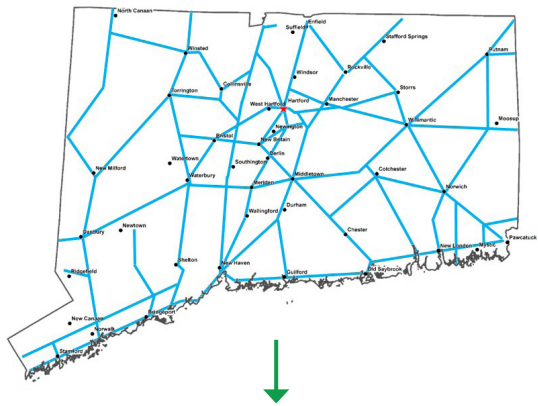
- Off-road paths, including those that are existing, under construction, in design and planned
- 2009 Cross State Routes
- Regional on-road facilities

Whenever possible, these existing and planned facilities were then identified as part of the network. The remaining segments of the network for which there were no defined routes for bicyclists to travel are shown in blue in the map at the bottom left.

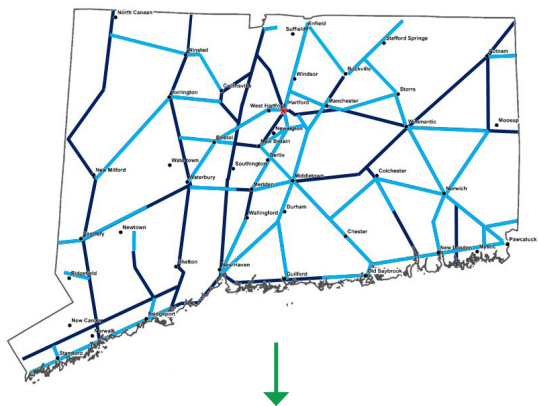
During the next step, the preferred route along state roads was identified for each of the remaining segments. The preferred route was defined as the route that provided a reasonably direct connection between the destinations as well as the potential for a comfortable and safe environment for bicyclists. It is important to also consider that the connections in the statewide bicycle network are meant to guide future investment in bicycle planning. As such, some routes were identified with the understanding that additional facilities or improvements will be necessary before the route would be considered safe and comfortable for all bicyclists. A combination of technical analysis as well as local knowledge and experience was used to identify the segments. An example of some of the information that was considered during this process is shown in **Table 12** on the following page. The technical analysis included the review of two data sources: the 2016 CT Bicycle Suitability Map and CT Strava bicycle rides.

The 2016 Suitability Map is an updated version of what had been developed for the *2009 Plan*. Both versions are shown in **Figures 1 and 2** on the next page along with **Table 4**, which displays the suitability matrix. Using the same methodology from 2009, each segment of state roadway has been assigned one of five classifications, called bicycle suitability, based on ADT (Average Daily Traffic) and shoulder width. Generally, the suitability increases with wider shoulders, and lower traffic volumes. **Table 14** displays a breakdown of roads in each classification for both 2009 and 2016.

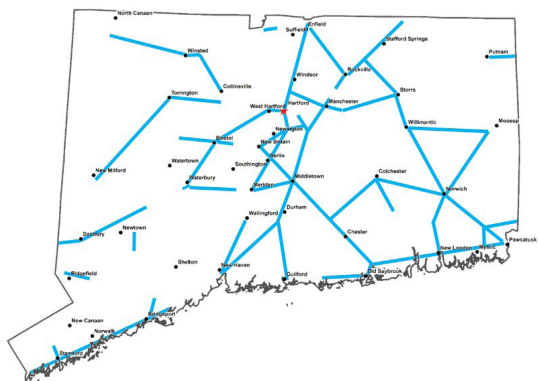
*Diagrammatic Network*



*Diagrammatic Network overlaid with off-road paths (including those that are existing, under construction, in design and planned)*



*Diagrammatic Network of remaining segments for which to determine connections*





Another layer of data that was taken into consideration is Strava bicycle rides. Strava is a leading website and smartphone app that allows users to track their bicycle rides, runs, walks, and more, and to share their favorite routes with other users. The app also collects anonymous data from its users, including information when people are traveling and general origin and destination points. As part of this Map Update, CTDOT purchased two years of Strava data so planners and engineers can have a better understanding of where people are actually riding today. This data is shown in **Figure 3** as the darker red lines indicate higher ridership; it has provided a valuable baseline of information that has served as a starting point in assessing potential bicycle routes. However, it also has limitations in that it only includes information on people that use Strava's Services. In addition, the data does not capture routes where people would prefer to ride if it was safe to do so. As such, it has been used in conjunction with other layers of data, technical expertise, and local input.

When determining the preferred route along state roads for some missing segments, there are instances where bicyclists frequently utilize an alternative route along local roads. These routes have been identified in the statewide bicycle network as potential local alternative routes. The identification of this route acknowledges the importance of local roads in a bicycle network.



It is still critical to also identify a state route for this connection in the network to provide CTDOT with guidance in allocating resources for bicycle improvements. CTDOT only has jurisdiction over state roads and cannot make any recommendations about the design of any local

streets, which remain under the responsibility of municipalities. However, segments of the network along state roads where a potential local alternative also exists should be given lower priority than other segments since bicyclists have a safe alternative upon which to travel on local roads.

The draft statewide bicycle network, presented in **Figure 4**, was developed after multiple draft iterations that were updated to reflect input from key stakeholders and the public. CTDOT coordinated with regions and municipalities upon the final development of the network to ensure it accurately reflects the local vision for bicycle and pedestrian planning in these communities. These meetings were intended to improve communication and further encourage a collaborative effort across levels of government to strengthen multi-modal connections across Connecticut. The statewide bicycle network is likely to be updated in the coming years as improvements and design recommendations are developed for specific routes.

**Table 4: Example Suitability Comparison**

The following is an example of the type of information that was considered when identifying a state route that provides a connection between two destinations. In this example connecting Danbury and Newtown, Route 53 / Route 302 was the selected route to include in the Draft Network.

	Route 6	Route 53 / Route 302
Average Strava Rides	170	523
Average AADT	17,700	10,900
Length (miles)	8.5 (includes some local road segments)	11.3
		
	<i>Image credit: Google</i>	<i>Image credit: Google</i>

**Table 14: 2009 and 2016 Suitability Comparison**






ADT	2009 Miles	2016 Miles	Difference	% Change
Least Suitable 	624.9	587.6	-37.3	-6.0%
Less Suitable 	451.3	426.8	-24.5	-5.4%
Suitable 	730.7	712.9	-17.8	-2.4%
More Suitable 	893.4	932.5	39.1	+4.4%
Most Suitable 	384.2	420.0	35.8	+9.3%

Figure 1: 2009 Suitability Map

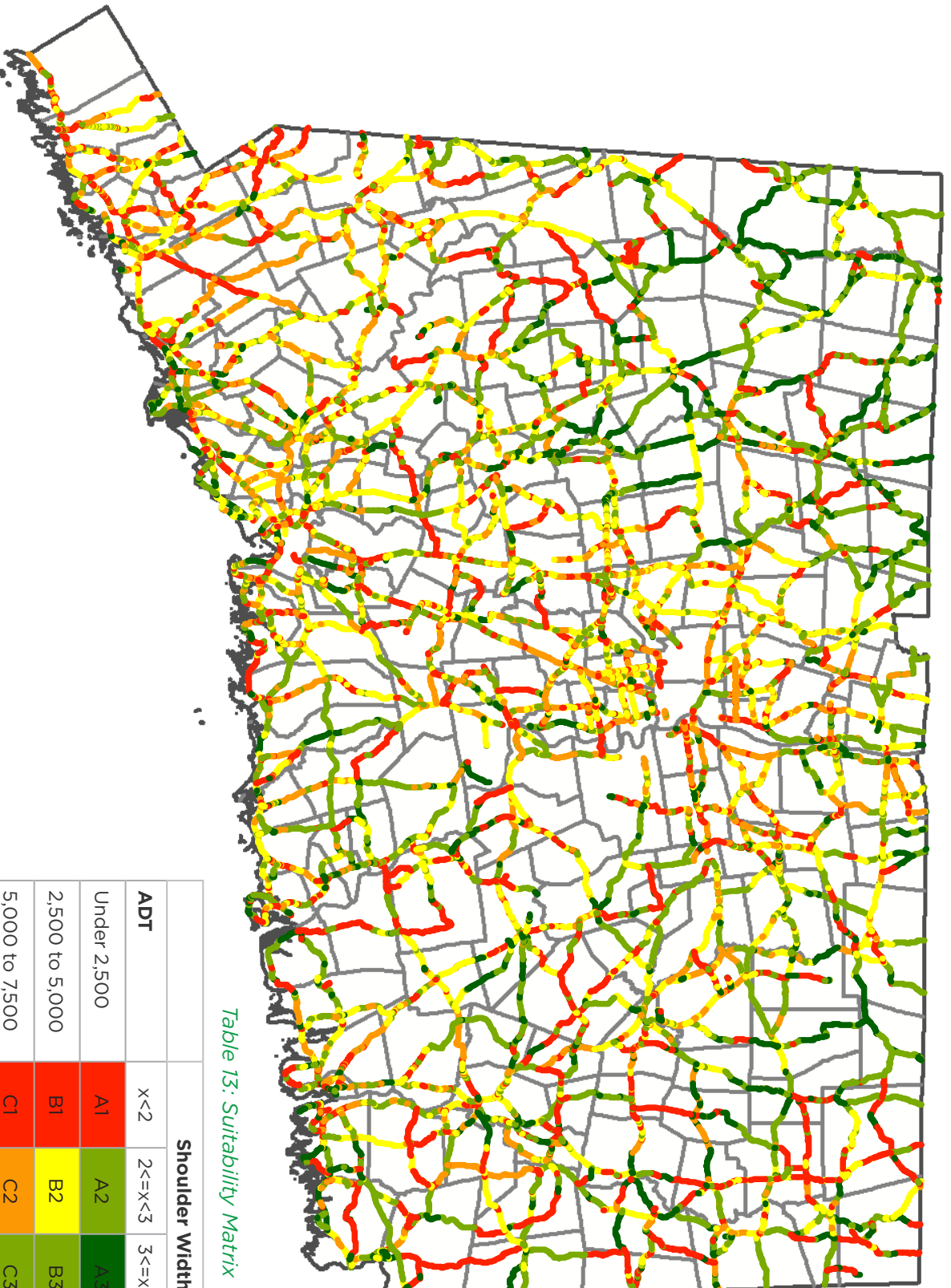


Table 13: Suitability Matrix

ADT	Shoulder Width (ft)			
	$x < 2$	$2 \leq x < 3$	$3 \leq x < 6$	$6 \leq x$
Under 2,500	A1	A2	A3	A4
2,500 to 5,000	B1	B2	B3	B4
5,000 to 7,500	C1	C2	C3	C4
7,500 to 10,000	D1	D2	D3	D4
Over 10,000	E1	E2	E3	E4

Figure 2: 2016 Suitability Map

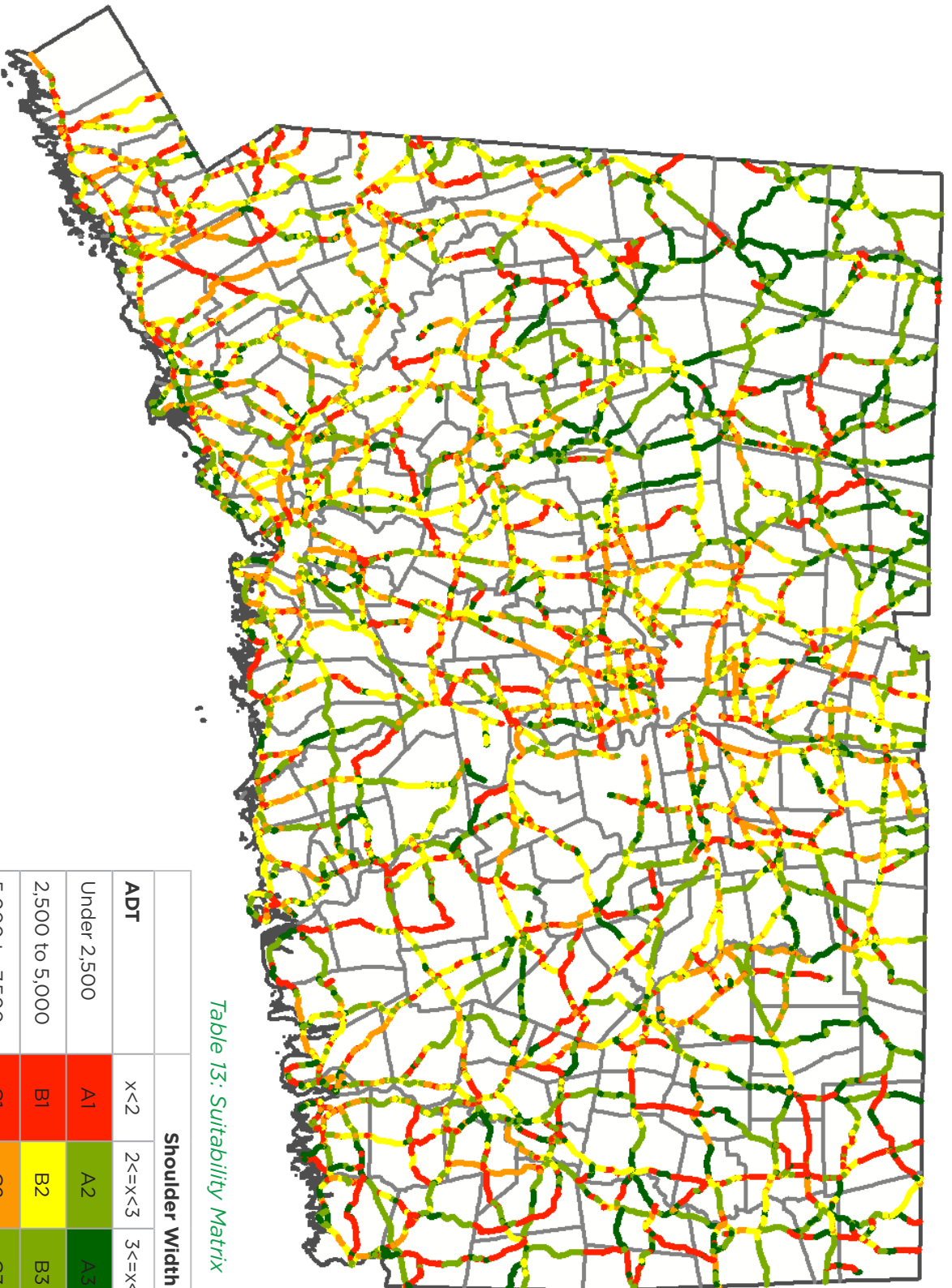
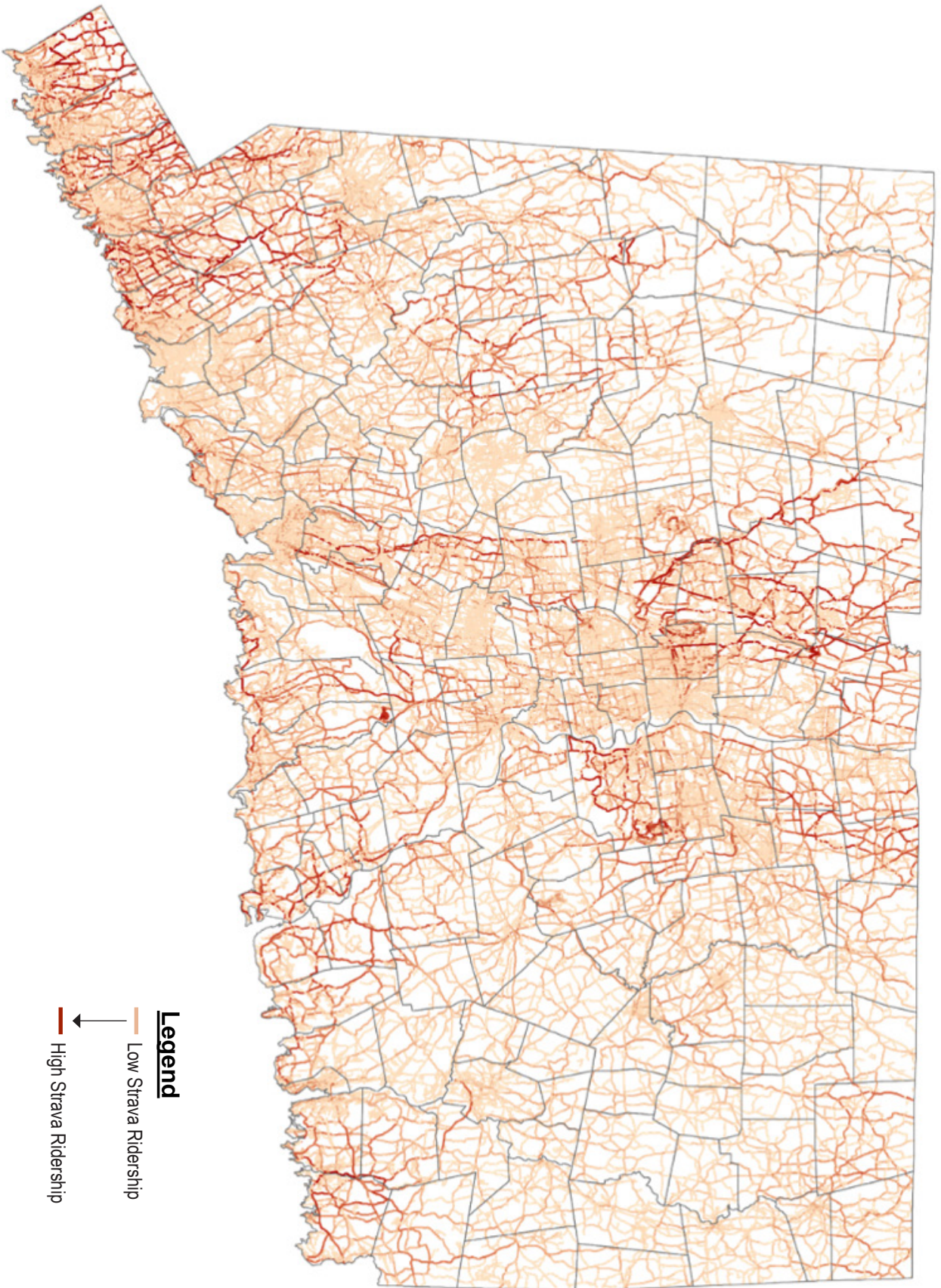


Table 13: Suitability Matrix

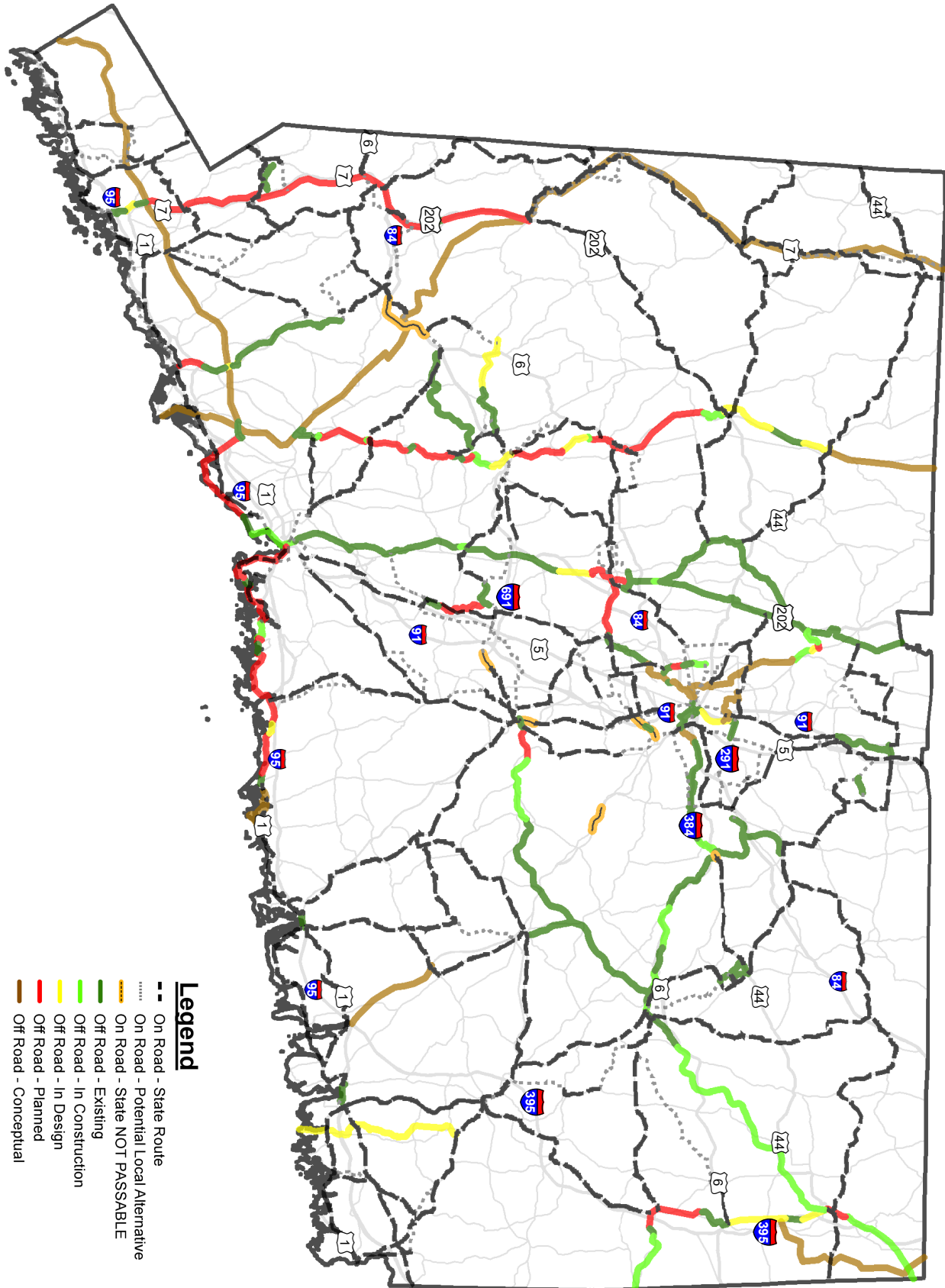
ADT	Shoulder Width (ft)			
	X<2	2<=X<3	3<=X<6	6<=X
Under 2,500	A1	A2	A3	A4
2,500 to 5,000	B1	B2	B3	B4
5,000 to 7,500	C1	C2	C3	C4
7,500 to 10,000	D1	D2	D3	D4
Over 10,000	E1	E2	E3	E4

Figure 3: CT Strava Bicycle Rides (November 1, 2014 - October 31, 2016)



# STATEWIDE BICYCLE NETWORK 2017

Figure 4: Existing Statewide Bicycle Network 2017



# APPENDIX L: BICYCLE PLANNING NETWORK EVALUATION PROCESS



*Image credit: Stamford Downtown*

## PURPOSE & BACKGROUND

In 2017, Connecticut Department of Transportation (CTDOT) and Fitzgerald & Halliday, Inc. (FHI) entered into a scope of work agreement to develop contextual information on the proposed bicycle network developed in the Draft 2017 Bicycle and Pedestrian Transportation Plan Update. The purpose of the work effort was to provide planners and roadway designers with a data-driven approach to plan for and design safe accommodations for bicyclists based on safety, existing conditions, equity, and best-practice implementation guidance.

There were three tasks in the scope of work. They included:

1. Bicycle network evaluation
2. Design guideline development
3. Interactive web resource

**The purpose of this memorandum is to document the bicycle network evaluation that was conducted as the first part of this scope of work.**

The need for this work was realized soon after CTDOT, FHI, and the project Steering Committee developed a planning network for bicycle travel on state roads in Connecticut. This network was based upon desired connections rather than the limited facilities that existed. The bicycle planning network was about 970 miles (about 1/3 of the total non-limited access highway network). Because Connecticut does not have the resources to provide the most desirable level of bicycle and pedestrian improvements on the entire network, CTDOT desired, CTDOT desired a more detailed analysis of the network to identify improvements that can best target safety in the near-term within available and potential resources.

## STATEWIDE BICYCLE NETWORK DEVELOPMENT AND MODIFICATION

The statewide bicycle network was developed to serve two purposes: (1) identify where bicyclists want and need to travel; and (2) provide CTDOT guidance as to where future improvements should be focused.

The project team and Steering Committee identified key destinations within the state that people frequently travel to and from. Destinations included major transit facilities, areas with high population density, areas with high employment density, isolated major employment locations, and colleges and universities. Simple, straight lines were then drawn between these destinations to illustrate the most direct paths.

Next, the straight-line connections were compared to existing and planned facilities to determine if there was already an established bicycle path along segments. For example, the diagrammatic network had identified the need for a connection between New Britain and Hartford. This exists in part by way of the CT *fastrak* trail. Whenever possible, these existing and planned facilities were then identified as part of the network.

FHI next identified a preferred route along state roads for each of the remaining segments. The preferred route was defined as the route that provided a reasonably direct connection between the destinations as well as the potential for a comfortable and safe environment for bicyclists. The segments were identified using a combination of technical analysis as well as local knowledge and experience. The technical analysis included the review of two data sources: the 2016 CT Bicycle Suitability Map and CT Strava bicycle rides.

In addition, FHI reviewed the CTDOT travel demand model's daily trip table, aggregated by town, to determine the top 25 highest town to town trip interactions. From this analysis, four town-to-town routes were added to the statewide bicycle planning network.

The statewide bicycle network was established to ultimately guide future investment in bicycle planning. As such, some routes were identified with the understanding that additional facilities or improvements will be necessary before the route would be considered safe and comfortable for bicyclists.

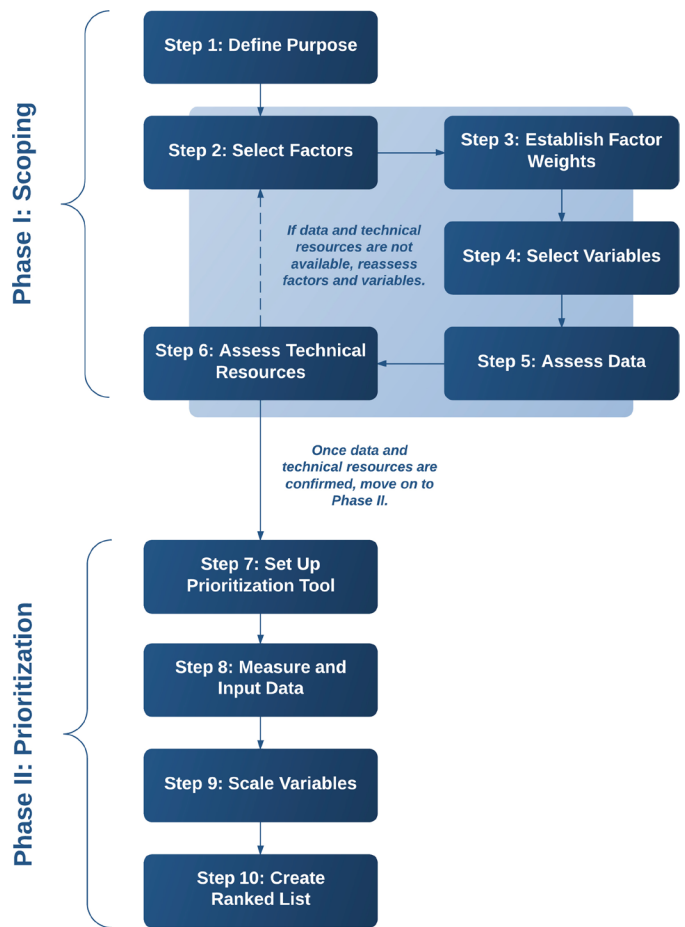
# BEST PRACTICES

FHI consulted *NCHRP Report 803: Pedestrian and Bicycle Transportation Along Existing Roads - ActiveTrans Priority Tool Guidebook (NCHRP Report 803)* as a best practices guide in prioritizing improvements for pedestrian and bicycle facilities. This guidebook presented a two-phase process to analyze and prioritize existing roads using a data-rich process. **Figure 1** displays the process from *NCHRP Report 803*.

*NCHRP Report 803* was written to be a flexible and inclusive process to guide all levels of agencies in considering pedestrian and bicycle improvements. At times, the methodology did not coincide with CTDOT goals / capabilities from a network evaluation perspective. Areas where FHI deviated from its process as appropriate and described in this memorandum.

While *NCHRP Report 803* provided much of the guidance used in the prioritization process detailed in this memo, the consultant team referred to other best practices in developing the full methodology for this process. In particular, additional guidance was used to further develop the existing conditions measure used in this analysis. Guidance used in this section includes the *Guide for the Development of Bicycle Facilities* published by AASHTO (2012), *Small Town and Rural Multimodal Networks* published by FHWA (2016), and *Best Practices White Paper #3: Bicycling Solutions for Hilly Cities* published for the City of Seattle (2013). The sources from AASHTO and FHWA provided the basis for the recommended shoulder width values, while the reference from the City of Seattle provided the basis for scoring hilly segments.

Figure 1: NCHRP Report 803 Priority Tool Methodology





# DATA SOURCES

Data from various resources was collected and analyzed for this analysis. **Table 1** displays these resources.

*NCHRP Report 803* states that adding additional data should be balanced against its availability, cost, and complexity. The primary source of existing conditions data came from CTDOT. *NCHRP Report 803* also suggested additional data, which did not readily exist at the state level. This included observed (85 percentile) traffic speeds, traffic control devices (signals, stop sign, etc.) locations, on-street parking, marked bicycle lanes (although limited), driveway density, and sidewalks. FHI thought that the existing conditions data provided by CTDOT, which included lane configuration and width, presence and width of shoulders, presence of medians, grade, and posted speed limit, was sufficient to characterize the existing conditions of state facilities.

*Table 1: Data Sources*

DATA	SOURCE
<b>CONNECTICUT CRASH DATA</b>	CT Crash Data Repository (2012 – 2016) <sup>1</sup>
<b>BICYCLIST RIDERSHIP DATA</b>	Strava (All Rides - 11/1/14 to 2/30/16)
<b>CTFASTRAK AND RAIL STATION LOCATIONS<sup>2</sup></b>	FHI
<b>UNIVERSITY LOCATIONS AND ENROLLMENT</b>	FHI and University Factsheets (2017)
<b>K-12 SCHOOL LOCATIONS AND ENROLLMENT</b>	U.S. Department of Homeland Security – Homeland Infrastructure Foundation-Level Data (2012-2013)
<b>POPULATION DENSITY BY BLOCK GROUP</b>	American Community Survey (ACS) 5-Year data (2011-2015)
<b>EMPLOYMENT DENSITY BY BLOCK GROUP</b>	U.S. Census Longitudinal Employer-Household Dynamics Survey (LEHD) (2015)
<b>RETAIL DENSITY BY ZIP CODE</b>	U.S. Census Bureau – ZIP Code Business Patterns (2015)
<b>PERCENT NOT DRIVING / CARPOOLING TO WORK</b>	ACS 5-year data (2011-2015)
<b>PERCENT POPULATION UNDER POVERTY LINE</b>	ACS 5-year data (2011-2015)
<b>PERCENT OF HOUSEHOLDS WITHOUT ACCESS TO MOTOR VEHICLE</b>	ACS 5-year data (2011-2015)
<b>CT STATE ROUTE ROAD GEOMETRY DATA<sup>3</sup></b>	CTDOT EXOR database (7.20.2016)
<b>POSTED SPEED LIMITS<sup>4</sup></b>	CT Office of the State Traffic Administration (OSTA) (10.27.2017)
<b>BICYCLE PLANNING NETWORK</b>	<i>Draft 2017 Statewide Bicycle and Pedestrian Plan Update</i>
<b>ROAD GRADE</b>	CTDOT Automatic Road Analyzer (ARAN) (2014)

<sup>1</sup> FHI joined two datasets across the 1/1/2015 adoption of the new PR-1 form. FHI manually geolocated all bike crashes on all state-owned facilities and local-owned facilities identified on the network which were not geolocated from the database.

<sup>2</sup> Includes all stations with Metro-North, Shoreline East, Amtrak, and Hartford Line service. Also included are four stations which are planned under the New Haven – Hartford – Springfield Rail Program, but which funding is not yet secured: North Haven, Newington, West Hartford, and Enfield.

<sup>3</sup> CTDOT geometry data used included ADT, lane configuration, lane width, and shoulder width.

<sup>4</sup> OSTA data was converted to a spatial layer using mile post data from the 2016 CTDOT layer. This speed limit layer is used for planning purposes only and should not be used for any final design recommendations on specific location.

All roadway geometry data was maintained to be consistent with the 2016 CTDOT network layer. This was done to ensure interoperability with the CTDOT database. Preliminary layers that were collected having a different roadway base layer were converted to the 2016 CTDOT layer format. This includes Strava data (originally delivered in Open Street Maps network layer) and the road grade data (originally delivered as GPS points from the ARAN truck).

## NETWORK EVALUATION METHODOLOGY

In November 2017, the project team proposed to closely follow the ActiveTrans Priority Tool in *NCHRP Report 803*, utilizing four measures: 1) safety, 2) demand, 3) existing conditions, and 4) equity. Each measure was comprised of several criteria which were assigned a specific number of points. The points for each road segment were tallied for the criteria and measure, with 100 being the maximum points possible. The initial priority score as developed is displayed in **Figure 2**.

After discussion with CTDOT, CTDOT and FHI agreed that the inclusion of all measures into a single value did not meet CTDOT needs. Instead, the project team agreed to break the data into three measures, to be weighted separately. These measures included:

- Need - comprised of safety, demand, and equity
- Existing conditions
- Opportunities

## SCALING OF CRITERIA

To ensure that criteria could be compared against each other correctly, it was necessary to fit all criteria on a common scale. In this case, values from zero (0) to one (1) were used. This should not be confused with weighting which aims to give rank of some criteria over others. Scaling was done before the weighting process. This analysis utilized either proportionate or percentile scaling, and these are noted below with each criterion. In general, proportionate scaling was the default except in cases which had a large range and were largely skewed left or right significantly. For more information, refer to *NCHRP Report 803* (41).

Figure 2: Original Proposed Measures (Number in Parentheses is Weight)

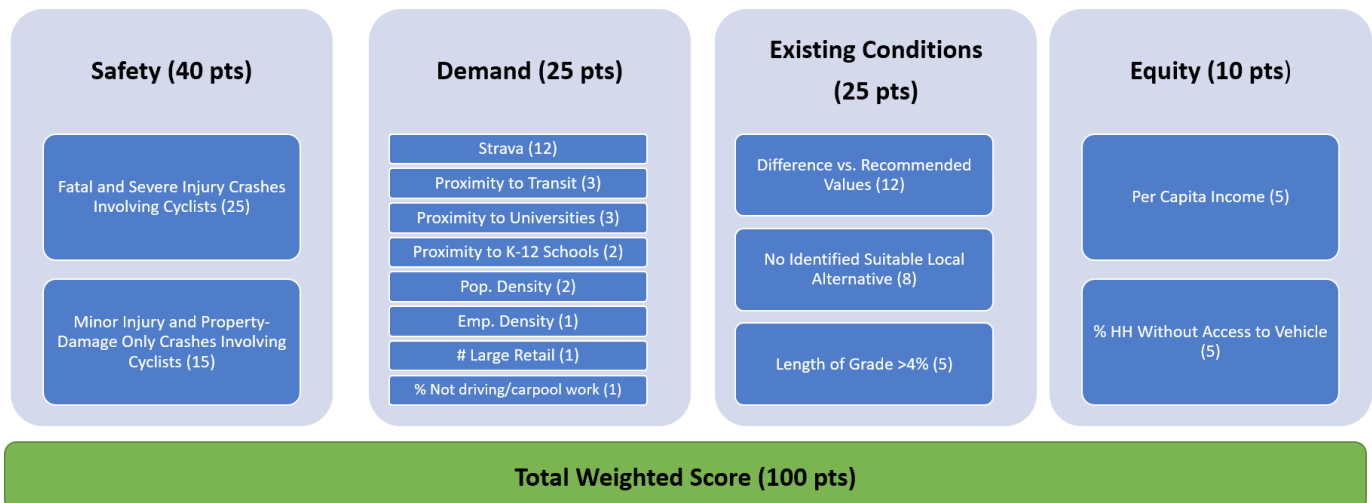
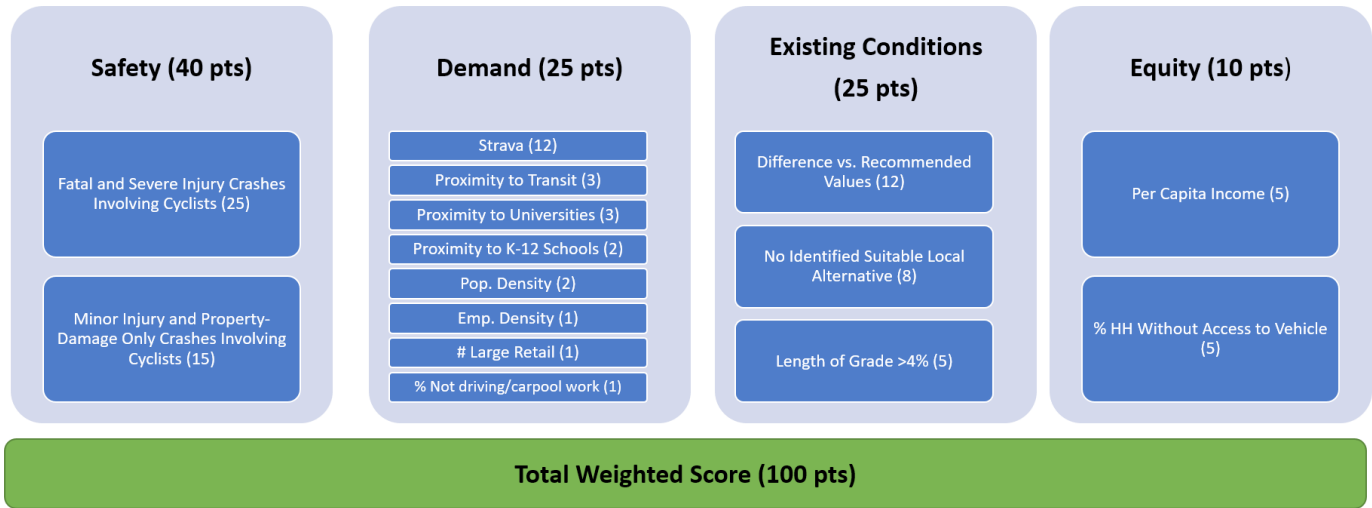


Figure 3: Need Measure and Associated Criteria (Number in Parentheses is Weight)



## Measure #1: Need

The need measure was comprised of the safety, demand, and equity categories. The purpose of the need measure was to indicate the amount to which a facility deserves attention from CTDOT according to these three categories. While the need score was largely based on the historical number of bicycle crashes, it was also based significantly on demand (both observed and latent indicators) and equity criteria. The need measure marked where the propensity to cycling was the highest and where DOT should focus their attention. **Figure 3** displays the need measure.

### Measure #1: Need – Safety Category

The safety category only had one criterion, the number of bicycle crashes between 2012 and 2016. Those incidents that resulted in a severe injury or fatality to the cyclist were weighted three times that of other incidents. This was decided because many members of the Steering Committee and project team felt that these severe crashes should carry more weight in the state’s planning process.

In addition, only those crashes that occurred within 1/4 mile on the route for the segment in question were considered in the data. For example, if a crash occurred on a local street adjacent to the state facility in question, it was not counted towards the crash total of the segment. This was done to recognize that improvements on the state facility in question may not impact crashes on adjacent facilities, which are not owned and maintained by CTDOT.

The safety variable was scaled based on proportionate scaling methods.

### Measure #1: Need – Demand Category

The demand category had a total of eight criteria that aimed to both demonstrate the existing demand observed and estimate the potential demand through surrogate data measures. **Table 2** displays the demand criteria of the need measure.

### Measure #1: Need – Equity Category

The equity category was included in recognition that enhancing bicycle facilities was important in areas where a large percentage of the population below the poverty line and / or do not have access to a motor vehicle. These populations may benefit most from improvements to the state bicycle infrastructure. **Table 3** displays the equity category criteria.

Table 2: Demand Category Criteria

CRITERIA	NOTES	SCALING TYPE
<b>STRAVA RIDERSHIP</b>	Strava ridership data attached to the segment layer (see below) by retrieving the max value within 50 feet of the segment. This had to be completed as Strava data was delivered in an Open Street Maps network while this project maintained the CTDOT 2016 network as its base layer.	Percentile
<b>PROXIMITY TO TRANSIT</b>	Points were assigned to the segment layer as follows: <1 mile: 1 1 – 2 miles: 0.66 2 – 3 miles: 0.33	None (0 – 1 by definition)
<b>PROXIMITY TO UNIVERSITIES</b>	Points were assigned to the segment layer as follows: < 1 mile: 1 x enrollment 1 – 2 miles: 2/3 x enrollment 2 – 3 miles: 1/3 x enrollment Segments which were within three miles to multiple universities received the cumulative score based on all nearby universities.	Proportionate
<b>PROXIMITY TO K-12 SCHOOLS</b>	Points were assigned to the segment layer as follows: < 1/2 mile: 1 x enrollment 1/2 – 1 miles: 1/2 x enrollment Segments which were within one mile of multiple schools received the cumulative score based on all nearby schools.	Proportionate
<b>POPULATION DENSITY</b>	Segments were assigned the mean population density of Block Groups within 100 feet of the segments. This was done since many state roads represent the boundaries of Block Groups. Assigning the population to only one of these groups would mean that the population density variable would change between the two block groups based on which area a segment fell within at any given time.	Percentile
<b>EMPLOYMENT DENSITY</b>	Segments were assigned the mean employment density of Block Groups within 100 feet of segments. This was done for the same reason above.	Percentile
<b>RETAIL DENSITY</b>	Segments were assigned the mean total employment at retail establishments with 10 or more employees by zip code within 100 feet of each segment. Retail employment was based on the NAICS 44-45 industry codes in data provided by the U.S. Census Bureau / American Fact Finder Table CB1500CZ21. A buffer width of 100 feet was used. Zip codes frequently represented larger areas than Block Groups.	Percentile
<b>PERCENT NOT DRIVING /CARPOOLING TO WORK</b>	Segments were assigned the mean value of Block Groups within 100 feet of segments.	Percentile

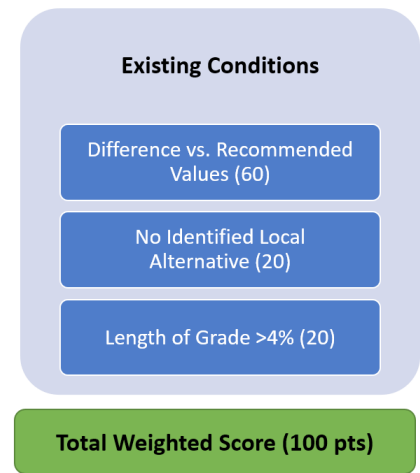
Table 3: Equity Category Criteria

CRITERIA	NOTES	SCALING TYPE
<b>PERCENT OF POPULATION UNDER POVERTY LINE</b>	Segments were assigned the mean value of Block Groups within 100 feet of segments.	Percentile
<b>PERCENT OF HOUSEHOLDS WITHOUT ACCESS TO A VEHICLE</b>	Segments were assigned the mean value of Block Groups within 100 feet of segments.	Percentile

## Measure #2: Existing Conditions

The goal of the existing conditions measure was to measure the bikeability of a corridor without assessing the potential demand on this corridor. For example, a corridor that differed drastically from recommended shoulder widths, included large, steep inclines, and did not have an identified local alternative would score the highest in this measure. Unlike the need measure, the existing conditions measure did not have multiple categories. It did still have criteria within the measure. The criteria and weighting of the existing conditions measure are displayed in **Figure 4**.

Figure 4: Existing Conditions Measure and Associated Criteria (Number in Parentheses is Weight)



### Measure #2: Existing Conditions – Difference vs. Recommended Values

In contrast to the data within the need measure, the existing conditions data does not contribute any meaning alone. For example, while the CTDOT EXOR data includes a field showing shoulder width, it was not appropriate to consider a facility with a larger shoulder safer than a facility without a shoulder without understanding: 1) the context within which these facilities exist, and 2) the general traffic characteristics of these facilities. For example, a facility with a speed limit of 55 MPH and an ADT of 10,000 would require a much different shoulder width than a facility with a speed limit of 25 MPH and an ADT of 2,000. FHI developed a recommended value criteria table, as shown below in **Table 4**. These values were referenced in the *Guide for the Development of Bicycle Facilities* published by AASHTO (2012), *Small Town and Rural Multimodal Networks* published by FHWA (2016), and *Best Practices White Paper #3: Bicycling Solutions for Hilly Cities* published for the City of Seattle (2013).

Table 4: Recommended Shoulder Width

AVERAGE DAILY TRAFFIC	SPEED LIMIT 35 MILES PER HOUR OR LESS		SPEED LIMIT GREATER THAN 35 MILES PER HOUR
	High Demand <sup>5</sup>	Low Demand	
< 1,000	Okay <sup>6</sup>	Okay	Okay
1,001 - 2,500	Okay	Okay	Outside Travel Lane + Shoulder = 14'
2,501 - 7,500	5' Bike Lane <sup>7</sup>	5' Shoulder	4' Shoulder <sup>8</sup>
7,501 - 10,000	6' Bike Lane	6' Shoulder	6' Shoulder
10,001 - 15,000	6' Bike Lane	6' Shoulder	6' Shoulder
15,001 - 20,000	Premium <sup>9</sup>	Premium	8' Shoulder <sup>10</sup>
20,001 +	Premium	Premium	Premium

<sup>5</sup> High Demand is defined as having Stava ridership greater than or equal to the 90th percentile.

<sup>6</sup> Facilities with high bicycle usage and low vehicle traffic should be considered for implementation of sharrows or other shared facilities.

<sup>7</sup> Standard for slower facilities is higher than that of those over 35 MPH due to the likelihood that these facilities are frequently located in more turbulent contexts (driveways, turning traffic, and stopping traffic etc.) and frequently have curbing and drainage grates present.

<sup>8</sup> 5' Shoulder minimum preferred if curb, drainage grates present or many driveways.

<sup>9</sup> Premium facilities will be further defined in the forthcoming bike design guide.

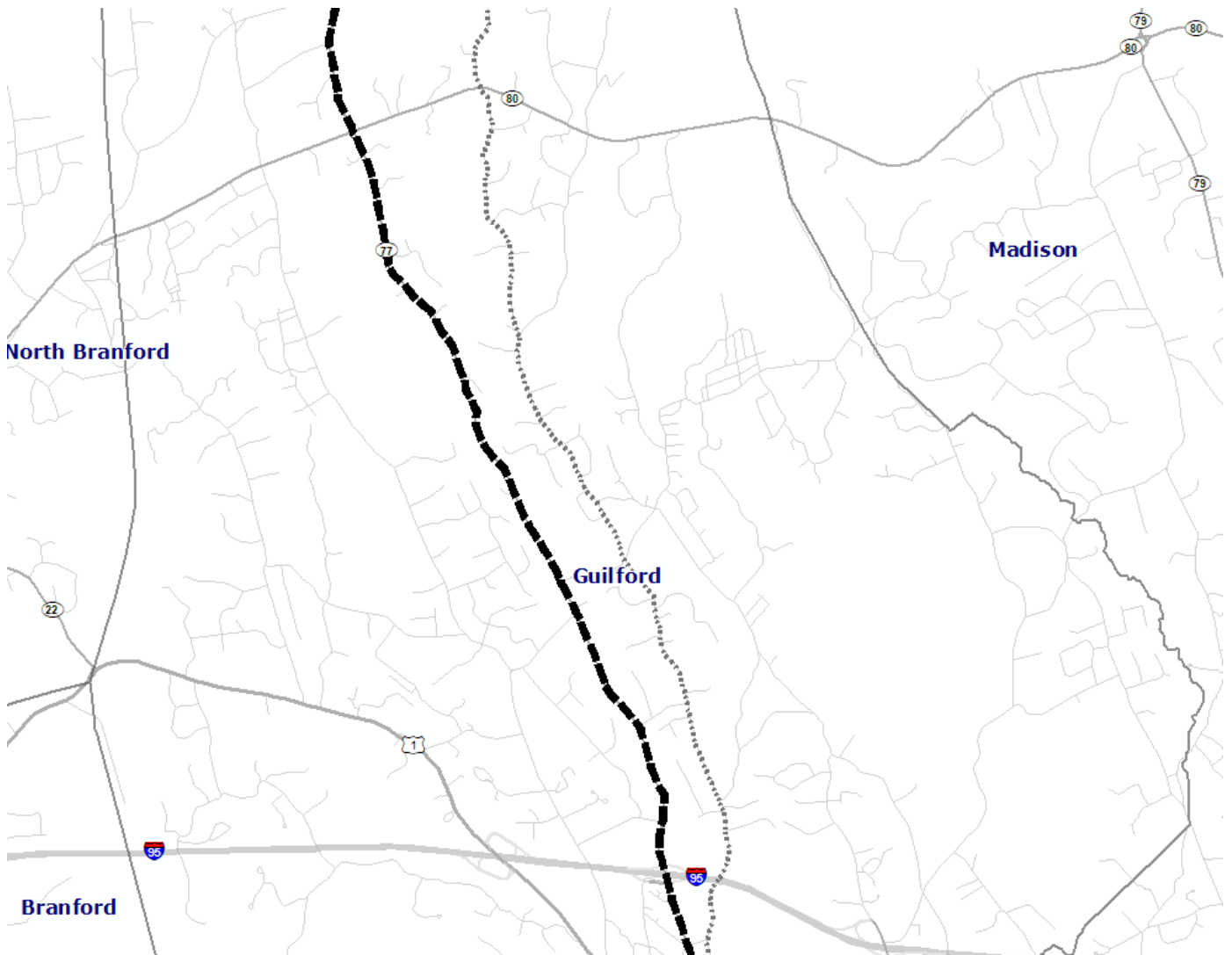
<sup>10</sup> This allows for a buffered bicycle lane. 6ft bicycle lane with 2ft buffer separating the bike lane from traffic.

Thus, comparing the existing shoulder width to the recommended shoulder width allows the user to understand the difference of the existing conditions versus the ideal condition. In this criterion, the value used was:

$$\text{Difference} = \text{Recommended Shoulder Width} - \text{Existing Minimum Shoulder Width}$$

In the case where a premium facility was recommended to be installed, the difference was set to equal to 10. Negative values are omitted (i.e. when the existing shoulder width was greater than the recommended shoulder width). In the case that the recommended facility was a combined travel lane and shoulder width of 14 feet, the existing value was calculated from the outside travel lane width and shoulder width. This variable was scaled using proportionate scaling.

*Figure 5: Potential Local Alternative Example (Guilford, CT)*



*Measure #2: Existing Conditions – No Identified Local Alternative*

This criterion gave preference to those state facilities that had no identified local alternative in the bicycle planning network. The default value for all state facilities was one (1), except in cases where a reasonably proximate and adjacent facility connected the same corridor, in which case the value was coded as zero (0). **Figure 5** displays an example of this in the Town of Guilford where an identified potential local alternative route, Little Meadow Road, was adjacent to CT 77, a route identified on the bicycle planning network. These values did not have to be scaled as they were set to be a value between zero (0) and one (1).

*Measure #2: Existing Conditions – Length of Grade was Greater than Four Percent*

The purpose of this criterion was to highlight state roads with a continuous grade of four percent or greater for 300 feet or more. The *Best Practices White Paper #3: Bicycling Solutions for Hilly Cities* from the *Seattle Bicycle Master Plan Update* (February 2013) provided guidance on scoring this criterion. The guidance stated that uphill grades greater than four percent can put bicyclists in a slow, unstable, and vulnerable position as they work to climb the grade. Additional infrastructure and shoulder and/or bike lane width can benefit bicyclist on these facilities.

FHI utilized grade data from the ARAN truck operated by CTDOT for this analysis. Since this data was created by GPS point data from the truck and was not consistent with the CTDOT network base layer, the project team sampled these grade points using a 100-foot buffer of all segments and assigned the mean value to each segment. The segments were then filtered to remove those with less than a four percent grade. Those that remained were spatially joined if they were contiguous, and their continuous distance was calculated. The distances were then assigned to the individual segments where applicable. The maximum length in this process was 6,000 feet and the minimum length was 300 feet.

This criterion was scaled proportionately.

## Measure #3: Opportunities

The goal of the opportunities measure was to show locations that CTDOT could potentially provide additional shoulder width either by a) completing a road diet, or b) realigning the roadway markings to rebalance shoulder widths on either side of the roadway. This measure is displayed in **Figure 6**.

There were two categories in the opportunities measure. There was no weighting and comparison scoring between the two categories; they were independent of one another. The opportunity in either the ability to implement a road diet based on average daily traffic (ADT) or the ability to rebalance the shoulder widths was critical to consider in this analysis.

*Measure #3: Opportunities – ADT Appropriate for Road Diet*

This category assessed the potential for CTDOT to implement a road diet, either to two or four through lanes. This category was calculated from a theoretical capacity of 7,500 vehicles per day per lane (vpdpl). Thus, a two-lane configuration was tested at a capacity of 15,000 vehicles per day (vpd) and a four-lane configuration was tested at a theoretical capacity of 30,000 vpd. The two-lane capacity was tested for roads that had either three or four through lanes while the four-lane capacity was tested for road segments that have five or more lanes.

*Figure 6: Opportunities Measure and Associated Criteria*



To give points to road segments that were close to these theoretical volumes, points were awarded for being within 25 percent the theoretical capacity, or 18,750 vpd and 37,500 vpd respectively. The score was then calculated on a range between zero (0) to one (1). Given that e was the current ADT, the theoretical volume/capacity ratio was calculated as:

$$n = e / t$$

where

n = theoretical v/c ratio

e = current ADT

t = theoretical capacity of road diet (15,000 or 30,000)

$$s = (1.25 - n) / 1.25$$

where

s = score used for variable

n = theoretical v/c ratio

Values below 0.2 in this measure were above the theoretical capacity discussed above.

This analysis was simplistic in nature and should not take the place of further engineering studies for the appropriateness of a road diet on any facility. This measure was meant to show locations which could warrant further study and locations where space for bicyclists could be achieved with relatively little effort.

This variable was not scaled as it was between zero (0) and one (1).

### *Measure #3: Opportunities - Opportunity to Restripe and Realign Road Markings to Balance Shoulder Width*

This category assessed those road segments that have uneven shoulder width on either side of the roadway. There could be opportunity to rebalance roadway width through restriping on these segments. These segments often occur where provisions were made for a truck-climbing lane on uphill sections of rural highways. In these cases, was common for the truck-climbing lane to be absorbed into the adjacent shoulder width. These drops in shoulder width occurred at a critical point for bicyclists – long, uphill segments are typically where bicyclists are at their slowest and are most susceptible to loss of control. Additionally, these drops in shoulder width frequently occur on roadway corridors that otherwise accommodate cyclists well with wide shoulders.

For example, US 44 just west of Winsted currently has a long, steep grade and the presence of a truck-climbing lane forces bicyclists heading west out of Winsted to forfeit their shoulder for about one mile on a road with an average grade of five percent. Outside this climbing lane, however, US 44 accommodates cyclists well with a consistently wide shoulder for about eight miles to Norfolk. **Figure 7** displays pictures of this Route 44 segment.

*Figure 7: Route 44 Unbalanced Shoulder Width Example (Winsted, CT) (Left -Presence of a truck-climbing lane on US 44 west of Winsted. Right - US 44 west of the hill climb (Source: Google Maps))*



Image credit: Google



Image credit: Google



In this analysis, the category measured relative improvement in the minimum shoulder width compared to the recommended value if a road segment had a hypothetical shoulder width based on 11-foot travel lanes centered on the roadway. This category was not calculated if a median of any type was present or if a road segment already met the recommended shoulder width (see **Table 4**).

Thus:

$$h = [ w - ( a * 11 ) ] / 2$$

where

**h = hypothetical shoulder width**

**w = current total pavement width**

**a = current number of total lanes**

$$s = [ \text{Min} ( h , r ) - c ] / r \text{ given that } c < r$$

where

**s = score used for variable**

**h = hypothetical shoulder width**

**r = recommended shoulder width**

**c = current minimum shoulder width**

This measure scored on a range between zero (0) and one (1) given the relative improvement that such restriping would achieve the recommended shoulder width guidelines. For example, if a road segment had a current shoulder width of eight feet and 0 feet and a recommended shoulder width of four feet, this shoulder could be rebalanced to four feet on either side. Since the minimum shoulder width increased from a value of zero (0) to its full recommended width, this opportunity would score a one (1) in this metric.

This variable was not scaled since it was between zero (0) and one (1).

## Additional Methodology Information

### *Segment Length*

The consistent usage of segment lengths was an important consideration to ensure that analysis produced valid results. To ensure the highest degree of accuracy, the data analysis was made compatible with the bicycle suitability analysis completed for state roads in 2017 using CTDOT's EXOR data. Since these segment lengths varied, an additional limitation on length needed to be imposed such that all segments were of reasonable length so that census and crash statistics could be accurately assigned to all segments. For example, some segments in rural parts of the state had segments of several miles in length – as their cross-sectional elements were maintained through this entire distance. Thus, all segments from the bicycle suitability analysis were split into segments no longer than 100 feet. Segments already under 100 feet in length were kept intact.

While this increased the computational demands of this analysis, the usage of segments no longer than 100 feet increased accuracy. Summary statistics based on corridors or other similar aggregation techniques could be computed at a future date, but were not completed as part of this analysis.

Segment creation and analysis of this data was completed for all CTDOT maintained roadways, except for limited-access facilities where cycling is prohibited.

# PRIORITY / IMPLEMENTATION MATRIX

To evaluate the prioritization of the state road network for bicycle improvements, a detailed and explicit methodology for evaluating the road network was warranted.

Breaking up the measures into need, existing conditions, and opportunities would allow the project team to analyze the segments in combinations with each other. Based on from CTDOT, FHI prioritized the facilities that exhibited both need (Measure #1 – comprised of safety, demand, and equity categories) and existing conditions or those facilities that lacked appropriate facilities for bicycling (Measure #2).

FHI identified three separate categorical guiding principles for the state maintained road network. Every segment could be put into one of three categories. They included:

- Segments that CTDOT could consider for stand-alone bicycle improvements
- Segments that CTDOT could consider incorporating bicycle improvements as part of maintenance and other road projects
- Segments that generally meet design criteria and not a Department priority, however, CTDOT should maintain existing level of service for bicyclists on these routes in future road projects.

FHI utilized the following approach to placing segments into each of these appropriate categories:

- Considering stand-alone improvements on segments with a history of exceptional crash history and bicyclist demand or connections that were identified in the bicycle planning network, but access restrictions were present (e.g. I-384 in Bolton through Bolton Notch).
- Incorporating bicycle improvements as part of maintenance and other projects which:
- Segments either on or off the state bicycle planning network with a demonstrated need (Measure 1 – Safety, Demand, Equity) and lack appropriate facilities based on **Table 4**.
- Segments on the state bicycle network that lacked appropriate facilities but had a large opportunity for a road diet or shoulder width rebalancing
- Segments on the state bicycle network that did not meet recommended design guidance and did not have an opportunity for an easy road diet or shoulder rebalancing.
- Maintaining (not necessary to improve, but do not worsen) existing bicycle facilities and shoulder widths on segments that already generally met recommended design guidance. This included segments both on and off the network.

A detailed overview of this approach is displayed in **Table 5**.

Each segment was placed in a single category of the highest priority. The only exception to this rule was Tier II-7, which was all facilities that did not meet the criteria of Tier III-1 or any of the other criteria in Tier I or Tier II. For example, a segment that met both the criteria for Tier I-1 and Tier II-1 would be assigned Tier I-1 status.

The implementation matrix showed the general recommendations for CTDOT to plan bicycle improvements on state facilities. The inclusion of off-network criteria was intentional in this process, as the project team recognized that many on the Steering Committee did not want the bicycle network to result in improvements being directed towards only those facilities on the identified bicycle planning network. The project team recognized that bicycling was allowed on most state facilities and will occur regardless of its status on the bicycle network planning network. Those state facilities that had a demonstrated need for cycling based on safety, demand, and equity measures as well as those that were not up to facility guidance were recommended to be addressed regardless of their status on the bicycle planning network.

Table 5: Priority / Implementation Matrix

TIER	PRIORITY	ON-NETWORK CRITERIA	OFF-NETWORK CRITERIA	MILEAGE
I. SEGMENT WITH BICYCLE SAFETY CONCERNS; CONSIDER FOR STAND-ALONE BICYCLE IMPROVEMENTS	I-1	Top 10% based on crash history	Top 5% based on crash history	On Network – 17.5 miles Off Network – 10.9 miles
	I-2	Top 25% based on <u>both</u> crash history and demand	Top 15% based on <u>both</u> crash history and demand	On Network – 12.6 Miles Off Network – 9.5 Miles
	I-3	Impassable segments based on perceived need and funding		Total – 11.8 Miles
	II-1	Top 25% based on <u>both</u> need score and existing conditions score	Top 10% based on <u>both</u> need score and existing conditions score	On Network – 102.4 Miles Off Network – 27.4 Miles
II. SEGMENT WAS LESS CRITICAL; CONSIDER INCORPORATING BICYCLE IMPROVEMENTS INTO MAINTENANCE OR OTHER ROAD WORK	II-2	Top 25% existing conditions score which has possibility of road diet or the possibility for a relative shoulder improvement of 25% or more through restriping and shoulder rebalancing		On Network – 47.7 Miles
	II-3	A facility which requires premium facility, unless included above		On Network – 23.3 Miles
	II-4	Top 25% existing conditions score		On Network – 10.7 Miles
	II-5	Top 25-50% of existing conditions score which has possibility of road diet (any score) or the possibility for a relative shoulder improvement of 25% or more through restriping and shoulder rebalancing		On Network – 85.0 Miles
	II-6	Facility which requires marked bike lane		On Network – 161.9 Miles
	II-7	As needed basis – facilities not within 20% of recommended guidance		On Network – 162.5 Miles
	II-8	As needed basis: Lowest need – facilities not within 20% of recommended guidance <u>and</u> bottom 50% in terms of need <u>and</u> existing conditions		On Network – 83.2 Miles Not planned for imminent improvement
	III. SEGMENT GENERALLY MET RECOMMENDED DESIGN CRITERIA, NOT A KEY DEPARTMENT PRIORITY	III-1	Within 20% recommended design guidance – meets no condition above	
III-2		Within 20% recommended design guidance – meets no condition above		Off Network – 695.7 miles
III-3		Does not meet any criteria above		Off Network – 1,365 miles

FHI considered Tier II-6 through Tier II-8 to be substantially of lower priority than those higher in the Tier II group. Those lower on the Tier II list were generally facilities which 1) may provide the physical space, but recommendations called for marked bike lane facilities (Tier II-6), 2) those facilities which were not within 20 percent of the recommended design guidance but perhaps did not have demonstrated need, or 3) those facilities which were of the lowest need as there lacked demand (either observed with Strava data or latent variables) and had generally acceptable existing conditions for cyclists (no grade issues and not substantially different from the recommended width value). Improvements on these facilities should be considered in an as-needed basis but are less critical for the development of the bicycle planning network than those higher in the list of recommendations. Regular maintenance on these facilities should ensure that accommodations to bicyclists are not worsened. Improvements should still take place on Tier II-6 to Tier II-8 facilities during major reconstruction efforts.

FHI separated Tier II into two separate categories, one from Tier II-1 to Tier II-5 which showed facilities which need improvements in physical space for bicyclists compared to recommended values. The second was Tier II-6 to Tier II-8, which was less critical as space for cyclists was generally provided but still did not meet design recommendations.

This methodology was useful in several ways:

1. It demonstrated locations where investments should be prioritized. By focusing on a strategic set of locations, CTDOT could increase bikeability in Connecticut far more efficiently than haphazardly spending resources on the entire network. Instead of focusing investment on the entire 3,000+ mile non-freeway network CTDOT maintains, or even the 970-mile bicycle network that was proposed as part of the bicycle planning network, improvements can be focused on 347 critical route miles identified as Tier I or Tier II-1 to Tier II-5 in this process.
2. It illustrated where significant gaps in the network exists and shows where small segments effect the bikeability of an entire corridor. For example, US 44 through Winchester, sees reduced bikeability on a small segment through Winsted but otherwise was bikeable for much of its length between Canton and North Canaan.

A summary of route miles proposed within each section is presented in **Table 6** and a map of these recommendations is displayed in **Figure 8**.

*Table 6: Total Route Miles for Each Implementation Tier*

	<b>ON-NETWORK</b>	<b>OFF-NETWORK</b>	<b>TOTAL</b>
<b>TIER I</b>	30.1 Miles	20.4 Miles	50.5 Miles
<b>TIER II-1 TO TIER II-5</b>	269.1 Miles	27.4 Miles	296.5 Miles
<b>TIER II-6 TO TIER II-8</b>	407.6 Miles	-	407.6 Miles
<b>TIER III</b>	263.9 Miles	659.7 Miles	923.6 Miles
<b>TOTAL</b>	970.7 Miles		

## References

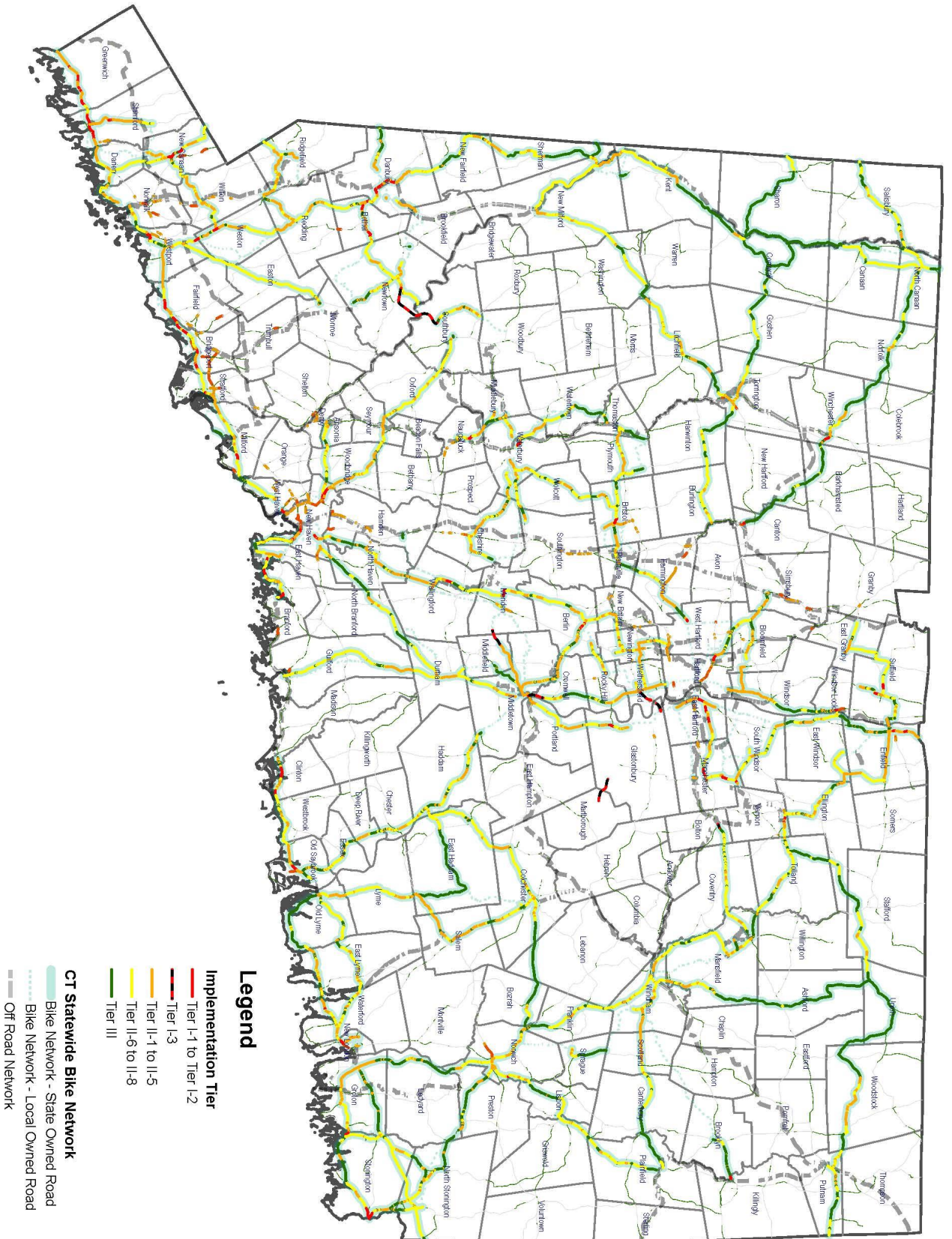
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Figure 8: Bicycle Planning Network Implementation Matrix Tier



# APPENDIX M: TRAILS OF STATEWIDE AND REGIONAL SIGNIFICANCE



# TRAIL PLANNING

Closing the gaps in the trail network continues to be a significant priority of CTDOT. Many of these gaps are smaller in size but costlier in nature because of such factors as design or right-of-way challenges. CTDOT is particularly committed to closing gaps in the trails of statewide and regional significance. They currently, or are planned to, connect Connecticut to other national systems as well as Connecticut’s regions to on another other.

The following sections include descriptions of key trails of statewide and regional significance and recent changes to their networks.

## East Coast Greenway (ECG)

The East Coast Greenway is a planned multi-use trail system, spanning nearly 3,000 miles between Calais, Maine and Key West, Florida which links all the major cities of the eastern seaboard. The 200 miles that exist in Connecticut connects the major cities of Hartford, New Haven, Bridgeport, and Stamford. The Connecticut ECG runs along its own, stand-alone routes, including interim on-road routes, as well as existing trails. For example, it includes a series of rail trails, such as the Air Line Trail North and the Hop River Trail, and several long, linear trails such as the Farmington Canal Heritage Trail, the Merritt Parkway Trail, and the Charter Oak Greenway.

The Connecticut ECG has made significant progress in recent years. To date, 43 percent of the 200 miles in Connecticut has been completed as off-road “spine” trail while another 32 percent is currently in development. Twenty projects totaling 37 miles of trail are in or nearing construction by 2018. The Farmington Canal



Image credit: East Coast Greenway Alliance

## Connecticut Trails of Regional Significance (as of early 2012)

- Air Line Trail (both north and south of the ECG alignment)
- Farmington River Trail
- Five Mile River Greenway
- Housatonic River Trail
- Naugatuck River Greenway
- Pequonnock River Greenway
- Norwalk River Valley Trail
- Route 11 Extension Trail
- Shoreline Greenway Trail
- Tri-Town Trail

Heritage Trail, which bisects the state is nearing completion. The only remaining gap in this trail system is located in the Town of Plainville, and a routing study is currently underway to facilitate the closure of this gap. In eastern Connecticut major portions of the trail network to the Rhode Island border are nearing completion. In addition, CTDOT is nearing completion of a detailed study of the Merritt Parkway corridor to address the feasibility of a multi-use trail to the NY border.



Image credit: Out and About Mom Blog - Rails-to-Trails in Connecticut: The Farmington Canal Heritage Trail

## Air Line Trail (both North and South of the ECG alignment)

Major work has recently concluded, upgrading the 6.6-mile section from Thompson to the Massachusetts line. Additionally, a new parking area with signage and information kiosks has been constructed where the trail crosses East Thompson Road, Sand Dam Road, Lowell Davis Road, and the trail terminus at Route 12.



Image credit: Town of Colchester



Image credit: State Park HQ

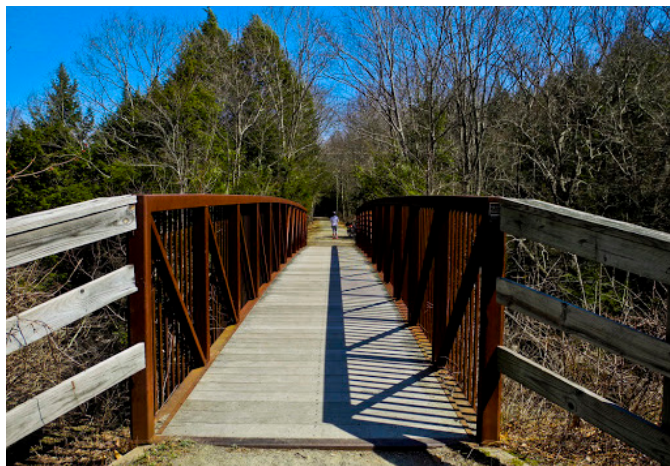


Image credit: kenneth casper/flickr via Only in Your State

## Farmington River Trail

The Farmington River Trail is an 18-mile loop trail that connects to the Farmington Canal Heritage Trail at its end points in Farmington to Simsbury. The trail also passes through Unionville, Collinsville, Burlington, and Canton. Its surface is primarily asphalt and its alignment often follows the Farmington River and the route of the old "Canal Line" railroad.



Image credit: RTC, Matthew Lupoli via TrailLink

## Naugatuck River Greenway

This planned 44-mile multipurpose trail follows the Naugatuck River from Torrington to Derby to link 11 municipalities. In recent years, municipalities have taken responsibility for leading the effort and in 2010, the Naugatuck River Greenway Routing Study Regional Overview was prepared for the Naugatuck River Valley Regional Planning agency. Approximately four miles of the Greenway have been completed and are open to the public and progress is being made on several efforts to connect the existing sections.



Image credit: UConn Extension



## Norwalk River Valley Trail

This 27-mile planned trail (38 miles when including various spurs) will form a north-south axis along its namesake Norwalk River from Norwalk to Wilton and Danbury. The location of the trail was studied in detail in the 2012 Norwalk River Valley Trail Routing Study and it will parallel US 7, connecting numerous neighborhood centers, office parks, and rail stations. Additional projects to extend or enhance the trail are also underway in both towns. Redding has prepared the design of the trail through its town while Ridgefield is in the process of permitting bicycles on the main trail. Danbury has received a grant to build a 3-mile segment of the trail that would connect Wolfpit Road in Wilton to Grist Mill Road in Danbury.



Image credit: Norwalk River Valley Trail

## Shoreline Greenway Trail

This planned 25-mile trail for bicyclists, walkers, and hikers will extend from Lighthouse Point in New Haven through East Haven, Branford, and Guilford to Hammonasset Beach State Park in Madison. The majority of the trail is planned to be a crushed granite, packed stone surface that's accessible for all. As of the summer of 2017, portions of the trail have been completed in Branford, Madison and East Haven. A segment in Branford is scheduled to begin construction in the fall of 2017 while another segment in East Haven is progressing into design. Other portions of the trail are variously in the conceptual, planning, or design phases.



Image credit: TrailLink Guest

## Pequonnock River Trail

Located along the path of an abandoned rail line, the 16-mile recreational trail is planned to extend from Bridgeport through Trumbull and Monroe to the Newtown line as described in the Pequonnock River Trail Alignment Study, an effort that was undertaken by the City of Bridgeport and published in 2015. This study is funded in part with the \$1,451,760 in Federal Congestion Mitigation and Air Quality Program (CMAQ) funds the City received to design and construct the Pequonnock River Trail extension.

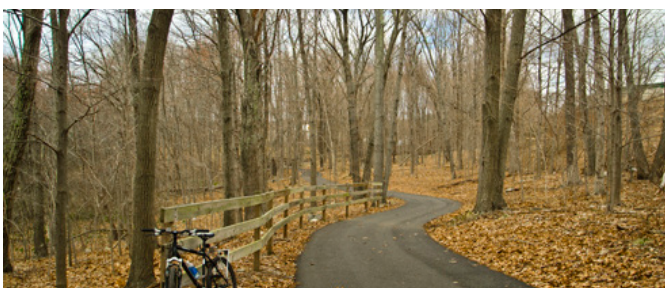


Image credit: Connecticut Explorer, Trail Biking The Pequonnock Valley Greenway



Image credit: TrailLink Guest

# APPENDIX N: BICYCLE AND PEDESTRIAN COORDINATOR RESPONSIBILITIES



At CTDOT, bicycle and pedestrian planning efforts and issues fall under the responsibility of the Intermodal Planning Unit. This unit is responsible for effective coordination both internally with other CTDOT offices and externally with other state agencies, COGs, local governments, and interest groups to ensure that bicyclists and pedestrians are considered when planning transportation facilities.

A Bicycle and Pedestrian Coordinator is a position described under the Federal Highway Administration's Bicycle and Pedestrian Program, which promotes safe, comfortable, and convenient walking and bicycling for people of all ages and abilities. Through this program, each state is directed to use a portion of its Federal surface transportation funding to maintain a Bicycle and Pedestrian Coordinator position in its State DOT.

Typical responsibilities include the promotion and facilitation of pedestrian and bicycle facilities; facilitation of public education and safety programs; development of connected pedestrian and bicycling networks; manage the collection of data on the use of pedestrian and bicycle facilities; and the evaluation of the performance of such facilities. Due to the significance, and the ever increasing importance of these responsibilities, no one individual can be tasked with these, rather it is a team effort taken on by all staff members in the Unit. Some of these tasks are as follows:

A detailed list of these duties are as follows:

- Plan and manage new programs in the areas of non-motorized accommodations, safety, educational materials, enforcement materials, courses, and recreation.
- Develop safety and promotional information through printed materials, videos, TV spots, press releases, interviews, and promotional activities.
- Develop guidelines to assist all MPOs in developing a comprehensive pedestrian / bicycle plan and help local jurisdictions in the development of plans and programs.
- Develop (or prepare) printed materials such as quarterly newsletters, maps related to bicycle and pedestrian routes as appropriate, safety information, and answer inquiries from citizens.
- Arrange for special displays and events, including conferences, workshops, and other public and technical information presentations.

- Develop (if necessary), review, and update State's Comprehensive Bicycle and Pedestrian Transportation Plan.
- Serve as a contact with Federal, state and local agencies, the press, citizen organizations, and individuals on matters relating to bicycles and pedestrians.
- Coordinate and maintain budget and forecast budgetary needs.
- Review projects for conformity with design standards and the state's comprehensive plan as it relates to bicycle and pedestrian facilities.
- Identify legislative requirements and recommend appropriate changes in state law to facilitate maximum utilization of the bicycle and pedestrian modes for transportation purposes.
- Maintain current knowledge of sources of funding for program. Work with appropriate offices to fully integrate bicycle and pedestrian projects in programming decisions.
- Serve as bicycle and pedestrian advisory committee member (if applicable).
- Develop priorities for special studies in areas such as cause of accidents; locations of accidents; effectiveness of new facility designs; needs analysis; barrier removal analysis; and origin and destination surveys.
- Monitor pedestrian and bicycle use, provide recommendations for system improvement and develop usage data.



*Image credit: Community Connectivity Grant Program*

# APPENDIX O: BICYCLE AND PEDESTRIAN TRAVEL NEEDS ASSESSMENT FORM



*Image credit: Flickr/pedrik via Only in Your State*

The following “Bicycle and Pedestrian Travel Needs Assessment Form” was last updated in 2018. The process has been developed to provide the documentation and information needed to determine the “... need and extent of bicycle and pedestrian features.” The form requires a variety of information including a description of existing bicycle and pedestrian facilities within or near the project limits, review of bicycle and pedestrian crash data in the project area, and a review of existing or planned bicycle or pedestrian traffic generators, such as parks and schools. The form is expected to be completed to the extent possible during a project’s scoping phase with continual review throughout the Preliminary Design. Upon completion of Preliminary Design, the form is also completed and attached to the Preliminary Design Report for each project.

A blank copy of the form is included on the following pages.



## CONNECTICUT DEPARTMENT OF TRANSPORTATION BICYCLE AND PEDESTRIAN TRAVEL NEEDS ASSESSMENT FORM (BPTNA)



In accordance with Connecticut General Statutes, Section 13a-153f, Accommodations and Provisions of Facilities for All Users and the Department’s Policy Statement No. EX.0-31, It is the policy of the Department to consider the needs of all users of all abilities and ages (specifically including pedestrians, bicyclists, transit users, and vehicle operators) in the planning, programming, design, construction, retrofit and maintenance activities related to all roads and streets as a means of providing a "safe, efficient transportation network which enhances quality of life and economic vitality." Therefore, the need for inclusion of accommodations specifically for bicyclists and pedestrians, including those with disabilities, must be reviewed for **every** project.

This form shall apply to all Department projects, mainline utility projects within the state right-of-way, the Office of the State Traffic Administration (OSTA) certificate applications receiving state or federal funding, and municipal transportation projects that receive state or federal funding. This form provides designers the documentation and information needed to make decisions on the need and extent of bicycle and pedestrian features that should be included in a project. This form is not intended to dictate what features should be included in a project design, as guidance on those questions can be found in numerous other reference documents. This form should be completed to the extent practical (at least Sections 1 & 2) during the project scoping phase and finalized by the completion of the Preliminary Design. Once signed, this form should be retained with the project documents.

Project Number(s):		Route(s):	
Project Name:			
Municipality(s):		Planning Region(s):	

### SECTION 1: APPLICABILITY

Although bicycle and pedestrian accommodations should be considered for all projects, certain types of projects (e.g. bridge deck patching, culvert re-lining, projects on expressway mainlines) do not typically provide reasonable opportunity to provide improvements for these travel modes. Considering the **project type** answer the question below. If the question below is answered **no**, please explain why, then skip to the last page, sign the form, and file this form with the project documents. If the answer is **yes**, go to Section 2 and complete the rest of the form.

Does this <b>project type</b> provide reasonable opportunity to provide improvements for non-motorized access?	Yes <input type="checkbox"/> No <input type="checkbox"/>
--	--

If no, why?

<b>SECTION 2: ASSESSMENT OF STUDY AREA</b>	
<b>2.1 Study Area Map</b>	
Identify any non-motorized and/or transit generators located within the Study Area (Study Area is generally defined as approximately ½ mile radius from the project limits). Using the letters in the code column below, create a map from a location plan or aerial photograph indicating the location of existing or planned non-motorized or transit user generators identified below (for planned facilities, precede the letter with a P-).	
Non-Motorized/Transit User Generators	Code
<u>Residential Areas:</u> Indicate any general areas of dense residential housing	<b>R</b>
<u>Parks:</u> Include areas that would attract people, whether officially designated as a park or not	<b>P</b>
<u>Recreational Areas:</u> Examples include athletic fields, dog parks	<b>RA</b>
<u>Religious Facilities</u>	<b>C</b>
<u>Schools (including public and private schools, colleges, universities, daycare or other educational institution)</u>	<b>S</b>
<u>Health / Medical Facilities</u>	<b>H</b>
<u>Town Centers:</u> typically would include areas where Town Halls, Libraries and other public facilities exist	<b>TC</b>
<u>Shopping Centers:</u> especially centers with businesses where non-motorized customers might be expected (restaurants, bookstores, drug stores, etc.)	<b>M</b>
<u>Large Employment Businesses:</u> Factories, large office buildings, hospitals, government offices	<b>E</b>
<u>Bus Stops</u>	<b>B</b>
<u>Public Transit Facilities:</u> train/bus stations, airports	<b>T</b>
<u>Shared-use trail access / parking</u>	<b>TA</b>
<u>Other:</u> other known facilities expected to generate or attract non-motorized users	<b>O</b>

<b>2.2 Analysis of Study Area</b>		
Using the map prepared in Section 2.1, and the resources suggested below, answer the following questions about the study area. <b>[For State/District-wide or Division of Traffic Engineering projects with many locations use the “Multi-location Table” at: <a href="https://www.ct.gov/dot/lib/dot/bptna-table_multiloc.docx">https://www.ct.gov/dot/lib/dot/bptna-table_multiloc.docx</a> to answer questions marked with an (*)]</b>		Explain as needed (attach additional sheet(s) if needed)
a. * Referencing the CTDOT Interactive Bike Map located at: <a href="http://www.ctbikepedplan.org/interactivemap.html">http://www.ctbikepedplan.org/interactivemap.html</a> is this project located on the Connecticut Statewide On-Road or Off-Road Bicycle Planning Network?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
b. * Have all existing bicycle, pedestrian and transit features within and just beyond the project limits (such as: features and ADA accessibility of existing bus stops, sidewalks, shoulder widths, bicycle markings/signs, shared-use paths, etc.) been identified and assessed for condition and need? (If assistance is needed identifying Transit requirements a request can be sent to: <a href="mailto:DOT.PTransBikePed@ct.gov">DOT.PTransBikePed@ct.gov</a> )	Yes <input type="checkbox"/> No <input type="checkbox"/>	
c. * Are there any areas of concern where physical impediments to non-motorized travel through the study area exist? Physical impediments can be excessive grade, limited width of roads/bridges, gaps or need for sidewalks (indicated by worn foot paths), utility poles or other appurtenances restricting access, etc.	Yes <input type="checkbox"/> No <input type="checkbox"/>	
d. * Is there any reason to anticipate an increase in travel by non-motorized and /or transit users through the project limits in the future?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
e. * Based on the U.S. Access Board’s <a href="#">Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)</a> , are there barriers to mobility inhibiting continuous access between schools, hospitals, senior care, or community centers, etc. for persons with disabilities that <b>cannot</b> be addressed in this project?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
f. * Is there a pattern of bicycle or pedestrian crashes within the project area? Crash information can be found by accessing the UCONN Crash Repository at ( <a href="https://www.ctcrash.uconn.edu/">https://www.ctcrash.uconn.edu/</a> ).	Yes <input type="checkbox"/> No <input type="checkbox"/>	



<p>g. Does the project provide <u>unique or primary access</u> (defined as access which is not otherwise available within approximately one-half mile of the project) :</p> <ul style="list-style-type: none"> <li>• across a river, highway corridor or other natural and/or man-made barrier?</li> <li>• into or out of any of the bicycle and pedestrian generators listed above?</li> <li>• between communities?</li> </ul>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/></p>	
<p>h. Is the project located near or provide new access or connectivity to state parks, forests or CT Designated Greenways? Information on State Parks, Forests and Greenways can be found at:</p> <p><a href="http://www.ct.gov/deep/cwp/view.asp?a=2707&amp;q=323852">http://www.ct.gov/deep/cwp/view.asp?a=2707&amp;q=323852</a> and <a href="http://www.ct.gov/deep/parkmaps">http://www.ct.gov/deep/parkmaps</a></p> <p>If yes, please notify the Trails and Greenways Program Coordinator at the Department of Energy &amp; Environmental Protection, State Parks Division, by sending a location and description of the project to: <a href="mailto:deep.stateparks@ct.gov">deep.stateparks@ct.gov</a>. This is for notification and not intended to be a formal review and /or concurrence.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	
<p>i. In accordance to the Complete Streets Policy, the Department will include non-motorized users in traffic counts to the extent possible. Has the existing pedestrian and/or bicyclist usage patterns within the project limits, particularly at intersection and midblock crossings, been observed / collected?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	
<p>j. Has there been any documented public concern or comments about non-motorized and/or transit needs in the area?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	
<p>k. Are there any comprehensive regional or local planning documents (such as Complete Streets Plan, Sidewalk Plan, Plan of Conservation &amp; Development, etc.) that address bicyclists, pedestrian or transit user conditions within or proximate to the project limits? (Can usually be found on applicable website) Contact the RPO Coordination or Intermodal Planning units in the Bureau of Policy and Planning if assistance is needed.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	

SECTION 3: NON-MOTORIZED AND TRANSIT ACCOMMODATIONS			
Identify any non-motorized and/or transit user accommodations/improvements that may be considered as part of this project. This section is provided as a list of countermeasures that may be appropriate and is not intended to dictate what features should be included in the project design. <b>[For State/District-wide or Division of Traffic Engineering projects with many locations answer this section by considering all sites as if they were one location]</b>			
<b>3.1 Pedestrian Facilities and Crossing Treatments</b>		<b>3.2 Bike Facilities (Cont.)</b>	
a. New sidewalks	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	e. Signage and/or pavement markings	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
b. Pedestrian median crossing island	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	f. Bicycle parking, bike racks/lockers	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
c. Curb extension/bulb-outs	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	g. Trail Improvements, including parking	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
d. Reduced Corner Radius	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	h. Special height railings	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
e. Pedestrian bridge/tunnel	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	<b>3.3 Bike &amp; Pedestrian Treatments</b>	
f. New or relocated unsignalized or mid-block crossing	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	a. Road diet	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
g. Enhanced illumination at pedestrian crossings	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	b. Narrowing travel lane width	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
h. Pedestrian signing and yield lines	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	c. Corridor-wide speed calming	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
i. Parking restrictions near crossings	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	<b>3.4 Transit Facilities</b>	
j. Pedestrian hybrid beacon [PHB; also known as the High intensity Activated crossWalk (HAWK)]	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	a. New or revised bus stops	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
k. Rectangular rapid flashing beacon (RRFB)	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	b. Bus shelters	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
l. Pedestrian fencing on bridges	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	c. Standing pads	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
		d. New or revised crossing for bus stop	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
<b>3.2 Bike Facilities</b>		<b>3.5 Streetscape Elements</b>	
a. Dedicated bike lane or cycle track	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	a. Landscaping, street trees, planters, buffer strips, etc.	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
b. Shared-used lanes	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	b. Decorative lighting	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
c. Shared-used path	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	c. Public seating or benches	Yes <input type="checkbox"/> N/A <input type="checkbox"/>
d. Wider shoulders	Yes <input type="checkbox"/> N/A <input type="checkbox"/>	<b>3.6 Other (please specify):</b>	

Once completed this form should be signed, attached to the Preliminary Design Statement, and filed with the project documents in ProjectWise. If the answer to the question under Section 1 “Applicability” is “Yes”, please email the link to the completed form in ProjectWise (or a PDF copy) to: [CTDOT.BikePedReviews@ct.gov](mailto:CTDOT.BikePedReviews@ct.gov). Comments will be provided if necessary however, designers are not required to obtain concurrence to move forward with design. This form will be maintained and periodically updated by the Office of Strategic Planning & Projects in the Bureau of Policy & Planning.

Prepared By:

\_\_\_\_\_

Project Engineer - Print Name

\_\_\_\_\_

Signature

Date: \_\_\_\_\_

Approved By:

\_\_\_\_\_

Project Manager - Print Name

\_\_\_\_\_

Signature

Date \_\_\_\_\_

# APPENDIX P: REVIEW OF CURRENT FUNDING PROGRAM



*Image credit: New Canaanite*

# OVERVIEW

On December 4, 2015, the FAST Act was signed into law. This law guarantees \$305 billion in funding for surface transportation programs over the fiscal years of 2016 through 2020. Surface transportation programs include, but are not limited to road, bridge, bicycling and walking improvements. A summary of funding sources is provided below.

- The *Surface Transportation Block Grant (STBG)* program provides flexible funding that may be used by states and localities for projects on any Federal-aid highway; on bridge projects; on any public road, transit capital projects, public bus terminals; and facilities for nonmotorized transportation (bicyclists and pedestrians).
  - A portion of the STBG is set aside to fund Transportation Alternatives (TA). These funds will cover small-scale pedestrian and bicycle facilities, recreational trails, and community improvements. The FAST Act requires the FHWA to distribute 50 percent of the TA funds to areas based on population.
  - The *Safe Routes to School (SRTS)* enables and encourages kindergarten through eighth grade school children to walk and bicycle to school. Projects are geared toward providing a safe, appealing environment for walking and biking that will improve the quality of children’s lives and support national health objectives. When it was first initiated in 2005 it was funded through the STBG. While this dedicated funding source is no longer available, SRTS projects are encouraged to pursue existing funding sources for bicycle and pedestrian planning projects.
- The *Recreational Trails Program (RTP)* provides funding to states for the maintenance and construction of nonmotorized multipurpose trails.
- The *Highway Safety Improvement Program (HISP)* aims to minimize traffic fatalities and serious injuries on all roadways. The funds can be used for things such as bike lanes, curb ramps, crosswalks, paved shoulders, multiuse pathways, sidewalks, and signal improvements that improve bicycle and pedestrian safety.
- The *CMAQ* program provides funding to reduce traffic congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards. An example of the types of projects eligible for funding under this program are those that include the construction of bicycle and pedestrian facilities (paths, bike parking, sidewalks, etc.) that help reduce vehicular trips.
- The *National Highway Performance Program (NHPP)* provides funding support for the maintenance of and construction of new facilities on or along the National Highway System (NHS). The funds can be used for

projects such as bike lanes, bicycle share programs, crosswalks, curb ramps, paved shoulders, multiuse trails, and signed bike routes.

- The *Transportation Investment Economic Recovery (TIGER) grant program* provides funding opportunities for bicycle and pedestrian facilities such as bike lanes, bicycle storage facilities, crosswalks, curb ramps, paved shoulders, multiuse trails, and road diet / traffic calming projects.
- *Congressional Earmarks* have specific applicability for bicycle and pedestrian projects for which there is political and / or public support. Generally, these projects are costlier, and would burden typical funding sources. The projects most likely to be included are bridge projects with pedestrian and bicycle accommodations, long-distance rail to trail projects or high profile path projects.

Currently, bicycle and pedestrian funding represents approximately one percent of the total budget for the 2015-2018 Statewide Transportation Improvement Program.

## *Let’s Go CT! Connecticut’s Bold Vision for a Transportation Future, (CTDOT, February 2015)*

CTDOT recently developed the *Let’s Go CT!* program to guide the future of transportation in Connecticut. The program will be executed in two stages. Stage one is called “Connecticut 5-Year Ramp Up” and outlines immediate, short-term investments to be completed within the next five years. Stage two outlines long-term investments for the state’s transportation system and is called “Connecticut 30-Year Vision.”

Both phases have specifically defined projects that support the development of additional bicycle and pedestrian facilities. The first phase includes \$101,000,000 for bicycle and pedestrian trail planning efforts, including the Community Network Bicycle and Pedestrian Connectivity Initiative and the Expanded Trail / Alternative Mobility Program. The second phase which focuses on efforts that will occur between 2020 and 2045 has identified \$30 million to maintain the regional and trail system as well as \$750 million for enhancements to (a) pedestrian and bicycle improvements in urban centers; (b) complete gaps in the statewide regional network; and (c) construction recreational trail along Route 15 (Merritt Parkway).