I. Introduction

Plan Purpose

The 2009 Connecticut Bicycle and Pedestrian Transportation Plan (Plan) provides direction for the Connecticut Department of Transportation (CTDOT) in developing policy and pursuing initiatives to advance programs and projects to accommodate non-motorized transportation (bicycling, walking, and horse riding). The previous plan, completed in 1999, provided goals and objectives that substantially raised the awareness of bicycle and pedestrian needs and issues within CTDOT.

Since then, there have been changes in federal laws and programs, statewide infrastructure, as well as the bicycle and pedestrian needs of residents and communities in Connecticut. The latest federal transportation law was enacted in 2005. The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) has a number of revised guidelines and funding sources compared with earlier legislation. These elements are described in this plan. In addition, the 2009 Plan places emphasis on the needs of all non-motorized travelers, whether traveling by bicycle, on foot, or on horseback. Users have requested that CTDOT encourage and promote travel by bicycling and walking by providing for the safe, convenient, and enjoyable use of these modes of transportation. This Plan outlines how CTDOT will accomplish this goal, including specific strategies recommended to support effective implementation of the Plan.

The Plan was prepared by Fitzgerald & Halliday, Inc. (Hartford, CT) with assistance from Alta Transportation + Design (Albany, NY) and Didona Associates (Danbury, CT). Federal and state funding was provided by the Federal Highway Administration and CTDOT. The primary focus of the Plan's vision, goals, and strategies is to advance bicycling and walking as means of transportation, while recognizing their value for recreation and fitness. This Plan places special focus on state facilities, whose design and maintenance are the responsibility of CTDOT.

Plan Development

Plan Process

This update of the Plan has been developed over an 18-month period, through an extensive public outreach and involvement process. The study team worked closely with a Plan Steering Committee and the general public to determine the vision, goals, and action strategies for bicycle and pedestrian planning in Connecticut. Local, regional, and statewide planning efforts, as well as other states' efforts, were researched. The data collection effort also included gathering information from Regional Planning Organizations (RPO), local governments, special interest /advocacy groups, other states and the general public on the issues, needs, and opportunities for improvements in bicycle and pedestrian planning and systems.

The study team worked with the Steering Committee to propose a series of alternative strategies, called implementation options to advance bicycle and pedestrian accommodations and opportunities in the State. The implementation options, as well as the proposed bicycle and pedestrian priority improvements of statewide significance, were published for public review in the Draft Plan. After a public review process, including public meetings, the recommended implementation options and regional priority improvements have been identified for future action by CTDOT over the coming years. Additionally, a number of recommendations, such as identification of statewide bicycle routes and the development of a new statewide bicycle map, have already been initiated as a part of this Plan.

Public Involvement

Providing the general public with opportunity to participate in the Plan development was one of the most important aspects 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 ultimate goal was to create a Plan that incorporates the needs and desires of the communities, residents, and users in Connecticut so that it is relevant and useful to the entire state.

The public outreach program of the Plan development entailed a number of components, including the following:

- **Steering Committee** – The Steering Committee guided the development of the Plan and Bicycle Map by reviewing and providing input on Plan materials. Steering Committee members provided expertise on local and regional issues, deficiencies in the statewide network, and improvement alternatives. In addition, a subgroup of the Steering Committee provided specific guidance on all aspects of the new Statewide Bicycle Map.

- **Public meetings** - Eight meetings were conducted during Plan development to provide the general public with the opportunity to provide the study team with information, comment on bicycling and walking, and review and comment on published materials. Two series of four identical outreach meetings were hosted throughout the state in October 2008 and June 2009. The initial series of meetings were held in Bristol, New Haven, Stamford, and Windham. The second series of meetings were held in Fairfield, Norwich, Torrington, and West Hartford. The format of these meetings was "open house", with a brief presentation, and open discussion.

- **Other outreach meetings** – Each of the 15 RPO's staff was contacted to hear their concerns, interests, and suggestions for the Plan and Bicycle Map revisions. In addition, a number of discussions were conducted with local governments and regional advocacy groups and organizations to hear their concerns, interests, and suggestions for the Plan and Bicycle Map revisions.

- **Inter-/intra-agency coordination** – A number of meetings occurred with staff from various offices within CTDOT that are involved with bicycle and pedestrian initiatives. The purpose of these meetings was to coordinate the Plan development with other efforts and guidelines in CTDOT and to ensure a broad CTDOT perspective was understood during Plan development. In addition, the study team obtained information on current involvement, management, planning and/or funding opportunities and programs within related state agencies and organizations through discussions with the other agencies' staff. These discussions also provided the opportunity to foster partnerships on bicycle and pedestrian planning activities throughout Connecticut.

- **Project newsletters** – Four printed newsletters were created and distributed over the course of the Plan development. The distribution of the newsletters occurred at the following time periods:

  1. Initiation/announcement of the Plan development,

  2. Prior to first series of public meetings,

3. Prior to the second series of public meetings and publication of the Draft Plan and Bicycle Map, and

4. Announcing the completion of Plan and new Bicycle Map.

- **Project website** - An interactive website at www.ctbikepedplan.org was developed for the Steering Committee, study team, and general public to utilize for viewing meeting announcements and related materials, reviewing published material and draft documents, and submitting comments. In addition, a business card with the project website address, information was distributed to Steering Committee members, interest/advocacy groups, bicycle shops, and the public at various meetings and events during the Plan and Bicycle Map development.

A complete list of all Steering Committee members, public outreach meetings, and public information materials is included in Appendices A, B, and C, respectively. In addition, a summary of comments from each of the public information meetings is included in Appendix D.

Bicycle and Pedestrian Planning in Connecticut

This section provides a summary of the state of bicycle and pedestrian planning in Connecticut. It includes information on the bicycle and pedestrian components of various state, regional, and municipal plans as well as documents and mapping prepared by bicycle and pedestrian special interest and advocacy groups. Strengths, weaknesses, and opportunities for improvement of each plan or document are discussed. Types of materials reviewed for this analysis include:

- Statewide agency plans and maps, from CTDOT as well as other state agencies;
- RPO bicycle, pedestrian, and long range transportation plans;
- Municipal plans;
- Special interest planning documents and maps; and
- Advocacy organizations efforts.

State Agency Plans and Maps

Relevant CTDOT statewide plans and maps as well as relevant plans prepared by other Connecticut state agencies were collected and reviewed. These plans include:

- CTDOT, *Connecticut Statewide Bicycle and Pedestrian Transportation Plan,* 1999.
- CTDOT, *Statewide Bicycle Map*, 2002.
- CTDOT, *Highway Design Manual,* 2003.
- CTDOT, *Long Range Transportation Plan*, June 2009.
- CTDOT, *2009 Master Transportation Plan*, January 2009.
- CTDOT, *2009 State of Connecticut Highway Safety Plan,* August 2008.
- Office of Policy and Management, *2005-2010 Conservation and Development Policies Plan for Connecticut*, 2005.
- Connecticut Department of Environmental Protection (CT DEP), *Connecticut Recreational Trails Plan,* 2005.
- CT DEP, *Pathways through Connecticut, A Transportation Guide to Multiuse Trails,* (DEP Bulletin 33, ISBN 0-942085-09-4), 2001.

- CT Greenways Council, *Officially Dedicated Greenways Map*, 2008.

1999 Statewide Bicycle and Pedestrian Transportation Plan

The 1999 *Statewide Bicycle and Pedestrian Transportation Plan* (the "old plan") provided information related to the goals and objectives, rules of the road, and planning, design, and maintenance guidelines of bicycle and pedestrian facilities throughout the state.

During this Plan Update outreach process in 2008 and 2009, the public cited that a major strength of this plan was that it contained clear goals and objectives; however, the goals were not measurable. Another public comment on this plan was that it was laden with regulatory information which made it difficult to peruse. Thus, the Steering Committee recommended moving much of the regulatory language to appendices.

2002 Statewide Bicycle Map

The 2002 *Statewide Bicycle Map* (the "old map") provided information on cross state, recommended, and loop ride routes for bicyclists, as well as state highway routes that were not recommended for bicyclists.

During this Plan Update outreach process, the public cited this as an acceptable map when planning a cycling trip on a particular route within the state. However, bicyclists often had to utilize other sources, such as advocacy and special interest organizations' maps and websites, to obtain detailed information, such as traffic volumes, about a route. In addition, most of the bicycle routes designated on the map had no on-street signage to guide bicyclists in route. Thus, the Steering Committee recommended that a revised map include more detailed information about each route including traffic volumes, shoulder/lane width, chokepoints, as well as the need to link routes with an on-street signage program.

CT Highway Design Manual

The present *CTDOT Highway Design Manual* was published in 2003. This document contains design guidelines for sidewalks, pedestrian signals, crosswalks, and other relevant pedestrian facilities on urban and rural highways and at-grade intersections.

2009 Long Range Transportation Plan

The *2009 Long Range Transportation Plan*, developed by CTDOT, outlines Connecticut's transportation policy for the upcoming 20 years. The *Long Range Transportation Plan* is prepared in accordance with federal requirements and updated every three to five years. An update is to be published in 2009.

The Federal government sets forth seven factors that must be considered by State DOTs in their Long Range Transportation Plans. Three of these factors address bicycle, pedestrian, and other non-motorized modes of transportation. Specifically, the Long Range Transportation Plans are to consider projects and strategies that will:

- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Enhance the integration and connectivity of the transportation system, across and between modes throughout the State; and
- Protect and enhance the environment, promote energy conservation, and improve the quality of life.

The 2009 *Long Range Transportation Plan* recognizes that there is a growing need for transportation options exclusively designed for special user groups including pedestrians and bicyclists. Additionally, the *Long Range Transportation Plan* states the need for the creation of smooth transitions between modes, specifically bicycling and

walking to transit. Specific actions to address bicycle and pedestrian needs include:

- Continuing to reevaluate and update the *Connecticut Statewide Bicycle and Pedestrian Transportation Plan* which supports enhancing the bicycling and walking environment throughout Connecticut in an effort to meet the public's demand for improved mobility; and

- Continuing to identify and implement feasible options for increasing the safety of motorcyclists, pedestrians, bicyclists, and other high-risk user groups including elderly and disabled persons.

2009 Master Transportation Plan

The *2009 Master Transportation Plan*, developed by CTDOT, prioritizes the projects and programs that CTDOT proposes to undertake within each mode of transportation for the upcoming two year and five-year period. It identifies the funds that CTDOT anticipates receiving annually in the various federal surface transportation authorization funding categories, as well as the projects that will be funded annually through each funding category. The *Master Transportation Plan* is regularly updated every two years.

Two major bicycle and pedestrian initiatives are outlined in the 2009 Master Transportation Plan. The first is this update of the CT Statewide Bicycle and Pedestrian Plan and Bicycle Map. The second is implementation of a pilot safety awareness campaign. This campaign will emphasize the need for motorists, bicyclist, pedestrians and equestrians to share transportation facilities. The pilot campaign was launched in May - July 2009.

2009 State of Connecticut Highway Safety Plan

The *2009 State of Connecticut Highway Safety Plan* documents fatal and injury traffic crashes that occurred on State Highways between the years 2002 and 2006. In addition, the Highway Safety Plan outlines potential safety funds that could be allocated for countermeasures to increase safety. During the five-year evaluation period, the number of bicyclist fatalities resulting from motor vehicle crashes ranged between two and five per year. In that same timeframe, bicyclist injuries ranged from 578 to 674 per year. With regard to pedestrians, the number of pedestrian fatalities resulting from motor vehicle crashes ranged between 27 and 50 per year between from 2002 to 2006; in that same timeframe, pedestrian injuries ranged from 1,063 to 1,173 per year. Bicycle and pedestrian safety is discussed further in Chapter Five.

The *2009 Highway Safety Plan* allocates a limited amount of highway safety funds to countermeasure bicycle- and pedestrian-related crashes. Specifically, the Bicycle and Pedestrian Safety Administration (Transportation Safety Section) has received $50,000 for the pilot safety awareness campaign launched in Spring 2009.

One limitation of the data presented in the *2009 Highway Safety Plan* is that it reports only bicycle and pedestrian crashes that involve motor vehicles. A number of the bicycle and pedestrian crashes that occur are bicycle-only or bicycle-pedestrian crashes. These crashes can be the result of poor sight lines, uneven pavement, or narrow shoulders and can be reduced with targeted education campaigns and highway safety improvements and funds. As outlined in the 2009 Statewide Bicycle and Pedestrian Plan action strategies, CTDOT will investigate opportunities to monitor and analyze these non-motorized vehicle-related crashes to more accurately target funds in this area.

A major update/revision of the state's Strategic Highway Safety Plan took place in 2005. In order to involve stakeholders in the development process, CTDOT, working in cooperation with the FHWA, designated several emphasis groups to work on areas of the plan, including Work Zone Safety, Driver Behavior, Motorcycle Safety, and Pedestrian and Bicycle Safety.

These emphasis groups met at an FHWA-sponsored safety summit to review the provisions of the existing safety plan and revise them to include new strategies for achieving updated safety goals. The result of this process was the revised CT DOT Comprehensive Safety Plan, adopted in 2006.

In addition, after the Safety Plan was adopted, the Pedestrian and Bicycle Safety emphasis group continued to meet to further review and analyze the proposed safety strategies and to examine issues and obstacles to implementation of those strategies that might arise within the existing organizational structure at CTDOT. Two of the results of these efforts were 1) the further development and refinement of the safety-related goals and objectives contained in the Comprehensive Plan in order to facilitate continuing improvement in safety performance, and 2) identification of the state driver manual as a key element of driver education. In response to Item 2, the group undertook to revise the text of the manual as it related to bicycles and pedestrians. This effort was completed in 2007, and a new manual published by the by the Motor Vehicle Department in 2009 which included the revised text.

Many of the stakeholders in the Pedestrian and Bicycle and Pedestrian Safety emphasis group who collaborated on this effort were members of the CTDOT Bicycle and Pedestrian Advisory Committee which was established in 2003 to identify issues of concern to the state's bicycle and pedestrian stakeholders and attempt to promote innovative approaches and solutions to these issues. This Advisory Committee was instrumental in providing the individuals needed to staff a Steering Committee to assist with the development of the 2009 Bicycle and Pedestrian Transportation Plan. The Steering Committee, which included approximately 35 individuals, met on a regular basis and provided support to the project by reviewing the activities of the consultant and providing relevant information and guidance.

CT DEP's 2005 Connecticut Recreational Trails Plan

The CT DEP's *2005 Connecticut Recreational Trails Plan* examines the existing statewide trail network and provides a detailed list of goals and objectives for the grant program. In addition to having a clear set of goals and objectives, this plan includes information on the trail system, priority projects, and an overall listing of the available greenway and trails maps. The *Connecticut Recreational Trails Plan* gives priority ranking to national and local trails projects. Projects with national significance, such as the East Coast Greenway, are given the highest priority, while local projects have the lower priority.

CT DEP's 2001 Pathways Through Connecticut, A Transportation Guide to Multi-Use Trails

CT DEP's 2001 *Pathways through Connecticut, A Transportation Guide to Multi-Use Trails, was* the first statewide guidebook developed for multi-use trails. Each trail entry includes directions to the trail, a locational map within each town, recommended activities as well as notes on train length, surface type, and access points. This guidebook allows users to consider using alternative modes of transportation by illustrating that multi-use trails are available close to where they live. It also helps to promote overall public health benefits by encouraging exercise through biking, hiking, rollerblading, or walking.

The Connecticut Greenways Council is an organization whose members are appointed by the Governor and the leaders of the General Assembly. The duties of the Council include assisting state agencies, municipalities, regional planning organizations, and private citizens in planning and implementing greenways in Connecticut. In addition, The Connecticut Greenways Council publishes a map of designated greenways in the state; the most recent version was published in 2008 and is entitled *Officially Designated Greenways*. State greenways are typically open space corridors such as a river valleys or railroad rights-

of-way and may contain a trail for non-motorized public use. It should be noted, however, that not all greenways have trails located on them.

2005 - 2010 Conservation and Development Policies Plan for Connecticut (C & D Plan)

The *2005 – 2010 Conservation and Development Policies Plan for Connecticut (C&D Plan)*, developed by the Office of Policy and Management (OPM), documents the development, resource management, and public investment policies of the State. It identifies a policy to "promote compact, transit-accessible, pedestrian-oriented, mixed-use development patterns around public transportation stations and along public transportation corridors." Specifically, the plan calls to:

- Provide a network of pedestrian and bicycle paths and greenways that are safe and provide convenient access to the transit system;
- Accommodate bike transport or provide appropriate storage facilities at transit stations; and
- Promote vehicle operator awareness programs pertaining to bicycle and pedestrian safety around transit corridors.

This policy is one of many that set the context for state agencies to implement their plans and actions. Other state agencies must consider and be consistent with the policies outlined in the C&D Plan. In addition, the Plan is used as a framework for evaluating plans and proposals submitted to OPM for review through mandated review processes. In addition to a statewide *C&D Plan*, regional planning organizations and municipalities develop their own plans of conservation and development (POCD) that must be compatible with the statewide plan.

While the statewide *C&D Plan* provides a clear standard for pedestrian and bicycle mobility near transit stations, it has limited jurisdiction in other areas, namely on state and local roadways.

Regional Planning Organizations Plans

RPOs are quasi-governmental organizations that are made up of representatives of local governments all located within a geographic area. RPOs typically provide transportation and land use planning services to their member towns. There are 15 RPOs in Connecticut. In Connecticut and elsewhere, there are a number of methods that RPOs can incorporate bicycle and pedestrian planning into their services. The various methods are described below:

Three RPOs have stand-alone, regional bicycle and pedestrian plans, including:

- Capital Region Council of Governments, *Regional Pedestrian and Bicycle Plan, The CRCOG Commitment to a Walkable Bikable Region*, March 2008.
- Central Connecticut Regional Planning Agency, *Central Connecticut Plan for Alternative Transportation and Health*, July 2005.
- South Central Regional Council of Governments, *South Central Regional Bicycle and Pedestrian Plan*, June 2007.

Five RPOs have individual bicycle plans for their region, including:

- Council of Government for the Central Naugatuck Valley (COGCNV), *Regional Bicycle Plan*, 1994.
- Greater Bridgeport Regional Planning Agency (GBRPA), *Regional Bicycle Safety Assessment and Update of the Regional Bicycle Plan for the Greater Bridgeport Planning Region,* December 2007.
- Housatonic Valley Council of Elected Officials (HVCEO), *Regional Concept Plan for Bike Route Development*, August 1996.

- Litchfield Hills Council of Elected Officials (LHCEO), *Improving Opportunities for Bicycling in the Litchfield Hills Region,* September 1994.

- Midstate Regional Planning Agency (RPA), *A Bicycle Plan for the Midstate Planning Region,* September 1994.

In addition, GBPRA completed a pedestrian plan, Pedestrian Safety Assessment and Plan for the Greater Bridgeport Planning Region, in December 2007.

Bicycle and pedestrian modes are included as alternative modes in the long-range regional transportation plans (RTPs) developed by the RPOs. RTPs could include a detailed bicycle and pedestrian transportation section that acts as a plan, complete with maps of the existing network and proposed improvements. Or, the RTP could include much more general information. The South Central Regional Council of Governments (SCRCOG) RTP and the Housatonic Valley Council of Elected Officials RTP reference their adopted bicycle/pedestrian plans in their RTPs as the resource for those facilities and proposed improvements. Regional planning agencies that include bicycle and pedestrian components in their RTPs include:

- Capital Region Council of Governments (CRCOG), *Capital Region Transportation Plan, A Guide for Investments Through the Year 2035*, April 2007.

- Central Connecticut Regional Planning Agency (CCRPA), *Long Range Transportation Plan 2007-2037*, May 2007.

- Connecticut River Estuary RPA (CRERPA), *2007-2035 Regional Transportation Plan*, 2007.

- Council of Government for the Central Naugatuck Valley (COGCNV), *Long Range Regional Transportation Plan: 2007-2035*, July 2007.

- GBRPA, Long Range Regional Transportation Plan: 2007-2035, May 2007.

- HVCEO, 2007-2035 Regional Transportation Plan, April 2007.

- LHCEO, *Litchfield Hills Regional Transportation Plan*, January 2005.

- Midstate RPA*, 2007-2035 Regional Transportation Plan*, May 2007.

- SCRCOG, *South Central Regional Long Range Transportation Plan*, May 2007.

- Southeastern Connecticut Council of Governments (SCCOG), *Regional Transportation Plan FY2007-2035,* April 2007.

- South Western Region Metropolitan Planning Organization (SWRPA), *Long Range Transportation Plan 2007-2035,* May 2007.

- Valley Council of Governments (VCOG), *Long Range Regional Transportation Plan Update 2007-2035*, March 2007.

- Windham Region Council of Governments (WINCOG), *Regional Transportation Plan 2005,* 2005.

Table 1 includes a comparison of topics that are addressed in the RPO plans.

All RPO plans specify needed bicycle and pedestrian improvements within their region. In addition, representatives of each region described their most critical needs for bicycle and pedestrian improvements during individual outreach meetings that occurred during the development of this Plan. Many of their priorities are not only regional, but also statewide. For example, a number of RPOs cite a cross-state, multi-use trail as their number one improvement. The bicycle and pedestrian priorities for each region are discussed in Chapter Six.

Table 1: Inclusions in Connecticut Regional Planning Agency Plans

Topic	CRCOG RTP & Bike / Ped Plan	CCRPA RTP & Altern Transp Plan	SCRCOG RTP & Bike/Ped Plan	COGCNV RTP & Bike Plan	GBRPA RTP, Bike, & Ped Plan	HVCEO RTP & Bike Plan	LHCEO RTP & Bike Plan	Midstate Bike Plan	CRERPA RTP	Midstae RTP	SECCOG RTP	SWRPA RTP	VCOG RTP	WINCOG RTP
General														
Benefits of Walking/Bicycling	X	X		X						X		X		
Bicycling & Walking Trends	X	X		X		X	X							X
History/Context	X	X		X	X	X	X	X		X	X			X
Vision, Goals, and/or Objectives	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Existing Conditions														
Facility Inventory & Evaluation	X	X	X	X	X		X		X			X		X
Safety Analysis	X	X	X											
Collision/Crash Analysis		X	X											
Needs Analysis	X	X	X		X							X		
Attractors & Generators		X	X			X	X	X						
Challenges & Opportunities	X	X	X	X		X	X				X	X		
Practices & Policies														
Previous Regional Planning Efforts		X			X									X
Existing Policies & Law	X	X			X	X	X		X		X			X
Benchmark/Performance Standards	X						X	X						
Public Involvement Process/Stakeholder Input	X	X	X			X	X	X						
Proposed Bicycle & Pedestrian System														
Bicycle System	X	X	X	X	X	X	X	X		X	X	X	X	
Pedestrian System	X	X	X		X						X	X		
Multi-Use Trails	X	X	X		X	X	X	X	X		X	X	X	X
Bicycle Suitability Model/Criteria														
Priority Ranking of Projects/Selection Criteria		X	X	X	X							X		
Design Standards														
Restriping Roads with Bike Lanes		X	X	X				X	X	X				
Shoulder path design		X		X	X	X	X		X	X			X	X
Shared-use Path Design		X			X									
Wide Curb Lane Design		X			X					X				
Intersection Designs		X	X		X					X		X		
Signals, Signing and Marking		X		X	X	X	X	X		X		X		
ADA, AASHTO, MUTCD		X	X		X	X								
Lockers, Maps, Bike Parking/Racks, etc.		X	X	X	X		X	X		X		X		
Planning & Design Checklist														
Implementation														
Roles & Responsibilities	X		X		X	X						X		
Operation & Maintenance			X	X	X	X	X		X					
Potential Funding Sources/Strategies		X	X		X		X	X	X	X		X	X	X
Education & Training	X	X	X	X	X	X	X			X		X		
Enforcement	X		X		X	X				X				
Recommended Policies, Procedures & Practices														
Promotion of Livable Communities/Healthy Living	X	X	X									X		
Promotion of Environmental Stewardship	X	X										X		
Traffic Calming		X	X		X									

Municipal Plans

As stated earlier, every municipality in the state is required to develop a Plan of Conservation and Development (POCDs) and update the POCD every ten years. POCDs must address a variety of specific issues related to land use and transportation. Many municipalities specifically address bicycle and pedestrian mobility as part of a transportation component of the POCD. For example, the Guilford POCD (2002) cites:

- "Greater attention must be paid to methods to slow down traffic and encourage other forms of transportation such as walking or bicycling.
- The continued installation of sidewalks in appropriated locations of Route 1 should be considered.
- Traffic control and traffic calming improvements are needed to make the Green and Town Center more congenial to pedestrians.
- Additional walkways and sidewalks in the Town Center should be provided to encourage walking".

A limited number of cities and towns in Connecticut have developed individual bicycle and pedestrian plans. For example, New Haven has developed a *Plan for Greenways & Cycling Systems, New Haven, Connecticut* (April, 2004). This plan proposes a system of greenways and multi-purpose, non-motorized trails in New Haven, and also focuses on the Farmington Canal Heritage Trail, the Fair Haven Greenway, the Harborside Greenway, and the West River Greenway. In addition, the City of New Haven has an on-street bike map available. Other examples of municipalities with bicycle and pedestrian plans include:

- Town of Greenwich, *Greenwich Bicycle Master Plan*, October 2001.
- West Hartford, *West Hartford Master Bike Plan*, 2008.
- Town of Glastonbury, *Glastonbury Master Bicycle Plan*, 2006.

Advocacy Organizations

There are a number of non-profit advocacy organizations that 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 cyclists' and motorists' awareness of their rights and responsibilities on roadways. These groups include:

- Central Connecticut Bicycle Alliance (CCBA);
- Sound Cyclist Bicycle Club (SCBC) in southwest Connecticut;
- Elm City Cycling;
- Farmington Canal Rail to Trail Association;
- CT Greenway Alliance;
- Thread City Cyclers, and
- Connecticut Bicycle Coalition.

Another group, the Regional Plan Association is a not-for-profit regional planning organization that works to improve the quality of life and the economic competitiveness of the 31-county New York-New Jersey-Connecticut region through research, planning, and advocacy. The Regional Plan Association strongly supports and advocates for better bicycle and pedestrian transportation. Finally, the Tri-State Transportation Campaign is a non-profit organization that works for a more balanced, transit-friendly and equitable transportation system in New York, New Jersey, and Connecticut. The Regional Plan Association and Tri-State Transportation Campaign each targets

specific issues in the general New York, New Jersey and Connecticut area.

The Connecticut Horse Council, Inc. represents the voice of the horse industry in governmental issues. The group monitors and pursues local, state, and federal regulations and legislation. In addition, its members were involved with the passage of state statutes which protect equestrians on roadways, the passage of the equine limited liability law, and the creation of a state Equine Advisory Council.

Special Interest Documents and Maps

There are also groups that have been organized to focus on the development of certain bicycle trails and paths in the State. Two specific groups, the East Coast Greenway Alliance and the Farmington Valley Trail Council have developed trail maps to document their existing and proposed routes through Connecticut. The East Coast Greenway is a proposed trail system, spanning nearly 3,000 miles between Canada and Key West, Florida which links all the major cities of the eastern seaboard. Currently over 21 percent of the route is already on safe, traffic-free paths. The East Coast Greenway map identifies which links of the trail are complete, in design, under construction, or not yet identified in Connecticut. The Farmington Canal Heritage Trail and the Farmington River Trail are off-road, multi-purpose paths located along the Farmington River and Farmington Rail Trail Corridor. Figure 1 displays the East Coast Greenway map of the proposed routes through Connecticut. Figure 2 displays the Farmington Valley Greenway and River Trail Map. Information is provided describing their respective surfaces: paved, stonedust, or unfinished.

Another group focusing on developing a linear trail in Connecticut is the Merritt Parkway Trail Alliance. The Merritt Parkway Trail Alliance is a group of organizations and individuals who advocate the creation of a safe continuous non-motorized trail along the entire 37.5 mile length of the Merritt Parkway. In 1994 a study of this initiative, the *Merritt Parkway Trail Study: Preliminary Feasibility Study* of the Potential for Bicycle and Pedestrian Paths, was undertaken. The Study examined the physical characteristics, adjacent land use, and potential for trail use in this state highway corridor. The study suggests development of at least one demonstration trail per town within the corridor. Recently demonstration plans for a short segment on the corridor have been under consideration by CTDOT; recent construction plans, including the Route 7/Merritt Parkway interchange have included considerations for future trail development.

Bicycle and Pedestrian Planning in Other States

To assure the development of a Plan which is balanced and relevant, the Study Team completed a review of other states' bicycle and pedestrian planning efforts. The review focused particularly on these states' goals, action strategies, and implementation options.

Table 2 provides a comparison of bicycle and pedestrian plans from other states with that of Connecticut. In addition, Table 3 provides a comparison of inclusions of various bicycle and pedestrian maps from Connecticut and other regions and states. These tables provide some indication of the diversity that exists among the planning documents developed by different states.

In addition, seven states were selected for comparison using a detailed benchmarking analysis to review how Connecticut compared when planning, prioritizing, and funding bicycle and pedestrian programs and improvements. The process examined bicycle and pedestrian plans, policies, maps, funding mechanisms, and design guidelines in four neighboring states and three state-of-the-art states. The four neighboring states included Massachusetts, New York, Vermont, and Rhode Island. The three state-of-the-art states reviewed were New Jersey, Wisconsin, and Oregon. The selected states represent a mix of locations around the U.S, and include large states

Figure 1: East Coast Greenway CT Map

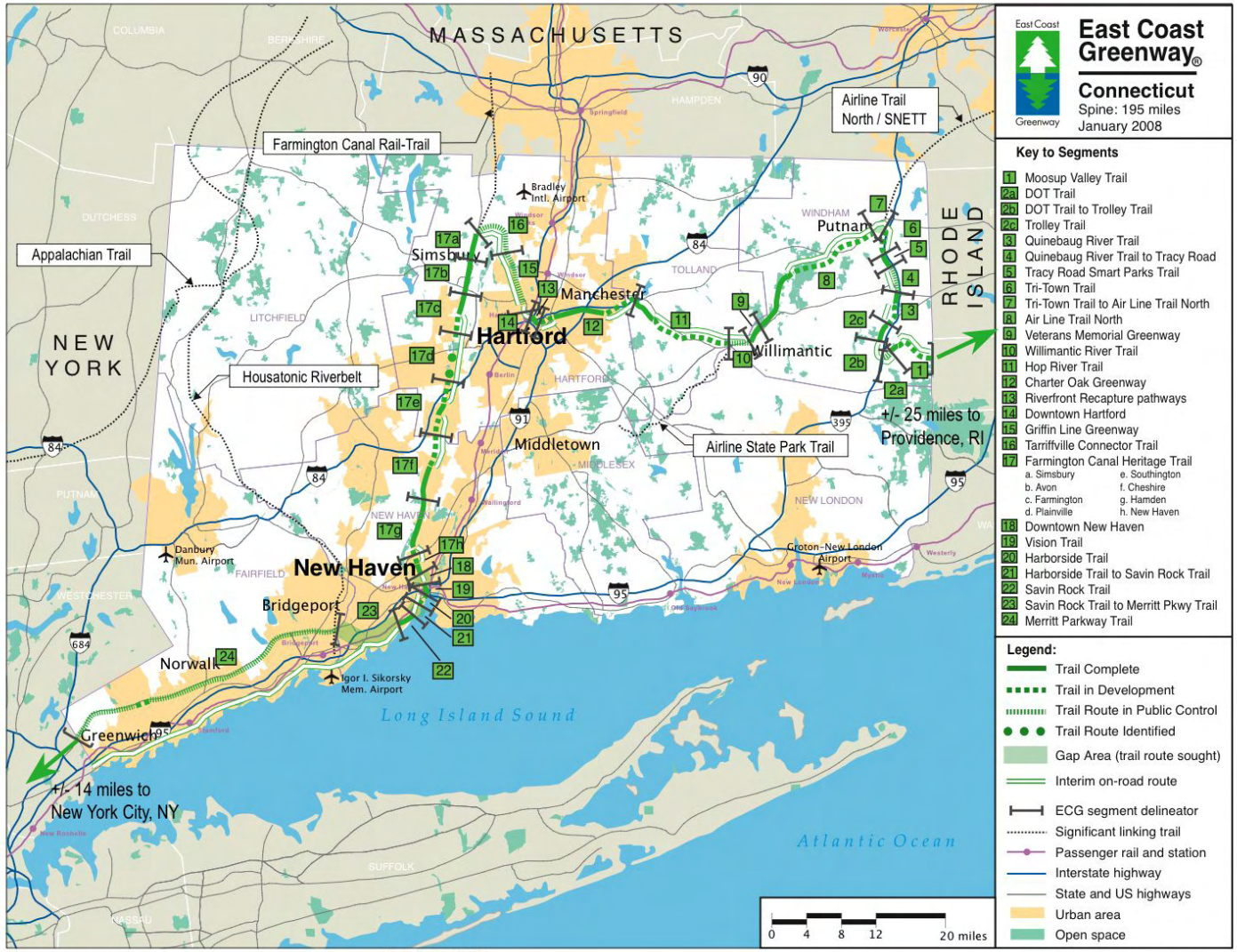
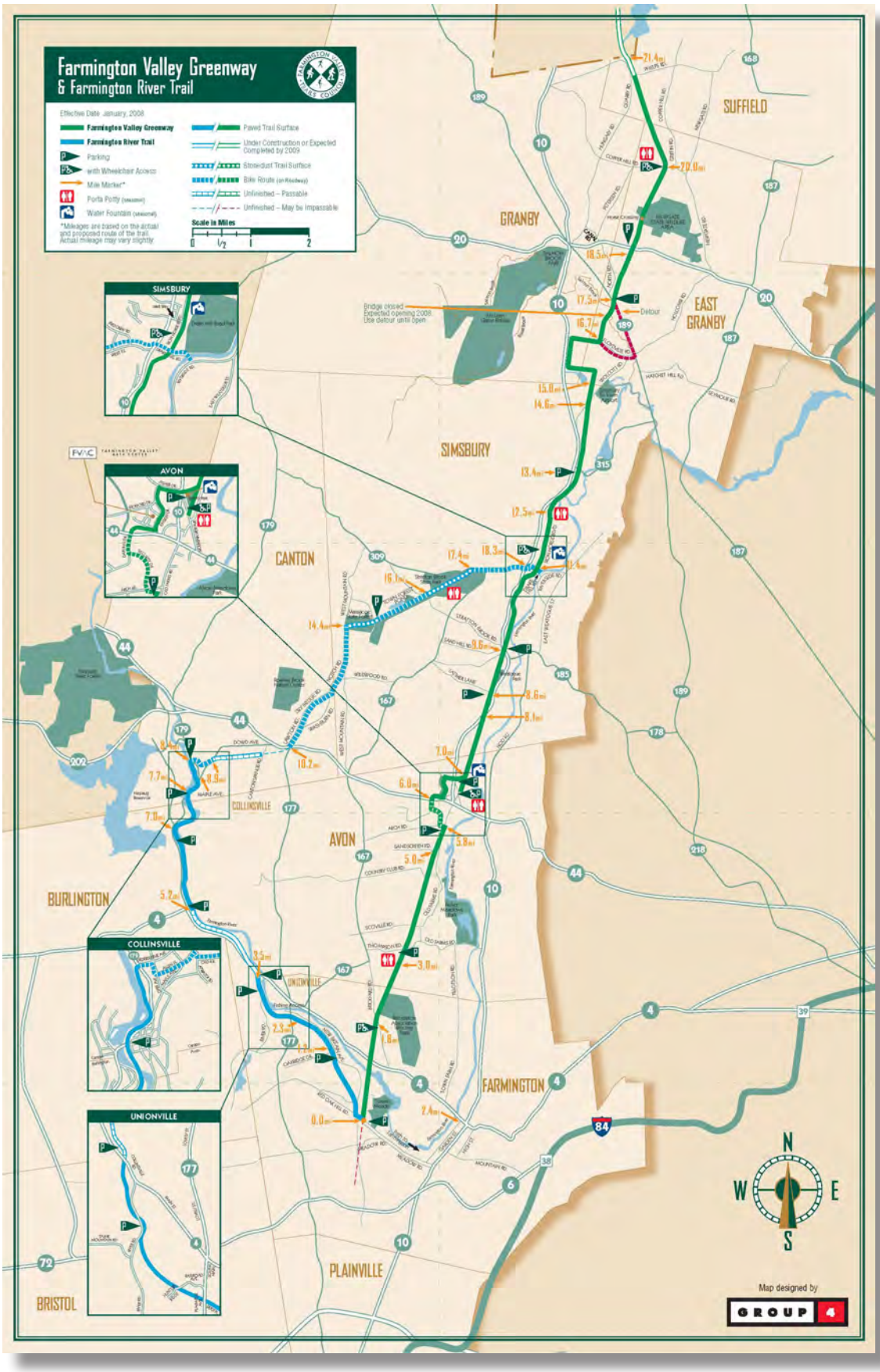


Figure 2. Farmington Valley Greenway and Farmington River Trail Map



Source: Farmington Valley Trail Council

Table 2: Inclusions of Various Statewide Bicycle and Pedestrian Plans

Topic	FL	VT (1998)	TN (2005)	NH (2000)	NJ (2004)	OR (1995)	NV (2003)	WI (1998)	MA (2007)	MI (2007)	AZ (2003)	CT (1999)
General												
Benefits of Walking/Bicycling	X	X	X			X	X	X				
Bicycling & Walking Trends			X			X		X				
History/Context		X	X	X	X	X	X	X	X			
Vision		X			X	X	X	X		X	X	X
Principles, Goals & Objectives		X	X	X	X	X	X	X			X	
Bibliography/Supporting Documents	X	X	X		X	X					X	
Definition of Terms	X			X	X	X		X		X	X	X
Glossary of Acronyms	X	X	X	X	X	X						
Existing Conditions												
Facility Inventory & Evaluation			X		X	X		X	X		X	
Safety Analysis	X		X	X		X	X	X				X
Collision/Crash Analysis	X		X			X	X	X			X	X
Needs Analysis		X	X		X		X					
Attractors & Generators			X		X							
Challenges & Opportunities		X							X			
Practices & Policies												
Previous State & Regional Planning Efforts			X		X	X		X	X	X	X	X
Existing State Policies & Law		X	X	X		X		X	X	X	X	X
Benchmark/Performance Standards			X		X	X			X	X		
Public Involvement Process/Stakeholder Input	X	X	X	X	X	X	X	X	X	X	X	
Proposed Bicycle & Pedestrian System												
Bicycle System			X						X		X	X
Pedestrian System			X								X	X
Bicycle Suitability Model/Criteria			X	X	X		X			X	X	
Priority Ranking of Projects/Selection Criteria	X				X	X			X	X	X	
Design Standards												
Restriping Roads with Bike Lanes	X		X			X	X	X		X	X	X
Shoulder path design	X		X			X	X	X		X	X	X
Shared-use Path Design	X		X			X	X	X		X	X	X
Wide Curb Lane Design	X		X			X		X		X	X	X
Intersection Designs	X		X			X				X	X	X
Signals, Signing and Marking	X		X			X	X		X	X	X	X
ADA, AASHTO, MUTCD	X		X			X	X	X	X	X	X	X
Lockers, Maps, Bike Parking/Racks, etc.	X		X			X	X			X	X	
Planning & Design Checklist	X									X		
Implementation												
Roles & Responsibilities		X	X	X	X	X	X	X		X		
Operation & Maintenance	X	X	X	X		X			X	X	X	
Potential Funding Sources/Strategies		X	X	X	X	X	X	X	X	X	X	X
Education & Training	X	X	X		X	X	X	X	X	X	X	
Enforcement	X		X	X	X	X	X	X				
Recommended Policies, Procedures & Practices												
Promotion of Livable Communities	X	X	X	X	X	X	X	X	X	X	X	
Promotion of Environmental Stewardship	X	X	X	X	X	X	X	X	X	X	X	
Traffic Calming	X	X	X			X				X		

Table 3: Inclusions of Various Bicycle and Pedestrian Maps

Topic	Mary-land	Phila-delphia Region (2003)	NYC (2002)	NYC (2008)	Erie Canal (2007)	RI (2005)	Port-land, OR (2008)	Mon-treal, QC (2005)	Lakes Region, NH (2008)	Chicago (2007)	TN (2005)	CT (2002)
Scope of Map												
Region / City Insets	X	X	X	X	X	X	X	X	X	X		X
Linear Route Maps					X	X			X			
Type of Paper	Regular	Water-proof	Regular	Regular	Spiral Book	Water-proof						Regular
Bicycle Routes												
Bike Lanes			X	X			X	X		X		
Off-Road Trails	X	X	X	X	X	X	X	X	X	X		
Insets of Bridge Facilities			X	X								X
Recommended Routes	X	X	X	X	X	X	X	X	X	X	X	X
Type of Recommended Route	Signed Bicycle Routes	By Ability Level	Recom-mended On-Street Routes	Signed On-Street Routes	Recom-mended Linear Route	Suitability	Traffic Level, Road Width, Obstacles	Signed Shared Lane	Recom-mended Paved & Unpaved	Recom-mended Routes and Future Improv.	Traffic Level and Road Width	Cross-State and Loop
Loop / Scenic Routes					X				X		X	X
Unsafe Routes / Advanced Riders Only			X		X		X		X	X	X	X
Steep Grades / Recom-mended Direction						X	X		X			
Prohibited Areas	X					X					X	
East Coast Greenway	X				N/A		N/A	N/A	N/A	N/A	N/A	X
Signed / Marked Bicycle Routes in Field	X	X	X	X	X		X	X		X		
Signage Examples			X	X								
Proposed Facilities												
Proposed Bike Lanes												
Proposed Off-Road Trails		X	X	X		X						
Proposed Routes				X							X	
Bicycles on Transit												
Commuter Rail Routes	X	X	X	X	N/A	X	N/A	X	X	X	N/A	X
Light Rail / Subway Routes	X	X	X	X	N/A	N/A	X	X	N/A	X	N/A	N/A
Bus Bike Racks		X	X	X	N/A	X						X
Instructions for Transit Use	X	X	X	X	N/A	X						
Services												
Bicycle Shops		X	X	X	X		X			X		
Bicycle Parking / Lockers		X								X		
Restrooms					X	X						
Parks & Other Recreational Facilities	X	X	X	X	X	X		X	X	X	X	X
Bicycle Regulations												
Helmet Laws	X		X	X	X				X			X
Required Equipment			X	X	X				X			
Night Riding	X		X	X	X	X			X			X
Other Laws			X	X	X				X			X
Safety Tips			X	X	X	X						X

and small states, as well as a combination of very aggressive and more modest programs.

New York, Massachusetts, Vermont, and Rhode Island were all selected because of their proximity to Connecticut and because each state program has its own unique elements. Massachusetts recently updated its design manual which has since become a model document for "Complete Streets" style development, which promotes bicycling and walking. New York has had an extensive statewide bicycle route network for over a decade, which could serve as a good model for Connecticut. Rhode Island has focused on the development of a statewide system of multi-use paths, while Vermont places their emphasis on local projects which will enhance quality of life.

Of the state-of-the-art states, Oregon has been a leader in bicycle and pedestrian planning for a number of decades. The Oregon Bicycle and Pedestrian Plan is over 20 years old and still continues to be cited as a model for other states developing bicycle and pedestrian plans. Wisconsin has separate plans for bicycles and pedestrians and has developed a strong regional approach to planning. New Jersey recently established a dedicated fund to improve pedestrian safety across the state.

The benchmarking analysis revealed a number of factors, including:

- New Jersey, Vermont, and Oregon have particularly well developed policy statutes related to bicycle and pedestrian efforts.
- Massachusetts recently redesigned their Highway Design Manual and it has become a model example for Complete Streets language.
- Most of the states have a sidewalk policy as part of their Highway Design Manual that outlines design specifics and exceptions to the policy.
- Most policies seem to incorporate transportation-based considerations.
- Many of the states have established active Bicycle and Pedestrian Advisory Council to assist the development of their policy.
- Nearly all of the states interviewed have developed their own bicycle and pedestrian design guidelines.
- The number of staff committed to bicycle and pedestrian efforts ranged from one to five.
- Every state except one with a plan indicated that performance measures and regional tasks are included as part of the overall mission.
- Most plans are not updated on a regular basis.
- New Jersey and Oregon are the only two states interviewed that have dedicated funding sources.
- The percentage of funds spent on bicycle and pedestrian projects varied widely.

Each state benchmarked in this analysis highlights opportunities for Connecticut to further advance bicycle and pedestrian planning initiatives. For example, Massachusetts can be looked as a great example of formally incorporating a Complete Streets approach to road design and maintenance. Complete Streets is defined as a situation where roads are **designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.** An adoption of a Complete Streets policy and the inclusion of such measures in the Highway Design Manual would be a significant first step to more comprehensive bicycle and pedes-

trian planning. Looking at Oregon, CTDOT could include more specific performance measures in the updated Bicycle and Pedestrian Plan with a minimum dedicated funding source to insure that the performance measures are met.

In addition, there are opportunities for improved interagency cooperation. Transportation performance measures could be linked to health and safety and environmental measures and increased bicycling and walking can help to achieve both of those goals. The Bicycle and Pedestrian Plan could be updated on a regular basis to insure that performance measures are being met and updated. CTDOT views this current updates as an opportunity to take a significant step forward to become a leader in bicycle and pedestrian accommodation.

Appendix E includes a detailed summary of the benchmarking analysis.