One City, One Plan

Transportation & Circulation

Chapter 8

KEY TOPICS

- Travel Patterns
- Roadways
- Bus Transit
- Railway
- Airports
- Pedestrian & Bicycle Environment
- Comprehensive Transportation Planning Efforts
- Goals & Objectives

DRAFT 2/1/10

Introduction

Transportation plays a critical role in One City, One Plan. Transportation themes thread through the goals of the plan to promote livable and sustainable neighborhoods, enhance mobility through transit, pedestrian and bike systems city-wide and by advancing downtown's role as the regions center for commerce, culture and city living. Further, the proposed railway and pedestrian plans promote and encourage the integration of sustainable practice in and around the city.

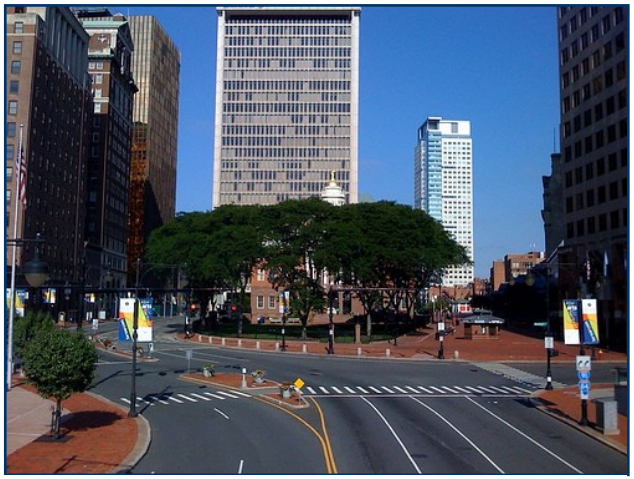
A safe, efficient, flexible and economically viable transportation system is essential to ensure that the City of Hartford can continue to grow and prosper. This system, comprised of a surface transportation network of highways, streets, walkways, greenways, bikeways, and mass transit, and proximity to Bradley International Airport is the basis for its expanding role.

One of Hartford's major goals for its transportation system is to reduce reliance on automobiles. This entails working across many different spheres to make it enjoyable, more convenient and less expensive to use other modes of transportation besides private cars for a variety of trips. Housing, urban design, transit, economic development, and parking policy all play a role in accomplishing this goal.

This plan draws from the work of previous studies by the City of Hartford, Connecticut Department of Transportation (ConnDOT), Connecticut Department of Environmental Protection, Natural Resources Conservation Service, Capitol Region Council of Governments, CT Transit and others. The challenge for the next ten years is to incorporate these planning efforts and ideas into one comprehensive strategy for the city. One such component included in this plan is called The Hartford Transportations Pathway Strategy which incorporates the plans in and around Union Station into one strategy. Studies and initiatives examined as background in the preparation of this section include:

- Hartford Traffic Control System Upgrades
- Hartford 2010
- Hartford I-84 Viaduct Study (HUB of Hartford)
- ConnDOT 2007 Master Plan
- New Britain– Hartford Busway Project
- Northwest Corridor Study
- New Haven– Harford—Springfield (NHHS) Commuter Rail project
- East Coast Greenway Plan and Bicycle Plan
- Capitol Region Council of Government (CRCOG) Regional Pedestrian & Bicycle Plan
- Capitol Region Council of Government (CRCOG) Regional Plan of Conservation and Development
- Downtown Circulation Study
- Union Station Planning Project
- Traffic Calming Studies
- Streetscape Projects

Capitol Ave with Capitol Building in Background



State House Square

Journey to Work- Destination of Hartford Resident Workers

Hartford	18,252	44.5%
7 Adjacent Towns (detailed distribution below)	10,986	26.8%
Bloomfield	***1,395***	***3.4%***
East Hartford	***1,928***	***4.7%***
Newington	***1,462***	***3.6%***
South Windsor	***605***	***1.5%***
West Hartford	***3,415***	***8.3%***
Wethersfield	***879***	***2.1%***
Windsor	***1,302***	***3.2%***
Balance of Hartford County	9,172	22.4%
Balance of CT	2,107	5.1%
Massachusetts	164	0.4%
Other Out of State	328	0.8%
TOTAL	**41,009**	

Source: U.S. Census Bureau, 2000; compiled by HMA.

Journey to Work- Origin of Commuters into Hartford

Hartford	18,252	17.1%
7 Adjacent Towns (detailed distribution below)	28,735	26.9%
Bloomfield	***2,730***	***2.6%***
East Hartford	***4,859***	***4.5%***
Newington	***3,342***	***3.1%***
South Windsor	***2,619***	***2.5%***
West Hartford	***8,116***	***7.6%***
Wethersfield	***3,576***	***3.3%***
Windsor	***3,493***	***3.3%***
Balance of Hartford County	30,905	28.9%
Balance of CT	24,572	23.0%
Massachusetts	3,290	3.1%
Other Out of State	1,115	1.0%
TOTAL	**106,869**	

Source: U.S. Census Bureau, 2000; compiled by HMA.

Travel Patterns

Hartford's transportation system is used by its residents, workers, and visitors every single day of the year. Travel patterns vary according to the type of trip being taken, the time of day, the time of year (seasonal variations), and the mode being used. For example, an individual may carpool to work during the weekdays, drive alone to the grocery store in the evening, walk with the kids to the park on the weekend, and take the bus to dinner and a movie Downtown on Saturday night. Understanding the public's purposes and preferences for travel helps to shape the kind of system that works best for Hartford.

Journey to Work

The most well-studied travel pattern is the "Journey to Work," for which data is provided by the United States Census Bureau. Analysis of this data helps us to understand the general traffic flows into and out of Hartford's communities generated by daily trips to and from the workplace.

According to the 2000 Census, the City of Hartford has an estimated 41,009 resident workers, of whom 18,252 (44.5%) are employed within the City itself. The remaining 22,757 workers (55.5%) commute to jobs outside of Hartford. Hartford residents are somewhat reliant upon jobs within the City itself for employment, as well as in the metropolitan area in general. In fact, 71.3% of Hartford's resident workforce works in either Hartford or an adjacent municipality. Fewer than 7% of Hartford resident workers commute out of Hartford County for work. Many employed residents of Hartford are likely to have short commuting distances to and from their workplace. Other important employment destinations for Hartford workers include West Hartford (3,415 workers), East Hartford (1,928 workers), Newington (1,462 workers), and Bloomfield (1,395 workers).

According to Census data, an estimated 88,617 workers commute into Hartford for employment daily, in addition to the 18,252 workers mentioned previously who both reside and work within the City. Commuters into Hartford come from a wider range of communities than are represented as destinations for Hartford resident workers; while fewer than 7% of Hartford workers left the county, over 27% of commuters into Hartford came from outside Hartford county. A substantial percentage of commuters into Hartford came from West Hartford (7.6%), Manchester (4.6%), East Hartford (4.5%, Wethersfield (3.3%), and Winsor (3.3%). The accompanying table shows a summary of the origin of commuters into Hartford.

Seventy-three percent of Hartford workers commute to and from work by car. In fact, of the 29,830 residents who commute by car, over 78% drive alone. Over 7,600 (16.4%) of Hartford workers commute to work by public transportation and an additional 2,374 (5.8%) walk to

work. According to the CRCOG Transportation Plan for 2035, nearly 8% of all Hartford workers currently commute by bus. Hartford workers in the City's Central Business District (CBD) rely heavily on bus transportation, with 14.4% of all workers in the CBD commuting by bus.

These figures indicate that single occupancy vehicles are the preferred method of transportation to and from work for the vast majority of Hartford's workers. Less expensive, more environmentally sound methods of transportation such as taking the bus, walking, or riding a bicycle remain less attractive to workers, perhaps due to a lower level of convenience, an increased commitment of time and effort, or real and perceived safety issues.

Roadways

The City of Hartford serves as a transportation hub between Boston and New York. It is well positioned from a surface transportation standpoint as the convergence of many interstate and state routes, including I-91 and I-84 and Connecticut routes 4, 5 and 15. These roadways serve those traveling within, to and from, and through Hartford.

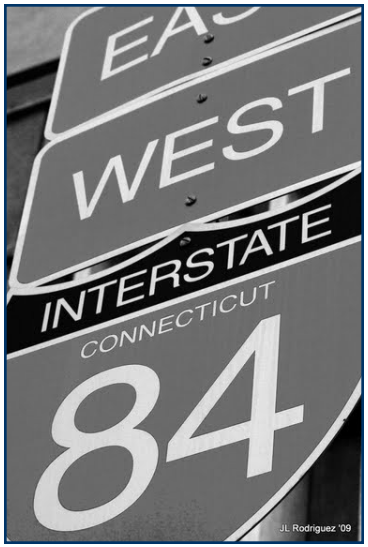
In addition to these larger roadways, Hartford is greatly impacted by the arrangement of its smaller streets. The loose gridiron arrangement of the majority of Hartford's streets provides a strong web of connections. The roadways may accommodate motorized and non-motorized vehicles as well as people traveling by foot. Various roadways have different purposes, and as such are designed and operated differently.

Roadways have different owners and thus are subject to different regulations. According to the Connecticut Department of Transportation, as of 2006, the City of Hartford was served by 225.9 miles of public roads, 91.5% percent of which are City roads (206.6 miles) and the balance of which (8.5%) are State Roads. City roads must be designed to City standards, and are maintained by the City, whereas State roads follow state standards of design and maintenance.

Functional Classification of Roadways

Roadways are further classified based on traffic volumes, accessibility and function. Functional classification is important because it determines how a roadway is designed, including design speed, lane width, shoulder width, and median design, among other things. Road functions can change over time as land use changes, so it is important to reclassify roadways when necessary to ensure that they function property in their current environments. It should be noted that roadways classification is based on and geared toward motorized vehicular use of the roadway, and does not take into account non-motorized and pedestrian usage.

The State DOT has identified six different levels of roadway classifications in the City of Hartford



I-84 is one of Hartford's two Principal Arterial-Interstate roadways.

Functional Classification Systems

Arterial– Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.

Collector– Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.

Local– Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

Level of Service	Description
A	Free flow with low volumes and high speeds.
B	Reasonably free flow, but speeds beginning to be restricted by traffic conditions.
C	In stable flow zone, but most drivers are restricted in the freedom to select their own speeds.
D	Approaching unstable flow; drivers have little freedom to select their own speeds.
E	Unstable flow; may be short stoppages
F	Unacceptable congestion; stop-and-go; forced flow.

Level of Service Characteristics

Urban & Suburban	Highway Type
C	Freeway
C	Arterial
D	Collector
D	Local

AASHTO Guide for selection of Design Level of Service

Main Street is classified as a Principal Arterial

based on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow: Principal Arterial – Interstate, Principal Arterial – Other, Principal Arterial – Expressway, Minor Arterial, Collector and Local Road. In some cases, the actual classification of a road may change along its length or may operate differently than its assigned functional classification.

Principal Arterial – Interstate

This is the highest functional roadway classification in Hartford, providing limited-access, multi-lane, high volume, high capacity facilities intended to provide for and accommodate high speed travel, over long distances with relatively few points of access to the local street system. Hartford's north/south and east/west link to the interstate highway system , which is classified as a principal arterial, is among the best available in Connecticut.

Principal Arterial – Expressway

Hartford's second highest functional roadway classification is similar in many ways to Interstate Arterials, without the interstate designation. Within Hartford, Route 5 and a short section of Route 4 receive this classification.

Principal Arterial – Other

This roadway type connects major development and activity centers within Hartford to each other as well as to activity centers in other towns and to accessible expressways. To maintain the road's thru traffic carrying capacity and higher design speeds, this road type would ideally provide a more restrictive level of access control to adjacent land uses than do other roads in the City. The Principal Arterial–Other roadways within Hartford are Route 44 and most of Route 4.

Minor Arterials

This type of roadway connects principal arterials and augments the traffic carrying capabilities of the entire roadway system. This type of roadway provides for a greater degree of access to abutting land uses and typically does not provide the same level of through mobility of the higher classifications.

Collector Streets

Collector Streets provide a higher degree of access to abutting land uses and a somewhat diminished level of through mobility than the higher classifications.

Local Roadways

The final classification of roadways includes all remaining streets. This classification contains a high percentage of street mileage, with roads that provide the highest level of access to abutting land uses and the lowest level of through mobility.

Hartford's roadway classification system currently serves the surrounding land uses well, and as such no changes are recommended at this time.

Level of Service

Level of service (LOS) is a grading system for amount of congestion, using the letter A to represent the least amount of congestion and F to refer to the greatest amount. The appropriate degree of congestion (that is, the level of service) to be used in planning and designing highway improvements is determined by considering a variety of factors such as the desires of the motorists, adjacent land use type and development intensity, environmental factors, and aesthetic and historic values.

In 2009, the Downtown Circulation Study was undertaken to help understand how downtown accessibility could be improved. This study examined LOS at 29 key intersections. Many intersections exhibited an LOS of A, B, or C for morning and evening peak periods. Only one intersection was given an LOS of "F." However, according to AASHTO's Highway Capacity Manual, in urban areas an LOS of "C" is appropriate for freeways and arterials, while an LOS of "D" is appropriate for collector and local roads. This would indicate that vehicles are operating at an inappropriate level of congestion for an urban area. In effect, cars are moving through the Downtown, and possibly other parts of the City, too quickly, which can have a negative impact on safety and the local economy.

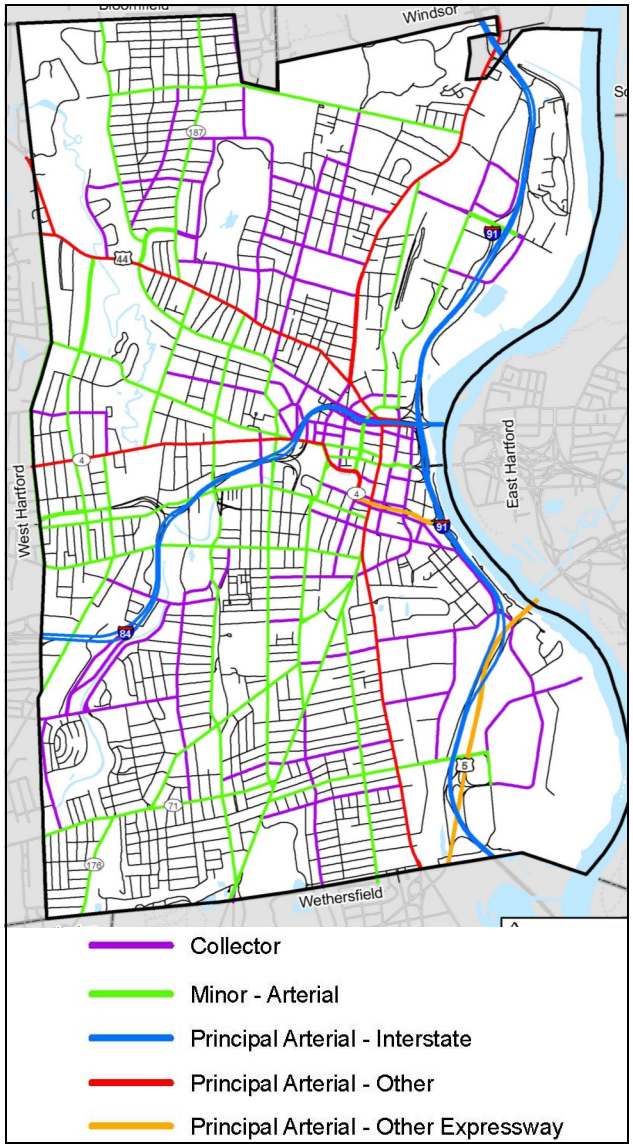
It also implies that motorists experience faster travel times at the expense of other modes such as walking and biking, which can be hampered by free-flowing traffic. The City may wish to adopt a policy of providing a higher level of service for alternative modes of transportation than for automobile traffic so that alternative modes will become safer and more attractive.

Roadway Condition

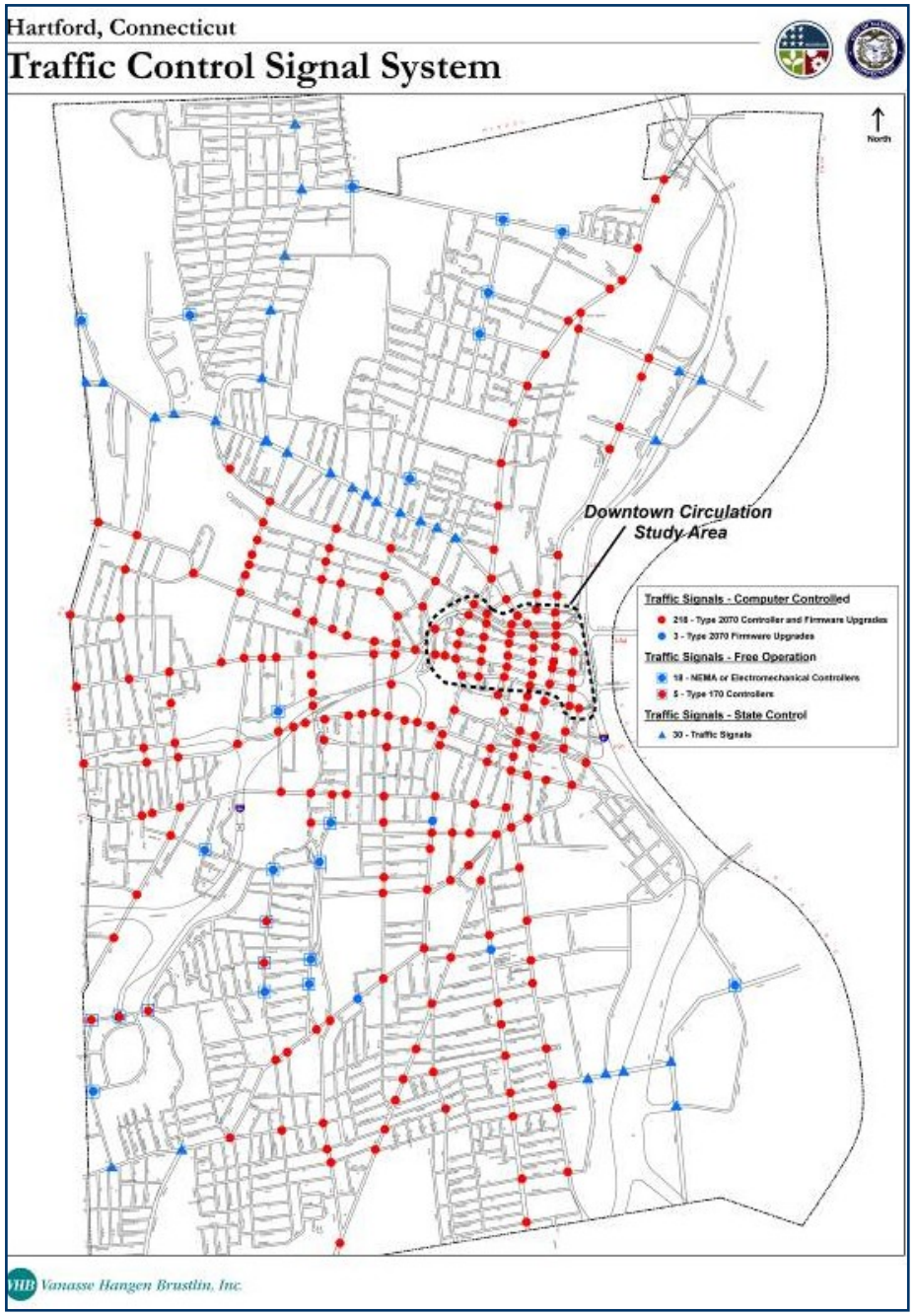
The condition of Hartford's streets and roadways has been assessed by an outside consultant working for the City Engineering Division. This assessment proscribes that road reconstruction and roadway resurfacing takes place on an annual basis. The Department of Public Works completed a Traffic Calming study in the neighborhoods. Based on that study traffic calming improvements have been scheduled via the City's Capitol Improvement Program. Recognized concerns, which are addressed in t**he** Downtown Circulation study currently underway, include:

- Speeding in the neighborhoods;
- Confusing one-way street patterns Downtown; and
- Need for pedestrian circulation and safety improvements to move toward Complete Streets.

As part of the Parkville Redevelopment Plan, it is anticipated that Bartholomew Avenue originating at Park Street will be extended to connect with Flatbush Avenue. In addition, the HUB of Hartford study is currently studying alternatives to the I-84 viaduct.



Hartford's Roadway Functional Classifications



Traffic Control System

The 2010 Trident report provides a series of recommendations around six tridents and will be discussed later on in this chapter. There are several streetscape projects that have recently been completed, with others in various states of design, which will also be discussed later in the chapter.

Hartford's Traffic Control System

Major improvements are planned for Hartford's traffic control system. The existing system is based on decades old technology that is not well supported by the traffic control system manufacturer and generally unreliable. Based on the existing system's performance, failure is routine and unpredictable. Most errors and failures are discovered by citizen complaints rather than system reports. A multi-million dollar updating and replacement of Integrated Surface software, central control hardware, local control hardware and local control firmware has been proposed.

The new system will also bring new traffic control technology to 220 intersections under computer control. The state of the art traffic control signal system will provide for a smooth flow of traffic along City streets, reducing congestion and stopped vehicles at problem locations, thereby improving air quality and reducing fuel consumption. It will also improve the safety of these intersections for pedestrian traffic. Finally, these improvements will make driving a less frustrating, more pleasurable experience, encouraging people to travel throughout the City.

Parking

Parking is an important element of a City's transportation system. Parking policy helps shape travel behavior, community design, and development economics. It must be developed carefully to balance a myriad of needs, including the need to accommodate residents, workers, and visitors; support economic activity; support transit ridership goals; and encourage new development. When not enough parking is supplied, or parking is exorbitantly expensive, those traveling by car may find it too inconvenient to travel to Hartford to do business, shop or visit. However, when supply is too plentiful or inex-

pensive, overreliance on automobiles is encouraged, and street life, as well as quality of life in general suffers. The City's goal is to create a parking supply and pricing policy that balances the needs of the City and helps move it toward sustainability.

Downtown

Downtown Hartford has numerous parking facilities including a mix of enclosed garages and surface lots operated by several different companies and the Hartford Parking Authority. Additionally, on-street parking is available throughout much of the downtown with pay-and-display parking meters. While finding an available parking space may not typically be a problem for drivers, navigating to the most appropriate facility is more of a challenge. The diversity of choice combined with one way street patterns and insufficient wayfinding signage can make it difficult for a driver unfamiliar with the Downtown to confidently find an appropriate parking space.

In 2006 a "Parking Supply/Demand and Alternatives Analysis" was prepared for the Hartford Parking Authority. This study examined Downtown Parking and found a supply of 11,453 parking spaces in public surface and garage lots as well as private surface lots (only one private garage was included in this study). A demand of 8,995 spaces was projected through 2011, with a utilization rate of 79%. Only one area of the Downtown (bounded by Asylum St, Main St, and Jewell St) was projected to have a deficit in supply. Several alternatives were developed for meeting that demand, and the HPA is pursuing development of a new garage at Ford St & Asylum St that will provide parking as well as street-level retail space.

Neighborhoods

Hartford's Zoning Regulations currently require that all new residential construction include off-street parking at a rate of one to one and one half spaces per dwelling unit. Since much of Hartford was constructed prior to these regulations, many neighborhoods rely mainly on on-street parking.

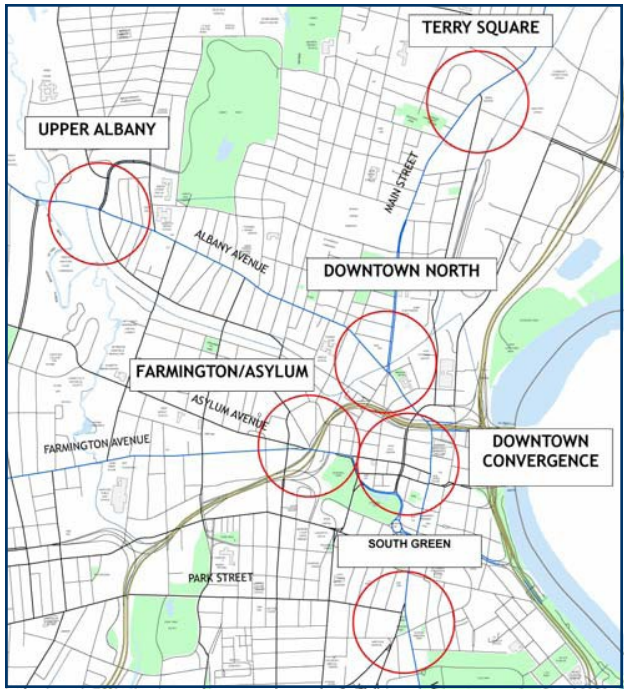
Roadway Plans & Projects

Hartford's roadways system is one of the most salient attributes of the City due to the fact that virtually every member of the community experiences it. As such, it is already the subject of many planning efforts and improvement projects aimed at improving the safety and efficiency of our roadways including the following:

Hartford 2010

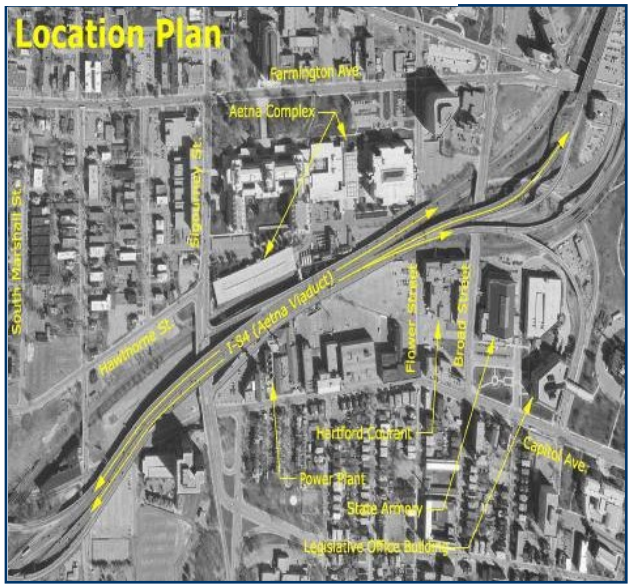
The Hartford 2010 study focused on key intersections, referred to as Tridents, serving the City and inner ring suburbs of East Hartford, Bloomfield, West Hartford, Wethersfield, and Windsor. The Tridents are Terry Square, Upper Albany, North Main, Asylum and Farmington, Downtown Conver-

The Morgan Street Garage



Hartford 2010 Tridents

The Terry Square Trident



I-84 Viaduct Project Area Map

gence and South Green. Key transportation initiatives of Hartford 2010 for each trident are:

Downtown Convergence

- Bring Trumbull Street streetscape principles to Main Street
- Create alternatives to reduce the use of Main street for bus staging
- Relocate bus transfer points
- Recalibrate signal timing
- Rationalize lane widths and add bump-outs at crossings
- Provide opportunities for short-term, on-street parking
- Provide higher-amenity bus stops
- Further upgrade way-finding signage

Asylum/Farmington

- Continue Farmington Avenue streetscapes through to Union Station
- Recalibrate signal timing
- Reorganize traffic movement and improve circulation
- Rationalize lane widths, add bump outs at crossings
- Provide opportunities for short-term, on-street parking
- Integrate New Britain bus way
- Further upgrade way-finding signage
- Provide a good pedestrian connection under the highway and train viaduct

Upper Albany / Blue Hills Avenue

- Reorganize traffic pattern in coordination with DOT and MDC
- Rationalize lane widths. Add bump outs at crossings
- Provide opportunities for on-street parking to enhance retail performance
- Further upgrade way-finding signage

South Green

- Secure parking garage at Park Street and Main Street
- Conduct a rotary study
- Indentify a location for construction of a new parking garage
- Reorganize traffic movement and improve circulation
- Integrate bus transit & hospital shuttles
- Rationalize lane widths and add bump-outs at crossings
- Provide opportunities for on-street and off-street parking to improve retail performance
- Further upgrade way-finding signage

Terry Square

- Recalibrate signal timing
- Reorganize traffic movement and improve circulation
- Rationalize lane widths and add bump-outs at crossings
- Opportunities for on-street parking
- Further upgrade way-finding

Downtown North

- Reorganize traffic movement and

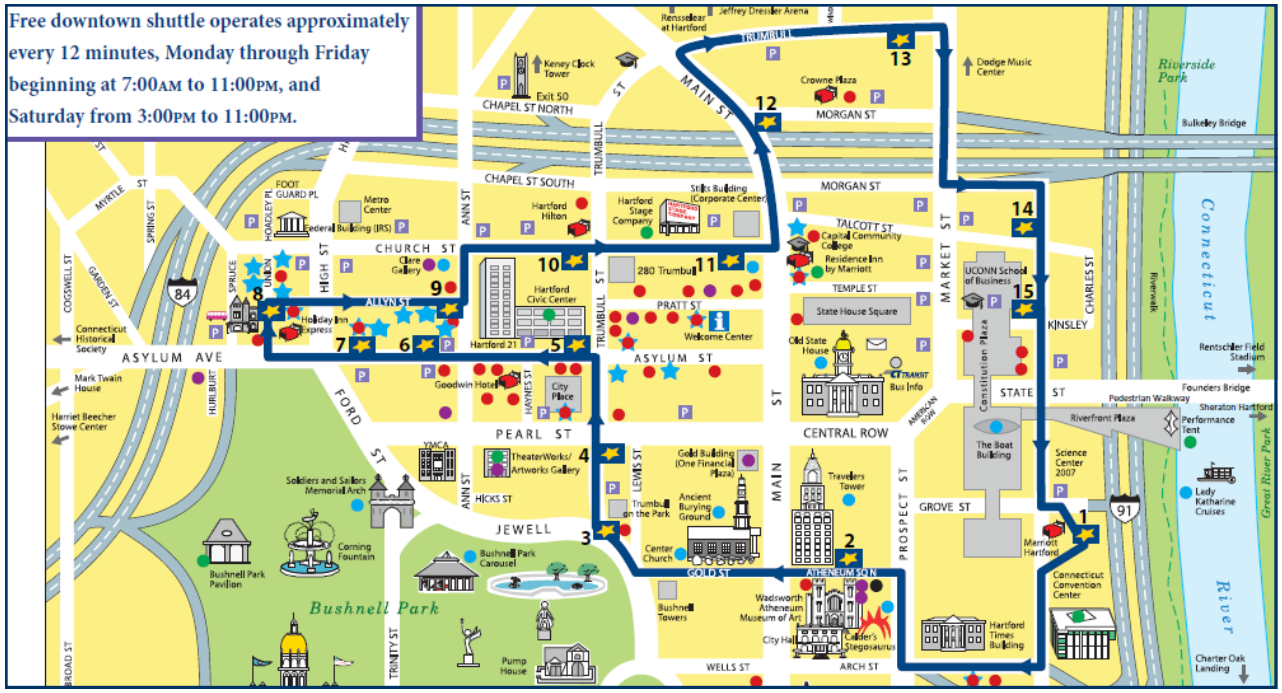
improve circulation

- Recalibrate signal timing
- Consolidate parcels
- Rationalize lane widths and add bump-outs at crossings
- Provide opportunities for on-street parking
- Further upgrade way-finding signage

Hartford I-84 Viaduct Study

The Connecticut Department of Transportation recently completed an evaluation of the I-84 viaduct in the City of Hartford. The analysis concluded that the three-quarter mile structure through the central area of Hartford is in need of immediate repairs and will also need to be fully reconstructed or replaced entirely within 10-15 years. ConnDOT is currently preparing designs to repair the viaduct while also beginning the planning and community involvement process to examine alternatives for the long-term reconstruction or replacement.

The City of Hartford, working through a committee of stakeholders entitled "The Hub of Hartford," and CRCOG have agreed to undertake the initial phase of this process. CRCOG is managing the project on behalf of the City and has engaged a consultant who will research and develop technically sound design alternatives for consideration. The consultant will create a comprehensive assessment of how each alternative will help improve the quality of life in surrounding neighborhoods, support existing businesses and promote economic development.



CT Transit Star Shuttle Bus Route

CONNDOT's 2007 Master Transportation Plan

The 2007 Master Transportation Plan identifies the State's priority transportation projects for the next ten years. The major projects for Hartford listed in the Plan include:

- Route 44 (Albany Ave): Safety Improvements
- Columbus Boulevard: Reconstruction and widening from Grove Street to State Street
- Coltsville: Streetscape Improvements on Huyshope Ave/S equassen St. / Van Dyke Ave
- Adriaen's Landing: Parking garage at Front Street

CT Transit Bus

Wilson Park & Ride
HARTFORD
NORTH END
NORTH MEADOWS
SOUTH MEADOWS
BLUE HILLS
ASYLUM HILL
FROG HOLLOW
SHELDON CHARTER OAK
PARKVILLE
Main
Asylum
Farmington
Tower
Cleveland
Ashford
Kensington
Westland
Charlotte
Capen
Mather
Homestead
Ashley
Collins
Albany
Connecticut
Governor
Pratt
Church
Elm
Park
Broad
Wethersfield
Franklin
Maple
Hartford
New Britain
Airport
Murphy
Wilson
Burnham
Harold
Brookline
E. Morningside
Pershing
Branford
Holcomb
Westbourne
Greenfield
Elizabeth
Farmington
Ward
Lincoln
Vernon
Wilson
Hamilton
Zion
Sigourney
Whitney
Prospect
Fern
Kane
Broadfield
Flatbush
Sherbrooke
Ansonia
White
Linmoore
Freeman
Princeton
Haddam
Amherst
Stanwood
Newington
Avery Heights
Dart
Chandler
Dexter
Newfield
Oakwood
Shield
Marion
Judd
Victoria
Campfield
Goodwin Park
Brown
South
Otis
Adelaide
Preston
Mountford
Benton
Bond
Wawarme
Stonington
Charter Oak
Wyllys
Willys
Pitkin
Hartland
Meadow
East River
Rensselaer
Maxim
Murphy
Airport
Locust
Franklin
Wethersfield
Hudson
Park Terrace
Hungerford
Russ
Sigourney
Whitney
Girard
Forest
Laurel
Highland
Prospect
Scarborough
Woodland
Cornwall
Ridgefield
Vine
Garden
Rainbow
Windsor
Weston
Jennings
Lenox
Palm
Lyme
Grandy
Mark Twain
Pershing
Caverly
Blue Hills
Burnham
Harold
Brookline
Nahum
Tobey
Wilson
Main
Ashford
Tower
Cleveland
Connecticut
Governor
Prospect
Orch

regional transportation, the City has supplemented the regular bus routes with a free Downtown shuttle service called the Star Shuttle. The shuttle operates in a unidirectional loop every 10-12 minutes, with fifteen stops at hotels, historic and cultural sights, restaurants and other popular venues in the Downtown. New England's first hydrogen fuel-cell bus is part of the Hartford Star Shuttle fleet.

Currently, more than 55,000 transit trips are made in the Hartford Region each day. In FY 2009, 13,578,452 trips were taken on CT Transit buses and shuttles operating in the City of Hartford.

Other bus services in Hartford include a para-transit system operated by The Greater Hartford Transit Authority as well as commercial bus lines, mainly operating from Union Station, which serve New England and beyond.

Bus Plans & Projects

New Britain – Hartford Busway Project

The New Britain – Hartford Busway Project began in 1997 with a Major Investment Study (MIS) conducted by ConnDOT, CRCOG, and the Connecticut Regional Planning Agency. After the preparation of three technical reports and a comprehensive public involvement program, the final recommendation was an exclusive 9.4-mile long busway linking downtown New Britain with Hartford's Union Station.

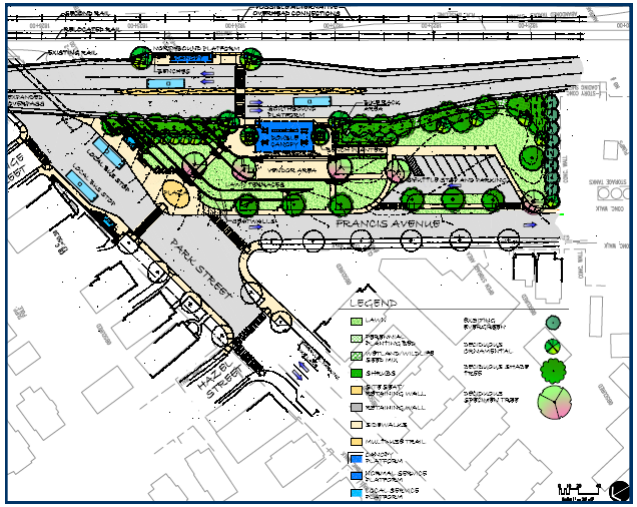
The MIS examined various alternatives to address the forecasted growth in travel demand. Of all the options studied – highway widening, high occupancy vehicle lanes, commuter rail in various alignments and light rail or bus rapid transit in various alignments – a busway in the existing rail corridor was selected as the preferred alternative because it offers travelers the greatest speed, flexibility and ease of use. Bus travel speed is enhanced by the use of the exclusive roadway, making bus travel times competitive with or even faster than automobile travel times.

The facility will permit bus access at intermediate points, so circulator bus routes could readily serve surrounding neighborhoods and then use the busway, thus providing a one-seat ride. New bus routes designed to take advantage of the busway will offer residents of the region greater access to downtown and suburban employment centers, and the flexibility of busway operation will allow the transit system to more effectively respond to changing ridership demand and future development within the corridor.

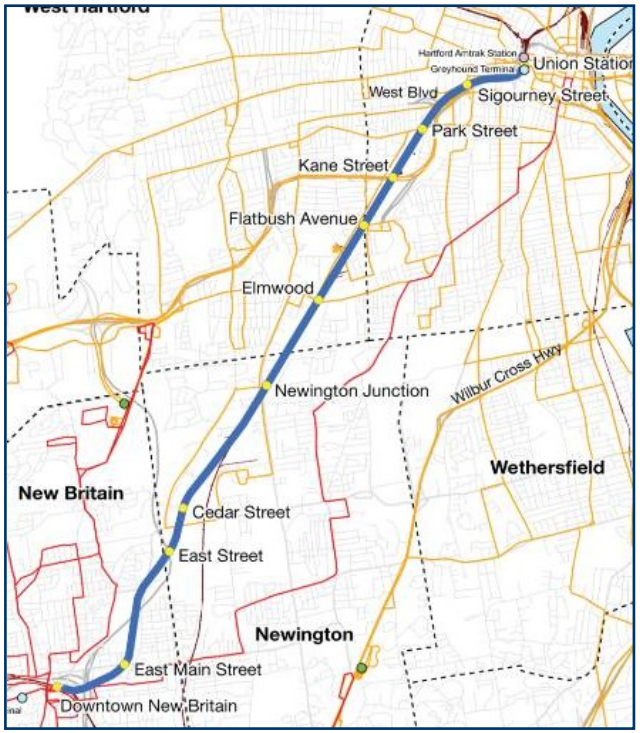
Eleven transit stations, four of which will be in Hartford, will serve the users of the busway. According to the CT DOT, revenue operations of the busway are expected to begin late in 2013.

Northwest Corridor Study

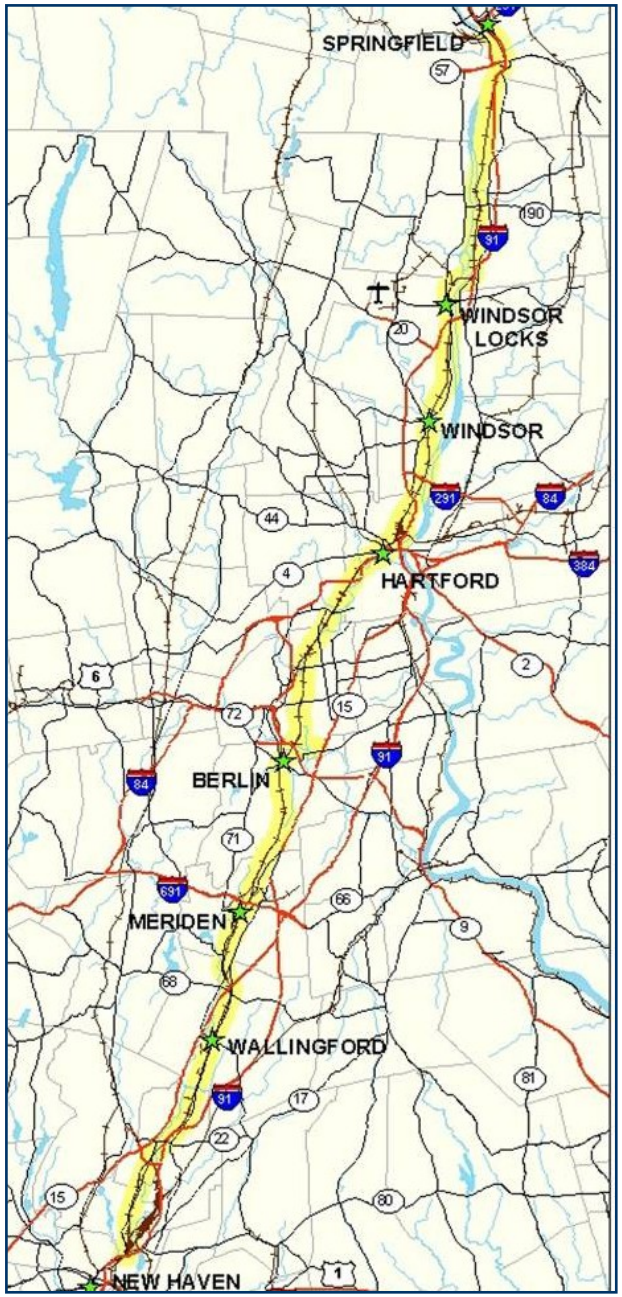
The Northwest Corridor Study is being



Proposed New Britain–Hartford Busway Station– Parkville



Proposed New Britain – Hartford Busway Route and Stops



NHHs Commuter Rail Corridor and Proposed Stops

completed to preserve the viability of the Griffin corridor for future busway deployment, build transit ridership in that corridor, ensure the viability of Union Station as the busway terminus and ensure that the busway busses can be efficiently added to the downtown transit traffic. The Griffin corridor runs approximately 10 miles roughly parallel to Route 187 through Cottage Grove and Bloomfield Center. The result of the proposed improvements will help provide a transit hub, strengthen trunk service and improve transportation to employment sites for City residents.

One of the major recommendations of this study is to create a Downtown Transit Center to better serve riders. This recommendation has been further studied in the Hartford Transportation Pathways Strategy (see the "Comprehensive Transportation Planning Efforts" section for more details).

Railway

Existing Passenger Rail Service

The existing railroad infrastructure in the City of Hartford is based near the heart of the City's downtown at Union Station. The station itself is a significant cultural and historic asset. Erected in 1843, it is listed on the National Register of Historic Places.

Union Station plays an important role in interregional and interstate rail and bus service, and in the future will be an important element of both the New Britain Hartford Busway and the commuter rail system. It is a popular bus transfer station and home to three Amtrak railway lines. The Northeast Regional, Vermonter and limited New Haven – Springfield Shuttle trains offer Hartford residents additional transportation opportunities to regional areas. Passengers can board six Northbound or six Southbound trains per day on the Northeast Regional's Springfield-Washington line, and one train in each direction per day on the Vermonter's St. Albans-Washington line.

For fiscal year 2008, Amtrak reported ridership at Union Station at 168,435 passenger boardings and alightings, making it the third busiest station statewide behind New Haven and Stamford respectively. With the initiatives to add commuter bus and rail service in the near future, the role of Union Station in Hartford's transportation infrastructure is to gain increased significance.

Rail Plans & Projects

<u>New Haven – Hartford – Springfield (NHHS) Commuter Rail</u>

The New Haven – Hartford – Springfield Commuter Rail is a proposed commuter rail line running from New Haven to Hartford and Springfield, Massachusetts. The proposed commuter line could also provide connections to Bradley International Airport, links to Amtrak Intercity service

and a direct link to the existing Metro North and Shore Line East Commuter Rail Station in New Haven.

The implementation of the New Haven – Hartford – Springfield Commuter Rail would benefit the region's transportation networks and stimulate economic growth throughout the state. Bi-directional service from New Haven to Springfield is proposed to run weekdays on a 30-minute peak period schedule. These additional commuter rail services with the addition of new stations along the Interstate 91 corridor will ease traffic delays and limit harmful tailpipe emissions. The proposed commuter rail is intended to provide an attractive transit option for residents in the neighboring areas and create economic development and transit-oriented development opportunities.

The completed feasibility study of the NHHS commuter rail service by Wilbur Smith Associates recommends:

- Commuter rail service between New Haven and Springfield, in the AMTRAK right-of-way
- 30-minute headways (frequency of service)
- Twelve new or improved stations with high-level platforms, grade-separated pedestrian facilities, bicycle storage and racks, and additional parking if required
- A minimum of 18 miles of extended double track sections
- Modifying local bus services to connect with passenger stations
- Shuttle bus connection from the rail station in Windsor Locks to Bradley International Airport.

Airports

Bradley International Airport

Bradley International Airport is not only a major State transportation facility, it is also an economic resource for Hartford, the region and the State of Connecticut. The Airport is served by nine major and five regional carriers that operate over 230 flights (in and out) daily. The Airport provides an important connection for Hartford and the region's economic and transportation system.

Currently, Bradley International is accessible via automobile on I-91 and Bus Routes 30 and 34. Implementation of the proposed Commuter Rail and associated shuttle bus would improve access to this regional asset. A goal of Metro-Hartford Alliance is to bring regular European service to Bradley.

Hartford-Brainard Airport

This airport is state owned (CT DOT) and located just three miles from Hartford's Downtown. The roughly 200 acre facility contains three runways and one helipad. The airport primarily serves charter and local flights. Moving forward, the Metropolitan District Commission has advanced ideas for the redevelopment of this airport in connection with a South Hartford Mixed Use

Union Station

Bradley International Airport is the "Gateway to New England"

Bicyclists in Hartford

Streetscape in Blue Hills

Development and Energy Facility.

Pedestrian & Bicycle Environment

Every transportation trip involves walking, whether it is at the beginning or end of a car, bus, or train trip, or it constitutes the entire trip. A good pedestrian network must be able to integrate with other means of transport beyond walking. Walking distance, pedestrian amenities, weather considerations, and perceived and actual safety all play a role in the quality of the pedestrian experience.

The quality of Hartford's pedestrian environment varies by neighborhood, and sometimes from block to block. For example, there is a general sense that it can be difficult to travel by foot in the Downtown area, even though destinations are close by and sidewalks are in good condition. This is due in part to intersection operations, where exclusive pedestrian signal phases cause long wait times, making travel by foot less convenient than it could be. It is also a result of the lack of a coherent wayfinding system, wide street cross sections, and areas of tiered facilities around Constitution Plaza and the Riverfront.

Hartford's Trail System

Hartford has a growing network of hiking, biking and walking trails. One of the newest additions is the East Coast Greenway, which is the nation's first long-distance urban trail system. The Greenway is a city-to-city transportation corridor for cyclists, hikers and other non-motorized users. By connecting existing and planned trails , a continuous, safe, green route 3,000 miles long will eventually link Maine to Florida. The Greenway enters the City of Hartford from the east via the Founders Bridge and exits the City in the northwest corner along the Bloomfield border. In Hartford, the Greenway connects the Connecticut River at Mortensen's Riverfront Plaza to Bushnell Park and the Park River. Currently, most of the trail utilizes existing roadways. Future trail development will move more of the East Coast Greenway off-road through the City.

Another important trail is The South Branch Trail of the Park River Greenway, which is listed as a state-designated greenway. Phase One of the multi-use trail along the Park River was completed in October 2008. This 1,690 foot section of paved trail extends from Flatbush Avenue to Nilan Street. Phase Two of the trail will run southerly along the Park River from Nilan Street to Newfield Avenue and is expected to be completed in 2010-2011.

In addition to the East Coast Greenway and Park River Greenway, Keney Park, Goodwin Park, Bushnell Park, Riverside Park, Pope Park and other smaller parks and open space properties in the City offer both trails and park roads for walking and biking.

These trail networks, coupled with other local trails, city sidewalks and regional trails, provide a

solid foundation for achieving an interconnected and accessible network of trails that link not only parks and open space but neighborhoods, schools, shopping centers and government facilities.

Bicycle Facilities

While the street grid in urban environments generally benefits bicyclists in addition to motor vehicles, there are many obstacles facing bicyclists in Hartford. For example, the existing street network makes it possible for a bicyclist to reach almost any destination, but wide street cross sections found downtown and in several other locations throughout the City can make it difficult for riders to make left turns across several lanes of traffic. Additionally, large blocks and one-way streets can force bicyclists to take circuitous routes to reach their destination. The lack of official bicycle facilities– such as bike racks, bike lanes, or bike signs– suggests bike use in Hartford is currently be limited to experienced and dedicated riders.

However, there have been recent improvements in Hartford's bicycle infrastructure. For example, bike racks are now standard equipment on all CT TRANSIT buses in the region, allowing for bike/ transit trips. In addition, The City of Hartford has installed bike lanes in numerous locations.

In order to help increase the biking rate in Hartford (which was only .17 for the Journey to Work according to the 2000 Census), an on-road bicycle network should be established. Ideally, all roads will eventually include safe pedestrian and bicycle accommodations. Until that time, every transportation project should be considered an opportunity to improve bicycle and pedestrian accommodation. Further work is needed to create a recommended on-road network.

Pedestrian & Bicycle Plans & Projects

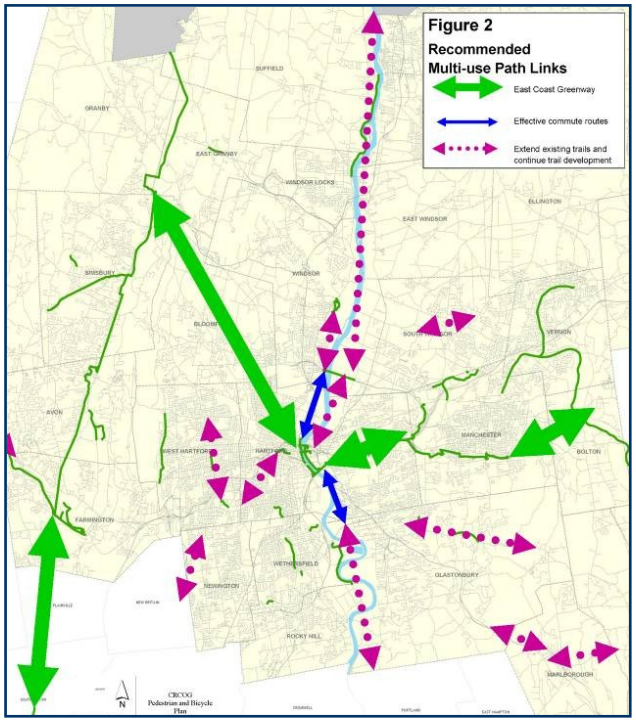
CRCOG Regional Pedestrian and Bicycle Plan

The Regional Pedestrian and Bicycle Plan represents a movement which recognizes the importance of active modes of travel, walking and bicycling as integral parts of the Capitol Region's transportation system. Completed in April 2008, this plan promotes walking and biking as viable means of transportation not only within a community but also regionally. Safe and convenient bicycling and walking routes provide numerous benefits to the community. These benefits include improved mobility, a cleaner environment, a decrease in traffic congestion, a stronger economy, improved public health and a stronger sense of community.

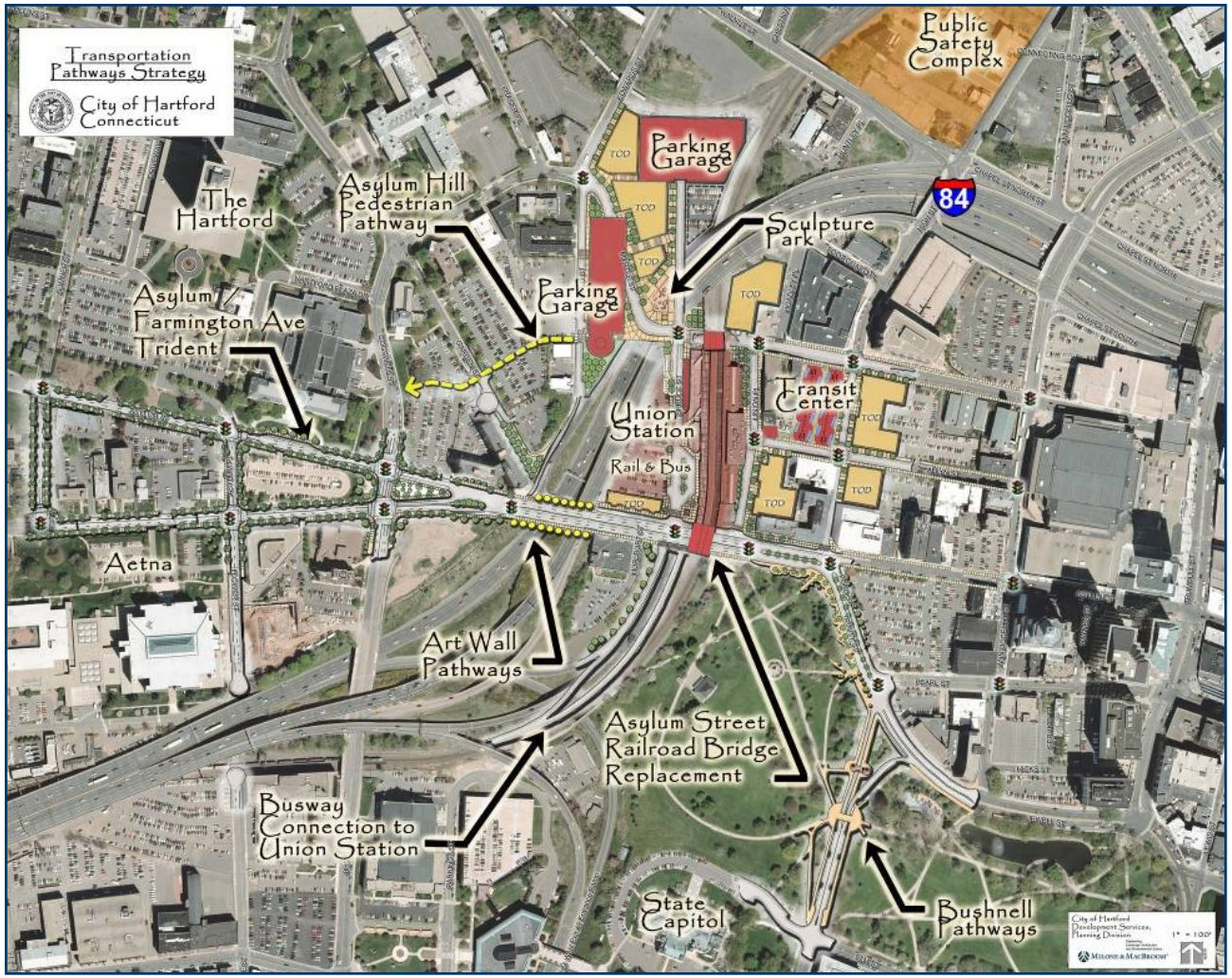
The primary actions recommended by the Plan include:

- Complete the East Coast Greenway through Central Connecticut;
- Create an on-road bicycle network that will link important destinations;
- Continue local trail development;

Trumbull Street Streetscape



CRCOG's Regional Pedestrian & Bicycle Plan



HTPS Conceptual Plan

- Invest in pedestrian safety improvements, including sidewalks;
- Create regional standards for bicycle and pedestrian design;
- Educate bicyclists, pedestrians and motorists;
- Encourage bicycling and walking;
- Provide targeted enforcement of traffic violation.

Comprehensive Transportation Planning Efforts

Many of the plans and projects underway in Hartford take a comprehensive approach to transportation, taking into consideration multiple modes as well as the transportation/land use relationship. They have at their core a goal to increase mobility and improve the quality of life for members of the Hartford and Regional community. These projects and plans are described below.

Hartford Transportation Pathways Strategy and Union Station Connectivity Project (HTPS)

The Union Station Connectivity Project is part of a larger planning, development and transportation framework in Downtown Hartford called the Hartford Transportation Pathways Strategy (HTPS). The HTPS represents the integration of many transportation and pedestrian improvement and transit-oriented development (TOD) initiatives in the area around Hartford's Union Station. These initiatives are in many different stages of development. Some already have a creation level of funding procured, and require only a small additional amount of funding to proceed to the bidding and construction phases. Other initiatives are in the design and permitting phases, while still more are in the conceptual development phase. Many of these initiatives have proceeded along their own individual development tracks. The TIGER application proc-

ess has provided the City of Hartford, the Capitol Region Council of Governments (CRCOG), the Greater Hartford Transit District (GHTD) and many neighborhood and business organizations with the impetus to join together and coordinate the development of these numerous projects and initiatives into a comprehensive strategy for revitalization of the area in cooperation with the Connecticut Department of Transportation.

The HTPS initiatives can be roughly categorized into the following four "pathways":

Modal Pathways

The Modal Pathways component of the HTPS includes the following initiatives aimed at adding and Augmenting Transportation Modes :

- New Haven-Hartford-Springfield Commuter Rail Service
- New Britain-Hartford Busway

Service Pathways

The Service Pathways component of the HTPS includes the following initiatives designed to create supportive Services for Multi-Modal Transportation:

- Union Station Bus Transit Center
- Improvements to interior of Union Station, including track and platform upgrades
- Improvements to Union Station site to reconfigure bus bays
- Asylum Street railroad bridge replacement
- Church Street railroad bridge replacement
- Structured parking and surface parking lots

Connection Pathways

The Connection Pathways component of the HTPS includes the following initiatives to facilitate connections to neighborhoods and jobs:

- Reconfiguration of Farmington Ave./ Asylum St. "Trident"
- General traffic circulation and signalization improvements
- Reconfiguration of Trinity Street and Bushnell Park pathways
- Reconfiguration of Flower Street
- Reconfiguration of Garden Street
- Asylum Hill pedestrian pathway
- Extension of Sumner Street
- Art Wall pathway and railroad bridge replacement – Asylum Street
- Myrtle Street sculpture park
- Access improvements around Union Station for taxis, bicycles and pedestrians ("Complete Streets")
- Streetscape improvements along several streets

Development Pathways

The Development Pathways component of the HTPS includes the following initiatives to create Transit-Oriented Development generated by multi-Modal transportation:

- Mixed use development along:
  - Asylum Street
  - Myrtle Street

Downtown Circulation Study Project Area

- Union Place
- High Street

- Development of jobs and economic activity around Union Station and in surrounding neighborhoods
- Increased residential presence in this part of Downtown Hartford to improve "livability"

Downtown Circulation Study

A circulation study for the Downtown is currently underway by the Department of Development Services' Planning Division with the assistance of Vanassse Hangan Brustlin Inc. (VHB). The purpose of the study is to identify opportunities to improve the downtown transportation network to promote economic growth and investments, improve regional and local connectivity, and create accessibility through a variety of transportation modes, including walking, transit, and driving. Key project objectives include:

- Enhance economic vitality of downtown
- Strengthen connections between areas of the city
- Support a walkable environment and strengthen pedestrian connections
- Improve vehicle access/egress for residents, visitors, and employees
- Reinforce/establish key gateway intersections and roadway corridors
- Improve wayfinding for pedestrians and motorists
- Support on-going transit initiatives
- Target key downtown corridors for transportation improvements

Findings from this study can be found in the Downtown Plan chapter of the POCD.

City of Hartford Capital Improvement Plan 2009-2010

The 2009-2010 Capital Improvement Plan identifies the projects funded to meet the city's needs for the next ten years. The transportation projects include:

- Street Rehabilitation & Road Improvement- This proposal continues the City's on-going program to repave and reconstruct city streets. This program constitutes a large portion of the City's planned street infrastructure upgrades and compliments other grant-funded reconstruction/ realignment projects.
- Brookfield Street Reconstruction / Bike Facilities- This project is to reconstruct Brookfield Street from Flatbush Avenue to Hamilton Street and to complete a portion of the bikeway project. Items to be reconstructed in this project include guiderail replacement, intersection reconfiguration at Flatbush Avenue and the installation of bike lanes on Brookfield Street.
- Streetscapes-This project is the ongoing streetscape improvement program planned for major arteries including Main St, Wethersfield Ave. and Albany Ave. The Albany Ave Project is a joint project between the City, State and MDC that addresses roadways, sidewalks, and sanitary sewer problems along Albany Ave.
- Farmington Avenue/Asylum Avenue/ Broad Street Realignment-This project will address safety issues along these corridors that were identified in the Hartford 2010 process, and enhance pedestrian connections between Asylum Hill and Downtown.
- Completion of Citywide Handicapped-Accessible Curb Ramps- Install handicapped accessible curb ramps for sidewalks and street intersections for approximately 108 intersections throughout the city.
- Albany Avenue and Main Street Improvements- This project will realign Albany Avenue and Main Street to improve traffic safety, circulation, and pedestrian access.

Additional transportation projects underway in Hartford include installation of bicycle racks at activity centers throughout the City, bus and commuter express bus replacement, sidewalk repair and replacement, and various other small roadway improvements distributed around Hartford as part of the City's Capital Improvement Plan.

CRCOG Regional Plan of Conservation & Development (POCD)

The CRCOG is currently updating its 2003 plan, which made the following recommendations pertaining to the City of Hartford:

- Revitalize Hartford & other urban centers. Support efforts to strengthen and

revitalize Hartford, the Capitol Region's central city, and also support the revitalization of older, urbanized areas throughout the region.

- Work with Hartford area transit officials to improve local and express bus service for both commuters and the transit dependent, including more reverse commute routes.
- Develop modal strategy for Bradley International Airport and Union Station. Work with local, state, and federal officials to promote a multi-modal Station in Hartford.

CRCOG Transportation Plan -"A Guide for transportation investments through the year 2035"

The Capitol Region Transportation Plan defines a comprehensive program for improving our transportation system to meet travel needs through the year 2035. It is a systems level plan that provides general policy guidance. It defines the Region's greatest needs, identifies which problems are the Region's highest priority, and recommends how the Region should spend capital funds.

The Transportation Plan reaffirms the Council's commitment to policies set in earlier editions, including:

- Development of a transportation system that offers more and better travel choices,
- Development of a good regional transit system as an alternative to the automobile,
- Development of an improved bicycle and pedestrian system, and
- Improvement of the existing infrastructure rather than building new infrastructure, by emphasizing freeway incident management, coordinated traffic signal systems, Intelligent Transportation Systems; and access management on arterial roads.

The Plan establishes some new emphasis areas. These include:

- Commitment to link land use and transportation planning,
- Support for Bradley International Airport,
- Commitment to start a freight planning program, and
- Commitment to address environmental justice issues.

Although the CRCOG plan is on the regional level, several transit system improvements for the city of Hartford were suggested. The CRCOG plan calls for the following transit system improvements in Hartford:

- **Union Station Enhancement** Continue to support efforts to improve, upgrade and enhance Union Station as the major multi-modal transportation center in the Region and as the central station for the Region's rapid transportation system.
- **Rapid Transit System** Develop a new rapid transit system inclusive of services in five main corridors.
- **Downtown Circulator** Continue to support the Star Shuttle service in downtown

Hartford. Explore other opportunities for similar circulator routes in Hartford.

Goals & Objectives

The following identifies a comprehensive program of transportation improvements recommended to encourage multi-modal travel, mitigate traffic congestion, improve pedestrian, bicycle, transit and traffic circulation, elevate walking and bicycling as modes of choice, increase safety and improve air quality.

GOAL 1: Improve pedestrian connections, conditions and level of service.

Objectives:

- Improve streetscapes in key corridors.
- Improve signal timing at crosswalks to promote pedestrian safety & convenience.
- Create a pedestrian wayfiding system that includes kiosks, signage, and markers.
- Improve pedestrian connections to Downtown.
- Hold events which encourage individuals to try biking and walking for transportation purposes.

GOAL 2: Improve bicycle infrastructure.

Objectives:

- Design an urban bicycle network that connects Hartford neighborhoods, employment and shopping centers, parks and regional transportation networks.
- Invest in sidewalks, bike lanes, wide shoulders, wide outside lanes, and multi use trails.
- Provide bicycle parking facilities with a mix of lockers and racks.
- Provide shower facilities convenient to employment locations.
- Print & promote maps showing safe and convenient bicycle routes.
- Provide education on safe riding skills, as well as sharing the road for bicyclists, pedestrians & motorists.

GOAL 3: Improve bus service.

Objectives:

- Implement the New Britain-Hartford Bus Rapid Transit (BRT) plan and establish four (4) new transit stations in Hartford.
- Ensure that the existing bus system connects to the new BRT system.
- Study existing bus routes to determine how to integrate new cross-town routes.
- Work with CT Transit to develop user-friendly system maps.

GOAL 4: Reduce dependence on single occupancy vehicles.

Objectives:

- Determine the largest barriers to using sustainable modes of transportation and create a plan to remove or reduce as many of these barriers as possible.
- Promote Union New Station as the HUB

of the City's transit system, which will include the New Haven-Hartford-Springfield commuter rail service, the New Britain-Hartford Busway, a new local bus transit center, the potential establishment of high-speed rail and improvements to Union Station.

- Encourage carpooling and ridesharing among employees in the Downtown area by offering discounted parking rates for multiple occupant vehicles at Hartford Parking Authority facilities.
- Explore the creative use of car-sharing programs such as Zipcar.
- Provide discounted rates or preferred parking for private alternative fuel & high mileage fuel vehicles

GOAL 5: Emphasize Complete Streets

Objectives:

- Encourage ConnDOT to revise their Highway Design manual to provide balanced guidance on public right-of-way design to serve non-motorized and motorized travel.
- Adopt a complete streets highway design policy at the City-level.

GOAL 6: Implement the Hartford Transportation Pathways Strategy.

Objectives:

- Make the following changes to the Farmington Avenue / Asylum Avenue Intersection:
  - Reconfigure roadway geometrics
  - Reorganize traffic movements & signal timing to improve circulation
  - Improve pedestrian connection (design elements) to Union Station along length of Farmington & Asylum
- Make the following changes to Sumner Street:
  - Extend south to Farmington
  - Make streetscape improvements
  - New traffic signals at asylum & Farmington
- Reconfigure Flower at the I-84 underpass to eliminate at-grade rail road crossing while maintaining access to Aetna.
- Make the following changes to Garden Street:
  - Reconfigure at intersection with Spring St
  - Upgrade streetscape
- Improve the streetscape on Myrtle Street.
- Make the following changes to Trinity Street:
  - Reconfigure to improve traffic circulation
  - Improve pedestrian connections to pathways in Bushnell Park
- Coordinate with Amtrak to study replacement of Asylum & Church rail bridges.

GOAL 7: Improve passenger rail

Objectives:

- Improve regional and commuter rail options including the New Haven-Hartford-Springfield Rail Line.

GOAL 8: Improve capacity of and connections to airports.

Objectives:

- Work with the Metro Hartford Alliance to implement service improvements to Bradley International Airport.

GOAL 9: Improve roadway connectivity, efficiency & safety.

Objectives:

- Implement the recommendations of the Downtown Circulation Study.
- Review one-way street patterns
- Synchronize signals to reduce idling & improve pedestrian LOS.
- Update traffic control devices
- Employ traffic calming techniques in residential areas.
- Develop an "access management" plan to combine driveways and reduce curb cuts in commercial corridors.
- identify roadways that have the greatest need for safety improvements.
- Utilize the Capital Improvements Plan to implement projects addressing roadway safety.

GOAL 10: Revise transportation policies and related regulations.

Objectives:

- Include TOD concepts in revised zoning code.
- Review parking regulations to ensure they are consistent with smart growth & sustainability.

Additional transportation improvements specific to Downtown are discussed in Chapter 10.