

TRANSPORTATION



City of New Haven
John DeStefano, Jr., Mayor

Transportation

GENERAL CHARACTERISTICS

With a cluster of highways, railroads and public transit systems, New Haven is the longstanding center of regional transportation. Over time, the transportation infrastructure has emerged as a dominant landscape feature, impacting mobility and the day-to-day quality of life in the city.

The system is largely radial, with New Haven at the core or hub of each network. Access in and around the city and the surrounding region is largely dominated by an extensive interstate highway system, with Interstates 95 and 91 converging in New Haven.

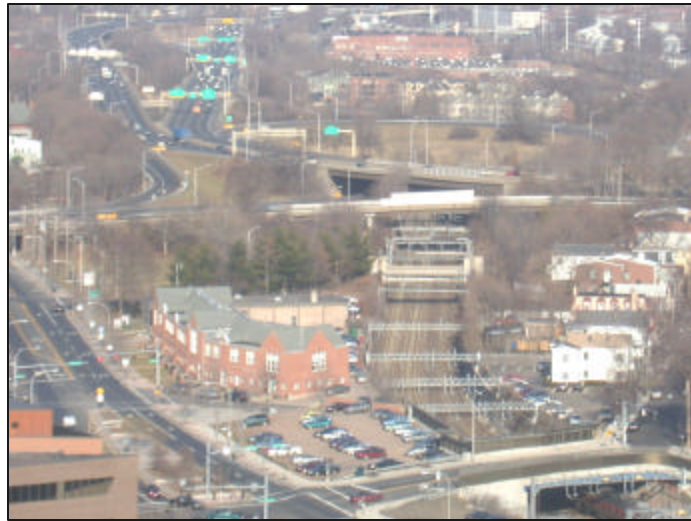


Figure 8.1: State Street and the Northeast Rail Corridor. I-91 is in the background.

The network serves a number of populations. First, the network serves New Haven residents both for journey to work and for all other activities. Second, the network serves the regional commuting population. Third, the network serves as the center of super-regional through movements.

The super-regional movements reflect New Haven's position as the gateway to New England and include the extensive population movements from the New York metropolitan area to Rhode Island and western Massachusetts; the freight movements from the Port of New Haven to destinations across the Northeast and South; and the commuter movements to New York City

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and Fairfield County. The broad range of functions provides a consistent flow within the network. Highway peak and off-peak hours often blend together; Union Station essentially operates on a 24-hour cycle; and truck terminal and hospital-related uses impact area roads late into the night.

Journey to Work

The latest “Journey to Work” data released by the Census Bureau indicates that most New Haveners drive alone to work. However, an impressively high 45% commute to their jobs by a form of transportation other than driving alone. Approximately 15% of all commuters travel via carpool, close to 14% walk to work, while over 11% use a form of public transportation.

Of the 10 largest cities in New England, only Boston had a higher percentage of residents who traveled to work via non-motorized transportation. Also, out of this same group of cities, New Haven ranked highest in the percentage of people who walked to work. The Census data reinforces anecdotal evidence and community support for a balanced transportation network.

Figure 8.2: Percent of Residents Commuting by Non-Motorized Transportation

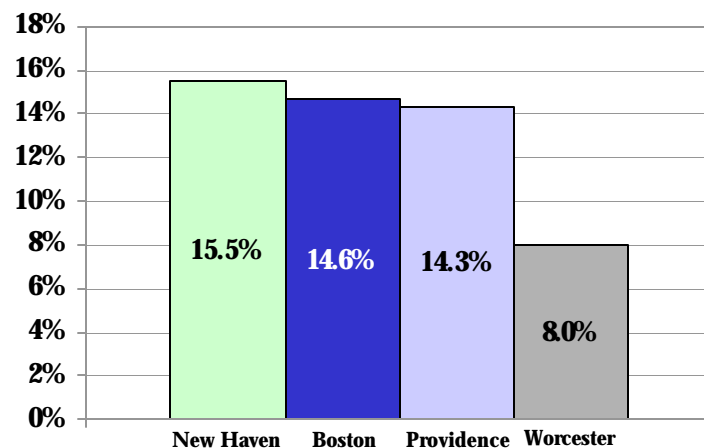


Figure 8.3 – Transportation System



VEHICULAR CIRCULATION

The surface transportation system in New Haven is extensive relative to state averages. In total, there are 255 miles of roadway in the city - the eighth highest amount of any Connecticut municipality. Of these roadways, 88% are locally-maintained public roads and 12% are state-maintained roads and highways. There are 43 locally-maintained bridges in the city.

New Haven is situated at the axis of two major interstates: I-91 and I-95. The Wilbur Cross Parkway (Route 15), runs along the northwestern tier of the city, thereby providing additional limited access capacity south to New York and north to the I-91 / I-691 area.

Total vehicle miles traveled is approximately 2.1 million in New Haven. At 17.1 miles/capita, total VMT well exceeds statewide averages.

Figure 8.4: Total and Per Capita Annual Vehicle Miles Traveled

	Total (m)	Miles per 1,000 residents
New Haven	2.1	17.077
Connecticut	76.8	0.044

By volume, average daily traffic is highest on Interstate 95 (129,500 vehicles per day). Highest volumes on arterial roads are realized along Whalley Avenue (19,300) and Ella T. Grasso Boulevard (18,100). Of the arterial roads, several are operating at or near capacity. These include State Street, Derby Avenue, Forest Road and Quinnipiac Avenue.

Congestion

In 1999, the South Central Regional Council of Governments measured congestion on highways and arterial roads across the region. The results indicate significant delays along Interstate 91 in New Haven (Exit 5 - Exit 1) as well as various sections of Interstate 95, including the areas approaching the Pearl Harbor Memorial (“Q”) Bridge.

Along arterial roads, seven of the 10 most significant delays in the region are found in New Haven. The most severe congestion is found in Westville and Amity, along Whalley Avenue, Amity Road and Ella T. Grasso Boulevard. A substantial portion of these movements relates to lengthy

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distance between Exit 59 and Exit 60 of the Wilbur Cross Parkway (over three miles). From points south and west, Exit 59 is the preferred route to major destinations in southern Hamden, including Southern Connecticut State University. The air quality impacts resulting from this congestion are substantial. As shown in more detail in Section X, the city is in non-compliance status for two criteria air pollutants: ozone and particulates.

INTERSTATE IMPROVEMENTS

Traffic volumes and the increasing congestion on the interstates are a major focus of regional transportation planning. Of these new investments, the largest statewide is the \$1 billion Interstate 95 New Haven Crossing Corridor Improvement Program. The project includes reconstruction and expansion of the highway from the shoreline to Long Wharf and includes a new Pearl Harbor Memorial Bridge and reconstruction of the I-91. Future expansion along Long Wharf to City Point is in a conceptual design phase.

The I-95 project highlights much of the issues facing mobility in New Haven. The dramatic and increasing demand for through traffic compromises local movements and the quality of life for New Haven residents. The expansion requires numerous land takings, relocation of viable New Haven businesses and disruption of the surrounding neighborhoods. At the same time, the project provides long-term opportunities for improved access to the city and to the region by eliminating prior barriers and advancing intermodal solutions.



Figure 8.5: Rendering of the new Pearl Harbor Memorial "Q" Bridge.

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There is general consensus that highway expansion alone is not a viable transportation strategy. Rather, overall mobility is dependent on parallel investments in other forms of transportation: railroads, public bus and waterborne transportation.

Moreover, the quality of infrastructure design will play an important role in shaping the landscape. The architecturally-significant Pearl Harbor Memorial Bridge design is in keeping with new design policies at Connecticut DOT. Similar and even greater attention must be paid to the design and placement of Long Wharf improvements. Harbor access and land use planning along Long Wharf is largely dependent on the placement and design of the interstate.

PASSENGER RAIL

New Haven has long been a center for rail transportation. Historic Union Station is serviced by three distinct carriers: Metro-North Railroad, Amtrak and Shoreline East. These services provide a unique competitive advantage for New Haven, both for use by residents and for use by the business community. Reducing traffic congestion largely will be dependent on the future adequacy of the rail system and improvements to parking / connecting transit at the stations.

Amtrak

New Haven is situated along two lines of service for Amtrak: the Boston-Washington “Northeast Corridor” and the New Haven – Vermont inland New England route. On the latter, New Haven serves as the terminus for Amtrak’s Vermonter Line that runs to Burlington, Vermont by way of Springfield, Massachusetts. New Haven is also a stop and service point for Amtrak’s Acela high-speed service, which, along with Acela Regional, complement Northeast Direct services.

New Haven is the busiest Amtrak station in Connecticut. The 251,130 New Haven passengers represent 28% of all Amtrak traffic in the state. While Amtrak service in Connecticut saw a 4% decrease in riders over the period from 1998 - 1999, service in New Haven dropped only 1.9%. With the addition of Acela Express and its accompanying track improvements, New Haven is expected to remain a major presence in Amtrak’s Northeast operations.

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Shore Line East

The Shore Line East Commuter Railroad, operated by Amtrak, under contract from the State of Connecticut operates between New London and New Haven on tracks owned by Amtrak. There are seven stations on the line, several of which are undergoing renovations in association with I-95 improvements.

Shore Line East ridership has been steady since its inception in 1991 in spite of a downturn associated with line improvements. In 2001, the monthly ridership figures indicate that passengers are returning; cumulative ridership as of October, 2001 was up 2.5%.

The replacement of the Pearl Harbor Memorial Bridge may significantly enhance Shore Line East service. In anticipation of the impacts on vehicular travel, ConnDOT recently opened State Street Station, which facilitates commuter movements to downtown.



Figure 8.6: New State Street Station

Metro-North Railroad

New Haven is the northerly terminus of Metro-North Railroad's New Haven Line. The Metropolitan Transportation Authority (MTA) operates the line under a service contract and subsidy from the State of Connecticut.

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In 1999, annual ridership on the New Haven Line totaled 31.1 million, highest among the railroad's five service lines. Annual ridership is projected to increase 31% between 1999 and 2020 (a 13% annual increase). The largest segment of growth is seen in intermediate commutation (eg. New Haven to Stamford), which is projected to increase 93.2% over the next 20 years. Similarly, the service is increasingly used for non-commutation purposes, thereby reducing off-peak vehicular movements.

With 2,918 daily boardings, New Haven is the fifth busiest station along the New Haven Line. Of the New Haven boardings, 45% are at peak hour and 55% are at off-peak hours. For the line as a whole, 66% of all boardings are peak-hour.

Service Qualities

In general, the rail service in New Haven is well ahead of similarly placed cities in the Northeast. Both Hartford and Providence have smaller stations and more limited commuter options. In New Haven, the remaining issues relate to service quality and timeliness. Parallel to the highway investments, there is a clear need to enhance the Shoreline East service and to improve operating headways, rolling stock and outlying stations. In addition, there is the potential to advance a New Haven – Hartford – Springfield passenger rail service. All three cities are located on the growing Interstate 91 corridor. In New Haven, peak hour demand for I-91 North will grow 25-40% from 1999 to 2010. In addition, the program complements growth management efforts by better linking the population centers.

Public Bus System

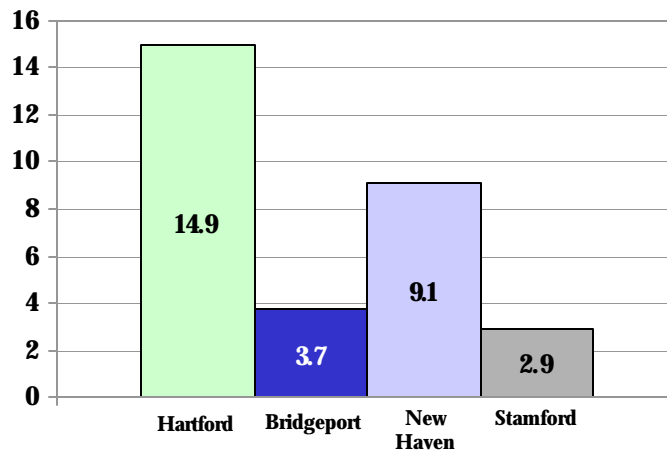
The public bus system is operated by Connecticut Transit, under contract with the Connecticut Department of Transportation. The New Haven Division is the second largest bus transportation system in the state. The service area covers 476 square miles, including New Haven and all or part of 19 surrounding towns. The 23 service routes cover 462 directional miles, largely radiating from downtown New Haven across the major roadways to the outlying suburbs.

On an average weekday, Connecticut Transit carries approximately 30,500 passengers. Highest daily ridership is seen on the D route (Dixwell Avenue / Grand Avenue) and the B route (Whalley Avenue / West Haven). Together, these routes carry 43% of the system's passenger load.

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In early 2002, Connecticut Transit service reductions affected 19 of the 23 routes. Many of the adjustments increased headways or eliminated redundant routing. For example, peak headways on the J – Whitney Avenue line increased from 15-20 minutes to 20-30 minutes.

Figure 8.7: CT Transit Passenger Boardings, 1999 (in millions)



The service reductions run counter to the work of the Transportation Strategy Board and the recommendations of the Statewide Bus Study. TSB research indicates that the population density of New Haven and of similar urban communities supports public bus service at 10 minute headways.

Likewise, the Statewide Bus Study identifies new service opportunities, many of which deviate from the traditional radial system and operate across town. Of note, the proposed Cross Town West has the potential to generate 427,000 passengers annually by routing from City Point, through the western neighborhoods, to Hamden.

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Waterborne Transportation

The Port of New Haven, the largest in the state, is privately owned and operated. Coastline Terminal (operated by Logistec) and Gateway Terminal are the largest port-related operators and each handles a wide diversity of product. In 1999, over 8.6 million short tons moved through the port, representing just under 50% of all freight traffic at Connecticut ports. On a regional scale, the port at Providence handles nearly as much volume as New Haven.



Figure 8.8: Port of New Haven

By commodity, New Haven is largely a petroleum port. Of all commodities handled at the port, 80.5% are petroleum and related products, 12.7% are manufactured goods and 6% are crude materials.

Among all state ports, New Haven's share of manufactured goods is 95.2% and its share of the petroleum market is 55.6%. The continuing diversification of the port is shown in recent changes in materials handled at New Haven. Between 1995 and 1999, petroleum shipments (in short tons) declined 5% and chemical shipments declined 34%. Meanwhile, large percent gains were realized in manufactured equipment (up 150%), crude materials (up 33%) and manufactured goods (up 12%).

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The New Haven Port Authority provides an opportunity to further broaden the economic and transportation benefits of port activities and seek to balance these benefits through careful land use planning.

There is a high level of interest in use of the port as a site for satellite container service from the Port of New York and New Jersey. In concept, a shuttle service would transfer containers to New Haven and then forward to destinations north and east. The proposed service has the potential to improve transportation and stimulate job creation through certain break down operations. However, there also is the risk of dead storage and increased local truck movements. For the operation to be successful, appropriate mitigation steps are necessary.

There continues to be interest in passenger and freight ferry service, thereby developing a closer economic relationship with the north shore of Long Island. Operating services in New London and Bridgeport have served to improve economic activity and tourism between the states. In New Haven, deepwater access is available at various sites east of the Maritime Center and at Canal Dock. Since these sites are outside the core port area and east of the Tomlinson Bridge, they are ideal for passenger-related maritime activity. Potential uses include cruise ship docking and passenger ferries.

Freight Railroads

Freight railroad service in New Haven is provided by the Providence and Worcester Railroad (P&W) and by CSX Corporation in neighboring North Haven. Service generally runs north (along a route to Hartford and West Springfield, Massachusetts) and north and east along the Northeast Corridor tracks. Largely due to the expanded Gateway Terminal operations Chapel Street, P&W's business has increased of late. From 1999 to 2002, P&W volume increased from 19,760 gross tons to 192,280 gross tons. A more moderate increase is expected for 2002.

New rail connections are planned for Waterfront Street via the recently-completed Tomlinson Bridge. Port-area rail service has been dormant since structural damage occurred in the early 1990's. The new Tomlinson has rail tracks along its northern side. Planned extensions would run further east along Forbes Avenue and south along Waterfront Street.

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Enhancing rail facilities is essential to the long-term development of the Port of New Haven. By linking the Waterfront Street area back to the rail grid, there is an opportunity to reduce local truck movements and to make the port truly intermodal. A good example of this is the aforementioned Gateway Terminal site on Chapel Street. While this site is not located within the core port area, the intermodal operations are an exemplary example of the potential at Waterfront Street and in the North Yard.



Figure 8.9: Intermodal activity along Chapel Street.

AIR TRANSPORTATION

Air transportation to New Haven is limited to the services provided at Tweed New Haven Airport, a regional facility straddling the border of New Haven and East Haven.

Although, Tweed has an effective service area of 1.5 million people, larger airports in neighboring regions – New York, Hartford and Providence – have drawn passengers away from Tweed. The service area is bounded by T.F. Green Airport in Providence to the east, Bradley International Airport in Windsor Locks to the north, and Westchester, La Guardia and John F. Kennedy Airports to the west.

Due in part to restrictions on operations, there is limited service and relatively high fares. Currently, Tweed New Haven's passenger service consists of four daily US Airways flights to Philadelphia, operated on DH-8 commuter aircraft. The service is well below that of previous years. Prior service had come from as many as three carriers, with 14 daily departures.

The recently-completed Tweed Airport Master Plan indicates continuing demand for service to major hub cities such as Cincinnati and Atlanta (Delta service), Cleveland (Continental service) and Chicago (United service). To meet these demands, the airport proposes a number of capital improvements, including safety zones and an extension to the main runway of 1,000 feet at either end. These improvements entail sensitive environmental, noise and neighborhood issues, all of which must be addressed before the improvements are implemented.

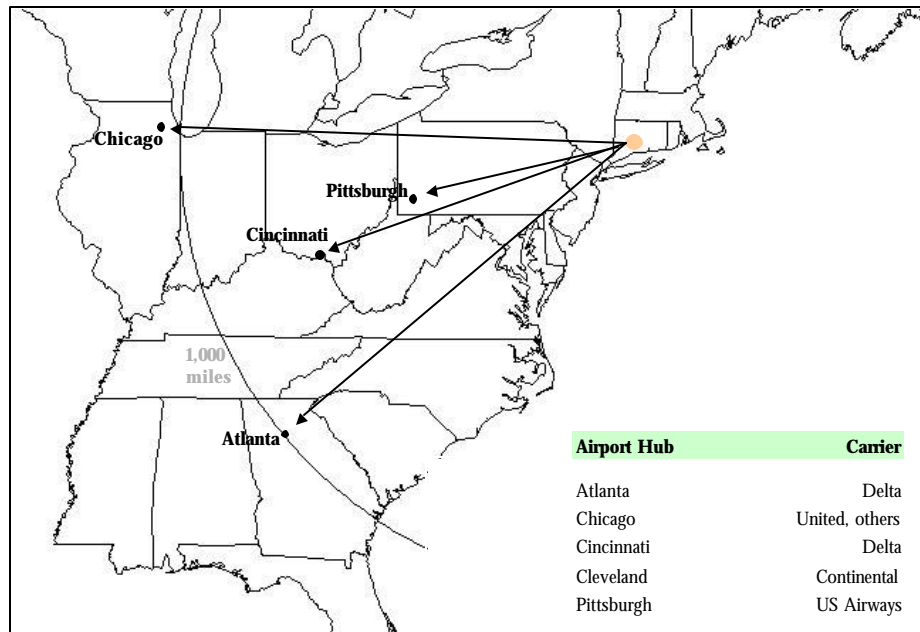


Figure 8.10: Service Potential at Tweed-New Haven Airport

GREENWAYS AND TRAILS

The proposed trail system – see New Haven Data Book page 62 – provides opportunities both for recreation and for enhanced transportation / mobility. Non-motorized transportation already is established in New Haven. Residents are engaged in walking and cycling to work, largely by sharing the road with vehicles.

Various planning studies, design charrettes and visioning exercises have been conducted in recent years all of which lead to the conclusion that New Haven's greenways and trails infrastructure is a tremendous untapped resource. In light of these efforts and the statistical evidence supporting non-motorized transportation, four trail systems are identified for their near-term potential as transportation elements:

- The Farmington Canal Greenway, now under limited construction, parallels much of Dixwell Avenue – one of the largest commuting routes into the city from the north.
- The proposed Harborside Trail parallels Interstate 95 and provides opportunities to reach the waterfront and downtown.
- In Fair Haven, an existing linear park along Front Street can be expanded south through the River Street MDP and then north along the Mill River. Connections can be made across the railroad to East Rock and across Chapel Street to the Harborside Trail.
- Along the western border, existing trail systems in West Rock, Edgewood and West River parks can be connected through a series of easements and limited on-road crossings. In doing so, the project could connect Route 34 and the Harborside Trail.

In spite of these opportunities, an integrated system will be dependent on creative share-the-road solutions. Generally speaking these solutions will involve reduced on street parking and / or careful striping of new cycling lanes. This is the case along Route 34, Howard Avenue and in the East Rock area for example. As part of regular transportation planning programs, share-the-road techniques can be incorporated in a systematic manner.

PLANNING CONSIDERATIONS

- Mobility in New Haven is greatly enhanced by choice: vehicular transportation, public transit, passenger and freight rail, waterborne and non-motorized options are all part of the system.
- While these options exist, there is limited complementary activity. For example, park and ride options are limited and intermodal connections at the port are restricted by infrastructure.
- Transportation policy overwhelmingly favors vehicular transportation. This approach fails to broaden public support and public use of alternative means of transportation as the services are not optimal and/or are cost prohibitive.
- Over time, the failure to balance transportation investment will continue to have environmental and economic consequences. Without parallel investment in alternative transportation, congestion is likely to continue post-I-95 expansion.
- Connecticut Transit, Metro-North and Shoreline East are integral to improving mobility. Headways remain the salient issue on both Connecticut Transit and Shoreline East.
- The Port of New Haven is an unparalleled transportation asset. Intermodal connectivity, including freight railroad connections, is essential to growing the port in a manner that protects surrounding neighborhoods and eases demand on the interstates.
- Though not likely in the near term, the long-term promise of passenger and freight ferry service must be further explored and studied in detail.
- Tweed New Haven Airport is remarkably underused given the size of the local market. Efforts should be made to implement the capital program in a manner that protects nearby residents from undue hardship.
- Commuter rail to Hartford and Springfield represents a new opportunity to broaden mobility and to preserve capacity along Interstate 91. Consideration should be given to connecting with Bradley Airport for both passenger and freight purposes.

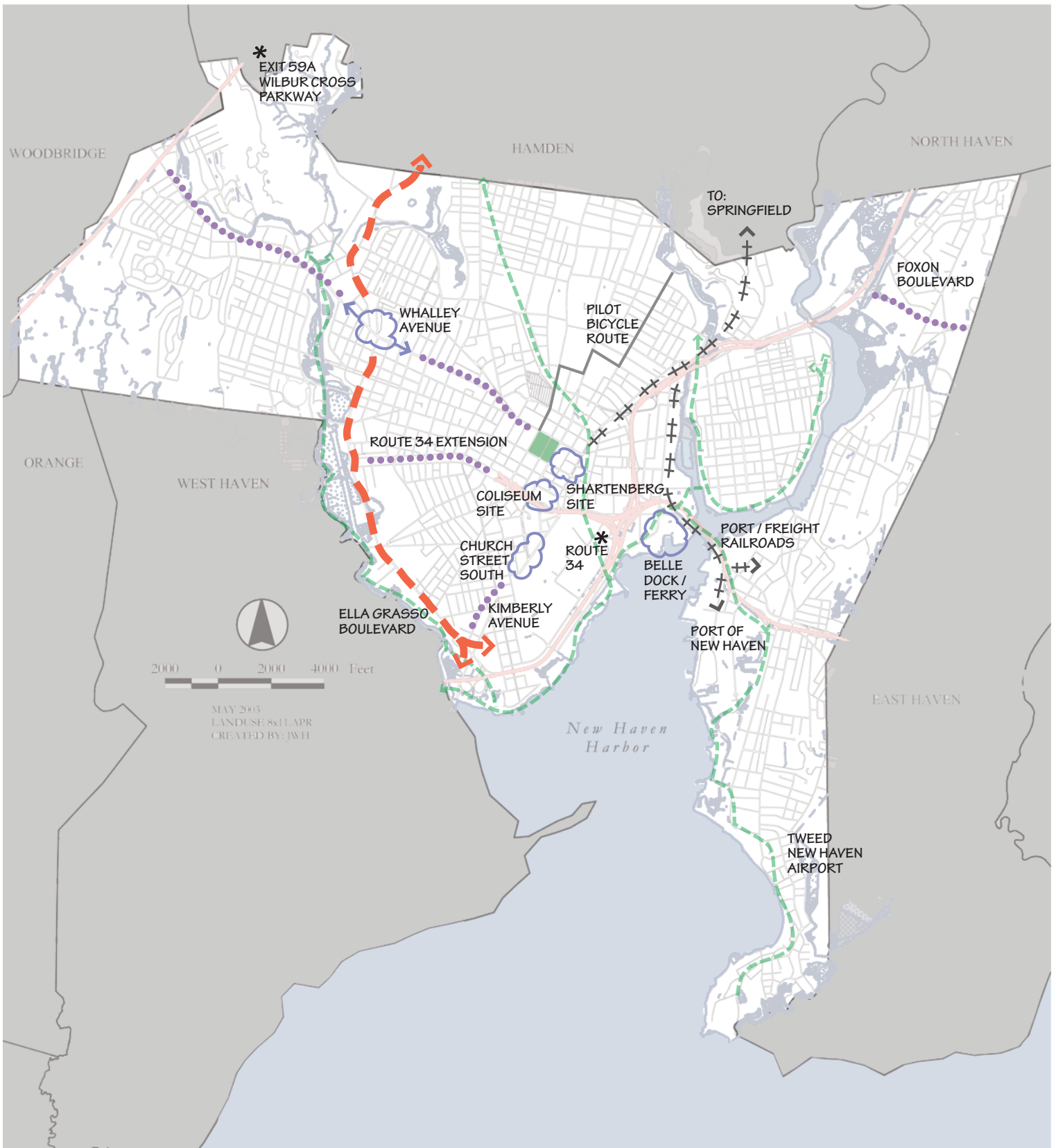
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- The design and placement of transportation facilities is an important factor in New Haven's urban form. Aesthetic considerations should be among the highest transportation considerations. Inappropriate truck routes, particularly when used as highway bypass routes, have a deleterious effect on the surrounding area and should be curtailed.
- This is certainly the case at Long Wharf, where increasing capacity must not surpass the city's prevailing interest in waterfront improvements – including Long Wharf Park, Canal Dock and the Harborside Trail with connections back to Sargent Drive, Belle Dock and Downtown.
- Similarly, the concept of transit oriented development has not been fully developed in New Haven. The larger transportation facilities are bounded by incompatible land uses. State Street Station represents the first substantial connectivity among residential, office and transportation land uses.
- Creative solutions will be necessary to create an integrated bicycle and trail system. Generally speaking these solutions will involve reduced on street parking and / or careful striping of new cycling lanes.

RECOMMENDATIONS

Establishing Trails. The proposed greenway and trail system is an environmental, cultural and transportation benefit to New Haven. With regard to transportation, the following investments are recommended:

- Completion of the Farmington Canal Line.
- Design and subsequent construction of the Harborside Trail.
- Reconstruction and enhancement of the Vision Trail.
- Completion of a Fair Haven and Quinnipiac River trail system with waterfront connections to Willow Street (via the Conrail pedestrian bridge) and to the Harborside Trail (via Chapel Street).
- Completion and designation of a West River Greenway trail.



TRANSPORTATION OPPORTUNITIES

- Greenways & Trails
- ✿ Transit Oriented Development
- Cross Town West Bus Route
- * New Highway Improvements
- ++ Commuter Rail
- Urban Boulevards



Encouraging Transit Oriented Development. The plan recommends a better alignment of economic development and city planning policies, reflecting a broader context for transportation resources. Foremost among the opportunities for transit-oriented development are Church Street South, the Shartenberg Site, New Haven Coliseum, the east side of State Street and the Whalley / Boulevard area. The Commission encourages reuse of Church Street South in manner that reflects its positioning between downtown and Union Station. A mixture of uses compatible with this prime geographic setting is encouraged.

Moving Freight. New Haven's geographic position and transportation connections are a competitive advantage that benefits both economic development and mobility. For freight movements to sustain with the city, attention must be paid to neighborhood preservation, environmental protection and traffic congestion.

- Encourage the growth and development of the Port of New Haven within the district of the New Haven Port Authority. Advance a more sound land use policy by relocating and/or closing tank farms to appropriate areas.
- Revise the Zoning Ordinance to restrict the locations of high turnover storage and warehousing uses to areas with adequate access to highways and/or freight railroads.
- Encourage full access between freight railroads and the port district, in particular by extending rail service along Waterfront Street and to the North Yard.
- Establish a truck routing system which curtails truck traffic on local streets and promotes the use of designated arterial connections. As a parallel effort, work with the Department of Motor Vehicles and local police to better enforce existing truck regulations.

Enhancing Public Transportation Systems. System preservation is largely dependent on a modal shift away from single-occupant vehicles to public transportation systems. While population density in New Haven does not support intense new infrastructure, there are several important opportunities:

- Enhance Connecticut Transit by capturing a greater share of discretionary ridership through improved routing (cross town routing),

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improved headways (to 10 minutes as density warrants) and improved facilities (shelters, signage, information, etc.).

- Enhance commuter rail through the establishment of new service to Hartford and Springfield.
- Enhance Shoreline East by improving operating headways and service times to Downtown and Union Station.
- Enhance air transportation by implementing limited hub service in a manner that protects nearby residents from undue hardship.
- Establish intra-coastal and cross-sound ferry services at Belle Dock.
- Work with Rideworks and local employers to develop more extensive car pooling and car sharing programs. Recruit a car sharing program to operate in New Haven.

Share the Streets. Trail development alone will not satisfy the demand for bicycle access and safety. As part of ongoing street improvements, the Commission encourages the appropriate placement of bicycle facilities, including dedicated bike racks, bike lanes and signage. Supporting educational programs are likewise encouraged.

Moving Vehicles. New Haven's transportation policy affects both local and regional population movement. As such, the city must continue to be responsive to the needs of the region and the state. In doing so, the City's policies reflect a local mandate for mitigation, incident management and protection of the urban fabric.

- Encourage high quality design of the transportation system in a manner contextual to the surrounding area. Plans for public streets, sidewalks, signage and traffic control / intersection improvements should be reviewed by the City Plan Commission in order to enhance the urban fabric and to help mitigate adverse effects.
- Context-sensitive design is further emphasized on Whalley Avenue, Chapel Street, Ella Grasso Boulevard, Kimberly Avenue and Foxon Boulevard. Along Long Wharf, seek to maximize land and access to Vietnam Veterans Long Wharf Park and to create signature connections from Sargent Drive to the waterfront.

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- Encourage transportation activity, including construction, construction staging and expansion, within existing rights-of-way.
- Advocate for a final product and sound land use plan at Route 34 / Oak Street Connector as an urban, tree-lined boulevard with improved connectivity at Air Rights Garage.
- Advocate for sound regional land use policies to preserve capacity along Foxon Boulevard, Whalley Avenue and in the Hill / Dwight area.
- Advocate for a new Exit 59A off the Wilbur Cross Parkway, thereby enhancing access to West Rock and SCSU.
- Advocate for new interchange connections at Route 34 and Long Wharf, supporting a new local road and Harbor Access project.
- In areas of highway system preservation and expansion, aggressively seek noise pollution controls for the protection of residents, recreation facilities, schools and other sensitive locations.