

Final Report

Regional Intermodal Transportation Center Master Plan and Efficiency Study

Southeastern Connecticut
Council of Governments

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EXPERIENCE | Transportation

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1. Introduction

1.1 Background

Downtown New London is the confluence of various modes of transportation serving the entire southeastern Connecticut region. Today, the collection of several individual transportation terminals and facilities located in close proximity to each other in downtown New London constitutes the Regional Intermodal Transportation Center (RITC). At the center of the RITC is Union Station, an historic, architecturally-significant and imposing structure designed by H.H. Richardson and built in 1888. This privately owned building serves as the region's train station for Amtrak intercity rail (Acela Express and Regional trains operating on the busy Northeast Corridor) and Connecticut DOT's Shore Line East commuter rail service (its easternmost terminal). Located alongside Union Station are the Amtrak-owned tracks used by passenger and freight rail services.

Union Station is also the site of New London's intercity bus terminal and the New London hub of the region's bus transit system. The Greyhound intercity bus station is located in a separate brick structure on Union Station property just north of the station's old baggage shed. The local transit system, Southeast Area Transit (SEAT), has a curbside bus stop with a simple shelter on Water Street, north of the building and the Greyhound station. This bus stop serves as its New London hub.



Union Station

Space for the transportation uses at Union Station is currently leased from the private owners by the operators of rail (Amtrak) and intercity bus service (Greyhound). The private owners of Union Station, who acquired the building in order to preserve it, have been exploring alternative uses for the building which includes considerable vacant space.

Various ferry services operate from the adjacent waterfront area to points in New York State and Rhode Island, although seasonal cruise ships dock at the Admiral Shear State Pier, beyond walk distance from the site. Private bus operators serving the two casino resorts in the region connect with passenger ferries. Local travel is also provided by three taxi companies which have a taxi stand in front of Union Station. There are two parking garages and several surface lots in the area serving patrons of the RITC and the local street network connects travelers to I-95 and the rest of the interstate highway network. Across Water Street, the City of New London operates parking garage with over 900 spaces providing parking for downtown needs as well as for the transportation terminal, particularly ferry and rail users.

Despite the general proximity of the modes, the actual connections between services could be improved in terms of physical conditions, directness, wayfinding, information and other factors. This Master Plan and Efficiency Study, commissioned by the Southeastern Connecticut Council of Governments (SCCOG) and funded with a grant from the Connecticut Department of Transportation, was undertaken to determine how the intermodal hub can be improved. The study was conducted by a team of consultants led by TranSystems, including Basile, Baumann Prost & Cole LLC, Crosby, Schlessinger, Smallridge LLC, Fitzgerald & Halliday, Inc., and URS Corporation.

1.2 Study Purpose and Objectives

The purpose of the Master Plan and Efficiency Study has been to develop a seamless regional transportation hub to meet regional transportation needs that also supports the revitalization of downtown New London. SCCOG and the City sought to ensure that a vital transportation hub is maintained with enhanced functionality for all transportation connections. These transportation assets are seen as key to New London's future development. The City of New London, a key stakeholder, wishes to promote development in downtown New London near the hub in a manner that will provide economic benefits, build on the transportation features as well as the waterfront and historic and architectural assets, and correct some past urban redevelopment decisions that have not contributed to the vitality of downtown.

The study contained the following specific objectives:

1. Determine if the Regional Intermodal Transportation Center (RITC) should remain at this site or be relocated to an alternate site
2. Conduct a physical inventory of RITC component facilities
3. Evaluate existing and future operational needs for each mode at the RITC
4. Analyze market potential for transit-oriented development at or near the RITC
5. Identify and evaluate potential improvements for the short and long term
6. Evaluate costs and economic impacts
7. Evaluate environmental conditions and implications
8. Develop a master plan including recommended actions

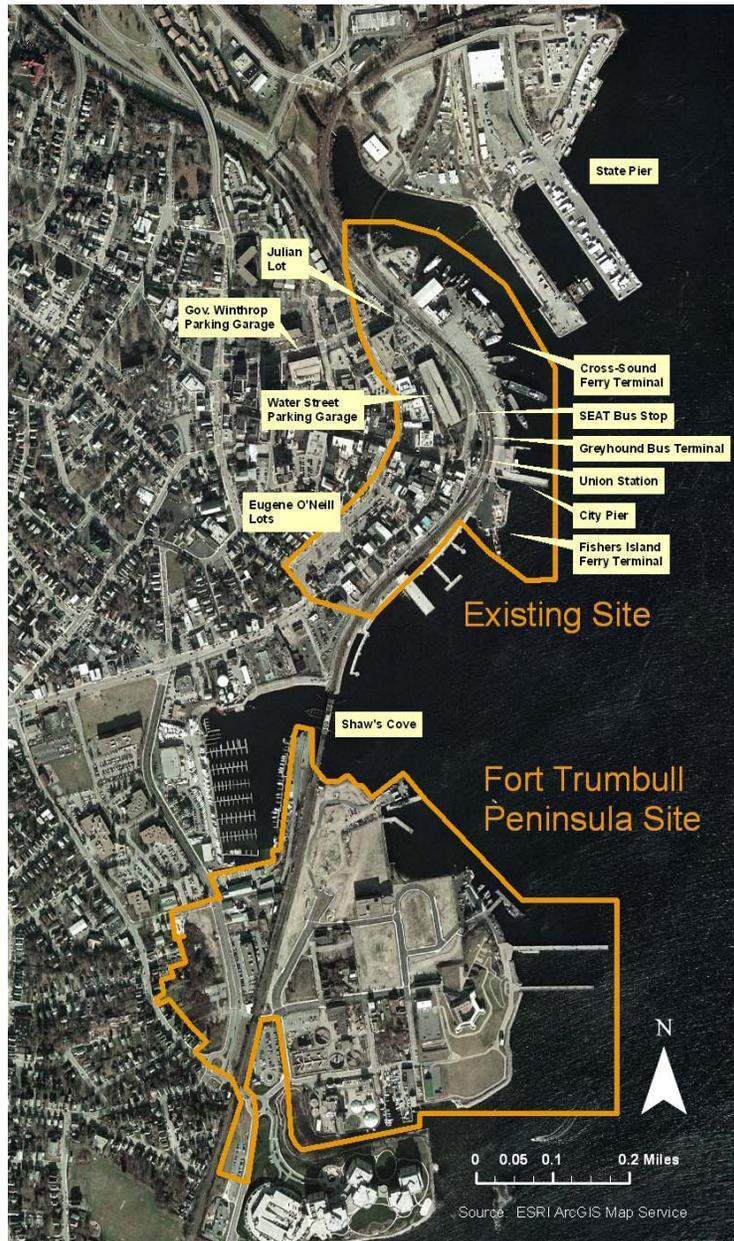
In addition to the technical objectives listed above, reaching public consensus was an important objective. There was ongoing stakeholder and public involvement and agency coordination throughout the study. This included two public meetings and six meetings of a Stakeholder Steering Committee including representatives of transportation providers, property owners, downtown business and other interest groups, and representatives of City and State agencies. (The public process is documented in Appendix F including meeting minutes.) Individual meetings were also held with key stakeholders. A study webpage was maintained on the SCCOG website (www.seccog.org) and fact sheets were prepared and distributed. Finally, passenger surveys conducted early in the study (in summer 2008) were a means of outreach to travelers.

This Executive Summary provides a brief description of each major step of the study with the emphasis on providing a summary of the recommended master plan. Each step is more fully documented in the final report.

2. Confirmation of Site Selection

A comparison of alternative sites was requested by Connecticut DOT, the agency funding the study, to serve the purposes of an alternatives analysis (as far as site location) for any subsequent NEPA documentation. The site for the future improved Regional Intermodal Transportation Center (RITC) was selected based on a comparison of two pre-selected alternative sites for the RITC - the existing site located in downtown New London along Water Street and the Fort Trumbull peninsula, a redevelopment site in the City of New London. (Fort Trumbull was cited as a place with visitor interest – due to the presence of Fort Trumbull State Park -- and a possible site for cruise ships to dock. It also is along the railroad right-of-way.) Figure ES-1 shows the location of the two sites.

Figure ES-1: Location of the Two Candidate Sites



Specific criteria for use in the evaluation included:

- Capacity for Operations - Landside
- Capacity for Operations - Maritime
- Compatibility with Other Existing/Potential Uses
- Environmental Sensitivity
- Parking Capacity (for all modes)
- Pedestrian Access (for all modes)
- Vehicular Access (for all modes)
- Traffic Impacts (for all modes)
- Capital Cost (for all modes)
- Economic Development Opportunity
- Likely Public Support
- Capacity to Accommodate the Entire Package of Modes

The recommendation of consulting team was that the RITC be maintained at the downtown site based on the following reasons:

1. There is widespread and firm desire among stakeholders interviewed, including the transportation operators, to keep the RITC at their current sites to support and serve downtown. There are perceived advantages to retaining the downtown location for each mode of transportation.
2. Only the cruise ships which currently dock at the Admiral Shear State Pier would really benefit from being at Fort Trumbull (it was one of the major considerations of ConnDOT in their suggesting Fort Trumbull as the alternative candidate site for the RITC). Moving the cruise ships to Fort Trumbull might enhance the attractiveness of New London to cruise ship operators and passengers, but it is not functionally necessary to move them and it is certain to be costly and, after thorough consideration, was deemed infeasible due to landside access constraints and marine operational factors.
3. Many transportation operators would face constraints at the Fort Trumbull site, such as the limited and circuitous access to the site, parking requirements and the need to dredge to create ferry terminal.
4. The existing RITC sites offer the needed capacity and opportunities for improvements, some of which are underway.
5. There is existing support for enhanced development around the existing sites and there are some sites for such development.

The Stakeholder Steering Committee reached a clear consensus agreeing with the consultant recommendation. With the concurrence of the SCCOG, the current site became the focus of the remaining tasks of the Master Plan and Efficiency Study, which developed a plan for creating an improved RITC at the selected site.

3. Transportation Services at the RITC

The following long distance modes are provided at the existing RITC:

- Amtrak intercity rail service, with a ticket office and waiting area in Union Station
- Shore Line East (SLE) commuter rail service, operated for Connecticut DOT by Amtrak and currently limited to one roundtrip per day at New London but expected to expand soon to six roundtrips per weekday
- Greyhound intercity bus service (operating from sawtooth bays and its leased terminal building just north of Union Station)
- Cross Sound Ferry (located on property east of the railroad tracks with vehicular access from the Governor Winthrop Boulevard crossing)
 - Auto ferry service to/from Orient Point, NY (Long Island)
 - Sea Jet passenger-only ferry service to/from Orient Point, NY (Long Island)
 - Block Island Express passenger-only ferry service
- Fishers Island auto ferry service (owned by the municipal government of Southold, NY and operating from a fairly new terminal building located east of the railroad tracks at State Street near City Pier)

In addition there are several local access modes, including:

- SEAT bus transit service (seven routes which pulse on an hourly basis) operating from a curbside location on the east side of Water Street just north of the Greyhound bus area (except for the route to Foxwoods which operates from directly in front of Union Station)
- Casino coaches (which meet Sea Jet passenger ferries on Cross Sound Ferry property)
- Taxis, which stand in front of Union Station
- Automobile parking, including the City-owned Water Street Garage, Cross Sound Ferry on-site parking (partially on land leased from the City), Governor Winthrop Garage, City-owned Eugene O'Neill Drive lots, and the Julian lot (open on summer weekends)

4. Existing Facilities at the RITC

The existing physical conditions of the transportation facilities located in downtown New London that make up the Regional Intermodal Transportation Center (RITC) were inventoried. These include the rail station, bus facilities, ferry facilities, parking facilities, taxi stand, vehicular and pedestrian network, and the City Pier area, shown in the aerial photo below in Figure ES-2.

Figure ES-1: Existing Transportation Facilities in Downtown New London



Most of the physical facilities are in good or very good condition, although some deficiencies were identified through observations of the consultant team and information from user surveys and interviews. The most notable deficiencies were the poor pedestrian connections, lack of amenities and comfort at the rail and bus facilities, conditions of elevators and stairways as well as deterioration of the concrete at the two garages,

inadequate security systems at parking facilities, and lack of wayfinding signage between transportation modes.

Current pedestrian facilities need improvements to ensure safe and convenient access between travel modes and to and from the parking facilities. The most notable deficiencies are between Cross Sound Ferry and the other facilities. Improvements are also needed to and from the Water Street Garage and Julian surface lot and the various transportation services. The Parade Project, for which construction is now nearly completed, will improve pedestrian safety in the vicinity of Union Station through enhanced crosswalks, sightlines and traffic calming. However, there are other needed improvements.

Union Station has had renovations to the lobby and roof, and the station platforms are in good condition. The Greyhound terminal, leased from the owners of Union Station, is in sound condition but is very basic and has not undergone renovations to enhance its appearance. The SEAT bus stop is minimal as a passenger facility, consisting of a simple shelter and several outdoor benches. It would benefit from improvements to enhance passenger comfort or relocation to a location which could provide indoor waiting areas and other amenities. Bus and rail users surveyed indicated particular concerns about amenities (e.g., lack of food services, newsstand and clean restroom facilities) and comfort at the rail and bus facilities.

Fishers Island Ferry has a new (3-year old) terminal facility that is in very good condition. The Cross Sound Ferry facilities are in good condition. Some of the parking areas in use at Cross Sound Ferry are unpaved. Users of the Cross Sound ferry facilities indicated concerns about lack of amenities and sufficient convenient parking.

The Water Street Garage and Governor Winthrop Garage show evidence of deferred maintenance (in particular, deteriorating concrete), although some repairs are now underway at the Water Street Garage addressing elevators, security, lighting and signage and others are planned. In addition, the elevators at the Water Street Garage need repairs. (A new tower is being constructed at the south end of the garage with a new elevator as part of the Parade Project.) Surveys of users of the parking facilities conducted as part of this study indicated the most dissatisfaction was with the stairways and elevators at the garages, as well as handicapped access. Another concern expressed in the surveys at the parking facilities was about security features. There is a lack of security systems in the garages and parking lots, including closed-circuit TV and blue light call boxes. The Water Street Garage will have security cameras installed as part of upcoming renovations.

Overall, the transportation facilities are not providing adequate access for persons with disabilities, based a field assessment conducted as part of this study in late 2008. Handicapped access in the Water Street Garage was considered to be a problem in the user survey. This may largely be due to the fact that the elevators were out of order. This will be corrected with the installation of a new elevator at the south end as part of the Parade Project.

Additional improvements to the remaining elements are warranted. Lighting and wayfinding signage are lacking. Although many of the survey respondents did not identify that lighting was poor or deficient, lower level pedestrian fixtures will both improve aesthetics and also provide a stronger sense of security. While survey respondents generally identified ease of access as being good; there was less satisfaction with signage. In general, wayfinding signage throughout the city street network is lacking; the existing signage doesn't provide clear and concise messages nor are the signs strategically placed. Better than 30% of the respondents indicated that signage was below average at the Cross Sound Ferry Lot location.

Finally, while there is a large “Welcome to New London” sign on the Water Street Garage (in letters along the face of the garage near the roofline), more needs to be done to attract the visitor in terms of restaurants, shopping, etc. that can be seen by visitors arriving at the RITC, particularly for those arriving at the Cross Sound Ferry Terminal, Greyhound Bus Terminal or SEAT bus stop. The railroad right-of-way area was found to be unattractive and did not appear to be well-maintained during the field review in late 2008. However, over the course of the study, several improvements have been made. The Parade Project has been constructed and is nearing completion. It is improving the area to the south of the Water Street Garage by opening up views and creating an attractive pedestrian plaza. The City has been installing new steel post fencing along the west side of the railroad right-of-way. (The decision to use steel post fencing rather than cyclone fencing was influenced by this study’s recommendations.) New London Main Street has installed some new wayfinding signage and is installing “gateway” signage at strategic locations. Despite this progress, there is a need to take additional actions to create a more pedestrian- and tourist-friendly area around the RITC.

5. Existing and Future Transportation Needs

The study identified elements of the transportation center that are working well and should be maintained, as well as many elements that are in need of improvement. Future ridership increases, expansion of services, growth in tourism, and new development in New London will likely create new needs that must be addressed in the future. Each of these areas is summarized below.

5.1 Current Needs

For the most part, each individual transportation provider’s operation is working fairly well. Amtrak operates smoothly through New London. Buses come and go with minimal delays from local traffic on most days. Ferry operations run smoothly. Parking facilities fill on only a few days each year.

Several key connections between modes were identified. Where these key connections are good, they should be maintained. Good connections are close together, on good surfaces, esthetically pleasing, weather protected and free from obstructions and delays. The good key connections that should be maintained include:

- Greyhound to/from SEAT
- SEAT’s Foxwoods Route (#108) to/from Amtrak southbound (northbound requires crossing the tracks)
- Greyhound to/from taxis and pick-up/drop-off
- Amtrak to/from taxis and pick-up/drop-off (although some may have to cross the tracks)
- Amtrak northbound to Fishers Island (southbound requires crossing the tracks)
- SeaJet high-speed passenger ferry to/from the casino shuttles
- Amtrak southbound, Greyhound, and SEAT to/from the Parade and downtown
- Roadway access to the Long Island Auto Ferry and to the two garages

There are also several other good quality connections that are made less frequently and thus not deemed key connections. While less critical, these should also be maintained if at all possible.

Bus Facilities - Bus facilities and operations are most in need of improvement. Greyhound's ticketing and waiting area is antiquated and there is no outdoor waiting area or outdoor seating. The existing saw-tooth bus bays are not configured as Greyhound prefers and create possible safety concerns when buses need to back up into traffic. Greyhound also desires access to a third bay. SEAT would prefer a location closer to the train station and would like an indoor facility for both passengers and operations personnel. SEAT's passenger facilities are minimal and need improvement.

Ferry Facilities - While both ferry operators have adequate indoor ticketing facilities for the vehicle ferries, indoor waiting areas are limited. The Block Island passenger ferry has no indoor waiting area and no restroom. A more substantial passenger ferry terminal building is needed.

Traffic - Traffic issues focus on the two railroad crossings. The crossings at State Street and Governor Winthrop Boulevard are frequently closed by incoming and outgoing trains at the station, impacting the ability of pedestrians and vehicles to access both ferry terminals. Downtown festivals and events also cause general traffic problems affecting bus and ferry operations. The area in front of Union Station, even after Parade construction is complete, may be too small for efficient use by the taxis and private vehicles picking up and dropping off passengers.

Parking - Parking facilities are located a distance from the ferry terminals. The parking capacity is adequate for current needs unless existing surface parking at Cross Sound Ferry and the Julian lot (an office building parking lot adjacent to the Water Street Garage that has been open on summer weekends to meet peak parking demands created by the ferry) become unavailable. Security, signage and elevators at the parking facilities are poor. Many passengers using the Block Island Ferry must park in the garages and walk a few blocks and across the tracks. Wayfinding signage and access routes from the garages to the ferry terminals are poor.

Connectivity and Information Needs - Several key connections between facilities were identified as deficient. The most difficult key connections to make are those that involve crossing the railroad tracks and accessing the ferry terminals. The major obstacles are the distances involved, level changes, wayfinding signage, condition of the pathways and delays and safety at the two railroad crossings. The key connections identified as deficient include:

- Greyhound to/from the Long Island Ferry
- Amtrak to/from the Long Island Ferry and the Block Island Ferry
- Water Street and Governor Winthrop garages to/from the Block Island Ferry
- Union Station and southbound rail platform from the Fishers Island Ferry
- Taxis and Water Street Garage to/from the Fishers Island Ferry
- Downtown to/from the Long Island Ferry and the Block Island Ferry

Other less than optimal connections result from pedestrians and vehicles needing to cross the railroad tracks at State Street. Trains in the station can cause delays and pedestrian areas are not clearly distinguished from the roadway. These include:

- Amtrak/SLE northbound platform to/from the Water Street Garage, SEAT 108 and taxis
- Amtrak/SLE northbound platform to Union Station lobby and ticket counter
- Fishers Island Ferry roadway access

Schedules are not generally coordinated to facilitate intermodal connections and real time status information is generally not shared among operators. Joint marketing and ticketing among New London

operators is minimal and schedule information and information on how to connect to other modes is lacking both pre-trip and on-site. Wayfinding signage is minimal, non-existent or misleading. Little information on downtown New London is available through the transportation operators. Performance of the RITC as a transportation center could be improved by more joint marketing and ticketing efforts and improved pre-trip and on-site information on how to make connections. A centralized system to provide real time connection information in all terminals may be beneficial. Downtown New London could benefit from more information on downtown attractions and activities being provided in advance, both on vehicles and in the station area.

Amenities and Commercial Needs - The deficiency that was mentioned most often by passengers at the RITC surveyed during this study was the general lack of amenities in each of the facilities. The Union Station area lacks any retail amenities or food concessions. Restroom facilities are locked and in need of accessibility improvements. SEAT passengers have no restrooms. While the rail station has a substantial waiting area, the Greyhound waiting area is cramped and antiquated. SEAT has only a single standard outdoor bus shelter and a few benches. While there is a single food concession at the Long Island Ferry terminal, there are no other retail or food concessions at either ferry terminal.

5.2 Future Needs

Two future transportation scenarios were developed, reflecting assumptions based on past trends and input from the operators. These were developed for the purpose of setting reasonable upper and lower bounds for decision-making concerning the RITC facility and should not be taken as projections of future travel. Both scenarios would result in increased demand for transportation services at the RITC. Ridership and parking demand was assessed for both 2015 and 2030 under each scenario.

Parking and Traffic - The demand for parking is a key element in determining future facility needs. If the Cross Sound parking lot is needed for auto ferry staging, and the Julian lot (open on summer weekends) is developed without public replacement parking, existing demand would create an immediate need for additional parking. Otherwise, under either scenario, additional parking may not be needed before 2015 but would certainly be needed well before 2030. By 2030, in the low demand scenario, peak summer weekend demand would be near the total capacity of all downtown parking facilities, while in the high scenario, higher growth rates and expanded ferry services would increase demand to well over total parking capacity. RITC parkers alone would take up all of the available capacity in the high scenario, leaving no room for other users. If RITC parkers were limited to the three closest facilities, they would nearly fill the facilities, even in the low demand scenario. It is also likely that additional space will be needed for taxis and for passenger pick-up/drop-off, possibly through the creation of an off-site taxi holding area. Increased traffic at the Water Street intersection with Governor Winthrop Boulevard may result in unacceptable traffic levels of service that would also need to be addressed.

Rail Facilities - Ridership and service under the future scenarios will likely require some additional or enhanced facilities. While current rail facilities appear to be adequate to meet future demand, it was determined late in the study that Shore Line East service when expanded will be shifted to Track 6 (the freight track) at Amtrak's request. Connecticut DOT will modify the existing platform and may consider construction of an additional platform in the future to the east side of Track 6.

Bus Facilities - Bus facilities may need to be expanded and enhanced. Greyhound may need access to a third bay. Greyhound's ticketing and waiting area would likely need to be enhanced and expanded. For SEAT, increased corridor route frequency in either scenario will create a need to layover an additional bus and any new routes would further increase space requirements. The increase in frequency in the high

scenario would result in much more SEAT activity visible at the RITC bus stop. This increase in vehicles using the facility and the accompanying increase in ridership would make the case for an enhanced facility with an enclosed waiting area, additional amenities and an indoor facility for operating personnel. Finally, the proposed but unfunded tourist transit system included in the high scenario would also create additional need for bus facilities, both close to downtown and accessible to the Cross Sound Ferry terminal. (At Cross Sound Ferry, the tourist transit buses would replace the casino shuttles using the same, or preferably enhanced, facilities.)

Ferry Facilities - Ferry operators may also need to add facilities to accommodate the expanded services reflected in the high scenario. Cross Sound Ferry may wish to construct a new high-speed passenger ferry terminal at the site of the Block Island ticket office and dock, serving the Block Island Ferry, SeaJet and any new passenger ferry services. Fishers Island would need a new ferry slip if they begin operation of a passenger-only ferry.

Current and future operational and facility needs for all modes, the need for improved connections between modes, the need for additional parking and the need for improved amenities all played a key role in developing proposed improvements to the Regional Intermodal Transportation Center

6. Potential Transit Oriented Development (TOD)

The enhancement of the RITC is envisioned to serve as a catalyst for transit oriented development (TOD), that is, concentrated development within walk distance of the RITC that builds on the advantages of convenient public transportation access and in turn generates passengers that will use the RITC. A market analysis was conducted to assess the development potential at and in the general area around Union Station (i.e., downtown New London). Through a demographic and economic overview of the RITC site area, as well as analyses examining the residential, office and retail market development potential of the station and surrounding areas, this market analysis considered the land uses and services that can complement the RITC. This analysis was prepared using an industry standard research process, taking into consideration emerging demographic and economic factors, transit oriented development factors, and public/private development opportunities. The result was projections for residential, retail and office development in the succeeding ten year period. This was followed by an evaluation of transit oriented development (TOD) sites and the development of some general TOD scenarios.

6.1 Summary of Strengths, Challenges and Opportunities

Strengths, challenges, and opportunities for potential development in downtown New London's Historic Waterfront District were identified as a result of site visits, interviews with stakeholders, and market analysis conducted during the study.

- **Strengths**
 - historic downtown with unique characteristics
 - national trends of residential, office and retail shifts into urban centers
 - growth in key industries (professional/scientific, maritime, and creative arts and technology)
 - large regional tourist industry
 - existing demand for market rate downtown residential space
 - eclectic niche of retailers and restaurants

- entertainment and arts venues
 - local and regional metropolitan connections (Boston, New Haven, Stamford, New York, Philadelphia, and Washington)
 - a historic multimodal transportation center in downtown serving as an origin or destination for 1.8 million passengers annually
- **Challenges**
 - difficult/expensive renovations
 - obsolete retail spaces
 - perception of crime
 - low traffic counts
 - national economic downturn
 - difficult pedestrian environment connecting the train station, ferries and downtown
 - low occupancy of existing commercial space
 - predominantly lower income population in the city
 - small downtown residential population
 - a relatively small downtown worker population
 - **Opportunities**
 - build on local economic and demographic trends with an expanded residential presence downtown for empty nesters and young professionals
 - attract businesses in key employment industries
 - encourage more tourist visits to the area
 - encourage niche retailers
 - bolster downtown entertainment/arts/cultural events
 - improve streetscape to attract public transportation users to the downtown
 - implement a marketing/branding program of downtown and the RITC to capture a larger share of the “culture class” emerging in the new economy and visitors who use the various transportation modes

6.2 Projections for the Next Ten Year Period

The market analysis projected that downtown New London can support modest additional retail, office and residential space over the next ten-year period. However, development will stall in the short term as the nation-wide economic downturn negatively influences market conditions that support growth. It is expected that the supportable square feet and units can be phased in throughout the ten year period, but the majority of the development will occur in the later years. The market analysis for office, residential and retail suggested the following potential projected development program:

Table ES-1 Downtown Development Program over a Ten-Year Period

	Low	Mid	High
Office	20,215 SF	39,000 SF	66,616 SF
Retail	19,422 SF	40,675 SF	62,460 SF
Residential Units	93 (93,000 SF)	211 (211,000 SF)	347 (347,000 SF)
Total Square Footage	130,707	288,262	473,181

While there is potential for new office and retail development, the greatest potential is for residential development. The level of development in downtown New London depends on the market conditions, available space, micro and macro economic trends, public policy incentives and proactive marketing programs. Any combination of these factors will influence the development potential of downtown New London. Taking into consideration the current economic downturn, downtown New London is not projected to see rapid growth in the near term years. As businesses and households begin to recover, they will look for new business, tourist, and retail opportunities. The City of New London, and other organizations aiming to make downtown a more attractive option for office locations, residential living and retail shopping and restaurants, have the near term to foster incentives and develop a marketing campaign to reach out to potential office and retail space users, tourists, residents and other groups potentially spending money in downtown.

Over the longer term (in ten years), the total estimated fiscal impacts from the RITC induced development program are over \$1.6 million in property tax, \$1.2 million in income tax and \$600,000 in sales tax annually. The induced economic impacts are 317 new downtown residents and 356 new employees (209 office employees and 156 retail employees).

6.3 Development Scenarios

The market analysis projected three conceptual development programs which included a low, mid and high scenario. Significant rehabilitation of existing buildings along Bank and State Streets as well as the development of several small infill sites within the downtown would accommodate the Low Scenario downtown development program (consisting of 20,215 SF of office, 19,422 SF of retail, and 93,000 SF of housing, i.e., 93 units). In combination with the rehab/development under the Low Scenario, the development of larger development parcels, including the Eugene O'Neill Drive parking lots would accommodate the Mid Scenario downtown development program (consisting of 39,000 SF of office, 40,675 SF of retail, and 211,000 SF of housing, i.e., 211 units). Lastly, in combination with all of the above, the redevelopment of large potential redevelopment sites on Atlantic Street, Eugene O'Neill Drive, Union Street, and Governor Winthrop Boulevard would accommodate the High Scenario downtown development program (consisting of 66,616 SF of office, 62,460 SF of retail, and 347,000 SF of housing, i.e., 347 units).

Sites that could potentially accommodate TOD range from small infill parcels to large, long-term redevelopment opportunities. Presently, there are very few undeveloped sites and, consequently, most of the major opportunities for TOD around the RITC are long term (20 or 30 years). The most immediate opportunities lie in the vacant storefronts on Bank and State Streets, and small infill parcels identified above. Although it is conceivable that these sites could be rehabilitated/developed within the short range, they are too small to achieve a significant portion of the future land use program identified in the market analysis. In addition, achievable as-of-right development densities may not be great enough to make it worth the investment for developers.

If there is a decision to raze and replace the Water Street Garage in the future (e.g., 20 or 30 years from now), consideration should be given to redeveloping the "superblock" bound by Water Street, State Street, Eugene O'Neill Drive, and Governor Winthrop Boulevard. This 235,000 sq. ft. site (5.4 acres) represents an opportunity to use the site more efficiently, create a new "face" for downtown New London fronting on Water Street and create a lively, pedestrian-friendly interior street pattern linking Bank and State Streets to the new multi-use district.

Developing the identified sites with well-designed, higher density, mixed-use development (with an emphasis on residential development) could potentially improve connections between the RITC and the downtown, increase transit ridership, and help transform the RITC and downtown New London into a vibrant, pedestrian-friendly, self-supporting district. The realization of this TOD potential will require public/private partnerships and community support.

7. Development and Evaluation of Improvement Options

To guide the development of options for the master plan and the screening evaluation of those options, the following guiding principles were developed to reflect the goals of SCCOG, the City and the Stakeholder Steering Committee.

Table ES-2: Guiding Principles

- | |
|--|
| <ol style="list-style-type: none">1. Emphasize short term improvements that are specific, low cost, and easy to implement, that address identified deficiencies and that work towards, or at least are not incompatible with the desired long term vision(s)2. Include one or more long term visions, which should be more general and allow for some flexibility so that the City can respond to private developer proposals3. Identify possible phasing of improvements4. Preserve and enhance the viability and growth of the transportation operators and local businesses5. Make transfers between modes safe and convenient6. Capitalize on the synergies of transportation services and development7. Balance the space needs of transportation services and development8. Maximize opportunities for those types of development that are likely given the character and advantages of New London9. Avoid schemes that would involve land takings / focus instead on opportunities for public-private cooperation10. Consider the goals of private businesses/property owners as well as public goals11. Create an attractive gateway for New London and the region and encourage travelers to visit New London |
|--|

7.1 Short Term Alternatives

Several options were identified for short term, lower cost improvements for the RITC. These improvements were designed to enhance the traveler and visitor experience, particularly as a pedestrian. These improvements would be implementable in a relatively short time frame, through cooperative arrangements among the City and the major property owners. The improvements would not require major redevelopment or reconstruction efforts; however, they would make significant progress in addressing identified issues, including pedestrian safety, unclear connections, amenities, image, aesthetics, etc. The potential improvements are compatible with the longer term visions.

For all practical purposes, the locations of the auto ferry terminals and rail station are fixed. The location of the major parking facilities serving the RITC are also fixed at least for the short term. It should also be

noted that the Parade Project which is under construction and nearing completion was assumed to need to remain in place without modification (or incur only very minor impacts).

The most flexible components of the RITC are the Greyhound Bus Terminal, the SEAT pulse-point bus hub, the taxi stand, the pick-up/drop-off areas at Union Station, the location of the high speed passenger ferry docks, and the allocation of staging versus parking space on the Cross Sound Ferry site. Also subject to possible new uses are the area in front of the Water Street Garage and some areas on the Cross Sound Ferry property. (Cross Sound Ferry has identified the potential removal of some existing buildings to allow for additional parking and staging areas.)

The most urgent needs to address were (in no particular order):

- Pedestrian Safety Improvements
- Enhancing the Pedestrian Environment
- Facilitating Transfers Between Modes
- Improving Wayfinding
- Enhancing Bus Passenger Amenities
- Enhancing the Aesthetic Appearance and Welcoming Visitors
- Encouraging Transportation Uses at Union Station.

Improvements Common to All Short Term Alternatives

Among the components of the short term improvement are several that are common among all the short term alternatives. These are:

- Enhanced pedestrian crosswalks and pathways including ADA compliance
- Enhanced pedestrian scale lighting
- Wayfinding signage between all components of the RITC
- Enhanced traveler information through signage, information kiosks, information center
- Aesthetic improvements to the façade of the Water Street Garage and the railroad right-of-way, that is, new fencing and landscape improvements, events banners and welcome signage on Water Street Garage façade
- Use of Union Station as a gateway to New London
- Extend taxi stand along State Street between Bank Street and South Water Street

The most critical focus areas for short range pedestrian and aesthetic improvements in the RITC area are at the two intersections where streets cross the railroad and that provide pedestrian and vehicular access to the waterfront, ferry services, City Pier, and Union Station. Another focus for pedestrian improvements is along the waterfront. These short term pedestrian and aesthetic improvements will create a higher-quality pedestrian environment and will tie together the transportation modes. Together, they will create a safer and more secure and attractive RITC area for residents, tourists, and transit and ferry patrons.

Improvements Specific to Particular Short Term Alternatives

The short term alternatives differ primarily in what changes are assumed to occur in the location and configuration of the bus facilities. Specifically, the differences are related to whether one or both of the two bus operations are retained in their current locations or relocated to the space now available in front of the

Water Street Garage. In either case, there should be upgrades to the customer facilities for the bus services.

As a result of the bus facility alternatives, there are options as to how the curb space along the east side of Water Street is used if the buses are moved from their current location and how the space in front of the Water Street Garage is used if the buses remain in their current location. Improved taxi stand and vehicle pick-up/drop-off areas at Union Station would be made in all options but in different locations depending on the location of the bus facilities.

The four primary alternatives for the bus facilities studied were as follows:

1. Enhance both facilities in place on the east side of Water Street
2. Move both facilities across the street to the off-street space in front of the Water Street Garage
3. Move only SEAT to the space in front of the Water Street Garage and leave Greyhound at the current site with some possible reconfiguration
4. Move only Greyhound to the space in front of the Water Street Garage and extend SEAT southward to include the former Greyhound site

Within these basic alternatives, some variants were identified.

Besides the location of bus facilities, another potential major difference between alternatives could be how Cross Sound Ferry uses its space. After discussion with Cross Sound Ferry, however, it was concluded that the current configuration of the passenger ferries works best even if Cross Sound Ferry removes some buildings to expand and reconfigure its auto ferry staging area. As a result, short term alternatives did not include options for reconfiguring the Cross Sound Ferry area.

Options considered but not included in the original set of Short Term Alternatives were:

- Bringing SEAT into Union Station
- Moving the Greyhound Terminal Farther North on Water Street and SEAT Closer to Union Station
- Removing a Travel Lane to Extend a Wider Sidewalk on the East Side of Water Street to Governor Winthrop Boulevard
- Shifting Taxi, Bus or Auto Pick-up/Drop-off to the East of the Railroad Right-of-Way
- Including a Pedestrian Bridge in Short Term Options

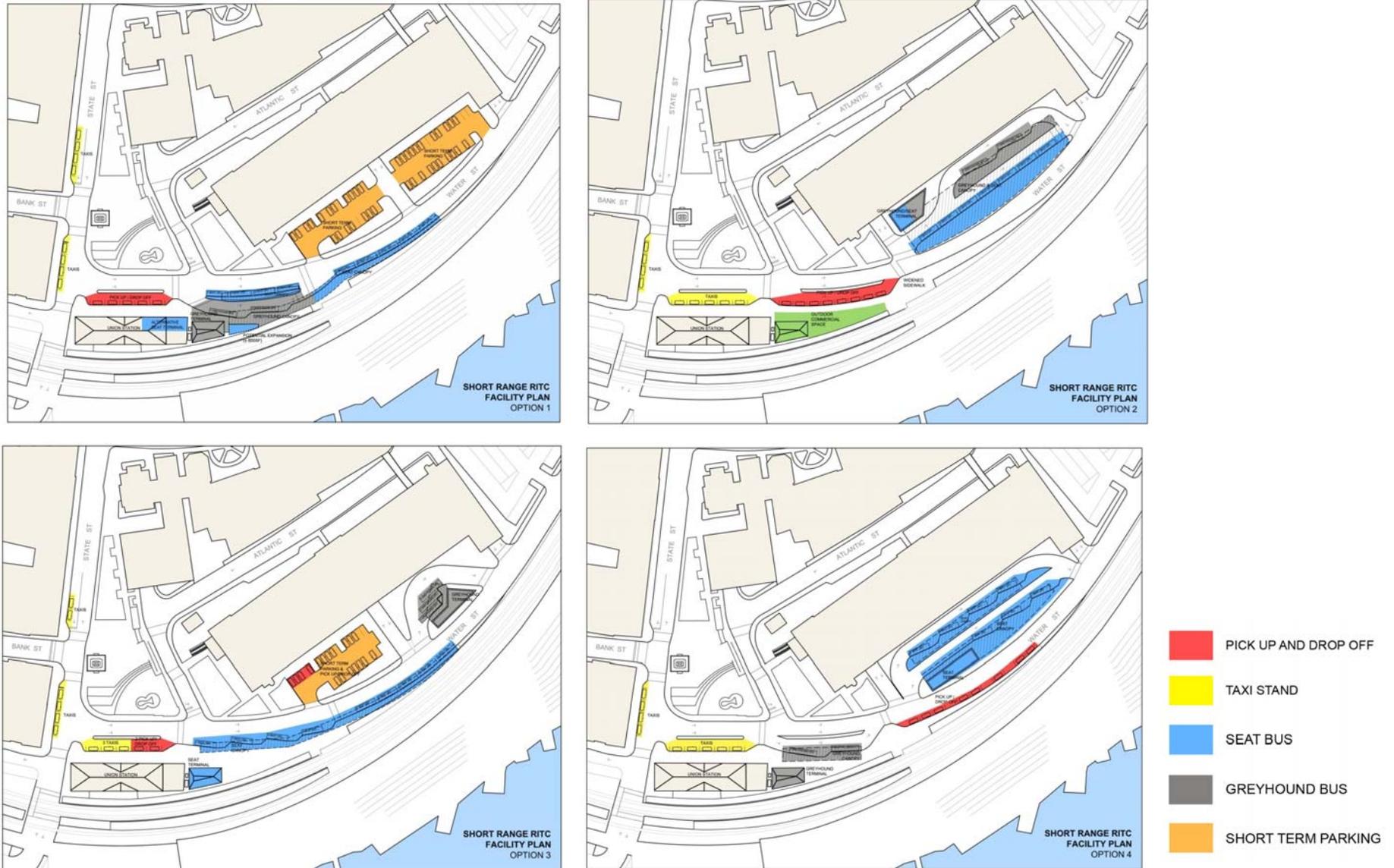
Note that as the Short Term Alternatives were refined in the Master Plan, a pedestrian bridge was included in the Short Term Preferred Alternative and utilization of Union Station for bus terminal space requirements was included in the Fallback Minimum Construction Alternative. A wider sidewalk on Water Street was also included in the Preferred Alternative, but this was made possible by relocating Water Street rather than removing a travel lane.

The four alternatives considered are summarized in Table ES-3. The plan representation of these options is shown in Figure ES-3.

Table ES-3: Primary Short Term Alternatives

Alternative	Name	Description	Greyhound	SEAT	Water Street Garage	Other
1	Both SEAT and Greyhound Stay on East Side of Water Street	One new expanded terminal building and canopy along curb (or SEAT terminal in Union Station)	2 sawtooth bays in current location	4 parallel to Greyhound, 5 north of Greyhound	Short term parking/pickup-drop-off (and/or public event space)	Need to Relocate Parade Crosswalk
2	Both SEAT and Greyhound Move to West Side of Water Street (off street)	New Free-Standing Passenger Terminal	2 sawtooth bays	7 parallel bays	Bus terminal with building; need to relocate center entrance	Reuse east side space for Pickup-Drop-off and plaza; Reuse Greyhound building for café; Need to Relocate Parade Crosswalk
3	Only Greyhound Moves to West Side of Water Street (off street)	SEAT relocated to Greyhound area	3 sawtooth bays and new terminal building	9 bays (4 sawtooth and 5 parallel); terminal at renovated old Greyhound building	Greyhound terminal and some short term parking and pickup-drop-off	Can't use FTA funds for exclusive Greyhound Terminal; Need to Relocate Parade Crosswalk
4	Only SEAT Moves to West Side of Water Street (off street)		2 sawtooth bays	7 sawtooth (or 9 parallel) bays, new terminal building	SEAT bus terminal with building; need to relocate center entrance	Need to Relocate Parade Crosswalk

Figure ES-3: Short Term Alternatives



7.2 Long Term Vision Concepts

The long term vision concepts are necessarily less specific than the short term alternatives. They are designed to identify alternative visions for the RITC area beyond the year 2030 when the Water Street Garage and some other facilities and properties are due for reconstruction or redevelopment. The Master Plan does not propose one single long term vision concept, but rather includes several alternative visions that can be followed as the opportunity arises

The concepts reflect two primary decisions that will have to be made:

1. Should the RITC be concentrated at the immediate Union Station area near the intersection of State Street and Water Street, or should the RITC be extended to include the area from State Street to Governor Winthrop Boulevard in the Water Street corridor?
2. Should the parking facilities for the RITC be concentrated, thereby dispersing potential transit-oriented development (to multiple small sites within walk distance of the RITC)? Or should the parking be dispersed over a wider area (but within walk distance of the RITC) thereby allowing more concentrated transit-oriented development near the RITC, taking maximum advantage of the waterfront location as well as the proximity to the RITC? Note that given the scale of downtown New London and the desire to protect the character of the city, it was deemed infeasible to concentrate both parking and development near Union Station.

Table ES-4 summarizes the resulting concepts. Figure ES-4 illustrates the concepts. Note the concepts generally can include a Pedestrian Bridge or rely on surface connections.

Options considered but not included in the Long Term Concepts due to either a lack of feasibility or other disadvantages were:

- Building a Deck over the Railroad Right-of-Way
- Building a Tunnel Under the Railroad Right-of-Way¹

¹ Disadvantages of a tunnel with respect to security, maintenance, disruption to rail traffic, de-watering and a connection to the Water Street Garage, make this a less desirable option than the pedestrian bridge structure which has the ability to connect the garage, station, and ferry terminal less expensively with improved security and less maintenance requirements.

Table ES-4: Four Long Term Concepts

A: Concentrated Transportation Center

(Concentrated Parking / Dispersed Development)

- Transportation facilities concentrated near Union Station
- Expanded parking as close to Union Station as possible
- Parking/transportation facilities limit development opportunities near the waterfront
- Large development opportunities are far from the Parade and Union Station

B: Concentrated Transportation Center with Parking Facilities along Water Street

(Concentrated Parking / Dispersed Development)

- Transportation facilities concentrated near Union Station
- Expanded parking on sites along Water Street closer to Governor Winthrop Blvd.
- Parking/transportation facilities limit development opportunities near the waterfront
- Large development opportunities are far from the Parade and Union Station

C: Concentrated Transportation Center with Relocated Parking Facilities and New Water Street Development

(Dispersed Parking / Concentrated Development)

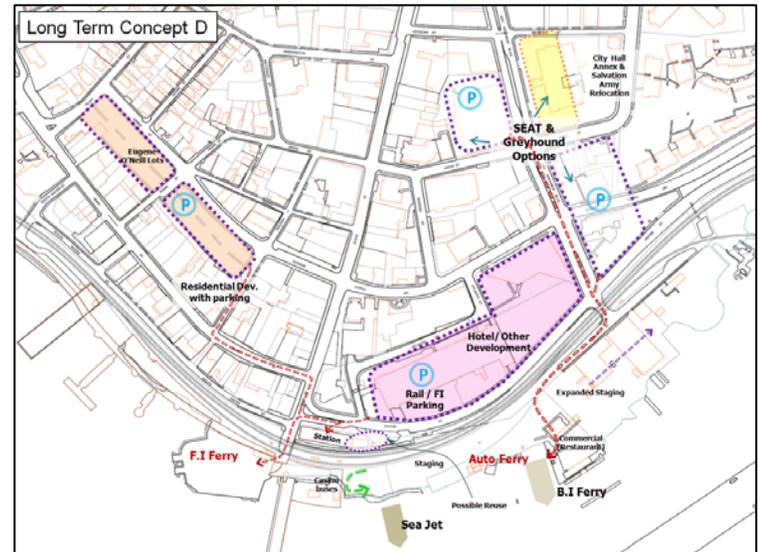
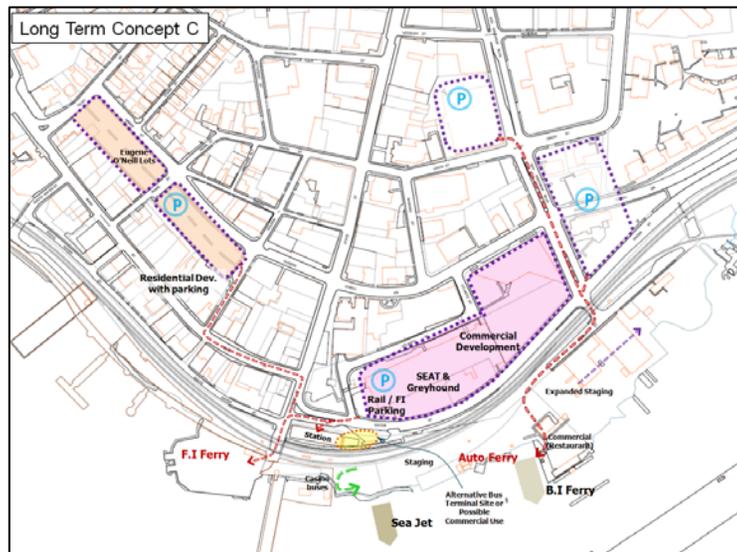
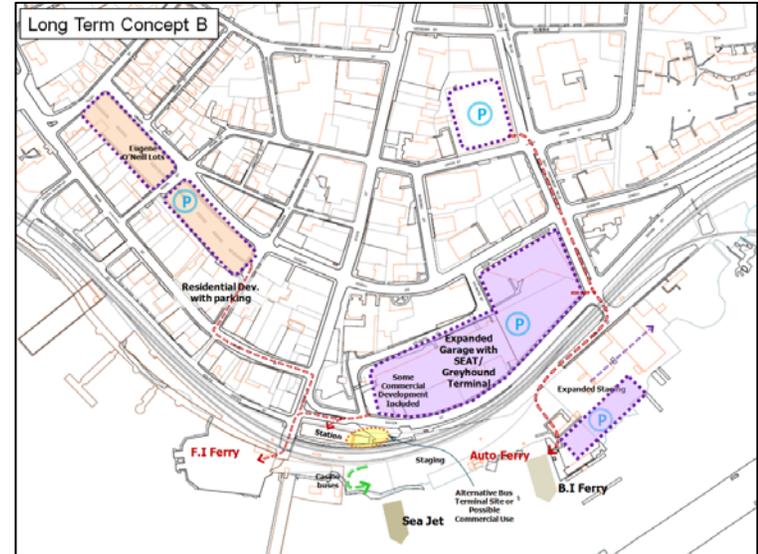
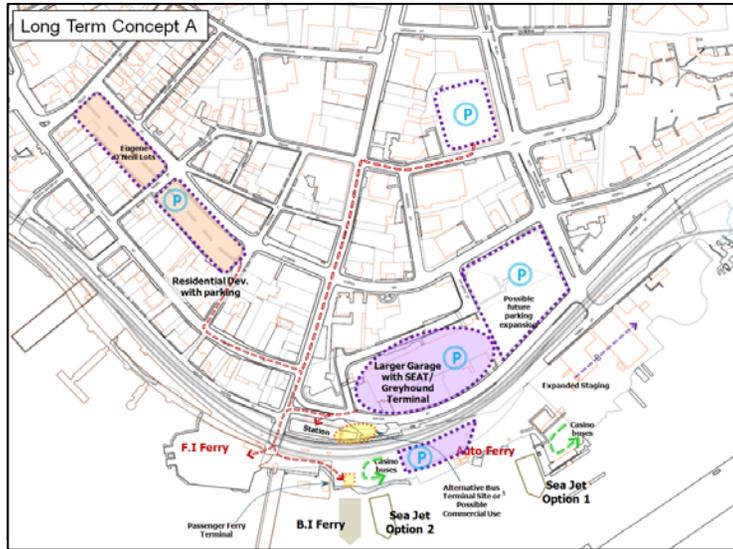
- Transportation facilities concentrated near Union Station
- Some parking relocated from Water Street to sites along Governor Winthrop Blvd.
- Relocation of parking facilities increases development opportunities near the waterfront and Union Station

D: Extended Transportation Center with Relocated Parking Facilities and New Water Street Development

(Dispersed Parking / Concentrated Development)

- Some transportation facilities relocated along Governor Winthrop Blvd.
- Some parking relocated from Water Street to sites along Governor Winthrop Blvd.
- Relocation of parking/transportation facilities increases development opportunities near the waterfront and Union Station

Figure ES-4: Long Term Vision Concepts
 (Note that Concepts A, C and D were also examined with a Pedestrian Bridge)



7.3 Evaluation and Stakeholder Input

Screening evaluation criteria, as listed in Table ES-5, were used to evaluate the Short Term Alternatives and Long Term Concepts. The results, documented in the final report, were presented to the stakeholders, identifying the many trade-offs.

Table ES-5: Screening Evaluation Criteria

<p><i>Common Criteria</i></p> <ul style="list-style-type: none">• Low Cost• Improves Safety and Convenience for Transfers• Enhances Pedestrian Safety• Enhances Wayfinding/Information• Has Sufficient Capacity (Operations in Short Term, Demand and Growth for Public Transportation Modes and Parking in the Long Term)• Enhances Attraction of Visitors• Minimal Environmental Issues• Minimal Property Issues• Potential for Public Private or Grant Funding (for the Transportation Improvements in the Short Term) <p><i>Short Term Criteria</i></p> <ul style="list-style-type: none">• Easy to Implement• Adaptable to Future Changes in Operating Needs• Flexible to Accommodate Long Term Commercial Development• Compatibility with Bus Terminal Long Term Concepts• Maintains or Enhances Traffic Operation/Safety <p><i>Long Term Criteria</i></p> <ul style="list-style-type: none">• Ease of Project Development• Ease of Phasing• Improves Convenience for Parking Access• Enhances Pedestrian Environment• Promotes Likely Development/Local Economy• Capitalized on Synergies between Transportation & Development• Balances Need for Transportation & Development
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The stakeholders had considerable suggestions and comments on the identification and evaluation of the short term alternatives and long term vision concepts presented at a Stakeholder Steering Committee meeting held in early summer 2009. TranSystems proceeded to examine the feasibility of some of the stakeholder suggestions such as introducing another railroad crossing between the two current crossings, shifting rail platforms northward to allow surface crossing while trains were in the station, relocating or removing the freight siding, etc. The consultant team was redirected by SCCOG to respond to the stakeholder consensus that emerged and to develop revised short term alternatives. The direction was to 1) develop alternatives for bus terminal facilities located on the east side of Water Street adjacent to Union Station, incorporating use of the building currently used by Greyhound, and shifting Water Street to the west, if needed, to provide adequate space to meet the bus operator needs, and 2) to include an up-and-

over pedestrian bridge or tunnel in the short term alternatives that would enable passengers to cross the tracks when trains are in the station (as required by Connecticut DOT) and which could include additional spans to connect to the Water Street Garage and the waterfront. This is reflected in the Preferred Alternative of the Master Plan described in the next section.

With regard to the long term concepts, there was no clear consensus on a specific vision for the future. There was agreement that the replacement of the Water Street Garage would not occur for many years considering the investment the City was making to repair the facility. The sentiment of the Stakeholder Steering Committee was that the alternative visions would be helpful in the future but the Master Plan should focus on the short term alternatives including immediate actions. As a result, the long term visions were not carried forward into the Master Plan. The most important long term consideration will be to continue to keep options open to respond to development opportunities in the future and to continue discussion on the long term vision.

8. Master Plan

The Master Plan includes a Preferred Alternative and a Fallback Minimum Construction Alternative. Both of these are short term alternatives and the Preferred Alternative includes an immediate action and short term component. Long term vision concepts were prepared during the study and are described in the Final Report but no single long term concept was advanced into the Master Plan.

The Master Plan does not represent a detailed design, but rather provides a conceptual design of the suggested improvements to the RITC.

8.1 The Preferred Alternative

The Preferred Alternative consists of the following major elements reflecting the input from the stakeholders and the direction from SCCOG and Connecticut DOT:

- Water Street Relocation
- Pedestrian Bridge
- Other Pedestrian Improvements
- Wayfinding Improvements
- New Combined Bus Terminal on the East Side of Water Street
- Rail Facilities
- Other Modal Improvements

Water Street Relocation

To provide the necessary space on the east side of Water Street for the bus terminal, pedestrian bridge vertical circulation (elevator and stairs) and pedestrian circulation, the plan envisions the relocation of Water Street to the west, utilizing part of the City-owned land in front of the Water Street Garage. The relocation of Water Street would at its maximum point extend about 50 feet west and would have some impacts on the Parade Project improvements (i.e., pavement, landscape and crosswalks) north of Atlantic Street. It was designed not to impact the Parade itself (south of Atlantic Street), the Julian property or the functioning of the Water Street Garage. The relocation plan preserves two travel lanes on Water Street parallel to the bus stop and continues to provide a 500-foot long right lane on Water Street approaching

Governor Winthrop Boulevard (for right turns and through movements). Travel lanes are narrowed slightly to 11 foot lanes with a total cartway width of 35 feet. Finally, although the City-owned parcels in front of the Water Street Garage are reduced in size by the relocation, 27 short-term parking spaces can be accommodated there, essentially preserving all the parking spaces currently provided there.

Pedestrian Bridge

After an evaluation of bridge and tunnel options, a pedestrian bridge was selected as the preferred means of providing direct unimpeded crossing of the railroad tracks. A tunnel would cause more disruption to rail traffic during construction, would require ongoing dewatering, would be impractical to extend to the Water Street Garage and would have greater security issues than a pedestrian bridge. Connecticut DOT required that a bridge or tunnel over the primary tracks be included in the short term plan and stated that no additional at-grade crossings could be introduced. Extensions of the pedestrian bridge westward to Water Street Garage (over Water Street) and eastward to the Cross Sound Ferry property (over the freight track) are optional and could be added in a phased manner. Thus, the pedestrian bridge is conceived as a mandatory center section and two optional extensions.

The mandatory central section would connect from the southbound platform area and bus terminal area on the east side of Water Street spanning the Amtrak tracks to the northbound platform. The bottom of the bridge would need to be about 30 feet above the tracks and would reach to an elevation of about 55 feet. At the west end of the center section, the elevator and stairway would be incorporated into the proposed new bus terminal building. At the east end of the center section, the elevator and stairs would be located at the end of the northbound platform accompanied by a short northward extension of that platform. The location of the bridge is largely fixed by the need to serve the northbound platform at its northern end since the space between the two tracks is not wide enough to accommodate vertical circulation elements and a rail platform. (Although stakeholders also suggested considering a location at Union Station or south of Union Station, such options have disadvantages such as greater impacts on the historic structure, impacts on South Water Street, requiring passengers to cross State Street, and eliminating the potential to directly connect to the Water Street Garage.)

The optional extension to the Water Street Garage would not require new vertical circulation at the western (garage) end but could instead rely on the stairs and new elevator at the south side of the garage. Optionally, the existing unused elevator shaft located in the southeast corner of the garage could be rehabilitated. The pedestrian bridge would connect to the top floor of the garage. (The final design should consider how the bridge structure can remain intact while accommodating an eventual replacement of the garage with a new structure.)

The optional extension to the Cross Sound Ferry area could be integrated with a new passenger ferry terminal. Such a terminal was previously proposed by Cross Sound Ferry but has not been advanced. For the purposes of the Master Plan, the bridge extension has been assumed to extend to the location identified on such prior plans but the vertical circulation to ground level is assumed to be part the bridge extension. At the request of Cross Sound Ferry, to accommodate the large number of Block Island Express passengers disembarking at once, an escalator is included at this location as well as an elevator and stairs. While no specific design of the bridge structure is proposed in the Master Plan, it has been assumed that a more transparent style bridge would reduce visual impacts. Nevertheless, the height of the bridge (elevation from about 36 to 55 feet) would result in visual impacts. Three dimensional visualizations have been prepared to convey the impacts for the center section of the bridge and for a full bridge with both extensions.

Other Pedestrian Improvements

Besides the Pedestrian Bridge described above, a wide variety of other pedestrian improvements are proposed as part of the Master Plan's Preferred Alternative. These include:

- Sidewalks/pathways on both sides of railroad right-of-way including:
 - An 8-foot wide sidewalk on the east side of Water Street from the current bus stop to Governor Winthrop Boulevard and beyond to the park at Crystal Street
 - A widened sidewalk on the west side of Water Street to Governor Winthrop Boulevard
 - Pedestrian pathways from City Pier through the Cross Sound Ferry area
- Use of pavers to unify the RITC bus terminal area with Union Station
- Quad gates/ rubber surfaces at the two railroad crossings at State Street and Governor Winthrop Boulevard including wider clearly delineated crosswalks and sidewalks
- Steel post fencing along the railroad right-of-way (Note the City has already installed this on the west side of the right-of-way along Water Street.)
- Landscaping along Water Street and the waterfront
- Gateway structures to delineate the waterfront area (located at opposite ends of the Cross Sound Ferry area)
- Pedestrian scale lighting throughout, similar to that used in the Parade Project
- Canopies with lighting for bus passengers at the Greyhound and SEAT boarding areas.

The pedestrian plan is shown in Figure ES-5. It assumes that Water Street is relocated and the bus terminal and pedestrian bridge are constructed. Similar pedestrian improvements could be made even if those improvements are not constructed. Improvements at the two railroad crossings and east of the railroad right-of-way can be implemented immediately, if funding is available, while other improvements along Water Street would need to wait until Water Street is relocated and the bus terminal and pedestrian bridge are constructed or they would have to be redone.

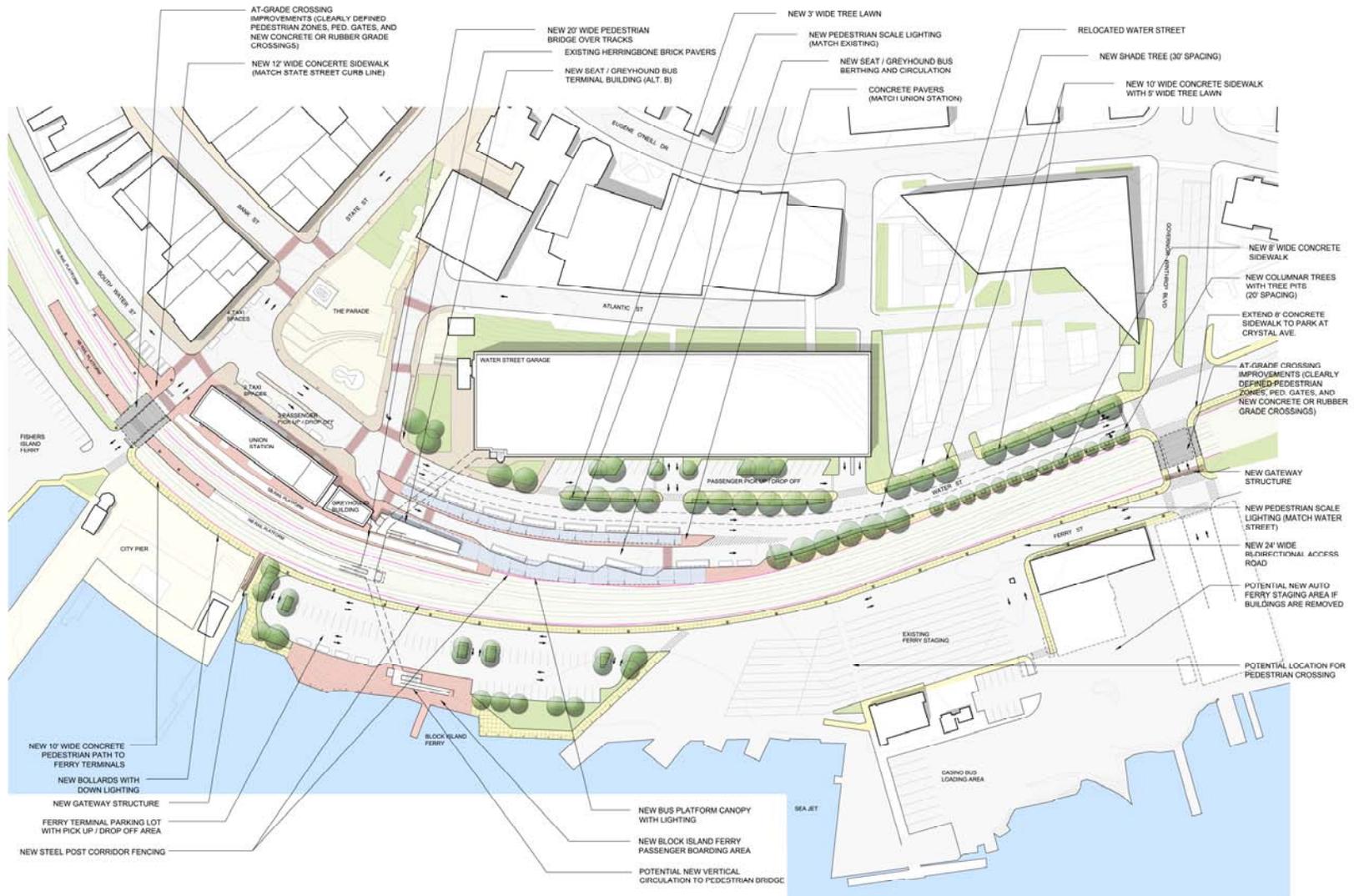
Wayfinding Improvements

The Master Plan includes a plan for wayfinding improvements. This includes 17 locations where signage would be erected to direct pedestrians and vehicles to transportation functions and to downtown business districts. The plan also includes recommendations that wayfinding maps be erected at three locations (Union Station, Bus Terminal and Water Street Garage) to help orient pedestrians. Specific examples of signage and information to be included on signs are shown in the Master Plan section of the Final Report. Note that recently New London Main Street has erected new wayfinding signage of a similar design at selected locations and is erecting "gateway" signs to encourage visitation to downtown New London.

New Combined Bus Terminal on the East Side of Water Street

The Master Plan includes a new combined bus terminal for Greyhound and SEAT located on the east side of Water Street made possible by the relocation of Water Street. The relocation of Water Street makes it possible to create two parallel bus boarding areas along Water Street while also accommodating the vertical circulation elements (stairway and elevator) for the pedestrian bridge over the railroad tracks and sidewalks for pedestrian circulation. However, even with the relocation of Water Street the space is constrained and the sidewalk would be only about 11 feet wide at its narrowest point. With the two parallel

Figure ES-5: Pedestrian Improvement Plan in the Preferred Alternative



IMMEDIATE & SHORT RANGE PEDESTRIAN IMPROVEMENTS

COMBINED GREYHOUND & SEAT TERMINAL : ALTERNATIVE B
 REGIONAL INTERMODAL TRANSPORTATION CENTER (RITC)
 NEW LONDON, CT

DATE: JANUARY 26, 2011

SCCOG Southeastern Connecticut Council of Governments

TranSystems

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bus boarding areas, the bus bays desired by the bus operators can be accommodated. The existing Greyhound building would be re-used for some bus terminal functions with interior modifications to the building. However, to provide the most functional space for the passenger waiting area and ticket/information counters, a new building addition with a glass front is proposed just north of the existing Greyhound building. This new building will allow bus passengers to have a view of the buses and the staff at the counter to view the passenger waiting area and the buses. Interior waiting space would allow for 50 SEAT passengers and 25 Greyhound passengers, consistent with the minimum requirements expressed by the bus operators. Canopies would be provided to provide shelter for passengers boarding buses or waiting outdoors. These canopies would extend from the new terminal building along the Water Street east side sidewalk curb line and along a 15-foot wide SEAT passenger boarding island. The design also allows for some ancillary curbside space for Greyhound freight pick-up/drop-off and SEAT maintenance vehicles. Figure ES-6 shows the layout of the bus terminal, and pedestrian bridge and the relocation of Water Street.

It should be noted that the plan envisions using currently privately-owned property (Union Station) and therefore would require negotiation for purchase or long term leasing of this property.

While the plan accomplishes the goals identified, it is a fairly tight fit and has some drawbacks. Among these are the constrained sidewalk width, the long and narrow building shape leading to less efficient use of space, and the fact that the new terminal tends to create a barrier between Water Street and the rail platform.

Figure ES-7 depicts a conceptual interior floor plan, whose purpose is primarily to show that it is feasible to accommodate the space required. A final floor plan would be part of the building design to be undertaken in a future implementation step.

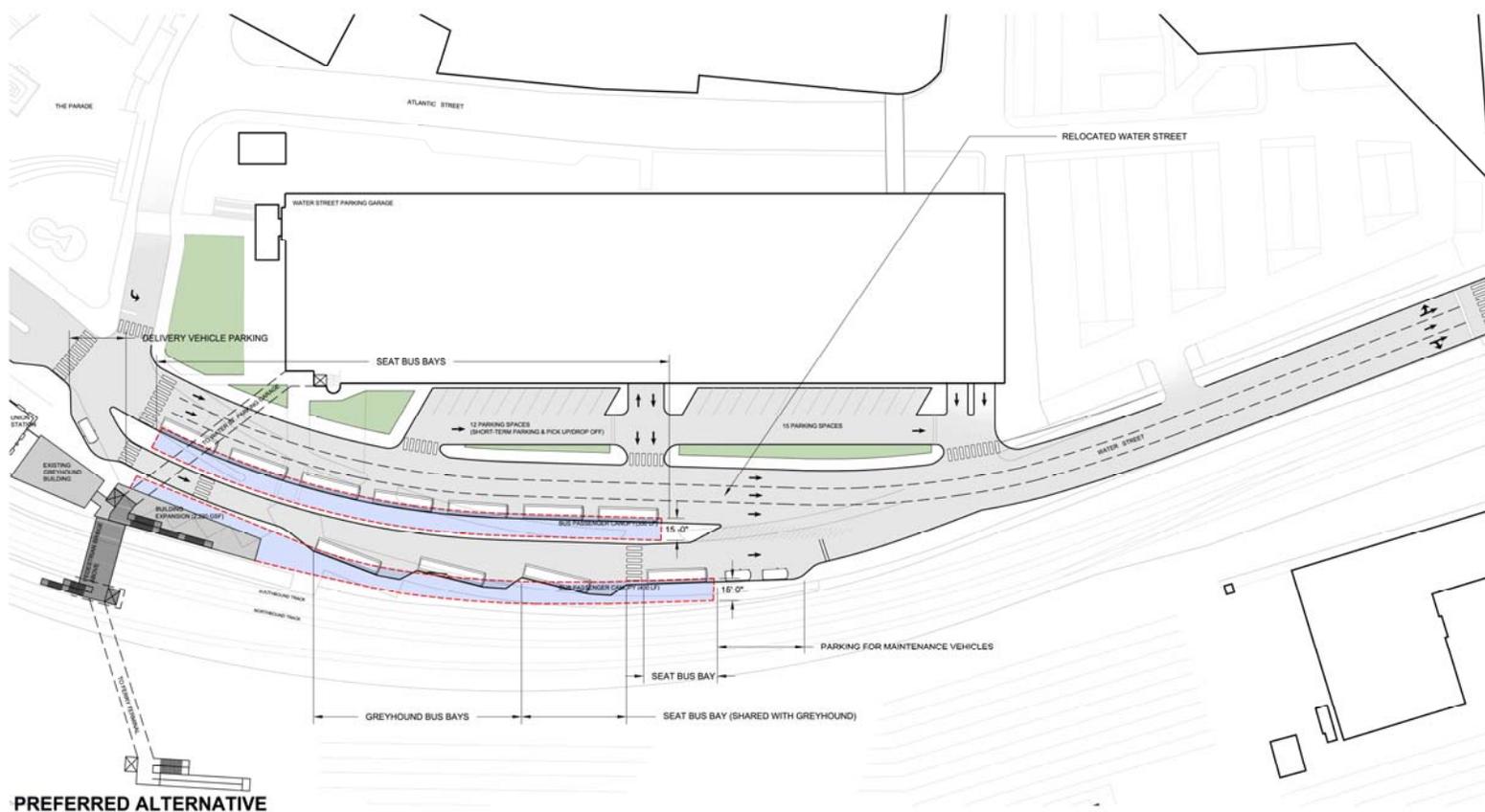
Rail Facilities

The Master Plan has not identified the need for additional facilities for Amtrak rail operations although enhanced amenities for passengers at Union Station would be desirable and minor adjustments are needed for ADA compliance. At the outset of the study, it appeared that Shore Line East would continue to operate from the current platform and that its primary need was commuter parking which could be accommodated at the Water Street Garage. However, late in the study, it became clear that Amtrak desires expanded Shore Line East service to operate from the freight track (Track 6), the track farthest from Union Station. Connecticut DOT is therefore examining immediate modifications to the northbound platform to enable it to be used to access Track 6. In the longer term, Connecticut DOT may consider a new platform for Track 6 located on the east side of the track adjacent to City Pier and Cross Sound Ferry. This was not examined in this study. However, it would have an impact on the proposed pedestrian bridge, requiring extension of the center section of the bridge and either requiring additional vertical circulation for the new platform or consolidation of the vertical circulation at the east side of the optional extension to the Cross Sound Ferry area with vertical circulation for this platform.

Other Modal Improvements

Taxis and Automobile Pick-up/Drop-off - Taxi and automobile pick-up and drop-off are critically important access modes for the train service at Union Station and are expected to grow in importance with the increased presence of Shore Line East at the station. However, the space available for taxi and automobile pick-up and drop-off at the rail station and bus terminal is already constrained by the limited space on Water Street and strong competition for uses. The proposed relocation of Water Street and the

Figure ES-6: Combined Greyhound and SEAT Terminal Site Plan in the Preferred Alternative



COMBINED GREYHOUND & SEAT TERMINAL SITE PLAN
 REGIONAL INTERMODAL TRANSPORTATION CENTER (RITC)
 NEW LONDON, CT

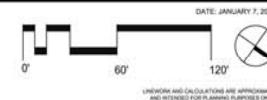
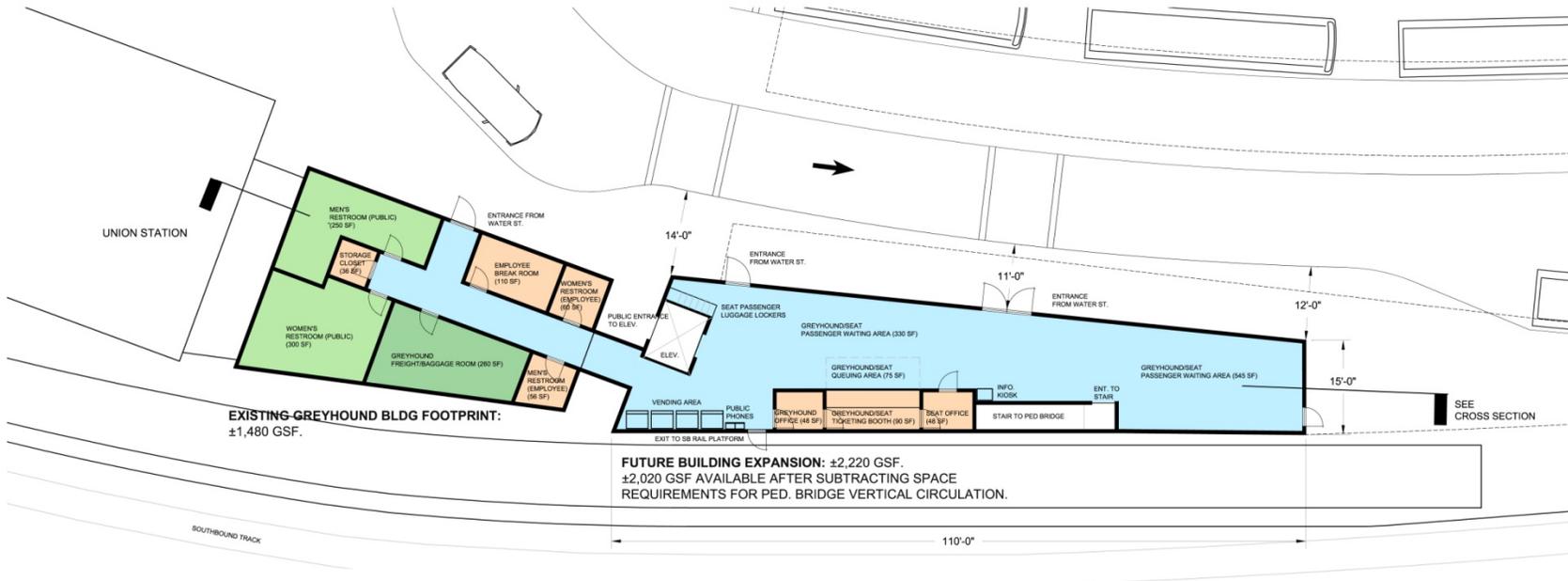
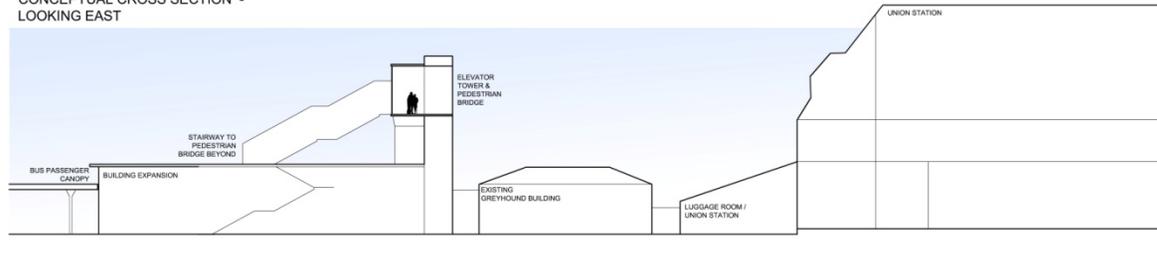


Figure ES-7: Draft Conceptual Floor Plan of the Bus Terminal in the Preferred Alternative

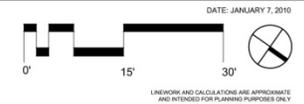
NOTES:

- THIS FLOOR PLAN **DOES** MEET MINIMUM SPACE REQUIREMENTS FOR PASSENGER WAITING AREA, AS DEFINED IN THE DRAFT ARCHITECTURAL PROGRAM.
 - MINIMUM WAITING AREA REQUIRED FOR SEAT: **500 SF** (50 PASSENGERS AT 10 SF PER)
 - MINIMUM WAITING AREA REQUIRED FOR GREYHOUND: **375 SF** (25 PASSENGERS AT 15 SF PER)
 - TOTAL MINIMUM WAITING AREA: **875 SF**
 - TOTAL PROVIDED: **875 SF**

CONCEPTUAL CROSS SECTION - LOOKING EAST



DRAFT CONCEPTUAL FLOOR PLAN
 REGIONAL INTERMODAL TRANSPORTATION CENTER (RITC)
 NEW LONDON, CT



plan for the Bus Terminal and Pedestrian Bridge does not negatively impact any of the existing designated auto or taxi pick-up, drop-off, queuing or parking spaces. It is envisioned that taxis would continue to pick-up and drop-off passengers directly in front of Union Station and that auto passengers would at least be dropped off in front of Union Station as well. It is suggested that the available short term parking spaces in front of the Water Street Garage be used for automobile passenger pick-up so that automobile standing in front of Union Station is limited to the short time needed for actual unloading. It is also recommended that the first block of State Street (that is, between South Water Street and Bank Street) be used for taxi queuing so that taxis wait there in an orderly queue and then can pull up in turn to pick up passengers at two designated spaces in front of Union Station nearest the State Street corner. The remaining three spaces in front of Union Station would be designated for passenger drop-off for automobiles and taxis. The final operational arrangements will need to be worked out with the taxi operators.

Car Rental - There may be opportunities to locate a car rental counter in Union Station provided nearby parking for rental cars can be arranged. A ZipCar space or two could be located in the Water Street Garage or in front of the Garage.

Bicycle Accommodations - A bike rental business might be located in Union Station. Bike racks should be provided at the station. Possible locations include at City Pier, in front of the Water Street Garage or in the current Amtrak parking spaces on South Water Street if these parking spaces can be relocated to another nearby location.

Visualization

Figures ES-8 and ES-9 show the view from the Parade of the RITC bus terminal and pedestrian bridge with the mandatory central section of the pedestrian bridge and with the full bridge with the optional extensions to the Water Street Garage and to the Cross Sound Ferry area, respectively.

8.2 The Fallback Minimum Construction Alternative

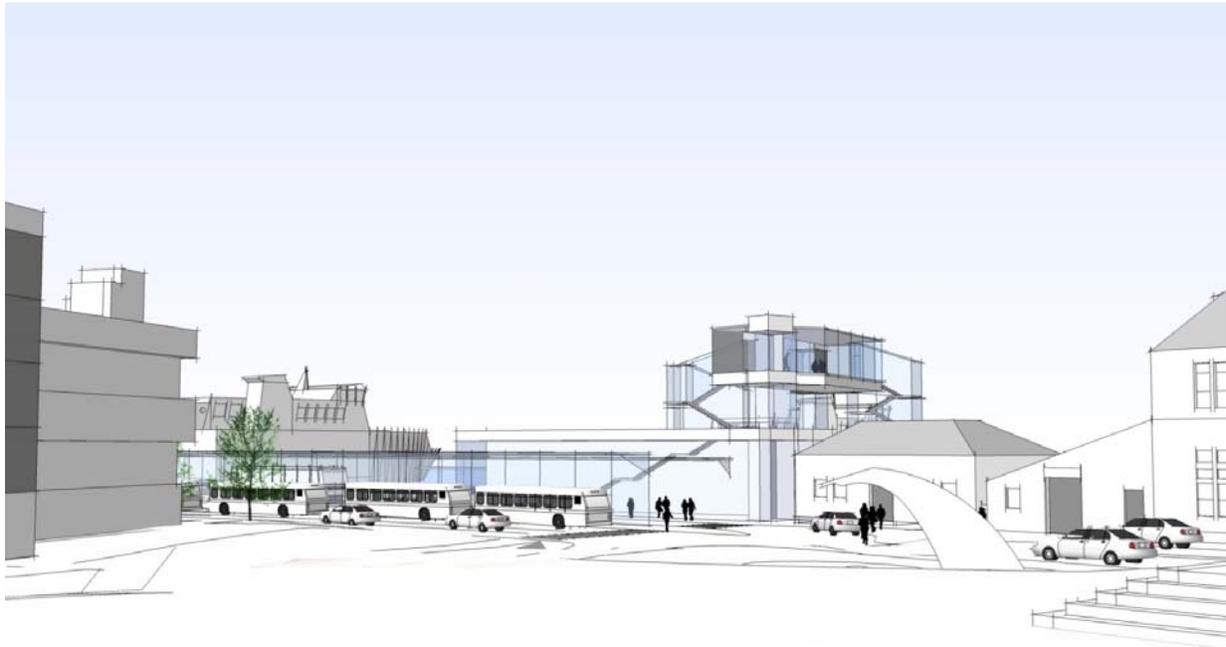
The Master Plan includes a second alternative, called the Fallback Minimum Construction Alternative (hereafter called the Fallback Alternative for short). This alternative has been included, at the City's request, to identify an option that could be exercised to meet needs in the short term if the funding cannot be obtained to construct the Preferred Alternative or if there are other reasons not to pursue the Preferred Alternative. Since one primary reason for including it is the lack of funds, it is assumed to exclude the Pedestrian Bridge that is included in the Preferred Alternative; however, if funding can be obtained for the Pedestrian Bridge, it is compatible with the Fallback Alternative.

The Fallback Alternative differs from the Preferred Alternative in the following aspects:

- Water Street remains in its current location
- Bus loading areas remain in their current locations
- The Pedestrian Bridge and new bus terminal building addition are not included
- Indoor bus passenger facilities are located in existing structures.

The pedestrian improvements other than the Pedestrian Bridge would be assumed to be included in the Fallback Alternative although the design would be revised to accommodate the current street configuration.

Figure ES-8: Preferred Alternative with Center Section of Pedestrian Bridge
View from the Parade



=

Figure ES-9: Preferred Alternative with Full Pedestrian Bridge Including Extensions
View from the Parade



The Fallback Alternative, like the Preferred Alternative, keeps all the public transportation services on the east side of Water Street. However, it does not involve construction of new bus terminal building and it does not involve the relocation of Water Street or the creation of two parallel set of bus boarding areas. As a result, it cannot provide expanded capacity for buses, though it does accommodate the current needs. It utilizes existing buildings including both the Greyhound Building and Union Station itself for the bus terminal facilities, requiring interior modifications and the construction of a connection between the two buildings. Figure ES-10 shows the configuration of the bus terminal area and Figure ES-11 shows a Conceptual Floor Plan within the existing buildings (for the purposes of a feasibility assessment and not a final design).

The major drawback of the Fallback Plan is the fact that the indoor waiting area would be located considerably farther from the SEAT buses than in the Preferred Alternative. Experience suggests that bus passengers prefer to wait near their buses. Canopies are provided at the bus boarding areas as in the Preferred Alternative. To accommodate winter and other poor weather circumstance, a large bus shelter is incorporated closer to the SEAT buses to address this drawback. However the Floor Plan shows the same indoor waiting area in the Greyhound Building as proposed for the new bus terminal building addition in the Preferred Alternative.

It should be noted that the Fallback Plan, like the Preferred Plan, envisions use of privately owned property (Union Station property) and that arrangement to purchase or lease the required property would need to be negotiated.

8.3 Estimated Costs

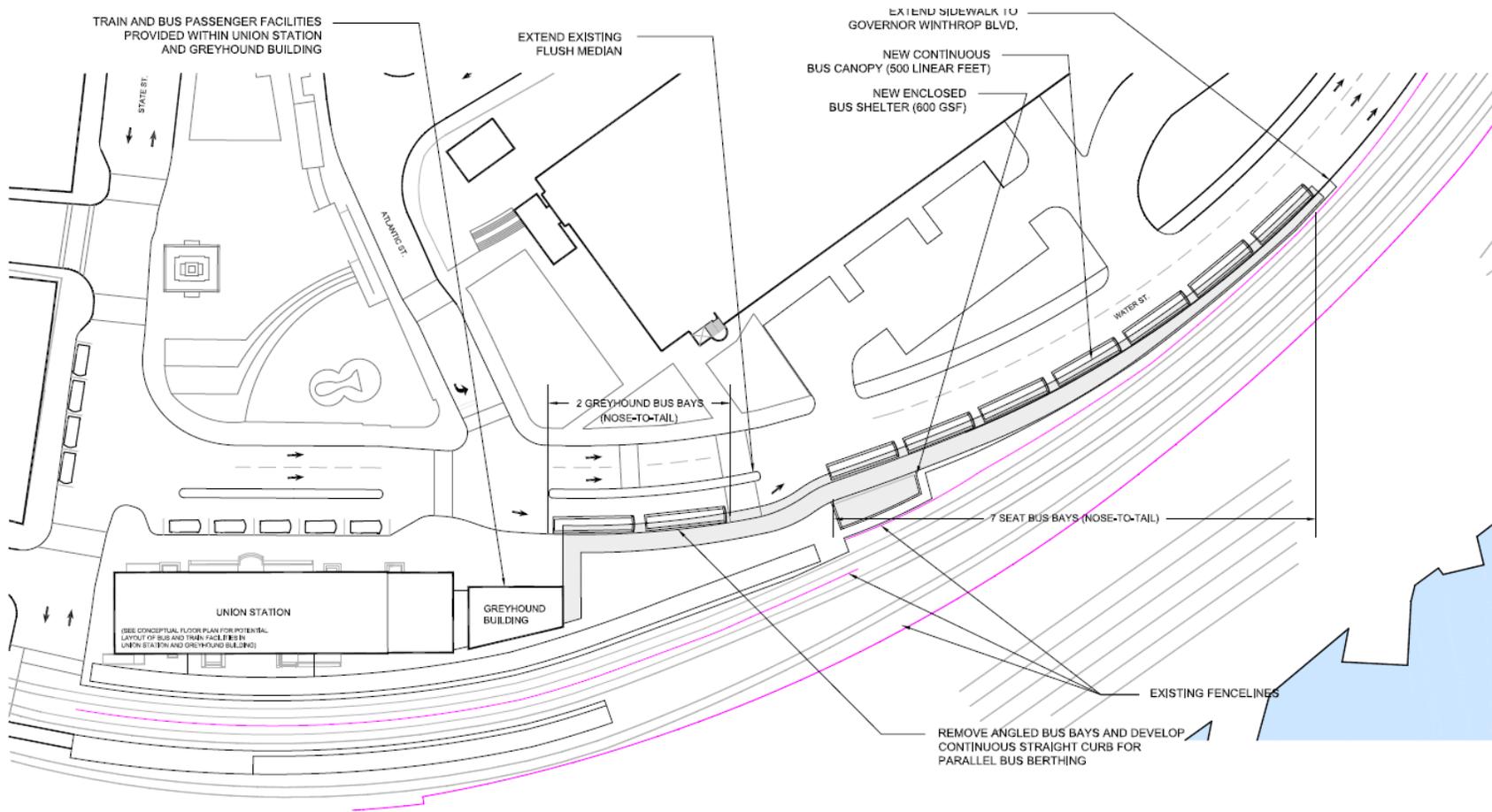
Costs to construct the Preferred Alternative and the Fallback Alternative were estimated in 2012 dollars (except the immediate pedestrian improvements which are in 2011 dollars.)

Immediate pedestrian improvements that are not dependent on the relocation of Water Street or the Pedestrian Bridge were estimated to cost \$5.5 M including those on both public and Cross Sound Ferry property (or \$4.7M excluding improvements solely on Cross Sound Ferry property).

The cost for the remaining short term improvements in the Preferred Alternative, including the center section of the Pedestrian Bridge, Water Street relocation and the bus terminal and canopies is \$9.9 M. Note that this excludes any costs associated with the purchasing or leasing the Union Station property which would be required (and also any cost of purchasing or leasing the Water Street Garage property if that is also desired to be a part of purchased RITC property, as noted in a later section of this Executive Summary). It also excludes any repairs underway or needed to be made at Union Station or the Water Street Garage. Repair costs, based on prior studies, appear to be in the range of \$1.6 M for Union Station and \$2.6 M for the Water Street Garage. (Some repairs at the Water Street Garage are underway.) These costs represent additional costs that would need to be taken into account, meaning that the total cost of immediate and short term improvements with the center section of the pedestrian bridge excluding purchase or lease would be nearly \$20 M.

ConnDOT is currently preparing cost estimates for immediate improvements to allow Shore Line East to use Track 6 from the platform currently used for Track 2. These costs or the costs for a new platform are not included.

Figure ES-10: Fallback Alternative Site Plan

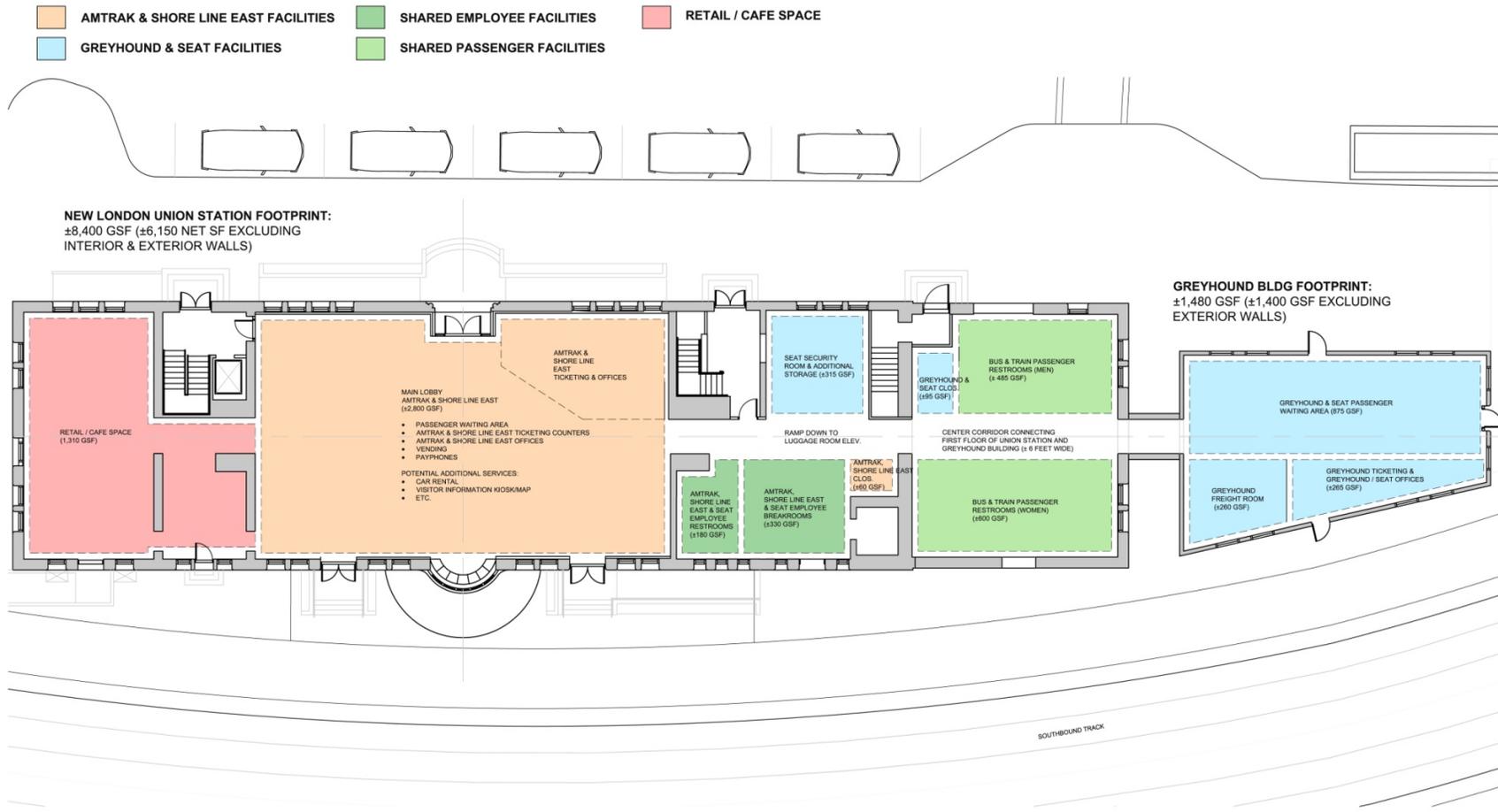


FALLBACK / MINIMUM CONSTRUCTION ALTERNATIVE

CONCEPTUAL SITE PLAN
 REGIONAL INTERMODAL TRANSPORTATION CENTER (RITC)
 NEW LONDON, CT

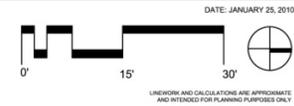


Figure ES-11: Fallback Alternative Conceptual Floor Plan



FALLBACK / MINIMUM CONSTRUCTION ALTERNATIVE

CONCEPTUAL FLOOR PLAN (DRAFT)
 REGIONAL INTERMODAL TRANSPORTATION CENTER (RITC)
 NEW LONDON, CT



The center section of the pedestrian bridge constitutes approximately \$4.9 M (including engineering inspection, contingency and escalation) of the estimated \$9.9 million in short term improvements. The additional costs for the optional extensions to the pedestrian bridge are \$1.4 M for the extension to the Water Street Garage and \$4.9 M for the extension to the ferry area with the needed stairways, elevator and escalators (including engineering inspection, contingency and escalation).

Annual operating and maintenance costs for the bus terminal and pedestrian bridge are estimated at \$0.3-\$0.4 M per year. (This cost does not include the effect of any Greyhound lease revenue.) Operating costs for Union Station (approximately \$0.3 M) and Water Street Garage (approximately \$0.4 M) are additional; each of these facilities has revenue sources that cover some or all operating costs.

The Fallback Alternative would include the same \$5.5 M in immediate pedestrian improvements plus \$3.0 M for the bus terminal facilities. There would be additional costs to purchase or lease the Union Station (and possibly Water Street Garage) property and to make necessary repairs as in the Preferred Alternative.

8.4 Use of Union Station for Non-Transportation Functions

Union Station is the core of the existing and future RITC. This study has identified how Union Station property can be used to create an enhanced intermodal center. The Master Plan contained in this report continues the current use of the Union Station lobby for rail passenger facilities and the use of the Greyhound building for bus facilities. The plan proposes that outdoor space included in the property be used for expansion of bus facilities, the pedestrian bridge and passenger pickup and drop-off space. Incorporation of these transportation facilities, however, leaves some space inside the building available for other uses.

The TOD market analysis conducted in this study addressed the potential demand for residential, office and retail development within walking distance of the RITC. The analysis considered the potential for development over a ten year period within ½ mile walking distance around Union Station. Union Station represents just one key resource that could be positioned to serve some of this demand. Although residential demand was found to have the greatest potential in New London, the Union Station building is more suited to office development with possible first floor retail uses.

To date, however, the Union Station property has not been redeveloped to its full potential. Recently, the interior space in the Union Station building, both on the ground floor and the upper floors, has been underutilized. In the past, the upper floors were occupied office space and there are still some limited office uses there today. A restaurant occupied the second floor and some first floor space in the past. However, even before the current economic downturn, much of this space remained vacant.

Given the recently announced departure of Pfizer from Fort Trumbull and the overall economic downturn combined with the previously weak position of New London as an office market, the market for office space is severely depressed in the short term. Union Station faces competition from other downtown building spaces and the newly vacant first class office space at Fort Trumbull. However, looking several years into the future, one can envision Union Station being better positioned as a result of proposed transportation and other downtown improvements, improving economic activity nationally, and a series of policy decisions designed to promote downtown New London as a transportation center and a site for TOD. It will be critical

to take advantage of this time to develop a comprehensive TOD plan for the Historic Waterfront District, including Union Station, and to make policy decisions that support that plan, while also keeping options open to take advantage of arising opportunities.

While a comprehensive TOD strategy is needed, the strategy for Union Station could be one of incremental improvements. It may not be reasonable to attract full time retail tenants into the ground floor until a market can be developed. An incremental approach could mean bringing kiosks for retail uses in summer and holiday seasons and introducing part time cafes and later evolving to full time retail and restaurant space. However, part-time uses should only be introduced for a limited time with the understanding that they will eventually be replaced by full-time uses.

8.5 Implementation Considerations

To move the project forward, consideration will need to be given to environmental issues and to the appropriate lead agency, as well as funding.

Environmental Considerations

Clearly there are visual impacts associated with the Preferred Alternative. The newly reconfigured Parade area now allows for direct views of the Thames River along a line of sight to the north of existing Union Station and the Greyhound Terminal Building. The bus terminal and pedestrian bridge obstruct some of the view, so the RITC project conflicts with the Parade Project in this respect.

Approval of the State Historic Preservation Officer will be required given that the project is located in an historic district listed on the National Register of Historic Places and given that Union Station is individually listed. If federal funds are used, Section 106 of the Historic Preservation Act applies as does Section 4(f) of the 1966 Department of Transportation Act. The latter prohibits use of historic property unless there is no feasible and prudent alternative and all possible planning has been done to minimize harm to the historic resources. View shed impacts will have to be thoroughly examined.

Since this is an already built environmental, natural resources are not likely to be major constraints. Connecticut Department of Environmental Protection (CTDEP) permits will be required since the project is within the coastal boundary area and there are shorelands and coastal flood hazard areas that are impacted. In addition to triggering the need for a Connecticut Coastal Consistency Review, the proposed undertaking may also trigger the need for a local (City of New London) Coastal Site Plan Review. Because a portion of the site is located within the 100-year floodplain as designated by the Federal Emergency Management Agency (FEMA), a Flood Management Certification may need to be filed with the CTDEP for the RITC project.

Since the project area has a history of former industrial uses which has been well-documented during this study, there is some potential for hazardous materials. Testing of the soil should be undertaken as part of the environmental assessment in the next phase of design studies.

Finally local building permits and City Council approval would be required.

Funding, Leadership and Governance

The project as proposed requires substantial funding and a lead agency that could own and build the project. ConnDOT has previously submitted a request for a Congressional earmark for improvements at Union Station in the amount of \$7. Transportation Enhancement Funding once reauthorized may be another source. Federal funds will require local match and the State looks to municipal entities to supply local shares.

While some elements of the RITC would continue to be owned, managed and operated by individual entities, there will likely be a need for coordination between the various transportation operators and shared funding of some elements. The study examined the governance of other intermodal transportation centers and developed a recommendation that the State take the lead role in owning and building the project. Based on its role in Shore Line East, rail stations and transit systems in the state, and its requirement that a pedestrian overpass or underpass be included in the short term plan, the Master Plan recommends that the State manage the rail station, the bus terminal and the pedestrian bridge. This would be accomplished through negotiation with the private owner to purchase or entering into a long term lease for the Union Station property (or a lease could be limited to the ground floor of Union Station, the Greyhound building and the land needed for the bus facilities and the pedestrian bridge). Connecticut DOT has indicated that this may need to include purchase or lease of the Water Street Garage to insure a revenue stream to cover operating costs. Negotiations with the private owner and the City would be needed.

In addition to acquiring Union Station, Connecticut DOT would also be responsible for building the SEAT bus terminal (which would then be leased to SEAT) and would be responsible for building the pedestrian bridge.

The consultant team also recommends that an RITC Association be formed to continue to involve the key stakeholders. The principal membership of this Association would be the transportation providers, the City and Connecticut DOT and any private owner if private property is involved. Responsibilities of this association would likely include arrangements for ongoing operational coordination (e.g., schedule coordination, information sharing, joint marketing and ticketing, etc.), sharing of maintenances responsibilities for intermodal linkages and longer term planning for the RITC. Members could be asked to contribute funding to this Association to cover expenses. Formation of this group may be an important first step toward implementation of the Master Plan.

9. Conclusions and Next Steps

This *Master Plan and Efficiency Study* has confirmed that the existing site is the preferable site for the enhanced Regional Intermodal Transportation Center. The study has identified the physical and operational needs of the Regional Intermodal Transportation Center at the current site and developed conceptual alternatives. The Master Plan includes a Preferred Alternative, comprised of both immediate and short term improvements, as well as a Fallback Minimum Construction Alternative that would be less costly. The capital and operating/maintenance costs associated with the two alternatives have been estimated as well as the costs for some optional elements. Environmental issues have been identified. The Master Plan recommends that the State take a lead role in managing the RITC and building the new facilities with the support and ongoing guidance of an association of key stakeholders including the City of New London and

the transportation providers at a minimum. Finally, an ongoing public process, including an active Stakeholder Steering Committee, has been carried out throughout the study to obtain stakeholder input.

The next steps to advance the project include the following:

- obtain City endorsement of study recommendation
- coordinate with the Connecticut Department of Transportation
- form an association to continue key stakeholder involvement
- pursue funding opportunities
- negotiate with the property owners to acquire or lease the necessary properties
- develop more detailed facility designs and conduct required environmental studies.



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1. Confirmation of Site Selection

1.1 Introduction

1.1.1. Purpose of this Document

The purpose of this chapter is to document the selection of the site for the future improved Regional Intermodal Transportation Center (RITC), the subject of this Master Plan and Efficiency Study, conducted by the Southeastern Connecticut Council of Governments (SCCOG) with grant funding from the Connecticut Department of Transportation (ConnDOT). This chapter compares two alternative sites for the RITC and makes a recommendation for the selection of a site for the RITC. This comparison of alternative sites was requested by ConnDOT. This chapter is intended to serve the purposes of an alternatives analysis (as far as site location) for any subsequent NEPA documentation.

1.1.2. Selection of Two Candidate Sites

Two sites had been identified by SCCOG for examination as the first task of the RITC Master Plan and Efficiency Study. These sites are the existing site located in downtown New London along Water Street and the Fort Trumbull peninsula, a redevelopment site in the City of New London located about $\frac{3}{4}$ of a mile to the south of the current site. As requested by ConnDOT, SCCOG directed the consultant to evaluate the Fort Trumbull peninsula as the alternative to the existing site. Figure 1-1 shows the location of the two sites.

1.1.3. Goals for the Study and for the RITC

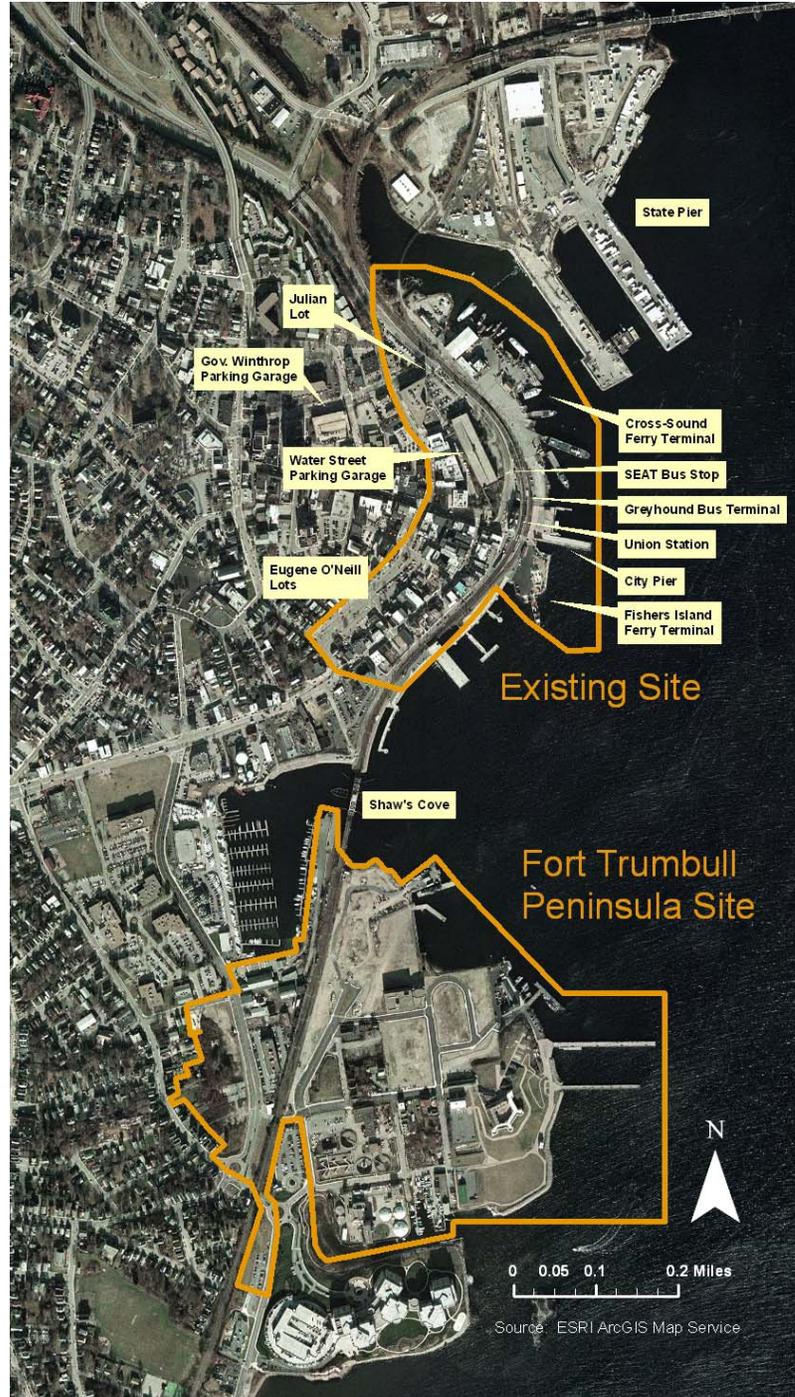
The ultimate purpose of this study is to create a plan that sustains and enhances a regional intermodal transportation center in New London, improving the link between the operations of the various transportation providers/facilities in the region including Cross Sound Ferry, Fishers Island Ferry, Amtrak, Shore Line East, Greyhound, South East Area Transit (SEAT), cruise ships, taxi and livery services, and parking garages and surface parking lots, while maximizing opportunities for transit oriented development.

Specific study objectives include:

- Perform an existing conditions survey identifying physical conditions and impediments to connections between the providers and services.
- Analyze the operational connections between the transportation providers named above to identify any inefficiency in scheduling, facility needs, etc. and suggest ways to improve these operational connections.
- Determine the current level of service for each transportation provider and identify and report planned future levels of service, suggesting what future levels of service might be, based on projected demand.
- Determine the impact level that planned and possible future levels of service might have on current infrastructure and operations.

- Prepare a market analysis to determine the development potential for land uses and service that would complement the intermodal transportation center and that examines the opportunity to promote smart growth.

Figure 1-1: Location of the Two Candidate Sites for the RITC



- Identify any other transit oriented development opportunities in the vicinity of the RITC.
- Identify the factors that make the existing conglomeration of transportation services optimal and summarize any costs and obstacles associated with relocating them to other sites in New London.
- Provide a generalized economic analysis of the impact any recommended improvements would have on the economy of the city and region.
- Prepare a master plan that describes the improvements needed to both physical and operational connections to allow for increased coordination and seamless transfers between the various transportation providers.
- Gather sufficient environmental data to allow a general review of the existing environmental sensitivity of the Regional Intermodal Transportation Center sites and potential impacts of any alternatives being studied.
- Fulfill the "Alternative Site" requirements of NEPA/CEPA by documenting the choice of sites.

Goals for the RITC itself include:

1. Enhance the intermodal connections between the modes serving the New London region and beyond including rail, intercity bus, local bus, ferries, cruise ships, automobiles and taxis.
2. Enhance existing functionality and operations of each individual mode and have positive rather than negative impacts on the operators.
3. Provide adequate capacity for the existing and future operations of each of the various modes, including landside and maritime operations.
4. Provide enhanced access by automobile and pedestrian traffic.
5. Be located proximate and accessible to major destinations for visitors.
6. Be compatible with other existing/potential uses.
7. Have minimal or no negative environmental impacts.
8. Have minimal or no negative traffic impacts.
9. Require reasonable levels of capital investment.
10. Support the businesses in downtown/New London and region including the tourist industry.
11. Enhance the opportunities for economic development opportunity (Transit Oriented Development) including residential and commercial development.
12. Be likely to win broad public support.

1.1.4. Criteria and Methodology for Site Evaluation

The methodology used in the site evaluation consisted of the following steps:

1. Identify physical feasibility of shifting each mode from its present site to the Fort Trumbull peninsula site.
2. Contrast advantages/disadvantages of each site for each individual mode (regardless of feasibility).
3. Examine the entire package of modes that could theoretically be located at each site (that is, have no fatal flaw) and evaluate the site capacity.
4. Identify the most likely package of services that could move to Fort Trumbull given feasibility and capacity and compare the advantages/disadvantages of that alternative to the current site alternative assuming also a reasonable level of improvement (although not specific plans) at the existing site.

-
5. Consolidate evaluation findings into a recommendation, considering feasibility, capacity, cost and other advantages.

Specific criteria for use in the evaluation include:

- Capacity for Operations - Landside
 - Rail (Amtrak and Shore Line East)
 - Inter-City Bus
 - Casino Buses
 - Proposed Shuttle Buses
 - SEAT
 - Multi-Modal
- Capacity for Operations - Maritime
 - Cruise Ships
 - Ferries
- Compatibility with Other Existing/Potential Uses
- Environmental Sensitivity
 - Natural
 - Cultural
 - Contamination
- Parking Capacity (for all modes)
- Pedestrian Access (for all modes)
- Vehicular Access (for all modes)
- Traffic Impacts (for all modes)
- Capital Cost (for all modes)
- Economic Development Opportunity (TOD)
- Likely Public Support
- Capacity to Accommodate the Entire Package of Modes

1.1.5. Overview of the Chapter

The remainder of this chapter is organized as follows:

- Section 1.2 and 1.3 summarize existing conditions at each site.
- Section 1.4 describes the evaluation of the advantages and disadvantages of each site for each mode that would potentially be included in the RITC.
- Section 1.5 describes the physical feasibility of locating each mode at the alternative site versus improving the facilities at the existing site.
- Section 1.6 examines the likely combination of modes that could be served at an RITC at either site and compares the two alternative sites with respect to all the evaluation criteria.
- Section 1.7 summarizes the recommendation of the study team with regard to site selection.

1.2 Existing Conditions- Downtown Site Facilities and Modes

1.2.1 Overview of Modes and the Intermodal Connections

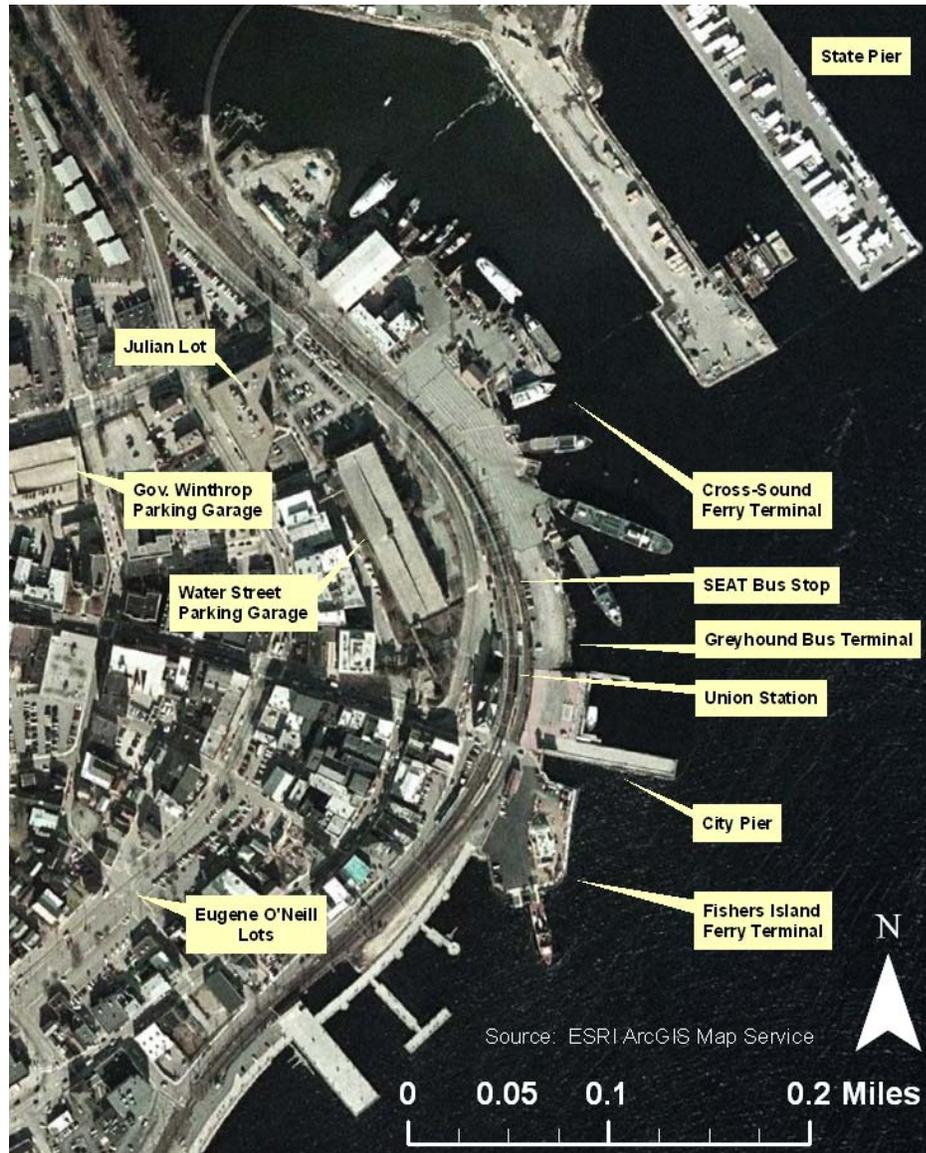
The current site of the Regional Intermodal Transportation Center is located on Water Street between State Street and Governor Winthrop Boulevard in New London. The RITC is currently a set of adjacent sites surrounding Union Station including parcels along the waterfront east of Water Street and parking facilities west of Water Street. The RITC hosts several local and intercity transportation modes, including:

- Rail
 - Amtrak intercity rail service including Acela Express and Regional service
 - Shore Line East commuter rail service (currently limited to one round trip per weekday)
- Ferry/Maritime Service
 - Ferry Service operated by Cross Sound Ferry
 - To Block Island, RI (passenger ferry service only)
 - To Orient Point, NY (auto and high speed passenger ferries)
 - To Montauk, NY (auto ferry; one round trip per week in summer months operated by Viking Fleet from Cross Sound Ferry site)
 - Ferry Service (auto ferry) to Fishers Island
 - City Pier, located directly east of Union Station across the rail right of way, provides additional facilities for docking of boats and small cruise ships (it also serves as public space between the Fishers Island and Cross Sound Ferry properties and as the focal point of the City's newly reconstructed waterfront park and Captain's Walk.)
- Bus Service
 - Intercity bus service operated by Greyhound
 - Casino shuttle bus service to each casino resort meeting passenger ferries
 - Local and regional bus service operated by SEAT
- Taxi service operated by local taxi companies (Port City Taxi, Harry's Cab, Curtin Transportation Group and Yellow Cab) from a taxi stand in front of the station
- Parking facilities operated by the City of New London, Cornish Parking and Julian Parking

There are currently no auto rental offices or facilities provided at the RITC.

Figure 1-2 shows the existing RITC site in downtown New London.

Figure 1-2: Aerial View of the Existing RITC Site



Cruise ships that dock in New London periodically over the year use the Admiral Shear State Pier which is located on a peninsula about one quarter mile (direct air distance) northeast of the Cross Sound Ferry docks. Actual walking distance between Union Station and the State Pier is about one mile, as is driving which takes about 4 minutes.

Figure 1-3 shows the existing cruise ship site at the State Pier.

Figure 1-3: Aerial View of the Existing Cruise Ship Site



Each of the modes and facilities is described in more detail below:

Union Station and Rail Services

Historic Union Station, designed by notable American architect Henry Hobson Richardson, is located at 27 Water Street in downtown New London. It was built in 1888 and renovated in the 1970's, and again, beginning in 2002. The 26,000 square foot +/- station and adjoining 1,000 square foot building on 0.54 acres are privately owned and operated. The original private ownership was undertaken to preserve the building, saving it from demolition and restoring the building. The current partnership was formed in 2002, 25 years later, and led to restoration of the lobby and the slate roof as part of a larger restoration plan. According to the owners, further restoration work was placed on hold as this study selected between the existing and alternate sites and addressed the development of a Master Plan for the RITC.

The station contains an Amtrak office for ticket sales and general information and includes a large waiting area, restrooms and general tourist information and an ATM. The station is open 5:30 am to 12:00 am, seven days a week.

The adjoining building to the north contains the Greyhound Bus Station. SEAT bus shelters are located along the north curb line of Water Street, to the north of the Greyhound building and the Greyhound Bus loading area.

Amtrak passenger rail services, Acela Express and Regional Service, provide service at the Station with a total of two daily express round trips and nine regional round trips. In addition, ConnDOT's Shore Line East commuter passenger rail service currently provides limited service, one to two daily round trips to the New London Station.

Figures 1-4 and 1-5 show Union Station.

Figure 1-4: View of Union Station



Figure 1-5: View of Rail Platforms at Union Station



Ferry Facilities and Downtown Waterfront

Cross Sound Ferry is located at 2 Water Street in downtown New London, abutting Union Station to the northeast and directly east of the rail road track. The company operates out of a 5.34 acre site which contains: 1) a 22,000 square foot office building/warehouse, 2) a 20,000 square foot warehouse with adjacent repair facilities, 3) a 7,000 square foot office/ticket/restroom building and several smaller seasonal out buildings; 4) 130 parking spaces for Ferry customers and limited parking for employees. Access to the site is from Governor Winthrop Boulevard and Water Street. Figure 1-6 shows an aerial view of the Cross Sound Ferry site. Figure 1-7 shows a photograph of the ferry loading.

Figure 1-6: Cross Sound Ferry Terminal



Figure 1-7: Cross Sound Ferry Loading



Cross Sound Ferry has a fleet of nine vessels; seven of these (used for the service to Orient Point, NY) can accommodate autos, trucks, motor homes and buses along with passengers. The capacity of these vessels ranges from 22 to 120 cars and 130 to 1,000 passengers. The two high speed ferries include the 400 passenger Sea Jet to Orient Point and the 530 passenger Jessica W. to Block Island (RI).

The following services are offered: 1) Seasonal high speed passenger service to Block Island; 2) High speed (Sea Jet) passenger service to Orient Point; 3) Regular (auto & passenger) ferry service to Orient Point, LI. At the height of the season on peak days, Cross Sound operates 22 round trips on the auto ferry to Orient Point, 6 round trips on the Sea Jet to Orient Point and 4 round trips to Block Island.

Cross Sound provides limited on-site parking (130 spaces) at the New London ferry terminal at \$10 per day on a first come first served basis. Cross Sound also advertises to its customers that additional parking is available at the Water Street Parking Garage directly across the street from the ferry terminal. The Water Street parking garage rates are \$6 per day Monday through Thursday and \$15 per day on Fridays, Saturdays, Sundays and holidays. The Julian lot (186 spaces) has also been open on weekends in recent years providing supplementary parking.

The Fishers Island Ferry is located at State Street immediately south of the City Pier. The 0.78 acre site contains a 6,000 square foot brick office/ticket/maintenance building built in 2005 at a cost of about \$15 million. There is a paved parking lot providing limited parking for staff and the drop-off and pickup (but not parking) of customers. Ferry Service is offered daily to Fishers Island with two vessels accommodating autos, trucks and passengers. A substantial part of their business is freight. The ferry carries daily commuters and contractors and students who attend a magnet school on the island. Ferry passengers reportedly park in New London or transfer to the rail service. Fishers Island considers itself part of the southeastern Connecticut community. Its passengers patronize local downtown businesses. One ferry carries 21 cars and 210 people and the other carries 28 cars and 250 people. Figure 1-8 shows an aerial view of the Fishers Island Ferry site.

Figure 1-8: Aerial View of Fishers Island Ferry Facility



The New London Waterfront Park is located at north of the Swing Bridge and east of the railroad tracks extending northward to City Pier. The Waterfront Park opened in 2001 and cost \$19 million to construct. The park is actually in two sections. City Pier is located south of the Cross Sound Ferry property and north of Fishers Island Ferry property. The remainder of the park is located south of the Fishers Island Ferry property and north of the Swing Bridge. The Park contains:

- City Pier, which is located behind Union Station and is 264 feet long and 35 feet wide, provides docking facilities to the public.
- The Children's Discovery Pier is located south of the Fishers Island Ferry property.
- The Amistad Pier is located south of the Children's Pier and is a T-shaped pier, the first portion being 143 feet long and 25 feet wide. The end of the T is 210 feet long and 24 feet wide. The public is allowed to dock at the pier.
- Custom House Pier is south of Amistad Pier and is the site of the Custom House which contains public rest rooms, a laundry facility, and a Police Sub-Station.
- Fisherman's Pier is south of the Custom House and is 287 feet long and 19 feet wide and is part of the 700 foot long walkway extending south towards the Swing Bridge.
- The Park offers berthing for large and small vessels and public moorings.

Cruise Ship Docking

The cruise ships visiting New London currently dock at the Admiral Harold E. Shear State Pier located immediately south of I-95, in the upper portion of New London Harbor. The State Pier has two berths alongside the 1,000 foot long concrete pier. The cruise ships use the east side of the pier. The area around the State Pier contains 5+/- acres and is fenced and gated to provide security for normal day to day cargo operations. The State Pier primarily accommodates commercial shipping, which is not an ideal mix with passenger cruise ships. Figure 1-9 shows the State Pier.

The Connecticut Cruise Ship Task Force (CCSTF) serves as the recruitment authority to bring and coordinate cruise ship visits to ports within the State of Connecticut. This organization acts as the link between private and public interests to promote the development of cruise ship passenger visits to the State.

The CCSTF, a tax exempt 501 (c) (6) organization, facilitates positive relationships between cruise lines and the State of Connecticut. This Task Force works with the cruise industry and port-related federal, state and local government agencies to promote the development of cruise ship visits to the State of Connecticut.

It is the aim of the CCSTF to increase tourism by cruise ship passengers while in port, encourage return visits and positive word-of-mouth promotion of the State of Connecticut through port-calls in the state and to educate all interested parties who may benefit from these visits.

New London is not a home port for the cruise ships but a port call on New England cruises. One of the cruise ships visiting New London is the ms Maasdam which is 720 feet long. Although new cruise ships are longer, the cruise lines tend to keep smaller ships on the New England routes.

During the cruise ship visits, the CCSTF and its volunteer members, the City of New London and the local Downtown Main Street Program, New London Business organizations and downtown merchants have successfully transported cruise ship passengers from the State Pier to Union Station in downtown New London and from there to points all around the region.

Figure 1-9: Photograph of the State Pier



Intercity Bus

The intercity bus terminal in New London is located adjacent to Union Station in an adjacent brick building on the east side of Water Street (on the north side of the station itself and directly west of the rail right of way). Figure 1-10 shows a photo of the terminal.

Figure 1-10: The Greyhound Bus Terminal



The Greyhound building is not part of the original Union Station structure. The 1,100-square foot terminal building and the saw-tooth style bus berths are leased from the private owner of Union Station by Greyhound. The terminal building consists of the following (area estimates are approximate):

- An 8 foot by 16 foot (128 sq. ft.) area which is used for ticket sales and customer information.
- An 8 foot by 10 foot (80 sq. ft.) freight storage area; their freight business has been growing and is about 5-6 pieces per day consisting of larger items that UPS does not accept.
- A 6 foot by 6 foot (36 sq. ft.) checkout room
- A 30 foot by 20 foot (600 sq. ft.) storeroom/office
- A 40 foot by 40 foot (1600 sq. ft.) waiting area plus restrooms

The bus station is open and staffed seven days a week from 8 am to 7 pm. The lease is on a month-to-month basis. There are two full-sized bus bays and two shorter bays to park in front of the terminal building. A third full-sized bay would be preferred by the operator. While terminal upgrades have been completed or are in progress at many Greyhound locations, such improvements have not been scheduled for New London due the uncertainty of its terminal location.

Greyhound (owned by First Group since October 2007) is the bus operator. Bus service includes service to Boston, Providence, Mohegan Sun and Foxwoods to the north and New Haven, Bridgeport, Stamford, White Plains and New York City to the south. New London is an intermediate stop on these through trips; no service originates here. Greyhound reports that about half of the customers are coming from or going to the local New London area and that a substantial number use SEAT buses for access. Buses spend about 15 minutes or less at the terminal and there are typically no more than two buses there at a time, unless a delay occurs or extra service is operated. Approximately 4-5 roundtrips per weekday use the facility. Service varies by day of week. On Sundays, the busiest day, there are 12 southbound and 9 northbound trips. Friday and Saturday there are 9 and 7 round trips, respectively.

While this task was underway, Greyhound reported that it would prefer to stay at its current location but had examined some nearby alternatives such as locating the ticketing office across Water Street at the Garage/former bank site and moving to the east side of the tracks to be closer to the ferry facility.

SEAT Local Bus

Local bus service in the Southeastern region of Connecticut is provided by SEAT (South East Area Transit). The service has been in operation since 1980. SEAT is a multi-municipal public agency created by the local municipalities enacting ordinances similar to the Southeastern Connecticut Council of Governments. SEAT consists of nine member towns: East Lyme, Griswold, Groton, Ledyard, Montville, New London, Norwich, Stonington and Waterford. All SEAT fixed assets and land are owned by the State of Connecticut and are leased to SEAT. SEAT's current operations, maintenance and administrative facility is located in Preston City but the agency is examining relocation alternatives. SEAT has contracted with the Mashantucket Pequot Tribe and Foxwoods Resort and Casino to support their mass transportation system by transporting people on SEAT buses on and off the reservation. First Transit, a private contractor, manages the service.

SEAT's website lists the following as its goals and mission statement:

Goals - It is the goal of the South East Area Transit to plan and operate a continuous, comprehensive, and coordinated bus transit system that meets the mobility needs of the residents and businesses in Southeastern Connecticut at the least possible cost to users, the cities and towns which comprise the transit district, and the State of Connecticut.

Mission Statement - The mission of South East Area Transit is to operate a safe, effective and outstanding regional public transportation system, linked to intermodal resources. This will enhance the quality of life for all that work, live and visit in Southeastern Connecticut. It will promote and support regional growth for the present and future transportation needs. It must meet the needs generated by future regional growth in Southeastern Connecticut.

Eight SEAT bus routes serve New London including "corridor" routes and local routes as follows:

Corridor Routes

- 1/101: New London to Norwich via Route 32
- 2: New London to Groton and Norwich via:
 - Routes 117 and 184 (midday)
 - Route 12 (first and last trips)
- 3: Niantic-New London-Groton via Routes 161 and 1
- 108: New London-Groton-Mistick Village-Foxwoods express (also an Amtrak Thruway Motor Coach route under contract to Amtrak)

Local Routes

- 12: Broad Street/Jefferson Avenue
- 13: Montauk Avenue/Ocean Avenue
- 14: Crystal Avenue/Colman Street
- 15: Jefferson Avenue/Colman Street (late nights and Sundays only)

All of the above routes serve the Union Station area. Route 108 serves the front door of Union Station and provides "through" connecting services to Foxwoods for Amtrak passengers who can purchase their bus fare on a single Amtrak ticket with their rail fare.

All the other routes serve the SEAT bus stop located on the east side of Water Street about 200 feet north of Union Station and immediately north of the Greyhound facility. The Water Street bus stop is the hub in New London. The bus stop has a simple shelter and five benches (outside the shelter) located on the sidewalk which is along the fenced rail right of way. Figures 1-11 and 1-12 show the current hub.

The Water Street stop in New London serves as a pulse point for SEAT so that New London routes come together on the hour at this location to provide for transfers between buses; some routes operate every two hours so that all routes are not part of the pulse.

Another major hub is in Norwich, where a new intermodal center is being constructed. All route schedules are keyed to the main regional transfer points for corridor and local service.

All SEAT buses are fully ADA compliant and are 30, 35 and 40 feet long and 102 inches wide. The latest buses were purchased in 2005. Local routes charge a fare of \$1.25. Inter-zone trips cost \$1.75 and \$2.25 for the Foxwoods route. One free transfer is included in the fare.

Figure 1-11: The SEAT Hub



Figure 1-12: The SEAT Hub at Pulse Time (viewed from the Ferry Terminal)



Casino Buses and Shuttle Buses

Currently, coach buses connect each of the two casino resorts and the Cross Sound Ferry high speed passenger ferry service, timed to meet each ferry. This service is provided free to the passengers as part

of their Cross Sound Ferry – Casino package. Cross Sound Ferry coordinates with the coach bus dispatcher to arrange for sufficient bus capacity for incoming passengers. Dispatchers at the casino resort bus terminal facilities handle the return trip. The casino coach buses load and unload passengers on the Cross Sound Ferry property where they can directly embark and disembark.

SCCOG commissioned a study in 2003 to study the development of an intermodal connection between the RITC and various attractions in the region including the two casino resorts (Foxwoods and Mohegan Sun) and Mystic. The study recommended that a tourist circulator be provided operating between New London, Mystic and the two casino resorts. The proposed tourist circulator system, when fully implemented, would ultimately subsume the direct connections between the two casino resorts and the high speed passenger ferries, preserving the direct shuttle nature of this service. In addition, the plan envisioned future linkages between the circulator bus stops and other destinations. Each route is described briefly below.

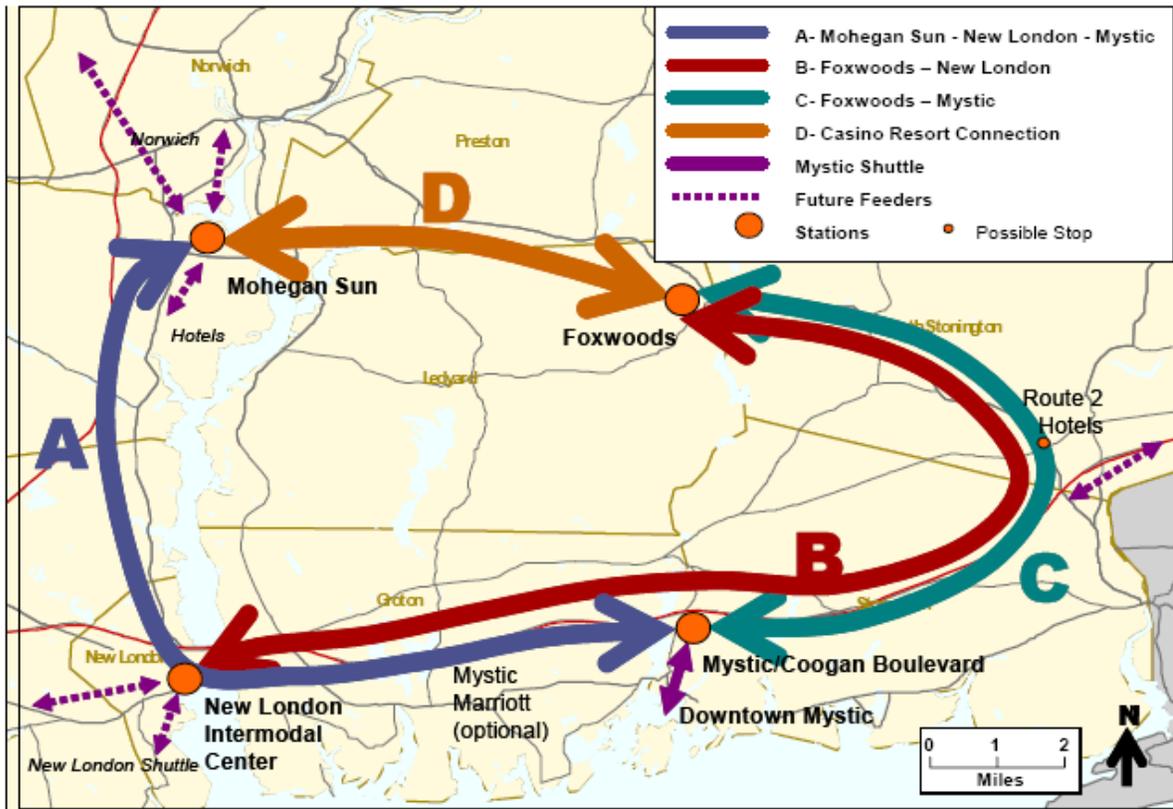
The full implementation system plan envisioned four regional routes:

- Route A: Mohegan Sun – New London – Mystic
- Route B: Foxwoods – New London
- Route C: Foxwoods – Mystic
- Route D: Mohegan Sun – Foxwoods

Only Routes A and B would serve New London.

These routes would be complemented by feeder services including a Mystic Shuttle service linking the regional route bus stop with various Mystic attractions. Figure 1-13 shows the proposed full implementation route system.

Figure 1-13: Full Implementation Tourist Transit System



Service would operate from 9 am to midnight on most days with service extending to 2 am on Friday and Saturday night. Frequencies would vary by season and by time of day. The most frequent service would operate during weekend peak hours in the summer season. At this time the frequency would be as follows in the two demand scenarios:

ROUTE	LOW DEMAND SCENARIO	HIGH DEMAND SCENARIO
Route A:	4 per hour	6 per hour
Route B:	2 per hour	2 per hour
Route C:	4 per hour	10 per hour
Route D:	5 per hour	10 per hour
Mystic Shuttle:	4 per hour	10 per hour

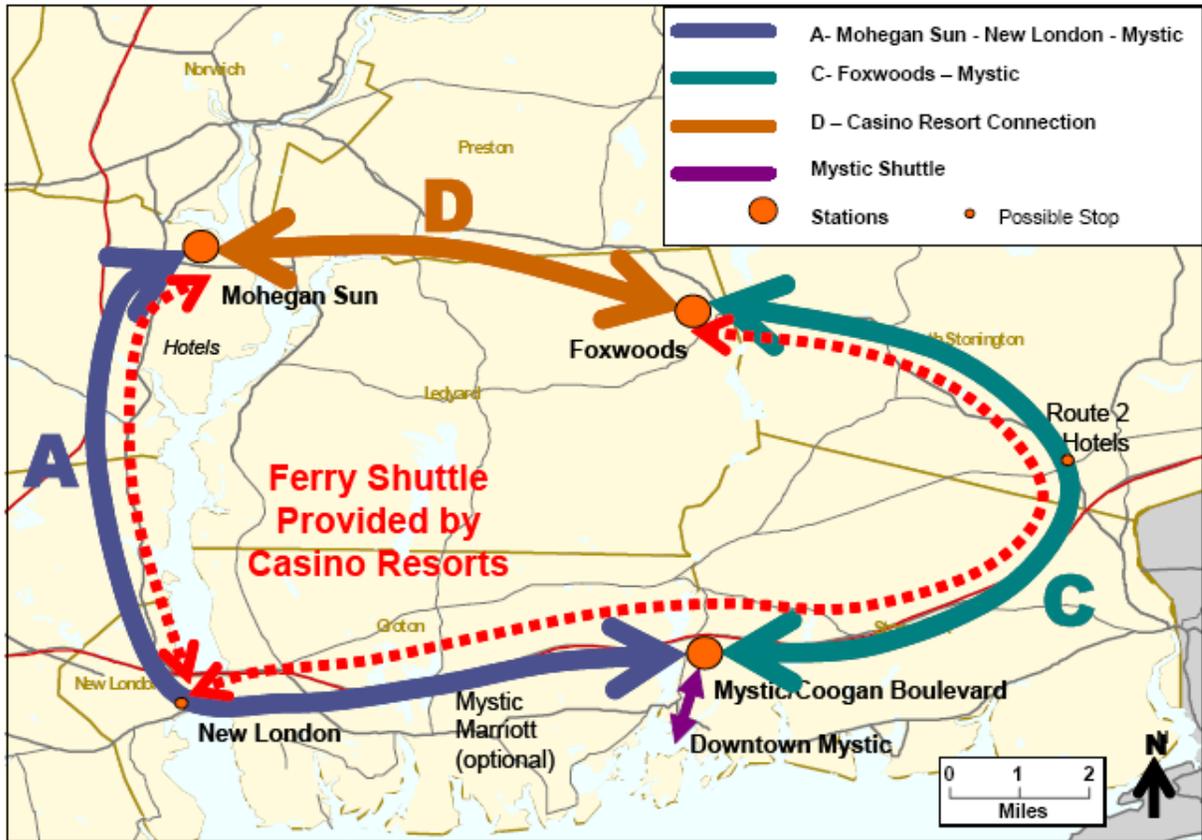
In the full implementation system, it was envisioned that there would be super-stops or transit centers at two locations in New London – at the RITC and at the Ferry Terminal. The latter was envisioned to serve the arriving and departing ferry passengers for the direct casino connections and because planning for an improved RITC had not yet begun.

The implementation of the tourist circulator was envisioned to begin with a pilot system. The Pilot System was envisioned to consist of three regional routes as follows:

- Route A: Mohegan Sun – New London- Mystic
- Route C: Foxwoods – Mystic
- Route D: Mohegan Sun – Foxwoods

In addition, the Mystic Shuttle would be operated. Figure 1-14 shows the Pilot System.

Figure 1-14: Proposed Pilot Tourist Transit System



In the pilot system, it is assumed that the current casino coach service would be maintained to connect to the high speed passenger ferries. During the peak weekend in the summer season, the following frequency of service was envisioned in the pilot system:

ROUTE	FREQUENCY
Route A:	4 per hour
Route C:	4 per hour
Route D:	5 per hour
Mystic Shuttle:	4 per hour

Only Route A would serve New London, meaning buses operating every 15 minutes in each direction. It was envisioned that the bus stop at the RITC in New London would be equipped with an enhanced shelter,

lighting, one medium and one enhanced dynamic sign with lighting, an electrical hook up and a trash receptacle.

The tourist circulator system has not yet been implemented and funding has not been secured, although a grant-in-aid to partially fund the pilot system was appropriated from the State DOT, provided the grant is equally matched from non-state sources. SCCOG was not successful in pursuing this other funding for the pilot system and the state funding is no longer available.

Taxis

There are a number of taxi and car services operating in downtown New London. These include Harry's Cab Service, Port City Taxi, Yellow Cab and the Curtin Transportation Group. A taxi staging area is located at curb side in front of Union Station, as shown in Figure 4 on the section describing Union Station.

Parking Facilities

Existing parking facilities in downtown New London include the following:

City Owned:

- 1) Water Street Garage – 975 spaces
- 2) Eugene O'Neill Surface Lot 1 – 125 spaces
- 3) Eugene O'Neill Surface Lot 2 – 130 spaces

Privately Owned:

- 1) Governor Winthrop Garage – 400 spaces
- 2) Julian Surface Lot – 186 spaces
- 3) Cross Sound Ferry Lot – 130 spaces

Figure 1-15 shows a map of the existing parking facilities.

Figure 1-15: Existing Parking Facilities near the RITC

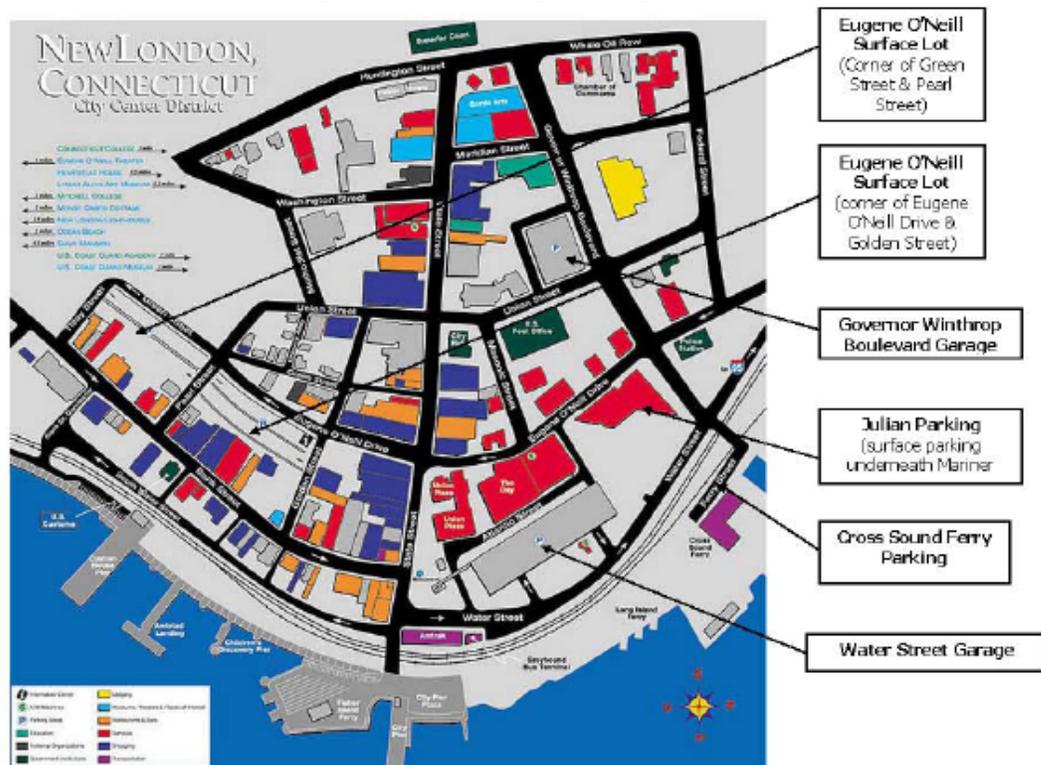


Table 1-1 shows the occupancy conditions of each parking facility based on study team surveys conducted on Saturday August 2, 2008.

Table 1-1: Parking Occupancy Conditions on Saturday August 2, 2008

	Total Spaces	Peak Occupancy	Peak % Occupied	Time of Day for Highest Occupancy	Lowest Occupancy	Lowest % Occupied	Time of Lowest Occupancy
Water Street Garage	975	479	49%	12:00 - 1:00 pm	370	38%	7:00 - 8:00 am
Governor Winthrop Garage	400	130	33%	3:00 - 4:00 pm	97	24%	7:00 - 8:00 am
Eugene O'Neill Surface Lot (1)	125	111	89%	6:30 - 7:00 pm	28	22%	7:00 - 7:30 am 8:00 - 8:30 am
Eugene O'Neill Surface Lot (2)	130	28	22%	6:30 - 7:00 pm	15	12%	1:30 - 3:00 pm
Julian Surface Lot	186	77	41%	8:00 - 8:30 am	56	30%	7:00 - 7:30 am
Cross Sound Ferry	130	142	109%	8:00 - 8:30 am	97	75%	7:00 - 7:30 am

(1) Eugene O'Neill Surface Lot (corner of Eugene O'Neill Drive and Golden Street)

(2) Eugene O'Neill Surface Lot (corner of Green Street & Golden Street)

Since August 2nd parking occupancy was believed to be affected by rainy conditions in the afternoon, the counts were adjusted to reflect conditions on sunny summer Saturdays that better reflect peak conditions. Block Island Ferry ridership information provided by Cross Sound Ferry was used to determine that the average of four mid-summer Saturdays had 82% more ferry riders. This combined with information from the parking surveys undertaken on August 2nd was used to factor up the portion of the parking demand related

to ferry usage. No comparable data existed to consider any similar impacts on non-ferry parkers. Table 1-2 shows adjusted occupancy conditions. Note that the parking facilities are still not full, with overall occupancy at 69% and Water Street Garage occupancy at 77%.

Table 1-2: Parking Occupancy Adjusted to Reflect Average Good Weather Saturday Conditions

	Total Spaces	Peak Occupancy	Peak % Occupied	Time of Day for Highest Occupancy	Lowest Occupancy	Lowest % Occupied	Time of Lowest Occupancy
Water Street Garage	975	747	77%	12:00 - 1:00 pm	370	38%	7:00 - 8:00 am
Governor Winthrop Garage	400	150	38%	3:00 - 4:00 pm	97	24%	7:00 - 8:00 am
Eugene O'Neill Surface Lot (1)	125	125	100%	6:30 - 7:00 pm	28	22%	7:00 - 7:30 am 8:00 - 8:30 am
Eugene O'Neill Surface Lot (2)	130	35	27%	6:30 - 7:00 pm	15	12%	1:30 - 3:00 pm
Julian Surface Lot	186	142	76%	8:00 - 8:30 am	56	30%	7:00 - 7:30 am
Cross Sound Ferry	130	142	109%	8:00 - 8:30 am	97	75%	7:00 - 7:30 am
Total	1946	1341	69%		663	34%	

(1) Eugene O'Neill Surface Lot (corner of Eugene O'Neill Drive and Golden Street)

(2) Eugene O'Neill Surface Lot (corner of Green Street & Pearl Street)

Traffic Conditions

The existing RITC is located in downtown New London off Water Street in the east central portion of the city and is close to three major regional access roads - Interstate 95 (I-95) and State Route 32 from the north and Route 1 from the east. Downtown New London is bordered by the Thames River on the east, Huntington Street on the west, Tilley Street on the south and Federal Street on the north. The existing traffic network system in downtown New London consists of many one-way streets and a limited number of two-way streets. Though one-way street patterns improve overall capacity and safety and reduce the number of conflicts, they can confuse drivers who are not familiar with the area. There are a number of public and private parking facilities and on-street parking is provided.

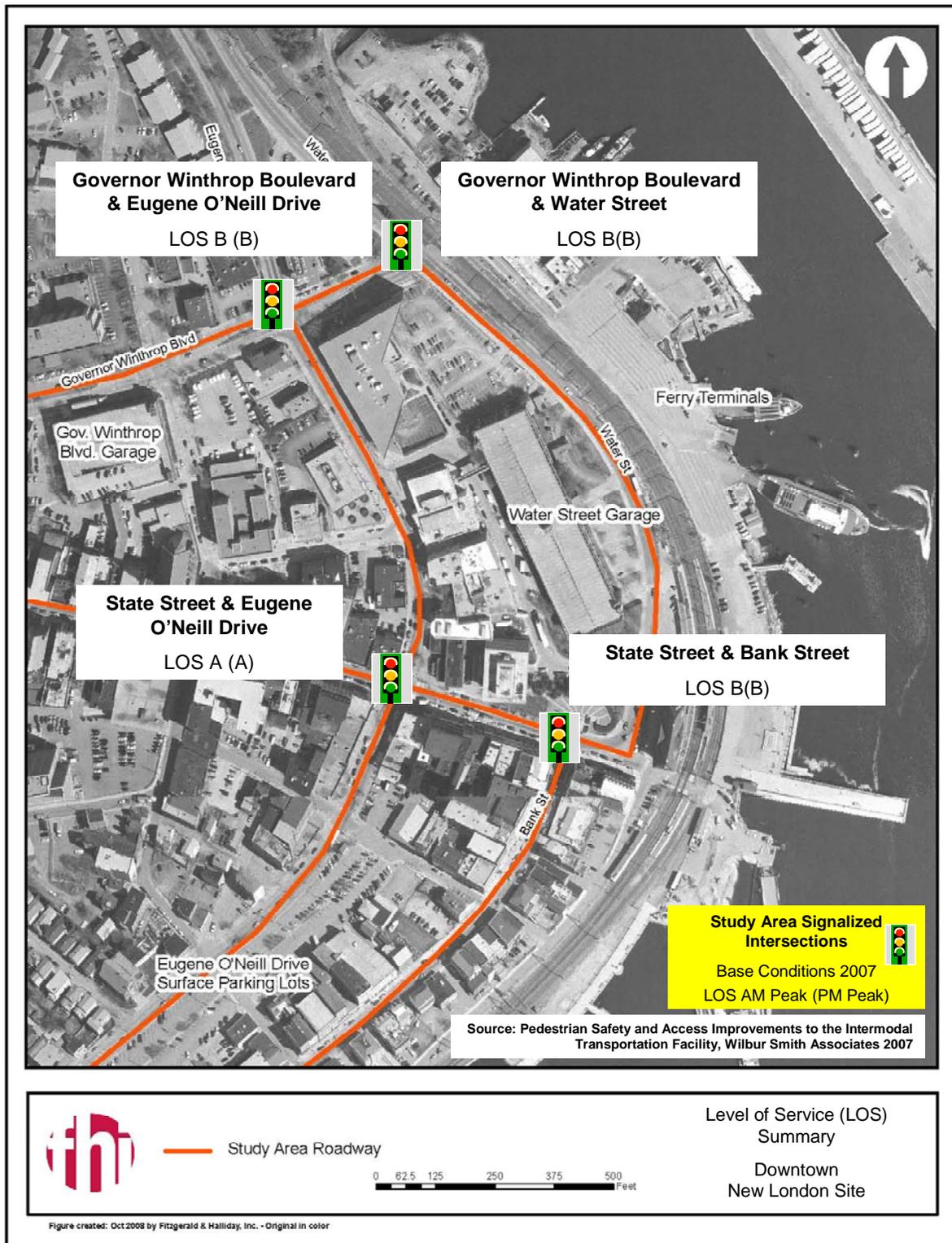
Based on traffic information documented in the *Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, Wilbur Smith Associates 2007*, vehicular access and traffic operations on the roadways and intersections, in general, are good. That study's project limits were defined by Governor Winthrop Boulevard to the north, State Street to the south, Water Street to the east, and Eugene O'Neill Drive to the west. A study of the capacity was conducted to determine the roadways and intersections ability to accommodate traffic under various level of service. Level of Service (LOS) is a qualitative measure of the effect of a number of factors including intersection geometrics, speed, travel delay, freedom to maneuver, and safety. Level-of-Service provides an index to the operational qualities of an intersection. Six levels-of-service are defined by letter designations ranging from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Generally, LOS D is considered acceptable. Results from the capacity analysis during the morning (AM) and afternoon (PM) commuting peak hours under 2007 (winter time) base conditions indicate that all signalized intersections within the project's limits operate well with an overall intersection LOS A or LOS B during both peak hours. Table 1-3 provides a summary of the LOS results. Figure 1-16 illustrates the LOS conditions in the vicinity of the existing RITC.

**Table 1-3: Level of Service and Delay Summary
2007 Existing Conditions (January 2007 Weekday Conditions)**

Signalized Intersection	AM Peak Hour	PM Peak Hour
	Overall Intersection LOS (Delay in seconds)	Overall Intersection LOS (Delay in seconds)
State Street and Eugene O'Neill Drive	A (5.7)	A (8.2)
State Street and Bank Street	B (11.2)	B (17.7)
Governor Winthrop Boulevard and Eugene O'Neill Drive	B (14.3)	B (14.5)
Governor Winthrop Boulevard and Water Street	B (12.1)	B (15.5)

Source: Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, Wilbur Smith Associates, 2007

Figure 1-16: Level of Service Summary (January 2007 Weekday Existing Conditions)



To understand traffic operations during a summer Saturday, turning movement count data was collected on Saturday, August 2, 2008 during the morning (7:00 AM – 9:00 AM), mid day (11:00 AM – 1:00 PM), and afternoon (4:00 PM – 6:00 PM) peak periods at the following intersections.

- State Street and Bank Street
- State Street and Water Street
- Governor Winthrop Boulevard and Ferry Street
- Governor Winthrop Boulevard and Water Street

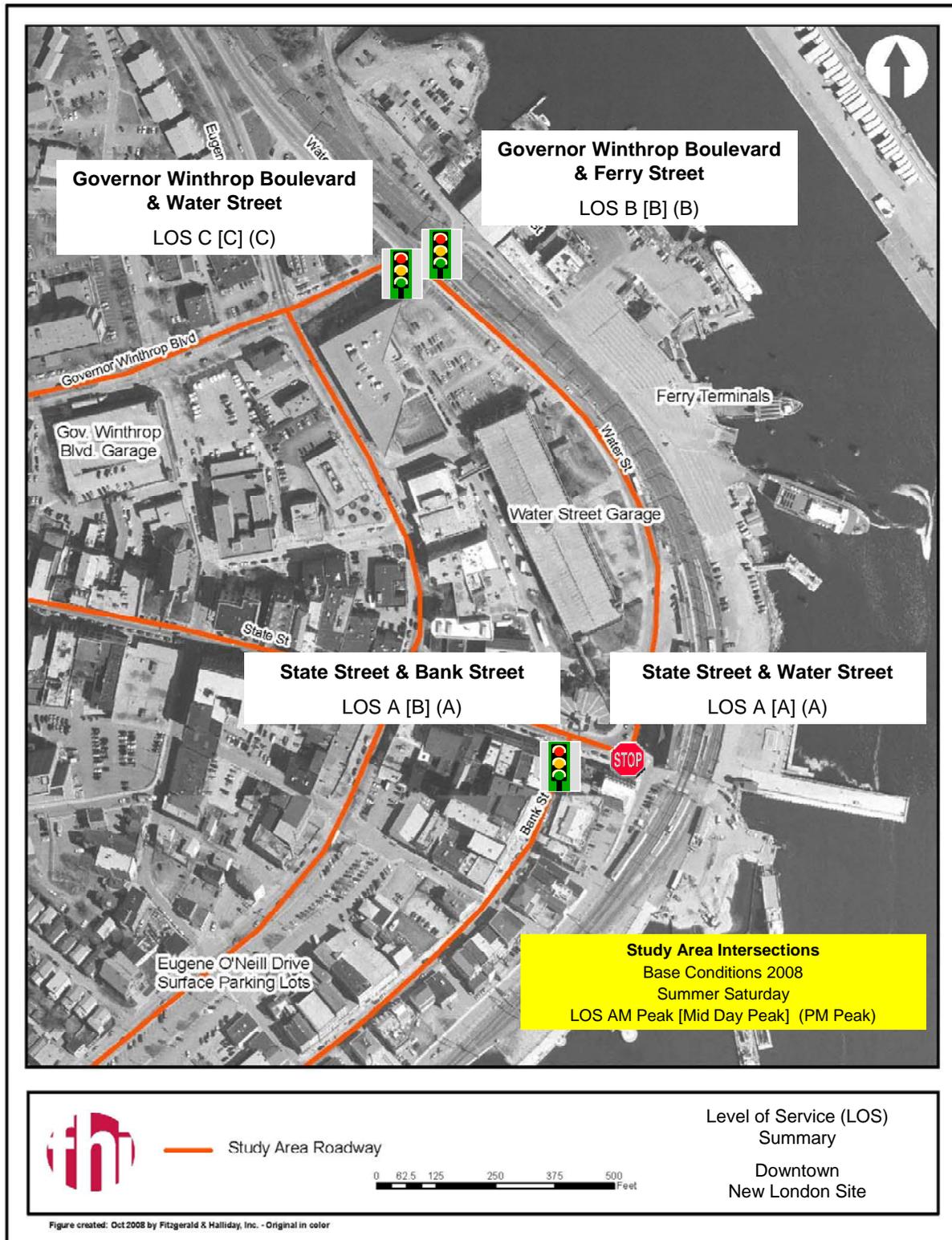
The summer Saturday peak hourly volumes were used to conduct the LOS analysis. Results from the capacity analysis during the morning (AM), mid day, and afternoon (PM) under 2008 (summer time) Saturday base conditions indicate that all signalized and stop-controlled intersections operate well with an overall intersection LOS C or better during all peak hours. Table 1-4 provides a summary of the LOS results. Figure 17 illustrates the LOS conditions.

**Table 1-4: Level of Service and Delay Summary
Existing Conditions (August 2008 Saturday Conditions)**

Signalized Intersection	AM Peak Hour	Mid Day Peak Hour	PM Peak Hour
	Overall Intersection LOS (Delay in seconds)	Overall Intersection LOS (Delay in seconds)	Overall Intersection LOS (Delay in seconds)
State Street and Bank Street	A (8.3)	B (10.4)	A (9.8)
State Street and Water Street*	A (7.4)	A (7.4)	A (7.3)
Governor Winthrop Boulevard and Ferry Street	B (16.9)	B (18.2)	B (10.8)
Governor Winthrop Boulevard and Water Street	C (20.1)	C (24.5)	C(27.4)

* An overall LOS is not calculated for stop-controlled intersections. The LOS and delay noted represent the critical movement with the highest delay.

Figure 1-17: Level of Service Summary (August 2008 Saturday Existing Conditions)



Pedestrian Connections

Typical pedestrian amenities are provided in downtown. These include sidewalks, marked crosswalks, and handicap ramps. Pedestrian signals are provided at some of the major signalized intersections. Pedestrian activity is low to moderate in downtown. Concentrations of pedestrians are most likely to occur at the municipal parking garages and surface lots. Pedestrian walkways are provided from upper levels of the garages to the adjacent streets and buildings. There is no pedestrian overhead walkway to Union Station, the intercity bus terminal, the SEAT bus stop or any of the ferry terminals, although one was proposed several years ago and the project was aborted for several reasons. Instead the Parade Project, now nearing completion, provides traffic calming and improved pedestrian crossings as well as an exterior elevator on the west side of the garage replacing the current pedestrian bridge to the Parade. This project, which had been in the planning stages for three years, was approved in August 2008 by the City Council and cost \$10.8 million to complete.

Figure 1-18 and 1-19 shows the Parade Project and key pedestrian crossings and facilities proposed as part of the Parade project.

Figure 1-18: A Model of the Parade Project



Source: The Day

Figure 1-19: A Layout of the Project Showing Pedestrian Improvements



Source: Presentation- Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, September 19, 2007

Downtown Area Development

This section describes the development climate in the downtown area at and near the existing RITC site. The discussion addresses development opportunity sites, market conditions and potential, public policies/funding/tax revenue impacts, transportation/access/parking/infrastructure factors, and attractions/amenities.

Development Opportunity Sites

- Approximately 230,000 square feet of vacant commercial space in downtown available (141,750 square feet of retail and 88,805 square feet of office) – potential opportunity to attract high quality retail/office and residential in selected locations ¹
- The Day printing operation may close its location adjacent to the Water Street Garage. This closure may open potential for (re)development of site
- A 3.23 acre lot in Shaw's Cove Office Park at the corner of Bank Street and Howard Street
- Reconstruction of Parade area may make some land available adjacent to existing Water Street garage for (re)development

¹ The vacant square footage was found using data from the New London Main Street Program's database of downtown properties.

- Union Station owners are interested in keeping the Regional Intermodal Transportation Center (RITC) downtown and enhancing the existing facility with additional supportive uses within the terminal
- Recent and potential (re)development opportunities associated with seven development opportunities identified in the Downtown Master Plan:
 - Crocker House: part of the House is currently under study to become the Coast Guard Museum; the upper floors are filled with residential space and the ground floor holds retail
 - Union Street Enclave: some of the buildings are being rehabilitated
 - The Parade: redevelopment of the Parade is under construction and is expected to be completed September 2009; the pedestrian overpass project was cancelled
 - Eugene O'Neill Housing Project: has not proceeded but is available for redevelopment
 - The Bacon Building: underwent renovations to create 21 residential units
 - The Cronin Building: condemned
 - Shaw's Cove: completed, and its 220 units are at 75% occupancy

Figure 1-20 shows the key development sites.

Figure 1-20: Key Downtown Development Sites



Sources: Google Earth, The Day's New London Empty Streets Map, New London Downtown Master Plan (1998)

Market Conditions/Potential

- Positive housing market potential - downtown housing stock nearly doubled in the last ten years to approximately 500 market-rate condos and apartments (excludes the 145 subsidized apartments in

-
- the Mohican building). 200 new units were constructed over the last five years and rough estimates put about 1000 people living in downtown²
 - Downtown buildings have been / are being renovated into residential condos and apartments:
 - 2003 Crocker House rented first phase of its 80 apartments
 - Former SNET Building renovated into 28 apartments
 - 9 loft-style apartments in mixed-use, 19 unit building at 13 Washington Street
 - Shaw's Landing on Bank Street, 35 luxury condos; asking price >\$300,000
 - Bacon Building converted into 21 apartments which range from \$800-\$1000/month at full occupancy
 - Many market rate upper floor new apartments rent at or above \$1,000 (owners report full occupancy)
 - Renovated 475 square foot studio for \$750/month and 900 square foot for \$950/month at full occupancy
 - Higher vacancy rates represent opportunities to attract quality tenants to downtown storefronts. The New London Main Street Program found that 37% of the retail space in downtown is vacant and 21% of the office space is vacant

Public Policies/Funding/Tax Revenue Impacts

- Various plans to support continued development and enhancement of downtown area (e.g. New London Downtown Action Agenda, New London New Vision, New London Downtown Master Plan, Plan of Conservation and Development for New London)
- Active Main Street program to support local business growth in downtown area
- Business incentive programs in place to support downtown development include: revolving loan fund, building rehabilitation program, façade improvement program, tax break for owners who improve their properties (see next bullet) and a rent subsidy program
- The City's Enterprise Zone Program offers a seven-year tax abatement for landlords on improvements made to commercial and residential properties. Should the RITC be located downtown, the taxable value of property improvements that may not otherwise have happened will not be contributed to the local government for seven years.

Transportation/Access/Parking/Infrastructure

- Existing pedestrian oriented infrastructure and downtown environment
- All modes (except the cruise ships) already located in close proximity
- Existing parking facilities can meet peak weekend/seasonal demand and also downtown needs
- Poor existing pedestrian connections between various transportation modes (ferry, bus, rail, etc.)
- Excellent vehicular access to major highways
- Rail access to cruise ship dock; could be beneficial if New London becomes a home port
- Both Cross Sound Ferry and Fishers Island Ferry have recent investment at current locations in downtown

² Dale, K. The Day. ...*And The Rentals Downtown Don't Stay Vacant Long*. September 2008. Retrieved on September 15, 2008 from <http://www.theday.com/re.aspx?re=0ef49ca9-b152-4d50-8d8f-648c8948613b>

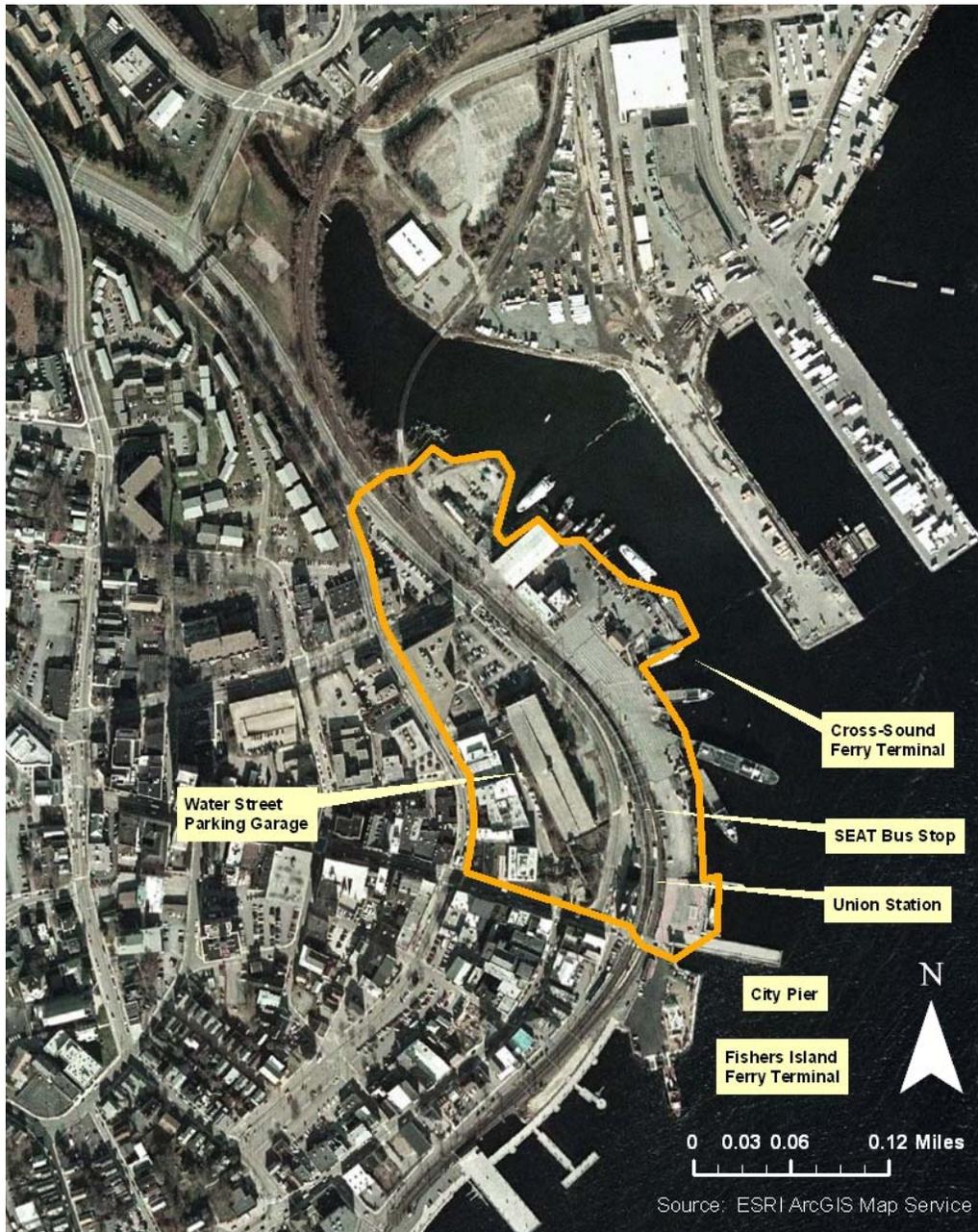
Attractions/Amenities

- Downtown New London area within walking distance of intermodal center
- Parade Project will improve some pedestrian and image issues at the current site
- Numerous historic buildings are located throughout downtown
- The Garde Arts Center provides performance space for cultural events
- Shopping and dining establishments are available for tourists, residents and downtown workers

1.2.2. Environmental Conditions – Contamination Issues

Existing development along the ferry terminus and railroad parcels have a history of uses which could yield potential for site contamination. A detailed site inventory was conducted as part of the current study and is documented in Chapter 9. Figure 1-21 shows likely contamination locations at the existing site.

Figure 1-21: Likely Contamination at the Existing RITC Site



Environmental Conditions – Natural and Cultural Issues

This section documents the findings of a preliminary screening of natural environmental and cultural resources at the existing RITC site and the greater southeastern Connecticut region as a whole. A preliminary environmental screening was conducted through the following means:

- Review of Connecticut Department of Environmental Protection (CTDEP) Geographical Information Systems (GIS) data and other CTDEP environmental publications.
- Review of National Register of Historic Places data.

-
- Field reconnaissance that involved a windshield survey of environmental resources in the area of both candidate sites.

The following natural, cultural, and community resources and issues areas were considered:

- Section 106 Resources
- Section 4(f) Resources
- Section 6(f) Resources
- Coastal Resources
- Wetlands
- Floodplains and Stream Channel Encroachment Lines
- Surface Water Resources
- Groundwater Resources
- Public Water Supply Reservoirs
- Fish, Shellfish, and Wildlife Habitats
- Rare, Threatened, or Endangered Species and Significant Natural Communities
- Active Farmland and Farmland Soils
- Wild and Scenic Rivers
- Hurricane Inundation Areas
- Noise Sensitive Areas

A brief summary of findings is presented below for each of the aforementioned resource categories and/or issue areas. In addition, Figures 1-32, 1-33 and 1-34 depict natural environmental and cultural resources at each of the two candidate sites. (They are found in Section 1.3.9)

Section 106 Resources

The National Register of Historic Places (NRHP) is the nation's official list of cultural resources worthy of preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. Information on the NRHP website and information contained in various reports prepared for the City of New London were consulted for this section. Some of the historic sites and districts discussed below are depicted graphically in Figure 1-28.

Union Station (National Register - 1971) and most of downtown New London are either National Register listed or eligible for listing. The station is the largest railroad station designed by H.H. Richardson and one of his two most important buildings in the State of Connecticut. Thus, any work conducted at this location will have to be carefully orchestrated with the Connecticut State Historic Preservation Office to ensure full compliance with Section 106 of the Historic Preservation Act.

Section 4(f) Resources

Section 4(f) of the 1966 Department of Transportation Act (49 USC 303) prohibits use of land from any public park, recreation area, wildlife or waterfowl refuge, or historic property listed on or eligible for the NRHP unless there is no feasible or prudent alternative to the use of the land and the project includes all possible planning to minimize harm. Section 4(f) also applies to archaeological sites listed on or eligible for the NRHP that are determined important for in-situ preservation. Section 4(f) does not apply to

archaeological sites that are determined important chiefly for their informational value and have minimal value for preservation in place.

Because the H.H. Richardson-designed Union Station is listed on the National Register of Historic Places, it qualifies for protection as a Section 4(f) resource. The public recreational walkway along the shoreline beginning behind the railroad station and running southward to the Swing Bridge and Shaw's Cove, may also qualify as a Section 4(f) resource.

Section 6(f) Resources

Section 6(f) of the Land and Water Conservation Fund Act (1965) provides funds for acquisition, maintenance, and enhancement of public recreational open space by municipalities. There are no public recreational properties or facilities funded and protected under Section 6(f) on or near the existing site.

Coastal Resources

The existing site is located along the western shoreline of the Thames River within Connecticut's designated Coastal Zone. Thus, Coastal Consistency Review will be required for work planned at this site to ensure full compliance with the coastal resource and use policies designated in Connecticut's Coastal Management Act. Coastal resources in the vicinity of the site include Shorelands and Coastal Flood Hazard Areas. Shorelands are essentially any developed areas within the coastal zone that are not subject to coastal flood hazards. Coastal Flood Hazard Areas are lower elevation areas that may be impacted by coastal flooding attributed to 100-year storms.

The existing site is located entirely within a Coastal Flood Hazard Area (CFHA). Developed areas just west of the site and at higher elevations are designated as Shorelands.

Wetlands

A review of CTDEP GIS data reveals that there are no hydric soils (i.e. poorly drained or very poorly drained soils) that would indicate the presence of wetlands on or adjacent to the existing site. Subsequent field reconnaissance confirmed the GIS data, as the existing site is fully developed and part of a larger urban area located along the western shoreline of the Thames River. Thus, there are no inland wetlands or tidal wetlands on or adjacent to the existing site.

Floodplains and Stream Channel Encroachment Lines

There are no Stream Channel Encroachment Lines (SCEL) associated with the Thames River in the vicinity of the existing site. A review of CTDEP GIS data reveals that the existing site (i.e., Union Station and its immediate surroundings) falls within the 100-year floodplain as designated by the Federal Emergency Management Agency (FEMA). Points along the immediate shoreline, including docks, piers, and an existing public recreational walkway are within the 100-year floodplain and may be subject to wave action during 100-year storm events. Floodplain resources in the vicinity of the existing site are depicted on Figure 29.

Surface Water Resources

The only surface water resource in the vicinity of the existing site is the Thames River, which is located directly to the east. The river, which is tidally influenced in the vicinity of the existing site, is designated by the CTDEP as a Class SC/SB water resource with respect to water quality. The SC/SB classification means coastal waters (S) with a current water quality classification of C and a water quality goal of B. Designated uses of SC waters are for fish, shellfish, and wildlife habitat, certain aquaculture operations,

recreational uses, industrial, and other legitimate uses, including navigation, but the C classification means that the water is presently not meeting all Water Quality Criteria due to pollution. Class SB designated uses include SC uses plus shellfish harvesting for transfer to a depuration plant or relay (transplant) to approved areas for purification prior to human consumption.

Groundwater Resources

Aquifer protection areas, commonly referred to as wellhead protection areas, represent the area of groundwater contribution for active public water supply wells. A review of CTDEP data revealed that there are no aquifer protection areas or public water supply wells in the vicinity of the existing site. Groundwater in the project area is designated by CTDEP as Class GB. This groundwater can be used for industrial processes, but it is not suitable for human consumption without treatment.

Public Water Supply Reservoirs

There are no public water supply reservoirs on or adjacent to the existing site. Drinking water is supplied to the site by the City of New London's public water system.

Fish, Shellfish, and Wildlife Habitats

The existing site is a built-out urban area with constant pedestrian, vehicular, and train activity. Wildlife habitat is non-existent. Vegetation is sparse and is limited to a row of mature trees along Water Street in front of the Water Street parking garage. There are also several small areas of mowed/maintained grass along Water Street and adjacent to the Northeast Corridor fence line. There is limited landscaping west of Union Station associated with an area known as the Parade (currently undergoing construction). Due to a significant amount of industrial land use along the Thames River and the presence of marinas and ferry terminals in the vicinity of the existing site, shell-fishing in the Thames River is prohibited. Recreational fishing occurs at public access points along the shore of the Thames River near the existing site.

Rare, Threatened or Endangered Species and Significant Natural Communities

The CTDEP Natural Diversity Data Base (NDDDB) was consulted to obtain a preliminary understanding as to whether or not any rare, threatened or endangered plant and animal species or significant natural communities exist in the project area. The NDDDB contains information on the status of more than 1,000 rare species of plant and animals, including invertebrates, and 45 significant natural communities. Figure 30 depicts CTDEP NDDDB sites located in the vicinity of the existing site (as well as the other candidate site).

There are no rare, threatened or endangered plant or animal species or significant natural communities on or adjacent to the existing site.

Active Farmland and Farmland Soils

The area surrounding the existing site is developed with roads, buildings and other man-made infrastructure. There are no prime or statewide important farmland soils or active farmlands on or adjacent to the existing site.

Wild and Scenic Rivers

There are no Wild and Scenic River resources at the existing site or in the project study area.

Hurricane Inundation Areas

The existing site resides within coastal areas that could potentially become inundated during Category 1 or 2 hurricanes.

Noise Sensitive Areas

Noise-sensitive land uses include: a) residences, hotels, and other buildings where people sleep; b) institutional resources such as churches, schools, hospitals, and libraries; and c) various tracts of land where quiet is an essential element of the land's intended purpose.

The existing site is located at the foot of State Street along the western bank of the Thames River. Surrounding land uses include ferry terminals, public parking, and commercial businesses among others. The area is a very active transportation center with trains, buses, taxis, ferries, and pedestrian activity at all hours of the day. There are no noise sensitive land uses on or immediately adjacent to the existing site.

1.3 Existing Conditions- Fort Trumbull Peninsula Site

The Fort Trumbull peninsula has been the site of a major redevelopment project for the City of New London consisting of 92 acres of waterfront land adjacent the Northeast Corridor Rail Right of Way. The following describes the redevelopment plan developed by the New London Development Corporation, the status of the development and a description of existing facilities. Figure 1-22 shows an aerial view of the Fort Trumbull site.

Figure 1-22: Aerial View of Fort Trumbull Peninsula



1.3.1. NLDC Plan for Redevelopment and the Status of Development Parcels

The Fort Trumbull Peninsula is defined by water on three sides and by Amtrak's Northeast Corridor mainline on the west. It is characterized by its steep topography and its mix of existing public facilities and cleared parcels slated for future private mixed use, residential, and hotel/conference center development. The recently opened Fort Trumbull State Park occupies 16 acres at the eastern edge bound by the United

States Coast Guard Station to the north. The USCG station includes the unique museum of the Naval Undersea Warfare Center. The USCG also occupies the recently renovated four story 80,000 square foot office building on the Municipal Development Plan (MDP) Parcel 3A. A newly constructed parking lot on the southern end of Parcel 1B serves the Coast Guard office building.

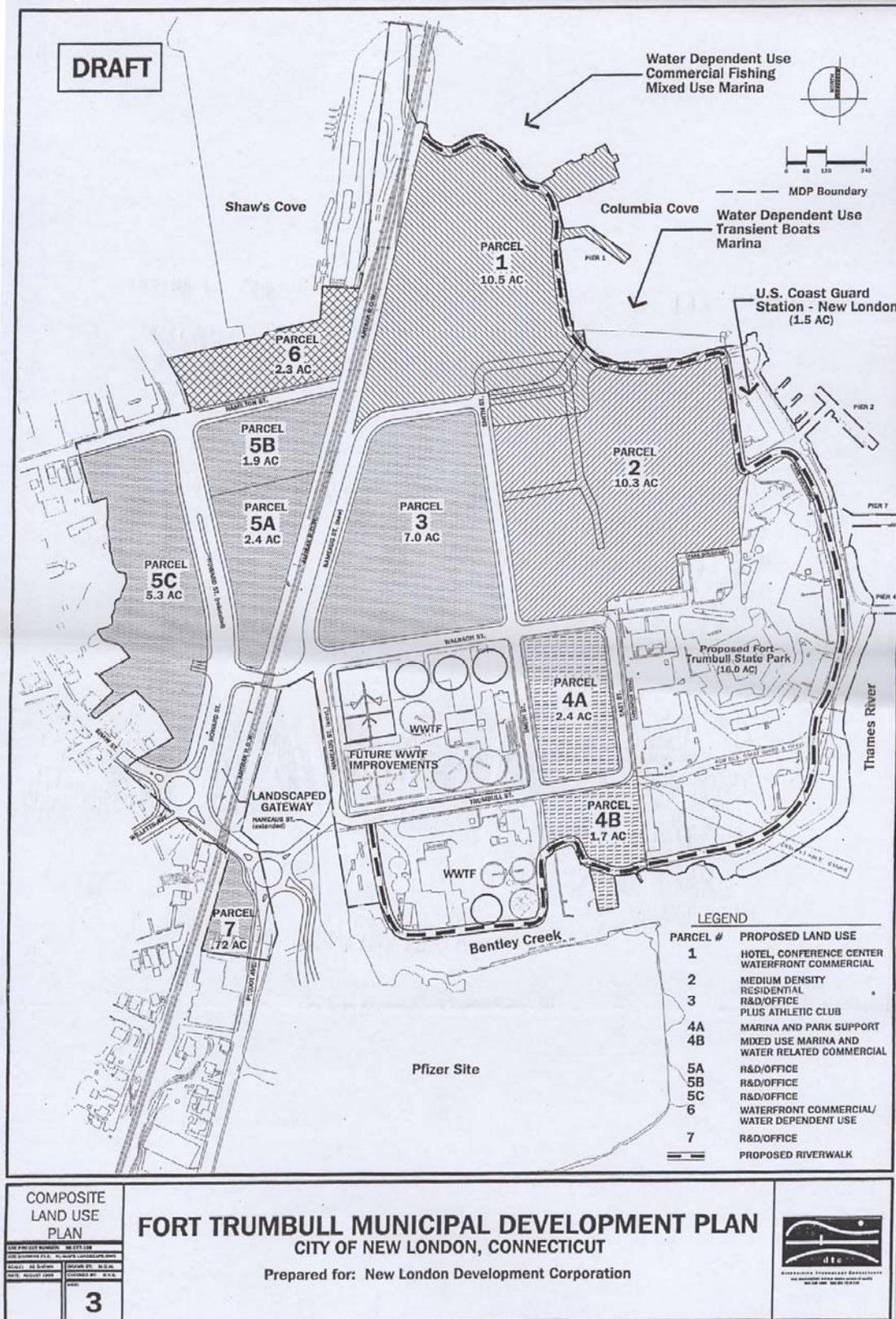
The New London Development Corporation prepared the Fort Trumbull Municipal Development Plan (MDP) in 1999 – 2000. Its goals are four-fold:

- To create a world-class development that will complement the undertakings of Pfizer, Inc. and set a standard for development in New London;
- To create an economic asset for the City of New London that will create jobs, generate tax revenue, and result in spin-off economic activity;
- To maximize public access to the waterfront and, in doing so, encourage uses which are water dependent or which will be enhanced by water access and views; and
- To develop a project which will help build momentum for the revitalization of downtown New London and the balance of the city to the benefit of the City's residents and visitors.

Most of the parcels have been cleared, and new streets constructed (Chelsea Street, East Street and the Nameaug Street extension). Parcels 2A, B and C (four acres) are designated for residential use; Parcels 3A, B and C for office (Parcel 3A is currently occupied by the Coast Guard office building and Parcels 3B and 3C are permitted for 100,000 square feet of office space each); and Parcel 4A (2.5 acres) for mixed use development. At the north end of the site Parcel 1A has been designated for the Coast Guard Museum and Parcel 1B for a hotel/conference center of up to 250 rooms. The Corcoran Jennison Company had been the designated developer for the hotel/conference center and a housing complex on Parcel 2, but their designation has been recently rescinded. The peninsula has many assets (water views, waterfront access, Fort Trumbull State Park among others) and it is reasonable to expect that development will proceed in the future.

Figure 1-23 shows the NLDC MDP for the redevelopment site.

Figure 1-23: NLDC Municipal Development Plan for the Fort Trumbull Redevelopment Site



1.3.2. Fort Trumbull Historic Site, Park and Visitor Center

This State Park is situated on a commanding site overlooking New London Harbor and the mouth of the Thames River. The park features a visitor center with interactive exhibits; a fishing pier; grassy grounds available for picnics; restrooms and walking trails and a spectacular view of New London Harbor.

Built between 1839 and 1852, the fortification is one of a group of 42 forts which were constructed for the defense of the coast of the United States, and for defense of the harbors they guarded. Fort Trumbull is unique because of the Egyptian Revival features incorporated in the architectural design. The Fort is a wonderful example of its era, a masterpiece in stonework and masonry. The Fort contains informative markers and displays and the fort interior features 19th Century restored living quarters, a mock laboratory, and a 1950's era office furnished to resemble the naval underwater research and development lab formerly located at the facility. The public also has access to the ramparts for a spectacular view of the New London Harbor.

The Visitor Center contains state of the art multimedia theaters, computer touch screen interactive exhibits, 3-D models, and extensive graphics and text panels. The one of a kind center depicts over 225 years of military history and technological advances from the Revolutionary War to the Cold War. Some of the main themes of the Visitor Center are the September 6, 1781 attack by the British under the command of Benedict Arnold, the U-boat menace during World War II, and the anti-submarine efforts during the Cold War. Figure 1-24 shows an aerial view of Fort Trumbull and Figure 1-25 shows photographs of the fort and the visitor center.

Figure 1-24: Aerial View of Fort Trumbull



Source: Google Earth, TeleAtlas, Digital Globe

Figure 1-25: Fort Trumbull and the Visitor Center



1.3.3. Coast Guard Facilities

The Coast Guard facilities are contained on what is identified as Parcel C of the Fort Trumbull Municipal Development Plan and the Environmental Assessment Disposal and Reuse of Naval Undersea Warfare Center, New London, Connecticut Report. Parcel C contains 1.6 acres located south of Shaw's Cove and a separate 0.1 acre site south of Pier 4. The 1.6 acre site contains Piers 2 and 6 and three buildings identified as #12, #45, and #86. The 0.1 acre site contains building #109, the Navy's Magnetic Silencing Facility. Figure 1-26 shows an aerial view of the Coast Guard facilities and Figure 1-27 shows a photograph of the facility.

Figure 1-26: Aerial View of Coast Guard Station



Source: Google Earth, TeleAtlas, Digital Globe

Figure 1-27: Photograph of Coast Guard Station



1.3.4. Existing Piers

Fort Trumbull contains a number of existing piers. Pier 1 located on Parcel A and is currently used by a private fishing company. Piers 2 and 6 are part of the Coast Guard facility. Piers 4 and 7 are part of Fort Trumbull State Park. Pier 4 has been rebuilt as public fishing pier. Pier 7 is currently used to provide dockage for public recreational, educational, and military vessels. Pier 7 is roughly 654 feet long and 30 feet wide. It was designed and constructed during in the mid 1960's when Fort Trumbull was home to the U.S. Navy Undersea Sound Laboratory.

Figure 1-28 shows an aerial view of the existing piers and Figure 1-29 shows a photograph of the piers.

Figure 1-28: Aerial View of Existing Piers at Fort Trumbull



Source: Google Earth, TeleAtlas, Digital Globe

Figure 1-29: Photograph of Existing Piers at Fort Trumbull



1.3.5. Pfizer Facility

The 780,000-square-foot Pfizer Global Research Facility opened in 2001, successfully transforming a former brownfield site to a modern 24-acre corporate office facility. The facility occupies the southernmost parcel on the Fort Trumbull peninsula, east of Pequot Avenue and just south of the channel that separates it from the rest of the peninsula. The facility, which consists of three six-story office buildings, is headquarters for the company's cutting-edge medical research programs involving more than 12,000 Pfizer researchers around the world. The world-class \$294 million Pfizer Research and Development Headquarters includes a child care facility; a cafeteria seating 550; a credit union and fitness center, parking garage for 1,790 cars, helipad, and ferry dock for employees commuting between Pfizer's Groton laboratories and the New London R&D headquarters. Two thousand (2,000) members of the Pfizer global development team are employed at the site. As part of the 22-acre environmental remediation, Pfizer, working with non-profit and educational groups, has restored Bentley Creek which is adjacent to the peninsula. Once a repository for run-off from a neighboring scrap metal yard, the creek today is a viable habitat for aquatic wildlife. Pfizer is now the largest taxpayer in New London, assessed nearly \$31 million dollars in 2006. *Unfortunately, by the time of completion of this Final Report, Pfizer has announced its intention to leave the Fort Trumbull site and consolidate regional operations in Groton.*

Figure 1-30 shows an aerial photo of the Pfizer facility.

Figure 1-30: Pfizer Facility and Wastewater Treatment Facility at Fort Trumbull



Source: Google Earth, TeleAtlas, Digital Globe

1.3.6. Wastewater Treatment Plant

A wastewater treatment plant owned by the City of New London is located along Trumbull Street (at 100 Trumbull Street). It occupies the 1.58 acre parcel south of Trumbull Street and just north of Bentley Creek and the Pfizer site across the creek; on the east, it is bounded by a small marina. In addition, a vacant 5.64 acre parcel for a future improved wastewater facility is located north of Trumbull Street (bounded by Nameaug Street on the west, Smith Street on the east and Walbach Street on the north). Parking is current located on the northern parcel as well as on a third parcel on the west of Nameaug Street, which may be associated with the plant. The City contracts out operation, maintenance, and management of its water and wastewater treatment systems. Figure 1-30 shows an aerial view of the Wastewater Treatment Plant.

1.3.7. Roadway Access, Traffic Conditions and Parking

Roadway Access and Traffic Conditions

The site can be accessed from downtown New London via Howard Street and Shaw Street both of which intersects with Bank Street in downtown New London. Access to the area is constrained by the railroad and its natural geography as a peninsula. Two railroad underpasses allow access to the area; the underpass to the north (at Walbach Street near its intersection with Howard Street) features a more stringent height constraint, limiting access by larger vehicles such as trucks and buses. There are two roundabouts controlling traffic flow on either side of the southerly railroad underpass at Shaw Street / Pequot Street, facilitating traffic flow between Howard Street and the Pfizer office complex. The site is also accessible from the south along the Thames River; Pequot Avenue provides a connection to the shoreline neighborhoods to the south from the roundabout east of the railroad underpass at Shaw Street / Pequot Street. A series of local roadways in a compact grid configuration provides access to the various facilities within the peninsula. Current traffic generators at the site include Fort Trumbull State Park and a wastewater treatment plant, in addition to a number of waterfront facilities including a marina and a U.S. Coast Guard station. In addition, the Pfizer office complex, a much larger traffic generator, is located on the south end of the peninsula. Currently, a number of parcels in the area remain undeveloped but are programmed for development in the MDP. The programmed developments include office, hotel, museum and residential uses.

Though available traffic data in the Fort Trumbull area are outdated (data are over three years old), traffic information documented in the *New London Transportation Model Analysis and Results, Wilbur Smith Associates, 1999*, indicates the roadway network can handle the baseline 1998 traffic demand and is anticipated to handle future traffic from future development originally forecasted for the year 2003 without significant capacity problems. This study assessed existing conditions (1998) and a future five year condition (2003) which consisted of future developments (Pfizer Global Development Center, the Fort Trumbull Municipal Development Plan (MDP), Bank Street developments, Downtown developments, and additional developments). Five signalized intersections in the Fort Trumbull area and recommended intersection improvements for the Fort Trumbull MDP were considered in the evaluation. Results from the capacity analysis during the afternoon (PM) commuting peak hour under 1998 base conditions indicate that all five signalized intersections operate at an acceptable level (LOS D or better) during both peak hours. Additionally, with the Fort Trumbull MDP improvements, it is anticipated that the five signalized intersections will operate at an acceptable level (LOS D or better). Table 1-5 and Figure 1-31 provide a summary of the LOS results.

**Table 1-5: Level of Service Summary
1998 Base Conditions and 2003 Future Conditions***

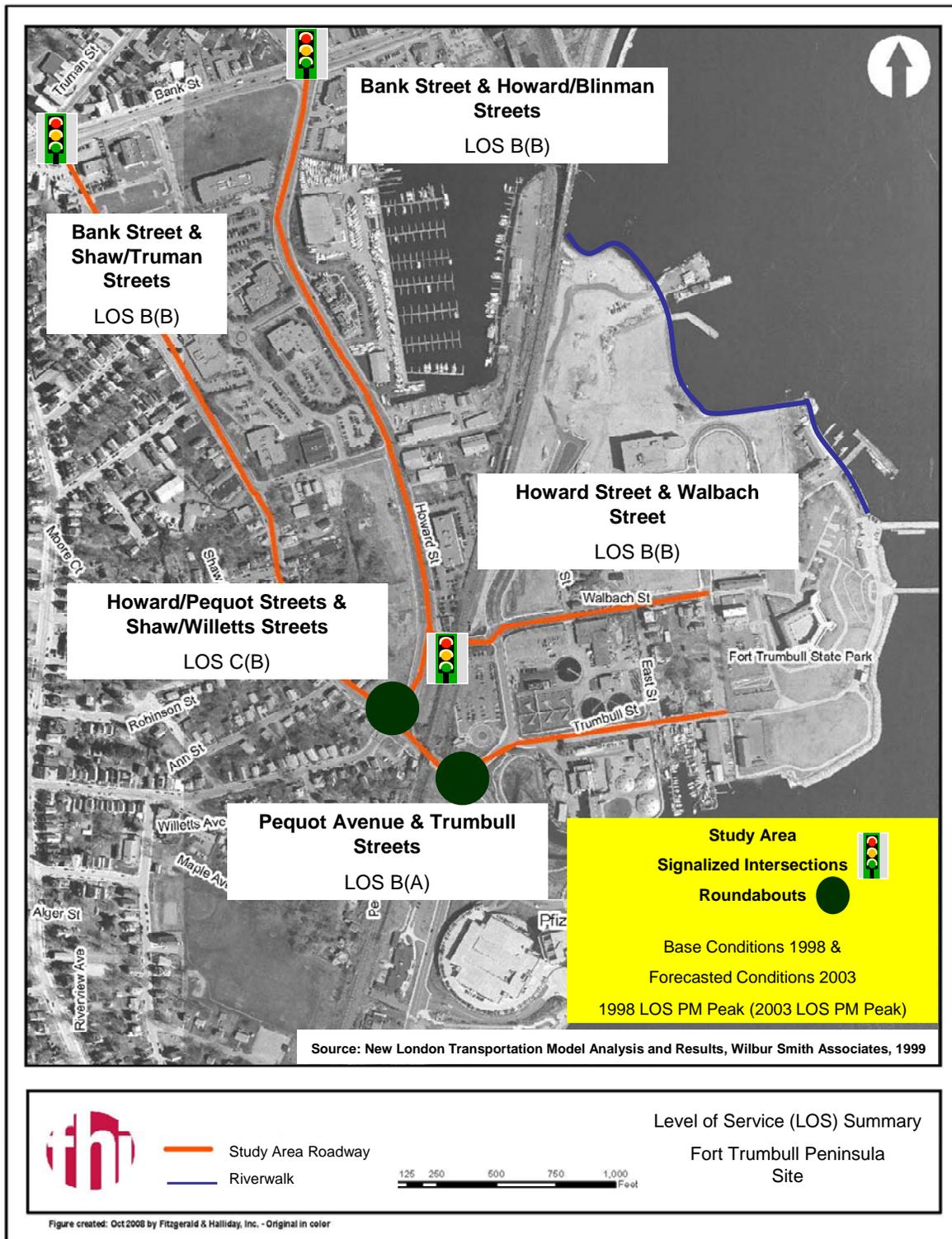
Signalized Intersection	1998 Base Conditions	2003 Future Conditions (with Fort Trumbull MDP Improvements)
	PM Peak Hour	PM Peak Hour
Bank Street and Shaw/Truman Streets	B	B
Bank Street and Howard/Blinman Streets	B	B
Howard Street and Walbach Street	B	B
Howard/Pequot Streets and Shaw/Willetts Streets	C	B
Pequot Avenue and Trumbull Street	B	A

Source: New London Transportation Model Analysis and Results, Wilbur Smith Associates, 1999

Note: AM peak hour capacity analysis results were not available.

*Future conditions are as projected in 1999

Figure 1-31: Level of Service Summary
 1998 Base Conditions and 2003 Future Conditions



Parking

There is a small parking lot at the site of the historic fort adjacent to the visitor center; vehicular access to the historic Fort site is gate-controlled. Parking is permitted on the west side of Shaw Street. In addition, the Pfizer office complex features a large parking structure. A new parking lot (220 spaces) has been constructed just east of the railroad right-of-way and west of Nameaug Street for use by tenants of the office building on Parcel 3A.

1.3.8. Pedestrian Conditions

Most streets on the Fort Trumbull site feature sidewalks on one or both sides. There is an extensive series of pedestrian pathways in the vicinity of the Fort structure, providing access for tourists to the historic site as well as to the piers at the waterfront (the latter involves some stairs or pathways on a grade due to the topography). In addition, there is a pedestrian network surrounding the Pfizer office complex.

1.3.9. Environmental Conditions – Contamination Issues

The report titled, “Environmental Assessment Disposal and Reuse of the Naval Undersea Warfare Center, New London, Connecticut dated August 1999” states that a Preliminary Assessment (PA) (NEESA, March 1988) identified no hazardous waste disposal sites or releases at NUWC New London and recommended no further action, as all hazardous wastes were disposed off-site. Since 1990, a number of areas of concern (AOC’s) have been identified and characterized and cleanup at most of the AOC’s requiring remediation has been completed.

Section 3.5 Environmental Conditions of the Fort Trumbull Municipal Development Plan – Revised Administrative Draft (August 1999) states:

“An area wide Phase I Environmental Site Assessment of the MDP area was performed in order to assess the environmental risk associated with the redevelopment of properties.” The Conclusion states: “The area wide Phase I environmental assessment has been completed for the MDP area. Based on conditions encountered it is believed that environmental contamination of soils and groundwater exists within the project area. The likely contaminant/waste types expected to be encountered during the investigation and remediation of the properties within the MDP area generally include:

- Petroleum products (gasoline, heating oil, waste oils, lubricating oils) associated with a gasoline station, several auto and marine repair facilities, several current and former underground tanks and a former oil terminal.
- Commercial industrial solvents (decreasing, dry cleaning, auto body and painting) associated with auto and marine repair facilities, former dry cleaning operations, wood furniture refinishers and auto body/painting operations.
- Metal-containing wastes associated with former foundry operations and a junkyard.
- Polychlorinated Biphenyls (PCB’s) associated with a former junkyard, a railroad maintenance facility and a former barrel storage facility.

Further investigations will be required to confirm and define contamination sources, possibly including:

- Soil gas analysis to screen for areas of contamination in soils and groundwater;
- A ground penetrating radar survey (GPR) on certain sites where unidentified USTs are suspected;
- Collection of surface soil or waste samples to determine if surfacial soils are contaminated from operations spillage or disposal;
- Installation of borings and samplings of subsurface soils to determine if USTs have leaked and to determine sources and extent of groundwater contamination;
- Sampling of waste and debris piles, abandoned and unidentified drums and containers;
- Asbestos surveys
- Survey buildings for lead paint using x-ray fluorescence;
- Sampling of stained or potentially contaminated building surfaces.”

Section 3.5 notes that Phase II Environmental Site Assessments were performed on the 15 locations in the project area indicated on “Table 3-5, Recommended Phase II ESA “I. The report notes that parcels not included were the former NUWC site, two privately owned parcels and the Regional Water Pollution Control Facility. The other parcels are considered low risk residential, commercial or undeveloped properties.

Current Status

The New London Development Corporation (NLDC) has indicated that the Phase I for the entire MDP area (including privately owned parcels) was completed and approved by the Connecticut DEP. The NLDC has provided the following summary of the environmental status (by parcel) of the Fort Trumbull area properties.

- Parcel 1A/B – Pollutant Mobility Criteria (PMC) remediation complete. Direct Exposure Criteria (DEC) remediation complete for pre-development (parking lots and buildings will complete). Final interim soil Remedial Action Report (RAR) approved.
- Parcels 2A/B/C - All PMC and DEC soil remediation complete. Soil RAR approved. Environmental Land Use Restriction (ELUR)
- Parcel 3A - Remediation completed. Developed. ELUR
- Parcel 3B - All PMC and DEC soil remediation complete. Soil RAR approved. ELUR
- Parcel 3C - All PMC remediation complete. DEC remediation pending final development plan.
- Parcel 4A - Not investigated, yet. No PMC issues expected (formerly residential); some slag noted (expected DEC).
- Parcel 4B - Privately owned. Issues warranting investigation noted in Phase I.
- Parcel 5A – Privately owned. Environmental insurance in place.
- Parcel 5B – Privately owned. Issues warranting investigation noted in Phase I.
- Parcel 5C - Not investigated, yet. Application in place for Municipal Brownfields Pilot Program (DECD). PMC issues may exist; widespread DEC issues expected (historic urban fill).
- Parcel 6 - Privately owned. Issues warranting investigation noted in Phase I.
- Parcel 7 - Clean (Pfizer owned).
- Parcels 8A/B/C - River walk (now City owned); fully PMC/DEC remediated.

Figure 1-28 shows the location of the above referenced parcels (Parcel 8ABC is not shown, but is located along the Columbia Cove waterfront along Parcel 1 extending southward from the swing bridge). A complete copy of Section 3.5 of the MDP is attached to this report as Appendix A.

Environmental Conditions – Natural and Cultural Factors

This section documents the findings of a preliminary screening of natural environmental and cultural resources at the Fort Trumbull site.

This preliminary environmental screening was conducted through the following means:

- Review of Connecticut Department of Environmental Protection (CTDEP) Geographical Information Systems (GIS) data and other CTDEP environmental publications.
- Review of National Register of Historic Places data and other documents prepared for the Fort Trumbull area, which contain information related to historic resources.
- Field reconnaissance that involved a windshield survey of environmental resources in the area of both candidate sites.

The following natural, cultural, and community resources and issues areas were considered (as in the case of the existing site):

- Coastal Resources
- Wetlands
- Floodplains and Stream Channel Encroachment Lines
- Surface Water Resources
- Groundwater Resources
- Public Water Supply Reservoirs
- Fish, Shellfish, and Wildlife Habitats
- Rare, Threatened, or Endangered Species and Significant Natural Communities
- Active Farmland and Farmland Soils
- Wild and Scenic Rivers
- Hurricane Inundation Areas
- Noise Sensitive Areas
- Section 106 Resources
- Section 4(f) Resources
- Section 6(f) Resources

A brief summary of findings is presented below for each of the aforementioned resource categories and/or issue areas. In addition, Figures 1-32, 1-33 and 1-34 depict natural environmental and cultural resources at the Fort Trumbull peninsula site as well as the existing site.

Figure 1-32: Historic and Community Resources

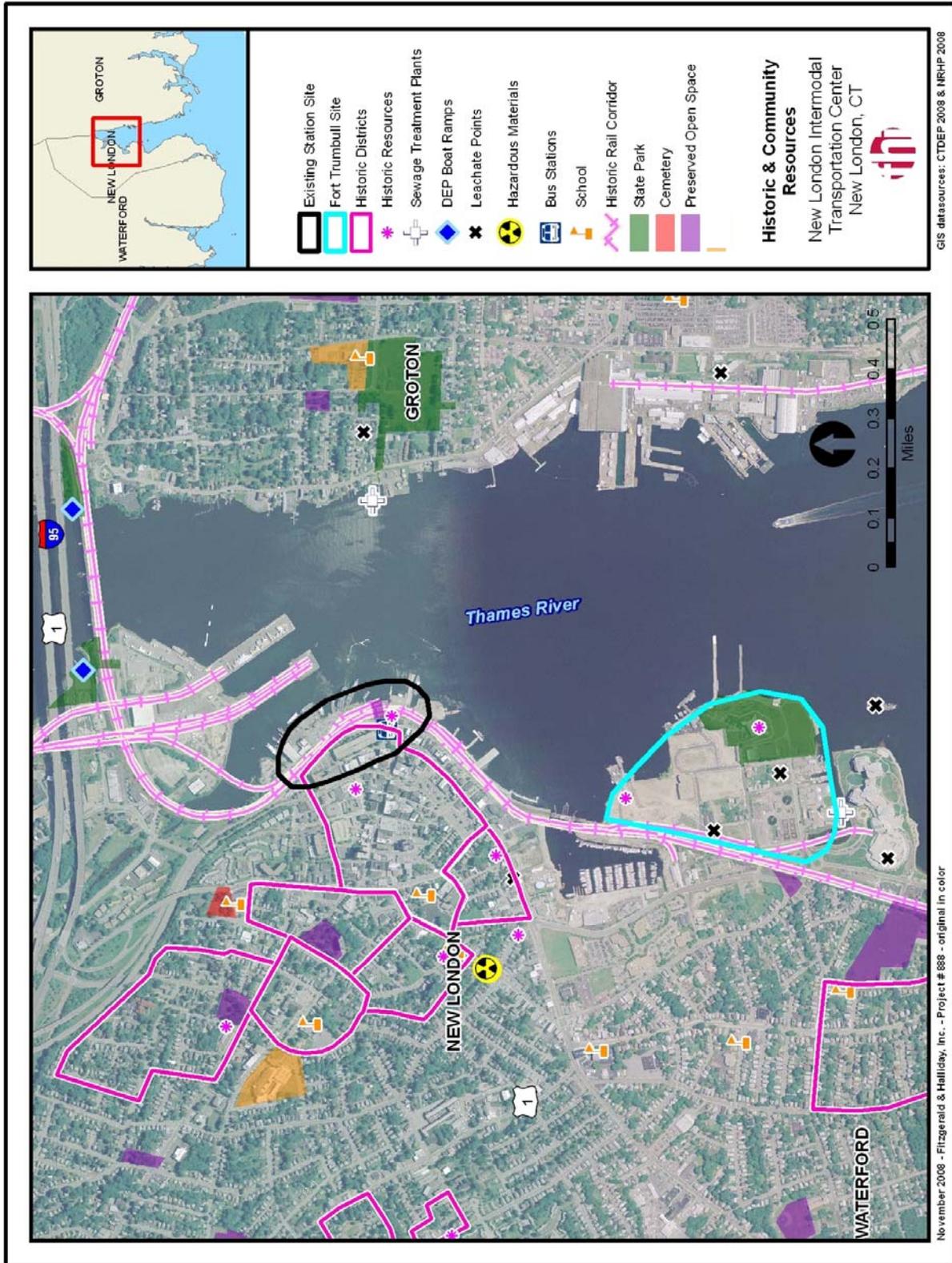


Figure 1-33: Environmental Data: Wetlands, Floodplains and Soils

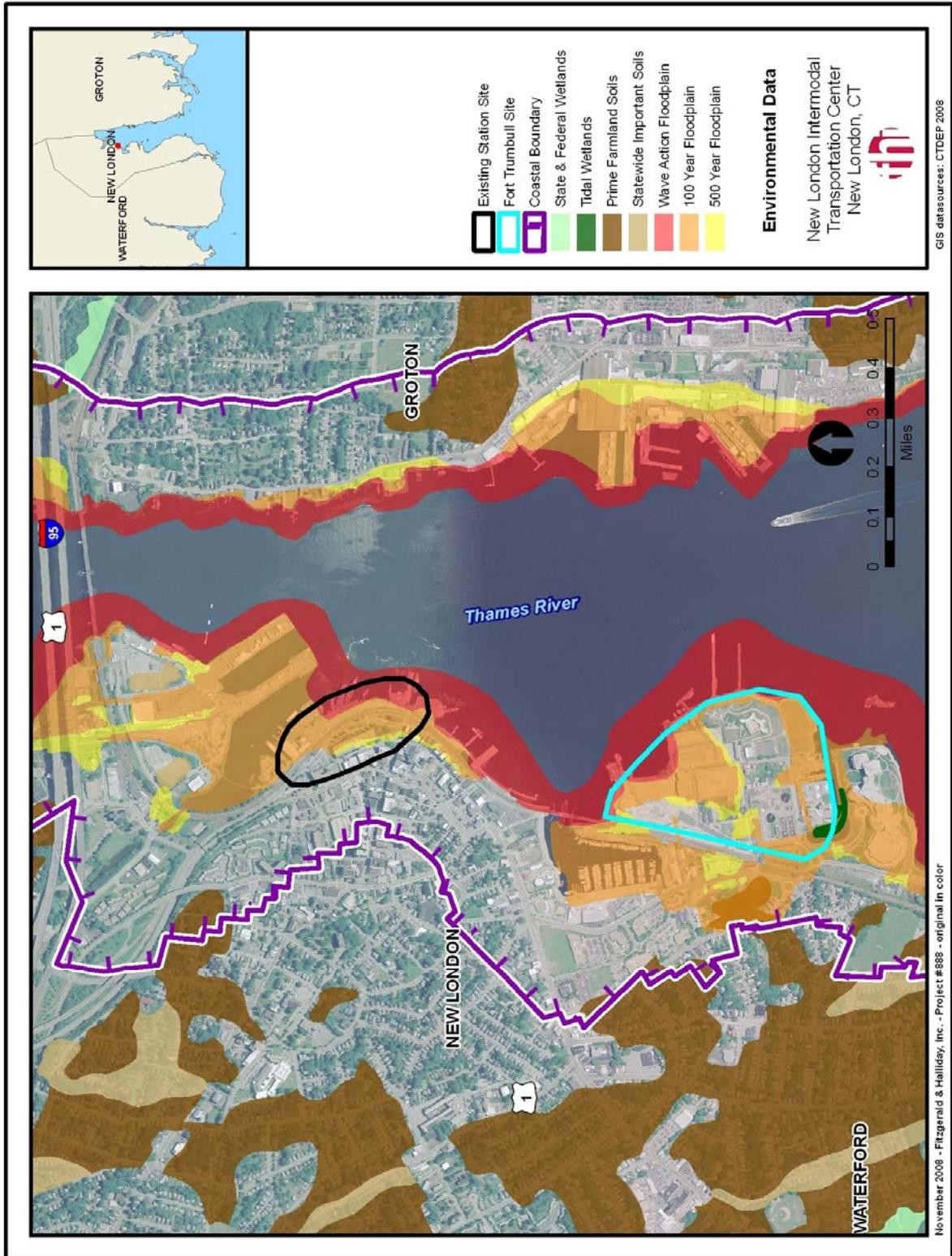
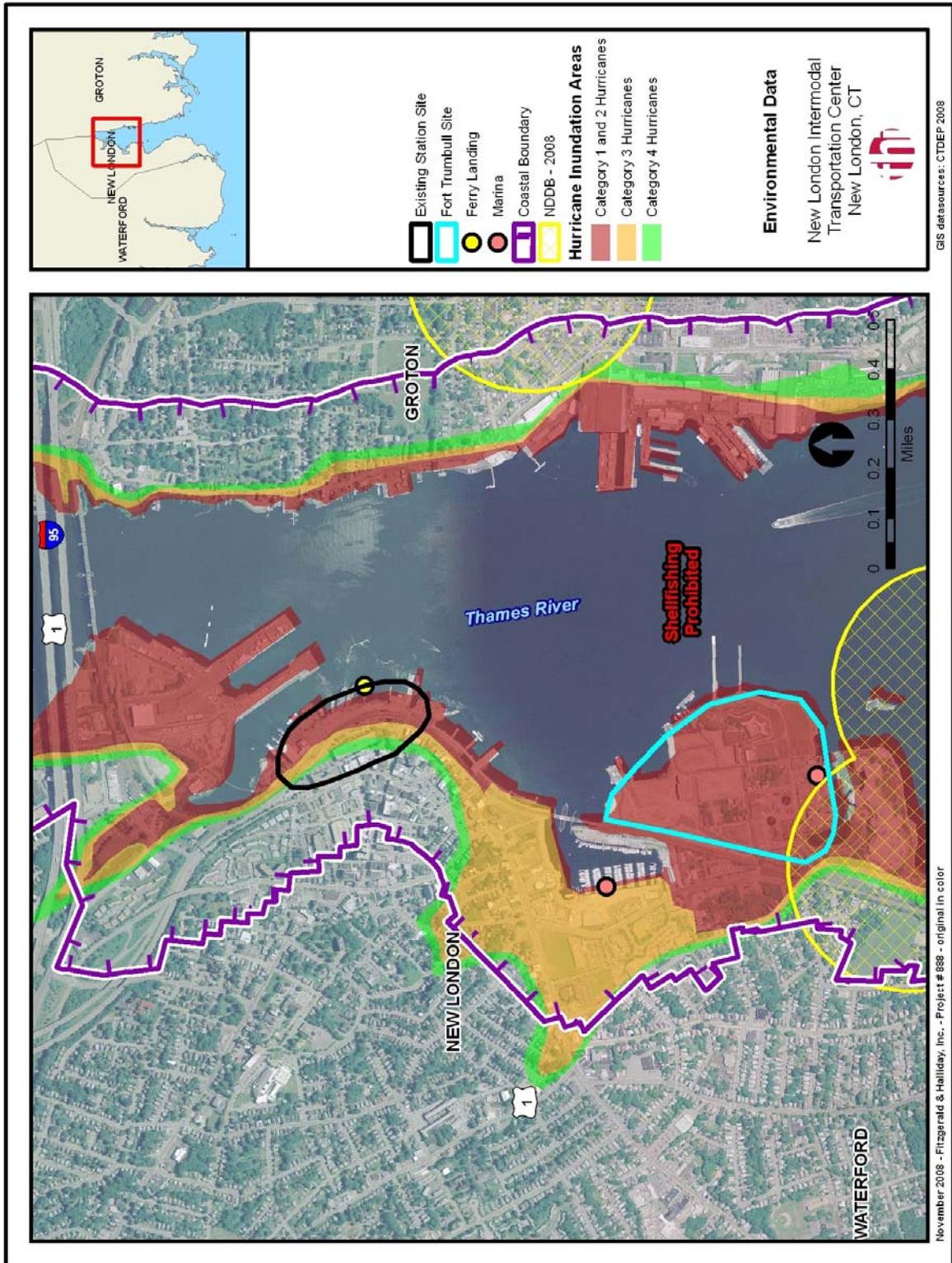


Figure 1-34: Environmental Data: Hurricane Inundation Areas and Other Designated Facilities



Section 106 Resources

As noted in the earlier section on the existing site, the National Register of Historic Places (NRHP) is the nation's official list of cultural resources worthy of preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. Information on the NRHP website and information contained in various reports prepared for the City of New London and the Fort Trumbull area were consulted for this section. Some of the historic sites and districts discussed below are depicted graphically in Figure 1-32.

Part of the flattest area adjacent to the tracks (former Amtrak/Conrail/NYNH&HRR site), north of Walbach Street and west of Nameaug Street, is the location of the remains of one of the earliest locomotive shops in the country and is designated as a State Archaeological Preserve. During the archaeological work, free flowing oil was discovered, requiring full suit hazmat protection to conduct work in the area. Near the archaeological preserve site is the National Register-eligible Italian Dramatic Club, one of the only buildings not to be demolished as part of the New London Development Corporation's (NLDC) redevelopment plan for the peninsula. The area of the Pfizer research facility site was found to be made up of a landfill that included World War II PT boats. Fort Trumbull State Park and the park piers were considered National Register-eligible as well. The northern section of the peninsula was used by the Navy for testing and was the site of a shipyard, and still houses the Coast Guard Station. The former navy site is also quite low in terms of elevation, which is another impediment to further development.

The area immediately west of the tracks is also part of the NLDC MDP area. The complex along Hamilton Street has been identified as National Register-eligible (it includes a mid 19th century forge complex that has a building supported by laminated wood arches). In the 1999 MDP EIS, the entire area between the former NUWC site and the railroad tracks was identified as archaeologically sensitive. However, subsequent work by Historical Perspectives, Inc. (HPI) for the NLDC proved those earlier findings groundless.

NLDC conducted all necessary mitigation for the entire peninsular site to be reused according to their master plan, including purchasing the land adjacent to the eastern side of the tracks that is designated as a State Archaeological Preserve.

Section 4(f) Resources

As noted earlier in the section on the existing site, Section 4(f) of the 1966 Department of Transportation Act (49 USC 303) prohibits use of land from any public park, recreation area, wildlife or waterfowl refuge, or historic property listed on or eligible for the NRHP unless there is no feasible or prudent alternative to the use of the land and the project includes all possible planning to minimize harm. Section 4(f) also applies to archaeological sites listed on or eligible for the NRHP that are determined important for in-situ preservation. Section 4(f) does not apply to archaeological sites that are determined important chiefly for their informational value and have minimal value for preservation in place.

There are several Section 4(f) historic resources located on the Fort Trumbull peninsula as identified under the Section 106 Section of this memorandum. They include Fort Trumbull State Park, the Italian Dramatic Club, the State Archaeological Preserve located just east of the railroad tracks, and the Hamilton Road complex located west of the tracks. There is also a public recreational walkway extending from Fort Trumbull State Park north along the shoreline to Shaw's Cove. This walkway is intended to connect to the

northern segment that leads to the Amtrak Railroad Station. It is likely that this walkway may also qualify as a Section 4(f) resource.

Section 6(f) Resources

As noted earlier in the section on the existing site, Section 6(f) of the Land and Water Conservation Fund Act (1965) provides funds for acquisition, maintenance, and enhancement of public recreational open space by municipalities. There are no public recreational properties or facilities funded and protected under Section 6(f) on or near the Fort Trumbull site.

Coastal Resources

The Fort Trumbull site is located along the western shoreline of the Thames River within Connecticut's designated Coastal Zone. Thus, Coastal Consistency Review will be required for work planned at the site to ensure full compliance with the coastal resource and use policies designated in Connecticut's Coastal Management Act. Coastal resources in the vicinity of the site include Shorelands and Coastal Flood Hazard Areas. Shorelands are essentially any developed areas within the coastal zone that are not subject to coastal flood hazards. Coastal Flood Hazard Areas are lower elevation areas that may be impacted by coastal flooding attributed to 100-year storms.

Much of the Fort Trumbull peninsula lies within a Coastal Flood Hazard Area (CFHA). Only the higher elevation areas of the peninsula, namely the area surrounding Fort Trumbull itself and extending west to an existing waste water treatment plant, and land immediately adjacent to the railroad tracks, fall outside of the CFHA. These areas are designated as Shorelands.

Wetlands

A review of CTDEP GIS data reveals that there are no hydric soils (i.e. poorly drained or very poorly drained soils) that would indicate the presence of wetlands on the northernmost portion of the Fort Trumbull peninsula. Field reconnaissance determined that this northern portion of the Fort Trumbull peninsula is undergoing substantial redevelopment. Virtually all of the former buildings and residences that once occupied the area have been demolished and the landscape is significantly disturbed. No inland wetlands were found to exist on the site, thus confirming the GIS data. The CTDEP GIS data does identify a narrow band of tidal wetlands located just to the north of the new Pfizer facility and south of an existing waste water treatment plant; however, this tidal wetland is not in a location that could support a potential intermodal center. This narrow band of tidal wetlands is depicted in dark green on Figure 1-29.

Floodplains and Stream Channel Encroachment Lines

There are no Stream Channel Encroachment Lines (SCEL) associated with the Thames River in the vicinity of the Fort Trumbull peninsula. A review of CTDEP GIS data reveals that a substantial portion of the Fort Trumbull peninsula falls within the 100-year floodplain as designated by FEMA (refer to Figure 1-29). From the Shaw's Cove inlet, the 100-year floodplain extends south into lower elevation areas of the peninsula to a point just north of the existing waste water treatment plant. The area immediately adjacent to and east of the railroad tracks, Fort Trumbull itself, the existing waste water treatment plant, and portions of the new Pfizer development are the only areas of the peninsula that do not reside within the 100-year floodplain. Much of the land south of Shaw's Cove and abutting the western side of the railroad tracks also resides within the 100-year floodplain.

Surface Water Resources

The Fort Trumbull peninsula extends eastward into the Thames River. To the northwest of the peninsula is Shaw's Cove. Both water bodies have been designated as Class SC/SB by the CTDEP with respect to water quality.

Groundwater Resources

There are no aquifer protection areas or public water supply wells in the vicinity of the Fort Trumbull peninsula, and the quality of the groundwater underlying the peninsula is designated by the CTDEP Class GB.

Public Water Supply Reservoirs

There are no public water supply reservoirs on or adjacent to the Fort Trumbull site. Drinking water is supplied to the site by the City of New London's public water system.

Fish, Shellfish, and Wildlife Habitats

The redevelopment project being undertaken by the New London Development Corporation on the Fort Trumbull peninsula has eliminated not only the former buildings and residences that once graced the landscape, but also much of the mature vegetation. What remains are a few pockets of mature trees and larger areas of grasses and low growing shrubs that occupy spaces between the existing roadway network and the adjacent rail corridor to the west. The new Pfizer development on the southern side of the peninsula is a professionally landscaped development. There is also a new office building and associated parking lots located slightly northwest of historic Fort Trumbull. The historic fort itself is surrounded by expansive lawns that are regularly mowed and maintained. Overall, wildlife habitat on the peninsula is minimal. As previously mentioned, the Thames River is prohibited to shellfishing and recreational fisherman can often be seen along the banks of the river at public access points.

Rare, Threatened or Endangered Species and Significant Natural Communities

The CTDEP Natural Diversity Data Base (NDDDB) was consulted to obtain a preliminary understanding as to whether or not any rare, threatened or endangered plant and animal species or significant natural communities exist in the area of the site. The NDDDB contains information on the status of more than 1,000 rare species of plant and animals, including invertebrates, and 45 significant natural communities. Figure 1-30 depicts CTDEP NDDDB sites located in the vicinity of the Fort Trumbull peninsula site as well as the existing site.

There are no rare, threatened or endangered plant or animal species or significant natural communities on or adjacent to the Fort Trumbull peninsula site.

Active Farmland and Farmland Soils

The Fort Trumbull peninsula was at one time completely developed with roads, buildings and other man-made infrastructure. Currently, the majority of the buildings have been demolished and removed from the peninsula as part of a large redevelopment project. What remains is a substantially altered soil profile. As such, there are no prime or statewide important farmland soils or active farmlands on the Fort Trumbull peninsula.

Wild and Scenic Rivers

There are no Wild and Scenic River resources at or near the Fort Trumbull peninsula site.

Hurricane Inundation Areas

The Fort Trumbull peninsula resides within coastal areas that could potentially become inundated during Category 1 or 2 hurricanes.

Noise Sensitive Areas

Noise-sensitive land uses include: a) residences, hotels, and other buildings where people sleep; b) institutional resources such as churches, schools, hospitals, and libraries; and c) various tracts of land where quiet is an essential element of the land's intended purpose.

As previously mentioned, the Fort Trumbull peninsula is going through an active redevelopment phase. Virtually all of the buildings and residences that once occupied the landscape have since been demolished. The southern part of the peninsula is now occupied by a Pfizer research facility and there is a new office building located just northwest of the historic Fort Trumbull. Presently, there are no noise sensitive areas on the Fort Trumbull peninsula.

Summary of Environmental Issues at Fort Trumbull

Given the presence of a State Archaeological Preserve to the east of the railroad tracks, as well as potentially eligible National Register historic resources to the west in the Hamilton Street area, obtaining approvals to construct a railroad station to serve as the hub for a new regional intermodal center on the Fort Trumbull peninsula would be subject to expensive permitting and regulatory negotiation under section Section 4(f) of the Department of Transportation Act of 1966; that section explicitly disallows the construction of a transportation project that impacts archaeological resource preserves or National Register properties unless it can be definitively shown that there are no other feasible and prudent alternatives to the proposed action. Since there is an existing railroad station located at the eastern end of State Street that, by virtue of its proximity to ferry operations and other transportation modes, is considered by most to be an intermodal facility by default; the argument that no other feasible alternatives exist cannot be made.

Another factor that severely precludes the viability of the Fort Trumbull site for a relocated RITC has to do with relocating Cross Sound Ferry and Fishers Island Ferry operations to Columbia Cove, and the cruise ships to Pier 7. This would require extensive dredging of the Thames River in this area (the River is only 8 to 14 feet deep) as well as construction of structures such as docks and piers below the high tide line. Because Cross Sound Ferry, Fishers Island Ferry, and the State Pier are already equipped with the necessary docks, piers and other in-water facilities and the channel is already dredged to appropriate depths in these locations to accommodate all ferry and cruise ship operations, it is unlikely that the CTDEP Office of Long Island Sound Programs or the U.S Army Corps of Engineers would ever grant the necessary permits and approvals to allow relocation of these facilities to Fort Trumbull to proceed.

1.3.10. Development Potential

This section describes the development climate in the area at and near the Fort Trumbull candidate site. The discussion addresses development opportunity sites, market conditions and potential, public policies/funding/tax revenue impacts, transportation/access/parking/infrastructure factors, and attractions/amenities.

Development Opportunity Sites

- The Fort Trumbull Municipal Development Project - 90 acres, plans for 90,000 square foot industrial building, 109-room hotel and conference center, 80 housing units, six office/research/waterfront commercial sites. There has been no development activity to date on the Project. Figure 1-28 referenced earlier in section 1.3.9 shows the development parcels in the MDP.

Market Conditions/Potential

- At this time, there are no recent or under construction private sector active developments projects in the Fort Trumbull area
- High technology cluster could be realized due to the linkage to the Pfizer Center, but at this time there are no recent or under construction research and development projects (Note: At the time of completion of this Final Report, Pfizer had announced its intention to leave the Fort Trumbull Site).

Public Policies/Funding/Tax Revenue Impacts

- Infrastructure is in place for the Fort Trumbull Municipal Development Project
- State of Connecticut investment in Fort Trumbull Municipal Development Project is \$78 million, the City of New London's investment is \$4 million and federal EDA funding is \$2 million, State and local funds for the wastewater treatment plant is \$11.2 million³
- The City and Town Development Act created a special tax exemption program that would apply to a major development project at Fort Trumbull.

Transportation/Access/Parking/Infrastructure

- Highway access is poor, not convenient to major roadways and limited by low clearance bridges
- Poor connections to downtown – limited by waterfront walkway/bikeway
- Parking and space requirements may conflict with development goals for Fort Trumbull peninsula
- Limited space on the Fort Trumbull site for parking to support rail, ferry and other transportation functions
- Unlikely that the ferry facilities located at downtown site could be accommodated at Fort Trumbull
- Feasibility of docking cruise ships at site is questionable due to potential costs associated with inadequate pier length, water depth, wind load and poor access to Fort Trumbull peninsula

Attractions/Amenities

- Proximity to Pfizer Center, Fort Trumbull State Park, and the proposed National U.S. Coast Guard Museum

³ Affordable Housing Institute: US. March 2005. Eminent Domain, The Wrong Fight: Part 3. Retrieved on September 15, 2008 from http://affordablehousinginstitute.org/blogs/us/2005/03/eminent_domain_3.html

- Limited amenities and attractors (e.g. restaurants, shopping, etc.) within walking distance of proposed site

1.3.11. Key Intermodal Connections

The various transportation modes serving downtown New London constitute a hub of transportation activity which provides unique synergies. Passengers can make transfers between a wide variety of local, regional and intercity, ground and maritime transportation services in the heart of downtown New London. While there is need for improvements to facilitate the interfaces between modes to make the transfers more convenient, there is clearly great transportation value to their coming together in one location. To date, the connections that have been noted as particularly valuable include:

- *Auto (Parking and Pick Up/Drop Off) -- Block Island Ferry* – This passenger only ferry requires access by other modes of which automobile access is the primary mode. Block Island is a tourist/leisure destination. Passengers use on-site parking at Cross Sound Ferry and the Water Street garage for access. The recent surveys indicated that 91% used a parked vehicle and 7% were dropped off.
- *Auto (Parking and Pick Up/Drop Off) – Amtrak Rail – Acela Express and Regional service* connects New London with major cities such as New York and Boston which are key business and recreational destinations. There is substantial disincentive for travelers with automobiles to drive to these cities and the station in New London has a wide catchment area. As a result, automobile access is critically important. Amtrak has an agreement with the City of New London to provide 200-300 parking spaces at the Water Street Garage that cannot be rented to monthly renters but must be offered on a first-come/first-serve basis to ensure adequate parking for Amtrak riders. The recent surveys on a weekday indicated that 24% used a parked vehicle for access and 42% were dropped. On Saturday a larger share was dropped off and a smaller share parked.
- *Auto (Drive On) - Long Island Ferry* – Cross Sound Ferry service to and from Long Island serves as a bridge between eastern Long Island and New England for auto travelers and truck traffic. The recent surveys indicated that 28% parked and 11% were dropped off.
- *Auto (Parking and Pick Up/Drop Off) – Shore Line East Rail* – Although currently only one Shore Line East round trip is offered on weekdays at New London, the second phase of Shore Line East improvements calls for all SLE trains to operate to New London. Given the parking constraints at Old Saybrook station (the current eastern terminus of most SLE service), it is expected that this will generate additional auto access and parking demand at Union Station for passengers residing in the New London area.
- *Greyhound – SEAT* – Due to the nature of the intercity bus market, which tends toward lower income travelers in comparison with the Amtrak market, the connection with local transit system (SEAT) was noted as the primary connection for Greyhound travelers. The recent surveys indicated that 22% of Greyhound passengers used SEAT to arrive at the terminal.
- *Auto (Parking and Pick Up/Drop Off) – Greyhound* - This was identified by Greyhound as a second key means of access to intercity bus service to New York and Boston. The recent surveys indicated that 11% parked and 44% were dropped off.
- *Greyhound – LI Ferry* – Greyhound and Cross Sound Ferry report that there is a niche market for this connection consisting of students whose home is on Long Island but who attend college in Boston and other New England locations and are dropped off at Orient Point and use the ferry to access Greyhound service. This was identified by Greyhound as its third most important means of

-
- access. The recent surveys indicated that 6% of LI Ferry users arrived by Greyhound and 11% of Greyhound users arrived by ferry.
- *Rail – Fishers Island Ferry* – Fishers Island is a higher income community for which the Amtrak service to Manhattan is important. Summer homeowners on Fishers Island use Amtrak to connect to the ferry which is adjacent to the train station. The recent surveys indicated that 16% of rail users arrived by ferry (the particular ferry not specified.)
 - *Shuttle - LI (High-Speed Passenger) Ferry* - Currently coach buses from each casino resort drop off and pick up passengers from the high-speed passenger ferries whose primary market is Long Island based casino visitors who leave their cars parked at Orient Point. The improved tourist shuttle bus system proposed for southeastern Connecticut should enhance the market for visitors who do not drive to the region.
 - *Shuttle - Cruise Ships* – Cruise ship passengers arriving in New London (at the State Pier) currently have the choice of purchasing coach bus excursions offered through the cruise ship operator or they are transported by shuttle bus to Union Station where they can spend the day in the city on their own or take another shuttle bus to selected sites such as Fort Trumbull. It is reported that over 20 coach buses line up to serve the arriving cruise ships.
 - *Taxi – Rail* – Business travelers arriving in New London destined to locations other than the immediate downtown make use of taxi service. On the recent weekday survey, 16% of rail passengers indicated that they used a taxi to get to Union Station. On weekends, the share dropped to 12%.
 - *Shuttle – Rail* – Rail passengers have not to date used SEAT service to any great extent for access or egress. The tourist circulator is envisioned to enhance the visibility and convenience of connections between Amtrak and the visitor attractions in the area. On the recent Saturday survey of rail passengers, 3% indicated that they used SEAT for access to Union Station; on weekdays, there were none.

Figure 1-35 provides a summary matrix which identifies these key connections:

Figure 1-35: Summary Matrix of Key Connections

	Auto Drive On	Auto Parking	Auto Pickup/Drop Off	Amtrak Rail	Shore Line East Rail	Cruise Ships	Block Island Ferry	Long Island Ferry	LI Sea Jet Ferry	Fishers Island Ferry	Greyhound Bus	SEAT Bus	Taxis	Proposed Shuttle Bus
Auto Drive On	NA													
Auto Parking		NA												
Auto Pickup/Drop Off			NA											
Amtrak Rail				NA										
Shore Line East Rail					NA									
Cruise Ships						NA								
Block Island Ferry							NA							
Long Island Ferry								NA						
LI Sea Jet Ferry									NA					
Fishers Island Ferry										NA				
Greyhound Bus											NA			
SEAT Bus												NA		
Taxis													NA	
Proposed Shuttle Bus														NA

1.4 Desirability of Each Site for Each Mode

1.4.1. Introduction/Overview

This section contrasts the two candidate sites with respect to their desirability for each of the major transportation modes. This description is focused on desirability without addressing feasibility which is addressed in Section 1.5. In contrasting the desirability of the two sites, the potential for improvement of the existing site is taken into account, although specific proposals for such improvements are not evaluated at this stage. As a result, the criteria addressed are:

- *Vehicular Access, Parking Capacity and Traffic Impacts* - This criterion addresses whether the location of the mode and its facilities at the site would provide adequate vehicular access and parking.
- *Traffic Impacts* - This criterion addresses whether negative impacts on traffic would result.
- *Pedestrian Access* - This criterion addresses whether the location of the mode and its facilities at the site would provide adequate access for pedestrians.
- *Capacity for Operations* - This criterion addresses whether the location of the mode and its facilities at the site would provide desirable levels of capacity. (If the capacity represents a severe constraint influencing the feasibility of locating the facility at the site, it is addressed in the feasibility assessment described in Section 1.5.)
- *Compatibility with Other Land Uses* – This criterion addresses whether the location of the mode and its facilities at the site would be incompatible with current and continuing land use at the site or a future planned or programmed land use.
- *Public Support* – This criterion addresses whether the location of the mode and its facilities at the site would garner public support or face substantial opposition. Consideration is given to the various stakeholder interests. At this time, public outreach has not taken place so that factor cannot be taken into account definitively.

An additional criterion related to desirability is *Economic Development Opportunity*. This criterion addresses whether the location of the mode and its facilities at the site would promote economic development at the site, as well as economic development at the site that is not selected. Each of the two sites was evaluated based on the following economic development / transit oriented development (TOD) criteria: (1) development opportunity sites; (2) market conditions/potential; (3) public policies/funding; (4) transportation/access/parking/infrastructure; and (5) attractions/amenities. Consideration is given to the tax revenue impacts on the City of New London. Since this criterion is best examined for the entire RITC, it is discussed in Section 1.5.

The following summarizes the findings for each mode/modal facility:

1.4.2. Rail Station

Existing Site

Perhaps, the biggest advantage of the existing rail station located downtown is that it exists and functions without requiring a large capital investment. The other big advantage is its location at the core of downtown

with easy access for pedestrians and for vehicles. Interestingly, only 8% of the (105) respondents to the surveys conducted this summer said they walked to the station (3% on Thursday and 11% on Saturdays). Drop-off was the predominant mode of access (42% on Thursday and 49% on Saturday). The location has easy access from the interstate highway system (I-95) and Route 32. The location provides intermodal access to the Greyhound and SEAT buses, ferry operations, taxis, and surface and structured parking. The Water Street garage provides the most convenient parking and, under an agreement with Amtrak, 200-300 spaces are reserved for first-come/first-serve use so as ensure parking for Amtrak. Eight (8) percent of Saturday rail passengers and 24% of Thursday rail passengers indicated that they parked their car as a means of access. Of course, if the RITC were shifted elsewhere, some or all of the intermodal features could be shifted to the new site. The current station also provides surface pedestrian crossings of the track. The drawback of the current crossing is the inability to cross from the southwest side to the northeast side of the track when a train is present. Another drawback has been the lack of convenient pedestrian connections to the Cross Sound Ferry and to the parking facilities. The Parade Project will provide improved pedestrian crossings and traffic calming that will enhance pedestrian access to the Water Street Garage. The Water Street Garage will also have elevators repaired and security cameras installed. The originally proposed pedestrian overpass that would have improved pedestrian connections between the Water Street Garage, Rail Station, Bus Terminal and Cross Sound Ferry was aborted. The current study will address improving intermodal connections including pedestrian connections to Cross Sound Ferry.

There appears to be strong public support as evidenced by comments made by the members on the Steering Committee that the rail station, the heart of the RITC, remain at Union Station. The owner of Union Station also supports the rail station remaining there.

Fort Trumbull Site

The physical location of the existing rail line through Fort Trumbull limits the possible location of any future station. Any future station would be located farther from the potential location on the waterfront for ferry services.

Fort Trumbull also has very limited area for parking which might constrain the parking capacity. Vehicular access would be constrained as well. There are only two points of access to Fort Trumbull and both are under railroad bridges and only one of the bridges is high enough to allow access by trucks and buses. This would limit access to Fort Trumbull for Greyhound and SEAT buses. The distance from I-95 and Route 32 would also present a disadvantage for both bus operations and private vehicles, increasing mileage (by about 1.5 miles each way) and time to and from the station.

Despite these drawbacks, there is no overall compatibility problem with current or planned land uses at Fort Trumbull, since the railroad already passes through the redevelopment site. The location of a railroad station (with parking) there would require devoting more land to transportation uses and could reduce the land available for office and other development.

A new rail station at Fort Trumbull would involve substantial cost. It is likely the cost would be at least \$30 million including 200 parking spaces and a bus drop off area. Note that the Old Saybrook station cost over \$20 million and provides platforms, a pedestrian overpass and only 40 parking spaces.

Public support would likely be a problem since the rail station would be located farther from downtown and downtown businesses. The Steering Committee members representing transportation mode operators, business and economic development interests, and other interest groups have overwhelmingly expressed opposition.

Amtrak was contacted but has not rendered an official opinion on the RITC site selection.

1.4.3. Ferry Facilities

Existing Site

Both Cross Sound Ferry and Fishers Island Ferry identified a strong preference for the existing site due to its proximity to rail, buses and Interstate 95. Note that the driving time to Fort Trumbull from the I-95 exit is about five minutes longer than the driving time to the existing ferry site.

Fishers Island Ferry identified the importance of the rail connection to their customers, as well as the parking facilities. They noted the fact that the downtown businesses were important to their customers. Finally, they noted their recent \$15 million investment in a new terminal.

According to Cross Sound Ferry, the ferry's appeal to consumers is highly dependent on the level of convenience provided relative to alternative ferry and roadway options. The following elaborates on the advantages of the existing site:

The current downtown site provides for easy access to and from I-95 for cars and trucks, to downtown and to parking. Cross Sound indicated that Fort Trumbull has none of those attributes (as described in the section on the Fort Trumbull site below). Despite the proximity of the current site to the roadway system, improvement to the access to the current ferry site across the railroad right of way is a critical need to be addressed in the study.

Providing the necessary vehicular access and managing the queuing of cars has been a challenge at the existing site due to the railroad right-of-way that cuts off access. (Note that the car ferries carry about 100 cars each.) Nevertheless, Cross Sound Ferry has made this work. As improvements and changes are considered at the existing site, it is critically important to Cross Sound Ferry that vehicular access at the Governor Winthrop Boulevard rail crossing and the current signal timing there be preserved. Both Amtrak and P&W freight trains have impacts on Cross Sound Ferry operations as they cut off vehicular and pedestrian access many times during the day. Because the Amtrak trains move quickly they don't cut off access for substantial periods. In contrast, the freight trains which use the area to switch tracks to turn around and go back north close off vehicular and pedestrian access for extended periods of time.

At the existing site, Cross Sound Ferry is able to provide on-site parking for its customers and employees. In addition the nearby Water Street parking garage serves as an important parking resource for Cross Sound Ferry that it advertises to prospective customers. Since the Long Island ferry is primarily auto ferry and since the Sea Jet High Speed passenger ferry primarily serves travelers originating on the Long Island side, the passenger parking is primarily important for serving the passengers for Block Island Passenger Ferry service. Cross Sound Ferry has plans to create a new High Speed Ferry terminal which would

displace 100 parking spaces from the Cross Sound Ferry site. These customers would then be likely to park in the Water Street garage.

There are serious problems with the existing site in terms of pedestrian access. This is not because the downtown and the other modes are not nearby but because the conditions are so poor. Cross Sound Ferry indicated that this is a critical need. It is for this reason that Cross Sound Ferry pushed for a bridge to provide a direct pedestrian connection from the Water Street garage, a project that was planned several years ago and then aborted. Cross Sound Ferry believes that there is still a pressing need for such a connection.

Another factor is the intermodal access to other modes, such as rail, intercity buses and cruise ships.

The current site provides a convenient connection between ferry and rail services. Cross Sound Ferry indicated there are passengers connecting between the ferries and the rail service, however the numbers of users are few per trip. The recent surveys identified that no one boarding the three Cross Sound ferry services arrived by rail but that 11% of Saturday and 16% of Thursday rail passengers arrived by ferry. This may reflect the effect of the Fishers Island Ferry which is reported to have a stronger connection with the rail mode. Cross Sound Ferry expressed the opinion that the numbers will likely grow in the future. Recognizing the importance of this connection, Cross Sound Ferry did joint ticketing with Amtrak beginning in 1995 but it is not active now. Cross Sound Ferry noted more students from Long Island use the ferry to connect to rail to Boston. Rail is important enough to the ferry service that the ferries wait if a train is late in arriving, although coordinating schedules with Amtrak proved difficult. (They also wait if the train blocks pedestrian access.)

About 11% of Greyhound passengers surveyed reported arriving by ferry while 6-8% of Cross Sound Ferry passengers surveyed indicating arriving by intercity bus. Cross Sound Ferry staff mentioned the student market which may also be a source of the ferry-Greyhound transfers. The current site provides a connection between these services.

The existing site does not accommodate the cruise ships although the State Pier where the cruise ships dock is not far away, although not within walking distance. However, there is little interaction between ferries and cruise ships now and Cross Sound Ferry believes that this would be unlikely to change unless the cruise ships were to stay in New London longer. As a result, the location of the cruise ships is not a significant determinant of an advantageous location for the ferries.

Finally, another advantage of the existing location is the access provided to support services with Cross Sound Ferry's shipyard and tug service at the existing location. If these were to be moved to the Fort Trumbull site as well it would require additional square footage and waterfront space. Being farther up the river at the downtown site reportedly provides better protection against storms than at Fort Trumbull.

Fort Trumbull Site

Cross Sound indicated that Fort Trumbull has none of the advantageous attributes of the existing site. In fact, they noted that they moved to the existing site thirty years ago from their previous site located near the Pfizer facility on Fort Trumbull peninsula in order to obtain these advantages. Fort Trumbull is less conveniently located to the interstate highway system and access is limited to two underpasses (under the

railroad tracks). While the underpasses provide unimpeded access across the tracks, both have height restrictions (only one underpass is high enough for buses).

With regard to intermodal access to other modes:

If the rail station were moved to Fort Trumbull along with the Cross Sound Ferry, the advantages of being adjacent to the rail station would be preserved, provided that the two are located in close proximity, which is less likely given the geography of the Fort Trumbull peninsula.

If the cruise ships and Cross Sound Ferry services were located at the Fort Trumbull site, it could increase the convenience of the intermodal connection between them. However, there is little interaction between ferries and cruise ships now and Cross Sound Ferry believes that this would be unlikely to change unless the cruise ships were to stay in New London longer. As a result, the location of the cruise ships is not a significant determinant of an advantageous location for the ferries.

If Cross Sound Ferry's shipyard and tug service were to be moved to the Fort Trumbull site as well, it would preserve this advantage of the existing site but it would require additional square footage and waterfront space.

The Fort Trumbull site is somewhat more exposed to storms than the existing site upriver, according to Cross Sound Ferry. While it is slightly closer to ferry destinations and slightly reduce sailing time, the increased access distance would more than eliminate any time savings.

1.4.4. Intercity Bus

Existing Site

The biggest advantage of the existing intercity bus terminal site is the easy access from the interstate highway system (I-95) and Route 32. New London is an intermediate point on the Greyhound bus service so quick access from and to the highway network is critical to minimizing the delay to through passengers. The easy access to and from the highway network also serves to keep travel times short, keeping operating costs to a minimum. Intercity buses must negotiate some city traffic on downtown streets to access the terminal, but Water Street provides an easy (i.e., 2 minute) connection back to the highway network.

The most important current means of access to intercity buses are SEAT buses and auto access, including both drop-off and parking. A key advantage of the existing location is its position adjacent to the hub of the SEAT local bus network in New London, providing access to intercity bus service by residents of much of New London and parts of the entire region. The ample surface and structured parking in the area is also an advantage and the proximity to the highway network makes auto access convenient. A drawback, however, has been the lack of convenient pedestrian connections to the Cross Sound Ferry. An overpass or underpass crossing the tracks north of the bus terminal and an improved pedestrian walkway to the ferries could provide a much improved pedestrian route that Greyhound feels could attract additional riders in the Long Island to Boston market. Relocating the intercity bus terminal to the other side of the tracks could also improve this connection, but delays crossing the tracks caused by passing trains and possibly less convenient connections to parking and SEAT make this less attractive than an overpass or underpass.

The existing site includes two bus bays and an additional pick-up/drop-off and employee parking area that are leased from Union Station for the exclusive use of Greyhound. The two bays are considered adequate for current service levels although Greyhound would prefer a third bay to accommodate peak travel periods and possible future expanded service.

There appears to be strong public support as evidenced by comments made by the members on the Steering Committee (at two public Steering Committee meetings and in individual interviews) that the RITC remain downtown, which suggests a preference that intercity buses remain at or near the rail station.

Fort Trumbull Site

Vehicular access to Fort Trumbull involves a much longer and time-consuming trip through city traffic (about 5-10 minutes extra depending on traffic conditions). This would negatively impact Greyhound operating costs as well as increasing the delay for through riders, which would in turn impact Greyhound's competitive position. There are only two points of access to Fort Trumbull and both are under railroad bridges and only one of the bridges is high enough to allow access by trucks and buses.

The distance from I-95 and Route 32 would also inhibit access for private vehicles dropping off passengers or parking, further reducing the attractiveness of using Greyhound buses. The additional distance traveled would add bus and auto traffic to local streets. Fort Trumbull also has a very limited area for parking (considering the municipal development plan) which might constrain the parking capacity. Relocating all of SEAT's eight New London bus routes to Fort Trumbull would maintain the good connection between SEAT and Greyhound. However, the negative impacts of such a relocation on SEAT service and operations are discussed below. It may be possible to create a better connection between ferries and intercity buses at a newly designed RITC at Fort Trumbull that is better than what is currently available at the existing site, but with limited options for a new ferry terminal location, this may not be possible.

There is no significant compatibility issue of locating an intercity bus terminal at the site.

Public support would likely be a problem since the intercity bus terminal would be located farther from the most commonly used access routes and might have fewer SEAT connecting services. The Steering Committee members representing transportation mode operators, business and economic development interests, and other interest groups have overwhelmingly expressed opposition to relocating the RITC to Fort Trumbull.

1.4.5. SEAT Bus

Existing Site

The biggest advantage of the existing SEAT hub site along Water Street is its proximity to bus riders' downtown destinations. SEAT brings people to downtown New London as well as bringing New London residents to other important destinations in the region such as Norwich, Mystic, Mohegan Sun and Foxwoods. Having the transfer point for these services near the downtown area optimizes the efficiency of bus operations. The easy access from the interstate highway system (I-95) and Route 32 also minimizes the travel time and therefore the cost of providing service to these regional destinations.

SEAT buses provide access to intercity buses and trains for New London and other area residents. The proximity of the SEAT hub to the intercity bus terminal and, to a lesser extent, the rail station is an advantage of the existing site. SEAT would prefer to be even closer to Union Station, not only to provide its passengers with better pedestrian access to the rail station, but also to offer a nearby attractive indoor facility for ticketing, passenger waiting, and restroom facilities.

The existing site includes a single bus shelter and approximately 400' of curb space to accommodate the eight buses occupying the space during some of the hourly pulse times. Current service expansion plans would require space for eight buses every hour, but there are no plans for additional space needs.

While SEAT would like their bus stop to be closer to Union Station and their customer information and waiting area to be inside Union Station, the owner of Union Station would like to see SEAT buses moved farther away from their current site near Union Station. Broader public opinion is unknown. Riders who responded to surveys seemed more concerned about routes, schedules and reliability of service than the bus stop itself.

Fort Trumbull Site

To serve Fort Trumbull, three SEAT regional routes would have to be extended a minimum of 2.6 miles per round trip, and possibly more, depending on the location of a bus facility within the Fort Trumbull site. This would increase SEAT operating costs and require additional public funding. The four SEAT local routes already come somewhat closer to Fort Trumbull. Routes 12 and 14 come as close as the intersection of Bank and Shaw Streets, about a minimum 1.2 mile round trip diversion. Routes 13 and 15 pass even closer. However, SEAT runs a pulse system (where buses converge at the same time at the hub location), with hourly service on all New London local routes. Adding time to any of these routes could make it impossible to complete a round trip every hour forcing a reduction in service to other parts of the city or substantial increases in operating costs. It may be that only a subset of routes can be extended without increased cost or service reductions in other areas.

Public support would likely be a problem since service to other areas may need to be modified in order to serve Fort Trumbull. The Steering Committee members representing transportation mode operators, business and economic development interests, and other interest groups have overwhelmingly expressed opposition to moving the RITC to Fort Trumbull.

1.4.6. Casino and Shuttle Buses

Existing Site

The casino buses are used to transport passengers from the high speed passenger ferries to the two casino resorts. They are therefore tied directly to the Cross Sound Ferry location described above. Even in the full proposed tourist shuttle bus system, it was envisioned that the buses providing the express connection to the casino resorts would stop at the ferry terminal. Of course at that time there was no clear plan for an improved RITC.

The proposed tourist shuttle system (in both the pilot and full system) was designed to enable tourists to visit the major venues in the region including the two casino resorts, downtown New London and Mystic. A frequent regularly scheduled circulator route was designed to make these connections. Union Station was the proposed downtown bus stop for the shuttle recognizing its role both as a transportation terminal and as

a convenient location for tourists visiting downtown New London. It was envisioned that feeder shuttles would connect with the tourist circulator and that a Fort Trumbull to Union Station shuttle might be provided so that tourists could make that connection.

Fort Trumbull Site

If the RITC were moved to the Fort Trumbull site, the proposed shuttle bus route might need to be adjusted. To enable the regularly scheduled tourist shuttle bus to connect with the transportation modes at the RITC, a stop at Fort Trumbull would be needed. Given the importance of Fort Trumbull as a visitor site combined with its new role as the RITC site, and given the continued importance of downtown New London as a destination for tourists, it would be logical to include both Fort Trumbull and downtown on the proposed tourist circulator route rather than require any transfer to a feeder shuttle. This would also enable tourists to make a direct connection to Fort Trumbull. It would however lengthen the routes on Route A and B of the proposed shuttle services in the full system and Route A of the pilot system. This would lengthen trip time and affect the operations but eliminate the need for a separate feeder bus.

At the Fort Trumbull site, while it should not be a problem to accommodate the proposed shuttle bus, it may be necessary to make more than one stop since there may be considerable distance between the Fort Trumbull Visitor Center, the location of a relocated rail station, and the location of a relocated ferry terminal.

The 30-foot transit buses proposed for the shuttle service would be able to use only the southerly underpass at Shaw Street and Pequot Avenue. There is no other significant compatibility issue.

1.4.7. Parking

Existing Site

Public surface and structural parking are well within the typical 600 feet desirable walk radius of the center. There is sufficient public parking downtown to meet the current needs; current occupancy ranges on peak summer Saturdays in 2008 was estimated at 69%, however, Block Island Ferry ridership (the major ferry service generating parking demand) was considerably lower than in prior years (Cross Sound Ferry reported August daily demand in 2008 was about 25% lower than that in 2005). Future parking demand would need to consider greater ferry demand, extension of all Shore Line East to New London and other transportation and downtown needs.

The Parade Project will improve pedestrian access to the Water Street Garage by installing a very visible, ground level entrance and adding a new elevator to the west side of the building. The City is soliciting proposals for the repair of the existing elevator and expects that to be completed by the winter of 2009. The City is soliciting proposals for the installation of 36 security cameras in the Water Street Garage and expects those to be installed by the winter of 2009.

Over the years the City has taken steps to improve the parking situation downtown. These improvements include the ongoing maintenance improvements to the Water Street Garage, the hiring of staff to increase the effectiveness of parking regulations enforcement and the addition of new signage to improve access to the municipal parking facilities.

One advantage of the downtown location is that the parking resources can be shared among several uses including downtown offices, entertainment venues, passenger ferries, Amtrak, Shore Line East and intercity

bus. To some extent, the peak times of these uses are complementary. Ferry use is highest on summer weekends while office uses are highest on weekdays during the year.

Fort Trumbull Site

The Fort Trumbull Municipal Development Plan outlines the proposed development for each parcel. A new parking lot was recently constructed adjacent to the railroad right-of-way on a portion of Parcels 1 and 3. This parking lot was designed to service an existing renovated office building and the future development on Parcels 1 and 3. To serve a relocated train station with or without a full intermodal center, additional parking would need to be configured.

It is possible that the parking resources for proposed office uses and for RITC uses could be shared in the same manner as in the downtown. However, at the Fort Trumbull site, the proposed office uses have not moved forward, and there would likely be more distance between the rail station and ferry terminals which might limit the sharing of parking resources.

The construction of sufficient parking to support an RITC at the Fort Trumbull site would detract from available development acreage at Fort Trumbull and also reduce the efficiency of the facilities downtown. (Revenue would be lost at current facilities although some parking could be used to support other redevelopment downtown.)

1.4.8. Cruise Ships

Existing State Pier Site

City Pier at the downtown site of the RITC does not now and cannot accommodate cruise ships.

The current berthing of cruise ships north of the RITC at the Admiral Shear State Pier works, although it requires some schedule coordination with freight shipments and the current facility does not provide pedestrian access to downtown. The State Pier is suitable for the berthing of the large ships and the surrounding land area is large enough to handle the process of unloading the passengers and moving them to downtown and other locations. Currently, as many as 22 buses are used to transport the passengers. Passengers are transported by coach bus to Union Station where they can make connections to other locations such as Fort Trumbull and Mystic by special coach bus. While functional, the State Pier is an industrial facility and is not the ideal place to dock a passenger ship, from an aesthetic perspective. The site has good vehicular access to downtown. Direct walk access to the downtown area via a pedestrian bridge would be desirable, as had been in place temporarily for Op Sail 2000. A permanent bridge may not be possible in that location.

Fort Trumbull Site

Fort Trumbull has been cited by the cruise lines as an ideal location to berth a cruise ship since the Fort, visitor center and the park are located there and the site would be very attractive to tourists. Despite these advantages, there are a number of drawbacks related to the site configuration, topography, access, pier adequacy and current uses:

- To support use of the site by cruise ships at the most logical location – Pier 7- it would be necessary to dredge. There is currently inadequate depth at the west end of the pier. Pier reconstruction would be necessary to provide adequate length and strength (to address wind load issues). The existing Pier #7 is adjacent to the Thames River navigational channel. The expansion of Pier #7 into the channel would be extremely difficult, not only would the extended Pier be further into the channel but any vessel berthed at the Pier would encroach even further into the channel. Our experience has shown that this type of expansion would be extremely difficult to permit and would require extensive documentation and design data for approval by the Army Corp of Engineers and the United States Coast Guard. In addition, other issues may arise given the extensive use of the channel by United States Navy vessels.
- The site configuration, topography and uses limit opportunities for landside access to the pier.
- On the north side, access is impeded by the Coast Guard Station. It is understood that the Coast Guard Station is permanent and that security issues would prevent any access through Coast Guard property.
- NLDC suggested that coach bus access to the Pier would need to be located at the current bus location at the Visitor Center. However, the current pedestrian pathway from the visitor center and park leading to the pier is on a slope and would not be suitable for the cruise passengers due to the grade and in some cases due to the distance since many passengers are senior citizens.
- Provision of adequate access could only be achieved with severe impacts on the park. The only path that would be suitable for vehicles is the path located to the south of the Fort which is currently designed for pedestrians and is part of the park.
- Providing vehicular access to the ship for passengers would require a large staging area near the pier. The available space is limited and does not appear sufficient to accommodate the number of coach buses that are currently used to transport passengers to and from the visiting cruise ships. While as many as 22 coach buses are currently used, it is possible that fewer could be used at the Fort Trumbull site if many passengers were to spend the day at the Fort. If the southerly path were used for access and egress, buses would need to turn around and the space limitation is even more constraining.

1.4.9. Summary

The above describes the desirability of locating each mode at the two sites. This can be essentially summarized as follows:

The existing site is highly desirable for all modes although the current use by cruise ships of the State Pier is only moderately desirable. The desirability of moving the various modes to the Fort Trumbull peninsula is as follows:

- Cruise Ships - desirable but has drawbacks
- Rail Station – not desirable
- Ferry Facilities – not desirable
- Intercity Bus – not desirable
- SEAT Bus – not desirable
- Casino and Shuttle Buses – not desirable as a replacement for the downtown stop; desirable as an additional location

- Parking – would be desirable as a substitute for the current parking facilities located at the downtown RITC but this is therefore dependent on the desirability of other modes moving to the site. Parking at the Fort Trumbull site is only desirable as an ancillary use related to economic development of the Fort Trumbull redevelopment area.

1.5 Feasibility

1.5.1. Introduction/Overview

This section focuses on the feasibility of locating the modes at each site. Since all but the cruise ships are currently located at the current downtown site, the discussion addresses the feasibility of shifting each mode from its present site to the Fort Trumbull peninsula site in contrast to the feasibility of improving the current site. The criteria used for this evaluation are:

- *Capacity for Operations*– This criterion addresses where capacity considerations make the location of the mode at the site infeasible or of questionable feasibility.
- *Capital Cost* –This criterion addresses whether capital costs of the facilities or improvements needed makes the location infeasible or of questionable feasibility.

An additional criterion is *Environmental Issues* – This criterion addresses whether environmental sensitivity of the site or contamination makes the location of the mode and its facilities at the site infeasible or of questionable feasibility. These issues are largely applicable to all modes and are discussed in Section 1.6. Where individual modes have special environmental issues they are discussed in this section.

Rail Station

The physical location of the existing rail line through Fort Trumbull limits the possible location of any future station. There are only four parcels at the Fort Trumbull site located adjacent to the railroad tracks. Parcels 1 and 3 are located on the east side of the railroad tracks. Parcel 1 is designated for a future Hotel/Conference Center/Health Club/Marina/Open Space uses. Parcel 3 is designated for future office use. Parcels 5A and 5B are located on the west side of the tracks and are designated for future office use. The Fort Trumbull Redevelopment Plan would have to be amended to allow for a variety of different uses at the site. The Fort Trumbull site also has very limited space for parking.

To replicate the current downtown rail station at the Fort Trumbull site would require extensive construction of platforms, bridges and crossings and access over the tracks requiring a minimum of 4 acres of land, including 300 parking spaces and the bus areas. Figures 1-36 and 1-37 show two possible layouts of a train station. It includes the standard 1,150 foot platform to meet Amtrak/ConnDOT requirements and 300 parking spaces and areas for SEAT and Greyhound bus operations as well as taxis and private vehicle pick up and drop off. Figure 1-36 shows the surface parking scheme consumes 4 acres of land (not including the existing roadway and existing surface parking spaces). Figure 1-37 shows a garage of 5 stories on the current location of a 220-space parking lot for the Coast Guard office building. This garage could accommodate the 300 parking spaces needed for the RITC as well as the replacement parking for the office building. While construction of a garage is more costly than providing only surface parking, it

consumes less land in the designated redevelopment area, only 3 acres (not including the existing roadway and extra surface parking spaces south of the garage).

Figure 1-36: Rail Station Layout with All Surface Parking

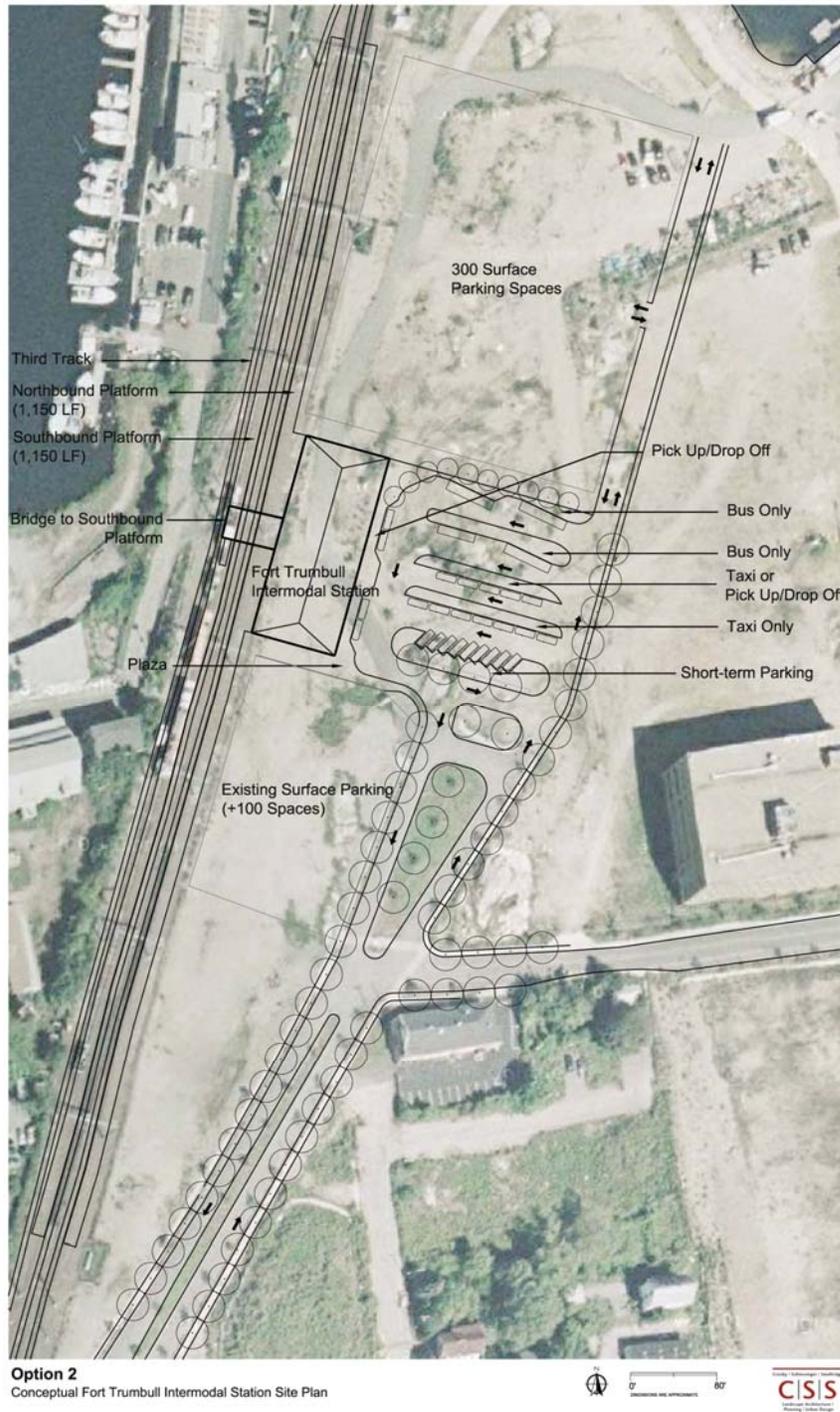
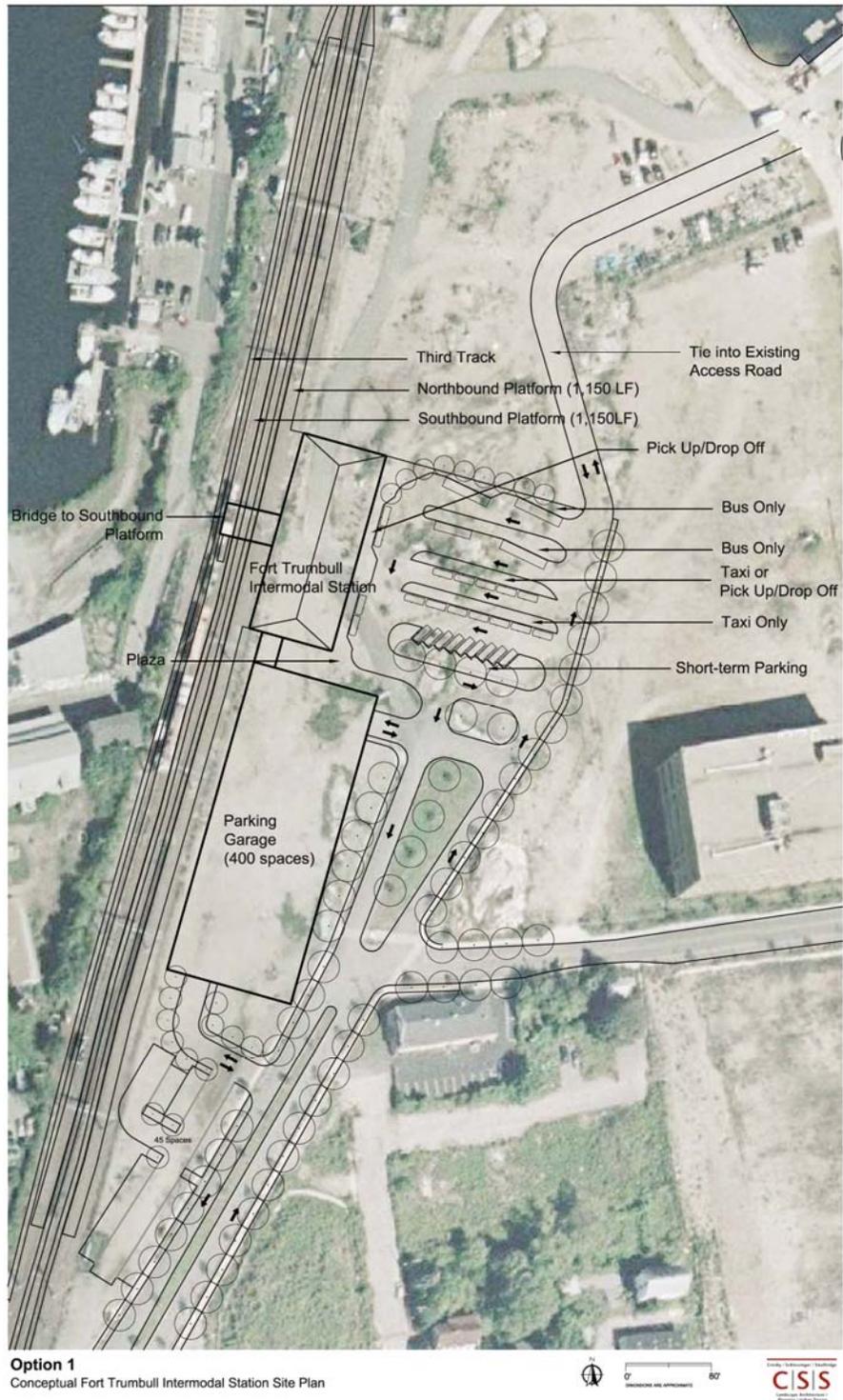


Figure 1-37: Rail Station Layout with Structured Parking



Option 1
Conceptual Fort Trumbull Intermodal Station Site Plan

It should be noted that the above garage scheme may not be feasible because of the State Archaeological Preserve located east of the railroad tracks. This preserve is underneath the existing parking lot but it has a couple of feet of minimally-compacted fill serving as a protection for the site. To build there one would have

design the garage foundation to avoid the entire site and then get permission from SHPO. Alternatively, a garage might be located farther north on Parcel 1.

Given the presence of a State Archaeological Preserve to the east of the railroad tracks, as well as potentially eligible National Register historic resources to the west in the Hamilton Street area, obtaining approvals to construct a railroad station to serve as the hub for a new regional intermodal center on the Fort Trumbull peninsula would be subject to expensive permitting and regulatory negotiation under Section 4(f) of the Department of Transportation Act of 1966; that section explicitly disallows the construction of a transportation project that impacts archaeological resource preserves or National Register properties unless it can be definitively shown that there are no other feasible and prudent alternatives to the proposed action. Since there is an existing railroad station located at the eastern end of State Street that, by virtue of its proximity to ferry operations and other transportation modes, is considered by most to be an intermodal facility by default; the argument that no other feasible alternatives exist cannot be made.

Finally, the cost of construction of a new train station with the associated parking and connections to the other forms of transportation would be high, at least \$30 million in the case of a surface parking scheme and at least \$36 million in the garage scheme, excluding land costs and replacement parking. The high cost suggests that the relocation would be of questionable feasibility. This is in addition to the fact that it is not desirable to incur large capital expenditures if there is no real advantage to moving the station to Fort Trumbull. As noted previously, the convenient pedestrian access to the core of downtown New London would be lost if the Fort Trumbull site was chosen. In addition, the convenience of connections to immediately adjacent bus and ferry transportation modes would be lost unless they could be replicated at the Fort Trumbull site.

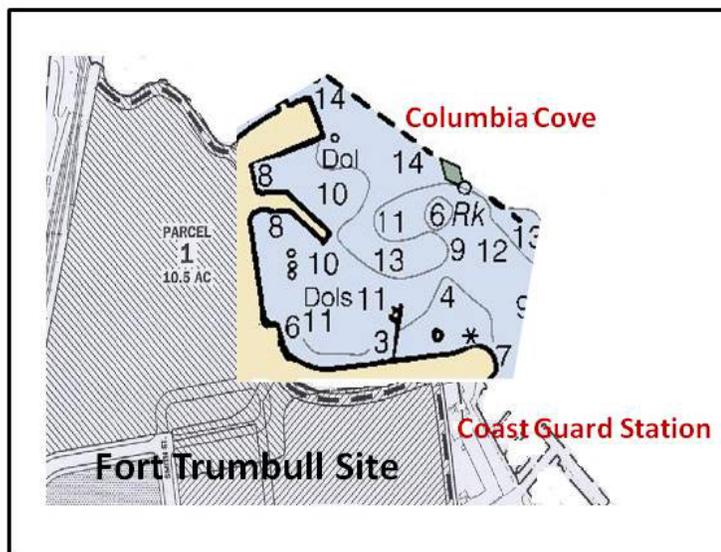
Ferry Facilities

Feasibility is a critical issue to consider in thinking about shifting ferry facilities from their current location to the Fort Trumbull site. These relate to the available space to provide the needed capacity and the cost of relocation.

Cross Sound Ferry – Cross Sound Ferry currently occupies 5.34 acres of space along the downtown waterfront. The Fort Trumbull waterfront is currently occupied by the State Park, the Coast Guard Station, a small marina and a small fishing business. The only area with sufficient vacant land near the waterfront is in the northeast portion of the Fort Trumbull site known as Columbia Cove where the water depth ranges from eight feet to fourteen feet. Use of Columbia Cove for the Cross Sound Ferry would require dredging a new channel and, removing the fishing business and piers. The upland queuing and circulation would use much of the land that is currently programmed for a future hotel, residential, and for the Coast Guard Museum. This area, known as Parcel 1, has the potential to have high economic value to the community.

Figure 1-38 shows the site and current NOAA navigation chart for the area. It depicts the road access and the existing piers that are currently used for commercial fishing and small vessels at the north of the cove as well as existing depth in the cove. The NOAA chart indicates that the bottom is rocky and may have old piles, dolphins and other structures. This combination would make demolition of the existing piers and dredging a new channel potentially expensive.

Figure 1-38: Columbia Cove Navigation Chart and Access



To access Fort Trumbull Parcel 1 vehicles would have to proceed south to the Shaw Street /Pequot Street underpass and then back north on Nameaug Street. The approach to Parcel 1 from Route 32 and I-95 (the major approaches used by automobiles, trucks, and casino buses) is also circuitous. The high cost of relocating the ferry operation (described further below) including parking and auto staging areas would have to be borne by the project proponents, as the ferry operator has stated that they have no wish to move. Dredging, permitting and mitigation would be required. Given the availability of an existing alternative site, construction approval would not be likely under the EPA Section 404(b)1. Given these conditions, it would have to be deemed infeasible.

Fishers Island Ferry – Although Fishers Island Ferry is a smaller operation, it would face similar drawbacks to those identified above for Cross Sound Ferry. Currently, Fishers Island Ferry occupies 0.78 acres of space adjacent to Union Station. Fishers Island Ferry constructed and opened a new terminal in 2005 at a cost of approximately \$15 million. The high cost of moving the facility to Fort Trumbull including the costs dredging needed at the site (described further below) would be prohibitive. The same EPA permit issue described above for Cross Sound Ferry would apply. Based on the above, it would have to be deemed infeasible.

Dredging and Construction Cost of Relocating the Ferry Facilities – As stated above, relocating Cross Sound Ferry and Fishers Island Ferry operations to Columbia Cove (Parcel 1 of the Fort Trumbull Development Area) would require extensive dredging over a 4.6 acre area of submerged lands in the Thames River, as well as construction of structures such as docks and piers below the high tide line. Since the vessels currently in use require approximately 13 feet of draft plus another 3 feet of allowance for sedimentation, a total dredged depth of 16 feet would be recommended for this site. The average depth in the area of the proposed terminal is between eight and twelve feet below mean lower low water. To create a clear and safe mooring basing for the ferries, significant debris removal and demolition of old dolphins and other obstructions would be required. A shallow area with rock is shown on the NOAA navigation chart. It is assumed that any dredged basin can avoid this obstruction.

Calculations based on 2003 NOAA navigation chart soundings estimate the total dredging to be about 41,000 cubic yards. Since this would be new dredging, it is unlikely that it would be permitted for the aquatic disposal sites. Therefore, upland disposal is the only remaining option. Recent bids for new dredging at the State Pier were \$192/cubic yard to dredge contaminated material and dispose of it in a designated upland siteⁱ. Maintenance dredging with aquatic disposal would cost significantly less, at about \$30/cubic yard. Dredging costs of non-contaminated material, with truck-away disposal, range from \$50 to \$100 per cubic yard. Assuming that half of the dredged material is contaminated and must go to a designated site, and the other half is clean and can be used as capping or fill, then the dredging costs for a ferry terminal at this Fort Trumbull site would be approximately \$5 million. This is a very rough estimate based on broad assumptions. The cost could range from less than \$2 million to over \$8 million, depending on actual levels of contamination and availability of upland sites. Given more detailed site information, the dredged basin design could be value engineered, potentially reducing the total quantity of dredged material. Incorporating a contingency of approximately \$500,000 for removal and disposal of debris, the total dredging and disposal cost is estimated at \$5.5 million.

Because Cross Sound Ferry and Fishers Island Ferry are already equipped with the necessary docks, piers and other in-water facilities and the channel is already dredged to appropriate depths in these locations to accommodate all ferry operations, it is unlikely that the CTDEP Office of Long Island Sound Programs or the U.S Army Corps of Engineers would ever grant the necessary permits and approvals to allow relocation to Fort Trumbull to proceed.

The total estimated cost of the ferry terminal would be \$23 million as shown below:

Dredging and Disposal	\$5,500,000
Buildings	\$8,000,000
Paving and Site Work	\$2,000,000
Bulkhead and Backfill	\$5,000,000
Utilities and Lighting	\$1,000,000
Wharf Improvements	\$500,000
Landscaping	\$500,000
Demolition	\$500,000
Total:	\$23,000,000

Figure 1-39 shows the possible layout of the ferry facilities at the Columbia Cove site on Fort Trumbull peninsula.

Figure 1-39: Possible Layout of Ferry Facilities at Fort Trumbull Columbia Cove



Intercity Bus

Unlike the rail station or ferry terminals, bus facilities could be located almost anywhere within the Fort Trumbull peninsula. The Fort Trumbull Redevelopment Plan would have to be amended to allow for a bus terminal at the site, but several parcels are still vacant. There are only two points of access under the railroad bridges at Fort Trumbull and only one of the bridges is high enough to allow access by buses. While this limits the access route for buses to Fort Trumbull, it does not preclude the location of an intercity bus terminal on any of the parcels.

To replicate the current downtown intercity bus terminal at the Fort Trumbull site would require construction of three bus bays, some pick-up/drop-off parking spaces and a building housing office space, a waiting area, restrooms and a ticketing and freight handling facility. (Some of these functions could be included in a new facility shared with other modes and operators.) A parking facility could be shared with Amtrak and other operators. Convenient pedestrian connections to the SEAT stop, the parking facility, rail station and Cross Sound Ferry would also be needed and would limit the choice of locations for the intercity bus terminal. All of these facilities, with the exception of the pedestrian connection to Cross Sound Ferry, already exist in some form at the existing downtown site, although many of them could be upgraded. A pedestrian bridge connecting the existing downtown bus terminal to the parking garage and ferry terminal has been previously designed and is considered feasible.

The cost of construction of a new bus terminal with the needed parking and connections to the other forms of transportation would likely be much higher than improvements to existing facilities. Nevertheless, it appears that if relocation of the intercity bus terminal were deemed to be desirable, it would be feasible to relocate the terminal to Fort Trumbull provided that the relocation of other facilities leaves a suitable parcel available.

SEAT Bus

SEAT bus facilities could be located almost anywhere within the Fort Trumbull peninsula. If the transfer hub is relocated to Fort Trumbull the facility would require space for eight buses to load simultaneously. If the transfer hub remains at Water Street then the various local New London bus routes, due to the different routings, would arrive at Fort Trumbull at different times and so could use a single bus length on-street bus stop. Spaces still might need to be provided for multiple SEAT "corridor" route buses, so overall a space larger than a single bus stop may be needed. Nevertheless, the space requirements would be small provided that the transfer hub is not relocated. There may be a need for multiple bus stops if rail, intercity bus and ferry terminals are not close together.

If the hub were to be relocated to the Fort Trumbull site, there are a number of vacant parcels available but the Fort Trumbull Municipal Development Plan would have to be amended to allow for a SEAT bus terminal instead of the currently planned uses. To replicate the full current downtown SEAT transfer hub at the Fort Trumbull site would require construction of space for eight buses. It would be desirable to also construct a waiting area, restrooms and a ticketing facility that could be shared with other modes. Without a transfer hub, one or more single, probably on-street, bus stops with shelters would be adequate. Convenient pedestrian connections to the intercity bus terminal and rail station would also be needed from either a new SEAT bus transfer hub or local bus stops.

Given the overall flexibility of bus operations, it should be possible to identify bus stop locations at Fort Trumbull providing the necessary connections. A new local bus transfer hub with the needed connections to the other forms of transportation would be more costly, but would be feasible provided that the relocation of other facilities leaves a suitable parcel available. The desired amenities for such a facility (a waiting area, restrooms and a ticketing facility) do not exist at the current site and there would therefore be a cost for such facilities at either site.

Casino and Shuttle Buses

There are no major feasibility issues associated with operating casino buses or shuttle buses to Fort Trumbull. The issues are essentially similar to those discussed for Greyhound and SEAT.

Parking

The location of any or all RITC modes at Fort Trumbull would require the replication of the parking supply currently located at the downtown site. It is not infeasible to do so but it might impact the feasibility of other development at Fort Trumbull. Surface parking would consume land proposed for other development. Structured parking would increase the costs for the RITC and the other development. The construction of sufficient parking to accommodate just the current train and ferry needs (approximately 500 spaces or 5 acres if surface parking) would therefore detract from available development acreage at Fort Trumbull and also reduce the efficiency of the facilities downtown.

Cruise Ships

There are a number of structural and navigational issues which in the past have precluded the use of Pier 7 at Fort Trumbull for the berthing of Cruise Ships. The major restriction was the fact that Pier 7 does not have the physical capacity to handle the potential wave and wind loads associated with docking of a vessel the size of a cruise ship. The limitations are explained in detail below.

The New London Cruise Ship Commission began as a grass roots initiative to bring major cruise lines to the Port of New London. The Connecticut Department of Environmental (DEP) was invited to participate in these efforts due to its docking facilities at Pier 7 and its potential use as cruise ship destination. The DEP was asked by the Cruise Ship Committee to receive the ms Maasdam in New London as a port of call on May 14, 2004. As a result of this request DEP began to investigate the potential for docking, receiving passengers and hosting of tours at Fort Trumbull State Park.

The first step in the process was to investigate the feasibility of providing docking for a cruise ship at Pier 7. The DEP hired a professional engineering firm to conduct the study, which included depth verification, pier stability, and load capacities of the pier with respect to large cruise ships. The DEP hired the Maguire Group to prepare an analysis titled, "Cruise Ship Berthing Analysis at Pier 7 Fort Trumbull State Park", dated March 3, 2004.

The analysis summary stated:

"The intended berth is the north side of Pier 7. Pier 7 is roughly 654 feet long and 30 feet wide. It was designed and constructed during in the mid 1960's when Fort Trumbull was home to the U.S. Navy Undersea Sound Laboratory. Notes on the pier construction drawings indicate a 5,600 ton design vessel. The design dredge depth at the pier was 32 feet, mean low water datum.

Information provided by Moran Shipping, an agent for Holland America Lines, indicates a tonnage of 24,965 for the ms Maasdam. The vessel has an overall length of 720 feet and drafts 25 feet.

A lead line survey conducted by Maguire on February 11, 2004 indicated that there was insufficient depth to berth this vessel for the first 100+ feet as measured from shore. Unless this area is dredged, the ms Maasdam could not be brought in close to shore and therefore, when moored, the bow of the vessel will extend roughly 170 feet beyond the end of the pier. If the area is dredged, the bow will extend out roughly 70 feet beyond the pier."

The analysis conclusion stated:

"The analysis results indicate that several dock fittings would be loaded beyond their rated capacity if the ms Maasdam remains moored during a weather event having a one year return period. For a two year event, all utilized deck fittings are loaded beyond their rated capacity, some as many as 5 times their 30 ton load rating. Such loadings would surely result in the failure of the deck fittings.

The average lateral load on the pier during a two year event is 1,847 pounds per linear foot. As stated earlier, general notes on the pier construction drawings list the pier lateral load as 1,500 pounds per linear foot. This excessive loading may result in damage to the pier. Because the analysis identified the deck fittings as the critical elements, and because the magnitude of the mooring reactions, (due to what would be considered a minimal weather event) further evaluation of the pier structure was not conducted.

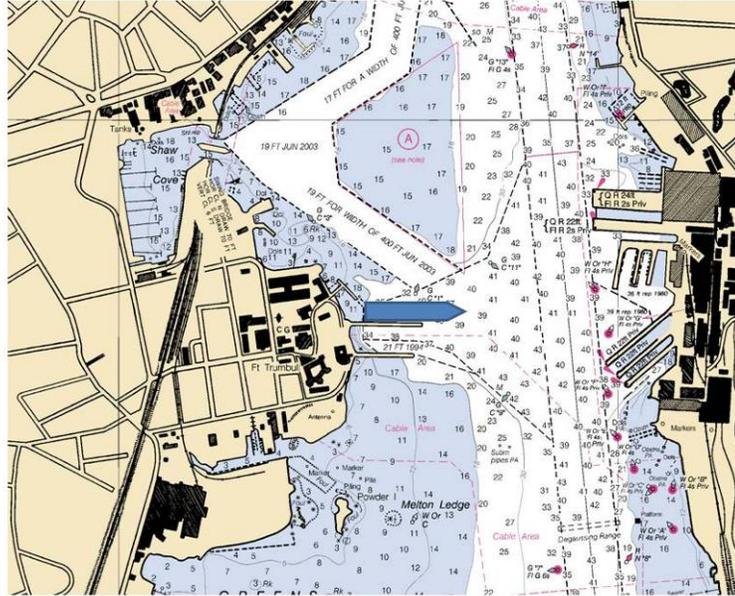
A mooring buoy can be shown to be effective, but only under specific load conditions. The anchorage requirements for the buoy may prove to be a navigational hazard and restrict other uses at Pier 7.

Maguire Group Inc. therefore recommends that Pier 7 not be utilized to berth the ms Maasdam and that DEP seek alternate berthing arrangements."

As a result of the study findings, DEP worked with the DOT to expedite the transition for the berthing of cruise ships from Fort Trumbull to the State Pier.

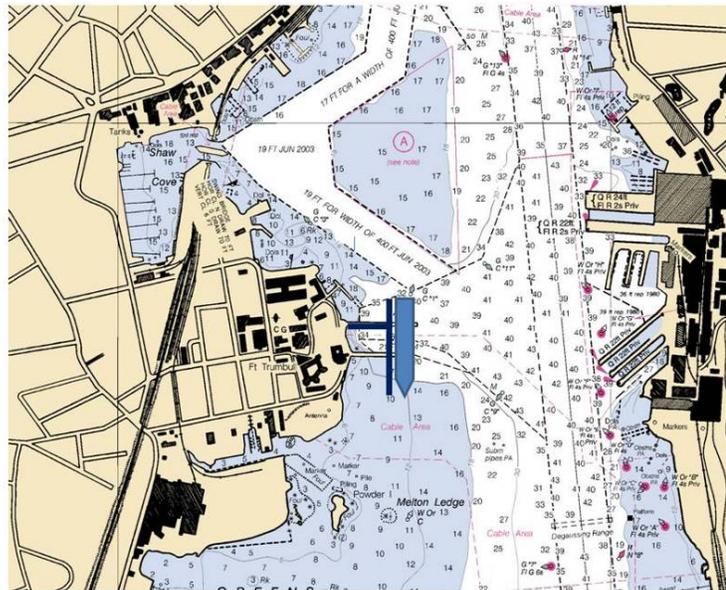
As the Maasdam represents an older and smaller vessel than is currently employed in the U.S. Atlantic services (Caribbean, Maritime Provinces and World Itinerary), Pier 7 would be even less suitable today than in 2004. Additionally, there are several dredged channels, including the federal channel in the vicinity of Pier 7 that would be restricted by the presence of a large vessel. Figure 1-40 was derived from a NOAA navigation chart and shows how a modern, 900-foot cruise ship would appear if berthed at Pier 7.

Figure 1-40: Pier 7 Berthing of a Modern Cruise Ship



In addition, newer cruise ships of 100,000 gross registered tons (GRT) have a displacement in the range of 35,000 -50,000 tons, as well as windage (wind loading on the superstructure) that is higher than that of the Maasdam. This would generate greater reaction loads than those discussed in the Maguire Group study. We understand that Pier 7 had been originally designed for berthing submarines, vessels that have virtually no windage and do not generate weather induced berthing loads in the way a cruise ship does. Therefore, Pier 7 would require significant modification or re-construction to safely berth most cruise ships. A possible reconfiguration of the Pier 7 to accommodate large cruise vessels is shown in Figure 1-41, below.

Figure 1-41: Possible Reconfiguration of Pier 7



This pier reconfiguration would include a new "T" wharf as well as replacement of the existing pier to provide a secure cruise ship berth that could accommodate the largest vessels currently in service. In addition, this pier would need to allow direct access for emergency vehicles as well as vessel service vehicles. For a 900-foot long vessel, it is anticipated that a pier of approximately 600-700 feet in length and 40 feet in width with a mooring dolphin would be needed. Minimal utility services on this pier are assumed since it would not be classified as a home berth.

However, reconfiguration of Pier 7 would require demolition of the existing structures, dredging of the berthing area and construction of structures such as docks and piers below the high tide line. Permits would be required for the construction of the new pier and for dredging. Because the State Pier is already equipped with the necessary docks, piers and other in-water facilities and the channel is already dredged to appropriate depths in that location to accommodate all cruise ship operations, it is unlikely that the CTDEP Office of Long Island Sound Programs or the U.S Army Corps of Engineers would ever grant the necessary permits and approvals required under EPA Section 404(b)1 to allow relocation of the cruise ship dock to Fort Trumbull to proceed.

Nevertheless, an order-of-magnitude cost has been estimated for the pier reconfiguration and associated dredging. This type of ship would typically require a depth of 30 feet at mean low water. Based on the most recent navigational charts, it is estimated that about 66,600 cubic yards of material would have to be dredged to provide the necessary depth. If the material were clean and to be disposed on land, the cost per cubic yard could range from \$50-\$100. If the material were contaminated, the cost could be \$192 per cubic yard based on the recent information from the State Pier. For this site, we assumed 25% of the material is contaminated. The remainder was assumed clean and we assumed the cost would be \$50 per cubic yard. Thus the total cost for dredging and disposal would be about \$6 million, although it could range from \$3 million to \$13 million.

A rough estimate of the costs for such a pier including dredging, access roadway costs and service buildings and facilities is shown below.

Dredging and Disposal	\$ 6,000,000
Pier Construction and Demolition	\$12,000,000
Access Roadway	\$ 500,000
Service Building and Facilities	\$ 4,000,000
Total	\$22,500,000

The number of cruise ship calls at New London would probably not justify these construction costs. Vessel calls at New London are mostly ships in transit between the Maritime Provinces and the Caribbean or larger World Itinerary vessels such as the Queen Mary II. This market is not growing rapidly, although an improved terminal would probably attract a somewhat larger market share. Home port operations have been discussed for New London. However, three conditions must be met to attract a home operator:

- A terminal with facilities for passenger ticketing, queuing and secure baggage handling (potential construction cost: \$50m to \$80m).
- A desirable foreign destination (such as Bermuda) within one to two day's sailing time of the terminal
- A major airport or a large local population base (preferably both)

Considering the mature home port terminal operations in New York City and Boston, there are few opportunities to attract northeast passengers to New London. Additionally, New London does not have airport capacity to support a broader market for home port vessels. Finally, calls at Bermuda are currently saturated by vessels originating elsewhere and there are no other attractive destinations within reasonable sailing time. For these reasons, it is unlikely that the construction cost could be justified by the cruise traffic. Therefore, this report concludes that a home port is not presently feasible in New London and it is not economically feasible to use Fort Trumbull for the transiting cruise ships that are currently calling.

1.5.2. Summary

The above describes the feasibility of locating each mode at the two sites. Table 1-6 summarizes the conclusions for each mode. The results can be essentially summarized as follows:

All modes are feasible at the current downtown site except for the cruise ships (which use the State Pier) and the ferry facilities. Keeping the cruise ships at the State Pier is feasible and improvements at that site also appear to be feasible. Improvements to the existing set of downtown sites are believed to be feasible.

The feasibility of moving the various modes to the Fort Trumbull peninsula is as follows:

- Cruise Ships - not feasible
- Ferry Facilities – not feasible
- Rail Station – feasible at substantial cost
- Intercity Bus - feasible
- SEAT Bus - feasible
- Casino and Shuttle Buses - feasible
- Parking – feasible at substantial cost

Table 1-6: Evaluation Summary

	Existing Site	Alternative Fort Trumbull Site
Capacity for Operations - Ground Modes		
Rail - Amtrak and Shore Line East	There is sufficient capacity at the existing site for operations and related parking. The existing site has advantages for pedestrian access and a disadvantage in that the northbound platform is inaccessible when a train is in the station.	A potential relocated rail station at the Fort Trumbull site would consume land planned for other uses including a current parking facility for the office building. If all the parking were in surface lots, the land required for the rail station (including the bus terminal, parking and auto pick-up/drop-off) would be a minimum of 4 acres; if structured parking were built, the land area needed would be about 3 acres. The cost of the rail station facility is estimated to be approximately \$30 million in the surface scheme and at least \$36 million in the garage scheme, excluding land costs. The station and related facilities would have to be designed to avoid impacting the archaeological site located near the railroad right-of-way. The rail station would also be located farther from the potential site of maritime modes (although these have been deemed infeasible) than in the case of the existing site.
Inter-City Bus	The existing site provides two full size bus bays which are sufficient although three full size bays would be desirable. The existing site offers quick, convenient (2 minute) access to the highway system which is an important advantage. Other advantages are the pedestrian access and convenience of connections to other modes, particularly SEAT.	The Fort Trumbull site would be farther away from the highway system adding travel time for the intermediate stop made in New London. Buses would need to follow a circuitous path since they can only use the southerly underpass under the railroad tracks. The Fort Trumbull site would not provide the pedestrian access that the existing site provides.
Casino Buses	The casino buses from both casino resorts directly meet the passenger ferries at the Cross Sound Ferry terminal. They access Cross Sound Ferry via the Gov. Winthrop Boulevard intersection.	If Cross Sound Ferry were at Fort Trumbull, the casino buses would operate there and the travel time would be somewhat longer. Casino buses would need to follow a circuitous path since they can only use the southerly underpass under the railroad tracks.
Proposed Shuttle Bus System	The proposed tourist shuttle bus system would serve the downtown location to provide access to both downtown and to the RITC.	If the RITC were at Fort Trumbull, the proposed route structure would need to be changed to allow the routes to serve both downtown and Fort Trumbull and this would increase travel time and affect operating costs.
SEAT	SEAT has sufficient curbside space to accommodate its pulsed operation downtown. The pedestrian access at the existing site is an important advantage. Convenient connections to other modes including the intercity bus terminal are another important advantage. SEAT does not need additional space but would prefer access to the indoor facility at Union Station for its passengers.	Shifting the RITC to Fort Trumbull would not eliminate the downtown bus stop but would require buses to make an additional stop. For some routes to serve both locations would add at least 2.6 miles round trip. Note that the SEAT buses would travel a circuitous route because they can only use the southerly underpass under the railroad tracks. Because of the scheduling needs of a pulse system, either all routes would not be able to serve Fort Trumbull or some routes would have to shorten their routes elsewhere.
Multi-Modal	The existing site provides for the adjacency of all modes other than the cruise ships.	Given that the maritime modes are deemed to be infeasible at the Fort Trumbull site, the convenient connections between ground and maritime modes would be lost.

Table 1-6: Evaluation Summary (continued)

	Existing Site	Alternative Fort Trumbull Site
Capacity for Operations - Maritime Modes Cruise Ships	The cruise ships cannot be accommodated at the existing site (City Pier) but can remain at the nearby State Pier (beyond walking distance). There are several improvements to the existing State Pier site that would be desirable.	The cruise ships cannot be accommodated the current Pier 7 at Fort Trumbull due to length, depth and strength issues. Pier 7 would need to be completely rebuilt most likely in a T-shape to avoid interference with the shipping channel. The EPA permit needed for such construction and associated dredging would be very difficult to obtain given the existing alternatives. The cost of constructing the needed facility and associated dredging and disposal would be very high, estimated to be in excess of \$22 million, excluding land costs. The landside operations capacity and access would be constrained by the topography, the parkland and the Coast Guard. Pedestrian access uphill to the Fort Trumbull visitor center would be difficult for many cruise ship passengers in terms of distance and grade. The overall conclusion is that a cruise ship terminal at Fort Trumbull is not feasible.
Ferries	The ferries include a 5.34 acre Cross Sound Ferry site and a 0.78 acre Fishers Island Ferry site. The nearby Water Street Garage and Julian surface lot provide overflow parking for Cross Sound Ferry's Block Island Express passenger ferry. Despite the railroad crossings, both operators have been able to conduct their operations at the existing sites and believe it has advantages. These include access to the other modes, parking, downtown and to the highway system (for passenger cars, trucks and buses). Cross Sound Ferry believes travel and access are key to its positioning vs. alternative modes. The Fishers Island Ferry recently constructed a new \$15 million facility. Serious pedestrian issues at the existing Cross Sound Ferry site need to be addressed.	The only site at Fort Trumbull where a ferry terminal could be considered is Columbia Cove. The cove is very shallow and would require dredging, which would require permits that would likely be very difficult to obtain given the existing alternatives. The cost would be very high to construct new docks, terminals and parking facilities, estimated to be in excess of \$23 million, excluding land costs. The parking and auto staging areas would require 2-3 acres of land proposed for other uses in the Fort Trumbull Municipal Development Plan. The access would less convenient adding about 5-10 minutes from the highway. The overall conclusion is that relocating the ferry operation to Fort Trumbull is not feasible.
Compatibility with Other Existing/Potential Uses	The maintenance and improvement of the RITC at the existing site is compatible with existing uses, supporting activity in the downtown area and given the downtown's dense transit-oriented development.	The cruise ship terminal would be compatible with the Fort Trumbull tourist site except that the landside operations would not be compatible with the existing Coast Guard facility or the parkland uses. The ferry docks would displace the existing fishing uses and the proposed hotel and other uses at Parcel 1. The rail station, bus terminal and parking would be compatible with other proposed uses except that the facilities would reduce the land available for private development proposed in the Municipal Development Plan.
Environmental Sensitivity - natural	No major natural environmental issues.	No major natural environmental issues, besides the dredging issues identified above for the maritime facilities.
Environmental Sensitivity - cultural	Existing site's Union Station is on the National Register of Historic Places and adjacent to downtown historic districts.	The Fort Trumbull site has several historic and archaeological concerns, including the State Designated Archaeological Preserve located directly east of the most logical location for an RITC (rail station). Other concerns are the Fort Trumbull State Park (Section 4f), the nearby Italian Dramatic Club and Hamilton Street Complex (Section 106 issues). The parkland is a major issue for a potential cruise ship terminal.
Environmental Sensitivity - contamination	The existing site has likelihood of contamination. It is likely that the improvements to the existing site would not have major environmental impacts.	The Fort Trumbull site also has contaminated areas although many parcels have been remediated. Contamination issues are not likely to be a deciding factor comparing the two sites.

Table 1-6: Evaluation Summary (continued)

	Existing Site	Alternative Fort Trumbull Site
Parking Capacity	There is sufficient existing parking capacity at the existing site. The existing site could accommodate some growth including increased weekday demand for Shore Line East. At the existing site, parking serves multiple uses with different peaking characteristics.	New parking facilities would need to be provided for the RITC if located at the Fort Trumbull site. There is vacant land available at Fort Trumbull peninsula but the land is programmed to support other uses. At least 3 acres of surface parking and automobile staging areas would be required. In addition, the most likely site for the rail station already has a new parking lot for the office building.
Pedestrian Access	The existing RITC provides pedestrian access from downtown and includes various modes and parking within close proximity. There are however important pedestrian safety and convenience issues that need to be addressed including access to and from the parking facilities and access across the railroad tracks to the ferries. The Parade reconstruction project (now underway) will address some of these problems.	At the present time, the Fort Trumbull site is relatively underdeveloped and there is little pedestrian access that it offers. If the cruise ships were feasible at Fort Trumbull, it would be near the Fort Trumbull State Park but the distance and grade create access problems. If the maritime modes were feasible, they would not be in close proximity to the ground modes. The downtown is beyond convenient walk distance from the candidate site for the relocated rail station/bus terminal.
Vehicular Access	Vehicular access to the existing RITC is good with a short distance to/from the interstate highway ramps. Access to the ferries is somewhat impeded by rail operations, particularly freight trains.	Vehicular access to the Fort Trumbull site is not as convenient as to the existing site. An additional 5-10 minutes depending on traffic would be required to reach the ferries from the interstate highway ramp for example. Vehicles would be able to pass under the railroad tracks using one of two underpasses, however, one (the northerly one located closer to the RITC site) is height restricted and could not be used for trucks and buses.
Traffic Impacts	Traffic conditions are good at the existing site intersections based on 2007 winter weekday conditions (LOS A or B) and 2008 summer Saturday conditions (LOS A, B or C).	Traffic conditions at Fort Trumbull projected for 2003 with the MDP improvements were good (LOS A or B).
Capital Cost	Capital costs associated with improving the existing site, though not yet estimated, are likely to be considerably lower than building a new transportation center at the Fort Trumbull site.	Capital costs to build a new transportation center at Fort Trumbull are likely to be quite high. A new rail station with surface parking and a bus terminal will likely cost over \$30 million, excluding land costs. Cost estimates of the cruise ship and ferry terminal each exceed \$22 million, excluding land costs.
Economic Development Opportunity (TOD)	The existing site has higher potential for transit-oriented economic development (TOD) given its strong pedestrian oriented infrastructure and nearby supportive uses. There are a number of sites near the RITC that can be developed and for which the existing hub of transportation modes provides a benefit.	The Fort Trumbull site is a relatively untested market even though it offers many vacant sites. The Fort Trumbull site's economic development potential would be adversely affected by reducing the land available for development if the RITC was located there. While the downtown waterfront would have high potential for development if the RITC, including the ferries, were moved to Fort Trumbull, this is not deemed feasible; as a result, a shift of the RITC to Fort Trumbull would leave the ferries in place at the downtown waterfront and would not free up significant waterfront property for development. There would be adverse tax revenue impacts of devoting more land at Fort Trumbull to public uses.
Likely Public Support	Strong stakeholder support for maintaining existing site.	Strong stakeholder opposition to moving to the Fort Trumbull site including business interests and transportation operators.
Capacity to Accommodate All the Modes	All modes except Cruise Ships can be accommodated at the existing downtown site.	All ground modes can be accommodated; maritime modes cannot.



1.6 Comparison of a Feasible RITC at Fort Trumbull with an Improved RITC Downtown

This section compares the most likely feasible RITC at Fort Trumbull with an improved RITC at the existing downtown site. Section 1.4 described which site was most desirable for each mode individually without addressing whether it was really feasible to move each mode to the Fort Trumbull site. Section 1.5 described whether it was feasible to move the mode to Fort Trumbull without regard to whether it was really desirable. In this section, we combine the assessment of feasibility and desirability for each mode individually and consider the capacity of the Fort Trumbull site to accommodate the modes that are feasible there, taking into account the desirability assessment as well to identify the most likely RITC alternative at Fort Trumbull. This alternative is then compared with the existing site, assuming improvements were made, in order to evaluate the two site alternatives. It is also in this section that we consider economic impacts and environmental issues which were not addressed on a mode by mode basis in the earlier sections. Additionally, we consider a final criterion – the ability to offer a consolidated RITC with all relevant transportation modes.

1.6.1. Likely Package of Modes that Could be Located at Fort Trumbull

Sections 1.4 and 1.5 identified the following conclusions about relocating each mode to Fort Trumbull:

- Cruise Ships - desirable but with drawbacks and not feasible
- Ferry Facilities – not desirable and not feasible
- Rail Station – not desirable and feasible only at substantial cost
- Intercity Bus – not desirable but feasible
- SEAT Bus – not desirable but feasible
- Casino and Shuttle Buses –not desirable but feasible
- Parking – desirable as needed to support other modes and feasible

All modes except the cruise ships can be accommodated at the existing site and it is desirable to do so. As a result, the most likely set of modes that could be accommodated at Fort Trumbull, regardless of cost, would include:

1. Intercity buses (Greyhound)
2. Local transit buses (SEAT) Shuttle buses
3. Intercity and commuter rail (Amtrak and Shore Line East)
4. Parking
5. Taxis

1.6.2. Comparative Evaluation of Two Sites for Likely Package of Modes

Capacity for Operations

Both sites have sufficient capacity to accommodate the train and bus operations (assuming the Fort Trumbull Municipal Development Plan could be amended and the currently planned uses relocated). It is not envisioned that the rail, intercity bus or regional bus service will need to increase capacity to meet demand in the near future, although it is envisioned that Shore Line East trains currently operating only as far east as Old Saybrook would be extended to New London. This would have an impact on the station,

most significantly, more parking and pick-up/drop-off demand, however, the existing site has the needed excess capacity on weekdays.

The Fort Trumbull site would likely require the rail station to be located on or near the site of a newly constructed parking lot for the office building and the relocation of that parking to another available parcel might be required. Assuming this can be done, there is no capacity constraint at the Fort Trumbull site.

Vehicular Access, Parking Capacity, Traffic Impacts

A qualitative assessment of the desirability of the sites relative to traffic connections indicated that, in general, the existing downtown site presents a higher level of desirability compared to the Fort Trumbull site based on the following:

- Vehicular access to the downtown site is better
- The downtown site offers better proximity and ease of access to businesses and communities
- Improvements needed to the roadway and pedestrian facilities to accommodate future travel demand are not anticipated to be significant.

The current access to Union Station, the Water Street parking garage and other parking facilities, the intercity bus terminal and the SEAT bus stop is better than the potential site at Fort Trumbull since the location is closer to the major roadways and does not involve crossing the railroad tracks. At Fort Trumbull, the roadway access is more circuitous and, as currently configured is limited for buses and trucks to using only one of the two underpasses across the railroad tracks, to reach the east side of the tracks which is the most likely location of the rail and bus intermodal center due to small parcel size, limited access and poor drainage issues on the west side of the tracks. One of these underpasses is too low to accommodate buses and trucks. Alternatively, a more expensive train station could be built on air-rights over the tracks using land on both the west and east sides where buses could stop on the west side and the parking could be on the east side. However, such a configuration may not permit a design that could create a single unified ticketing and waiting area for all modes.

Traffic levels of service are good at both locations. Though the City of New London has approved roadway and pedestrian circulation improvements as well as parking facilities as part of the Fort Trumbull Municipal Development Plan, additional improvements to the roadway and pedestrian networks in the Fort Trumbull area may be needed to accommodate demand (automobiles, buses, and pedestrians) associated with an intermodal center in this area. Additionally, access from Downtown New London to the intermodal facilities in this location will be limited due to its location and physical and geometrical constraints.

While the existing parking facilities have more than enough parking capacity for the RITC downtown, the Fort Trumbull site would need to provide parking for the RITC if relocated there.

Pedestrian Access

Pedestrian access is superior at the downtown location due to the proximity of the location to downtown businesses and residences. While the existing crossings between the rail and bus boarding locations and the parking facilities have deficiencies, the Parade project is expected to improve convenience and safety of pedestrian crossings and restore elevator service to the Water Street garage. An RITC Master Plan at the existing site could also include additional pedestrian improvements. The Fort Trumbull site is in a

redevelopment area which as it develops would be expected to have further pedestrian improvements in addition to those already in place as a result of past and ongoing developments. However, the Fort Trumbull site is located a substantial distance (about one mile walking distance) from the core of downtown and there are not many destinations within convenient walk distance. The railroad station and bus terminal would most likely be located on the east side of the railroad right-of-way due to land availability; this would require facilities for pedestrians to cross the tracks.

Capital Cost

The major cost of creating an RITC for rail, intercity bus, and regional bus, with associated parking and access services at Fort Trumbull would be the cost of the rail station and parking facility. This would be in excess of \$30 million. The cost of the bus facilities would be considerably less. The cost of any improvements to the existing facility would likely be much less.

Compatibility with Other Land Uses

Neither site is incompatible with an intermodal center, although the downtown site may be more compatible with public transportation services since it contains denser concentrations of transit oriented development such as retail, offices and multifamily housing. In addition, the development of a rail-bus RITC at Fort Trumbull would consume some land that has been slated for other development uses.

Perhaps most importantly, if the ferry modes cannot be shifted to Fort Trumbull and would remain at their current locations, the existing site has the unique advantage of consolidating the ground and maritime modes in a single location. This makes the existing site much better in terms of compatibility. It would be counter to one of the main goals of this study, that is, to better link and coordinate the operations of existing transportation services, if only some of the transportation modes were moved to another site located a significant distance away, resulting in a fractured RITC.

Environmental Issues

Contamination Issues

Contamination issues do not seem to be a deciding factor in distinguishing the two sites, as both sites have some contaminated areas.

Natural and Cultural Issues

Based on a review of natural and cultural resources in the vicinity of the two candidate sites, the existing site location is better suited to accommodate an intermodal center. In terms of natural resource constraints, which are quite limited, the two sites are very similar. They both exist within the coastal zone and are subject to 100-year coastal flood events. There are no wetlands at either site and no known surface or groundwater issues of concern. Wildlife habitat is extremely limited at both sites due to the urbanized nature of the existing site and the active redevelopment that is occurring on the Fort Trumbull peninsula. There are also no known rare, threatened or endangered species or significant natural communities on or adjacent to either site location.

The major difference has to do with Section 106 and Section 4(f) resources. Although the existing site is centered on the National Register-listed HH Richardson railroad station and is adjacent to historic districts associated with downtown New London, the Fort Trumbull site has several historic and archaeological concerns, foremost of which is the State Designated Archaeological Preserve located directly east of and adjacent to the railroad tracks. This location would be the most logical spot for a planned intermodal center were it to take full advantage of rail access. The presence of Fort Trumbull State Park, the nearby Italian Dramatic Club, and the Hamilton Street complex are also concerns. As stated earlier in this report, due to the presence of a State Archaeological Preserve to the east of the railroad tracks, as well as potentially eligible National Register historic resources to the west in the Hamilton Street area, obtaining approvals to construct a railroad station to serve as the hub for a new regional intermodal center on the Fort Trumbull peninsula would be subject to expensive permitting and regulatory negotiation under section Section 4(f) of the Department of Transportation Act of 1966; that section explicitly disallows the construction of a transportation project that impacts archaeological resource preserves or National Register properties unless it can be definitively shown that there are no other feasible and prudent alternatives to the proposed action. Since there is an existing railroad station located at the eastern end of State Street that, by virtue of its proximity to ferry operations and other transportation modes, is considered by most to be an intermodal facility by default; the argument that no other feasible alternatives exist cannot be made.

Economic Development Opportunity

Assuming that improvements are made at the present site, the downtown site has the strongest potential to attract related transit oriented economic development.

Located in the downtown area, the site has a strong existing pedestrian oriented infrastructure / network with nearby supportive uses and development opportunities relative to the Fort Trumbull site which has poor connectivity and limited access to the surrounding areas. The downtown site has the strongest potential to capture the momentum of people living, working and visiting in downtown New London. There is an existing and growing residential base in the downtown area to support transit oriented development while the Fort Trumbull site does not have an existing residential base (most of the workers at the adjacent Pfizer facility commute from other locations).

There are numerous potential opportunity sites that can be (re)developed in the downtown area, including attracting high quality retail and office tenants to vacant space. On the other hand, the Fort Trumbull site is an untested market given the lack of prior development and planned development associated with the Fort Trumbull Municipal Development Plan that has not yet occurred, including residential development (except for the 700,000 square foot Pfizer Global Research and Development Center which opened in 2001). It is possible that the Pfizer development could attract a high technology cluster to Fort Trumbull, but at this time the area has not seen any additional businesses taking advantage of the proximity.

In terms of transportation, multiple modes of transport are already located in downtown; these modes include: car, bike, train, ferry, pedestrian and bus while the Fort Trumbull site does not have any existing facilities for an intermodal transportation center. The cultural and historic interests of downtown are pervasive (historic sites and walking tours, restaurants and shopping, and arts center) and make the downtown area an attractive visitor destination. While Fort Trumbull has historic and cultural interests, they appear to be isolated with poor connectivity to downtown and other nearby areas.

If all the transportation modes are shifted to Fort Trumbull, and the RITC were located there, opportunities for economic development would increase minimally; due to the lack of physical space at the Fort Trumbull site, the land available for any additional complementary development would be reduced substantially. On the other hand, enhancement of the current RITC in downtown would enable substantial opportunities for economic development that take advantage of the accessibility of all modes; however, the RITC would occupy a considerable amount of waterfront property. Relocating the RITC to Fort Trumbull would allow for development of the downtown waterfront property but would not capture the opportunities associated with access to all modes of transportation.

With only the bus and rail modes shifted to Fort Trumbull, the land available for economic development at Fort Trumbull would not be as severely reduced. None of the downtown waterfront property would be freed up by moving only these modes, although the Union Station building would become available for re-use.

The existing site downtown has the advantageous location of excellent highway access compared to Fort Trumbull. Parking is also available and can be potentially expanded in downtown New London to handle the additional need arising from the RITC. Conversely the parking and space requirement needs for an intermodal center may conflict with the development goals for the Fort Trumbull peninsula. Parking needs and bus pickup/drop off at Fort Trumbull will be difficult to accommodate because of limited space, low clearance under the railroad bridge and difficult topography near the dock.

The presence of a multimodal transportation center generates economic (e.g. jobs, payroll) and fiscal impacts (e.g. taxes) to the state and local jurisdictions. Location and private ownership of the existing rail station in downtown generates positive tax revenue to the City through property tax and other related tax revenue. In addition, maintaining the RITC in its current downtown location will further create positive spin-off tax benefits in terms of enhanced downtown development and revitalization of existing and future retail, office, and residential uses. Moving the RITC to Fort Trumbull has the potential to create less of the positive tax impact since the future RITC would be publically owned and operated (and therefore not taxable) and could potentially take up land that could be programmed for private tax revenue generating uses. In addition, the lack of existing private tax revenue generating uses adjacent to a potential Fort Trumbull RITC location would challenge the enhanced future development potential compared to the downtown location which already has an established retail, office and residential market.

Public Support

There is a lack of support among the stakeholders for moving the RITC to the Fort Trumbull site. It is likely that there would be even less support among the stakeholders and the public for relocating the rail and bus modes while leaving the ferry and cruise ship modes at their current locations.

1.6.3. Summary

Table 1-7 below provides a summary of the evaluation of the two sites for the RITC given the set of modes that could feasibly be provided there:

Table 1-7: Summary Evaluation of the Two Sites

	Current Site	Fort Trumbull Site
Capacity for Operations	○	◐
Vehicular Access	○	●
Parking Capacity	○	◐
Traffic Impacts	○	○
Pedestrian Access	○	◐
Capital Cost	○	●
Environmental (Contamination)	◐	◐
Environmental Sensitivity (Natural)	○	○
Environmental Sensitivity (Cultural)	◐	●
Compatibility with Other Land Uses	○	◐
Economic Development Opportunity	○	◐
Public Support	○	●
Consolidated RITC	○	●

Key:

- Minor Issues/High rating
- ◐ Moderate Issues/Medium rating
- Major Issues/Low rating

1.7 Recommendation

The strong recommendation of consulting team was that the RITC be maintained at the downtown site based on the following reasons:

1. There is widespread and firm desire among stakeholders interviewed, including the transportation operators, to keep the RITC at their current sites to support and serve downtown. There are perceived advantages to retaining the downtown location for each mode of transportation.
 - The Union Station owners would like to see the transportation terminal remain on the lobby level of Union Station.
 - Greyhound sees strong advantages to the downtown site, including good highway access.
 - SEAT is not interested in moving its hub to the Fort Trumbull site. SEAT prefers the downtown location, and is interested in improving the current hub and perhaps using Union Station itself.
 - Cross Sound Ferry, the major ferry operator, is opposed to moving to Fort Trumbull, which is near the site they previously occupied. It has made a substantial investment in the current location which has distinct advantages, including easy access to I-95 for cars and trucks, immediately adjacent ground transportation and parking, and better protection from wind and currents.
 - Fisher Island Ferry has invested \$15M in a new facility at its existing site, which has an ideal location near the rail station and downtown parking, services which many of its passengers use.

2. Only the cruise ships would really benefit from being at Fort Trumbull (it was one of the major considerations of ConnDOT in their suggesting Fort Trumbull as the alternative candidate site for the RITC). Moving the cruise ships to Fort Trumbull might enhance the attractiveness of New London to cruise ship operators and passengers, but it is not functionally necessary to move them and it is certain to be costly and, after thorough consideration, is deemed infeasible.
 - The cruise ships are able to function where they are. Several improvements could be made at the existing State Pier site to enhance their operation. Currently, busing passengers to Union Station works well to provide passengers a central point for local side trips from the cruise ships.
 - The cruise ships currently come to New London infrequently and do not use New London as a home port. Thus the cruise ships play a small role now in the tourist economy of New London. In fact, access to the rail, ferry, intercity bus and local bus services is not critically important to the current cruise ship operation. As a result, it would be hard to justify making the site selection for the RITC revolve around the cruise ship operation as currently configured.
 - The existing piers at Fort Trumbull cannot handle cruise ships and would require reconstruction, including dredging. Cruise ships would likely interfere with the federal shipping channel and the General Dynamics Electric Boat shipyard across the river unless Pier 7 was completely rebuilt and reoriented.
 - Landside access to a docking pier at Fort Trumbull would be very difficult due to the topography. There is a lack of space for loading/unloading immediately near the pier -- currently about 22 buses are needed to unload the cruise ships. Both the existing Coast

Guard facility and the existing parkland at the Fort Trumbull site impede vehicular access. Buses would likely need to load/unload at the existing visitor center bus stop which is up the hill and a considerable distance from the pier. It would be very difficult to get approval to do any alterations that would negatively impact the existing parkland that covers most of the area closer to the pier.

- If New London were to become a home port for the cruise ships, there would be greater advantages to having rail access directly to the cruise ship docking site. However, this would require relocating the rail station at considerable cost and disruptive impact on the existing transportation network. Also the transfer from rail service to the cruise ships at Fort Trumbull would not be seamless due to the distance and grade that passengers would have to traverse.

3. Many transportation operators would face constraints at the Fort Trumbull site.

- Low railroad bridge clearance limits access to the Fort Trumbull site, particularly for buses and trucks. Only the Shaw Street / Pequot Street underpass could be used by buses and trucks.
- There is limited space at the Fort Trumbull site for the parking needed to support rail, ferry and other transportation functions without impacting other planned development. A paved lot near the railroad right of way is allocated to the office building on Parcel 3A and the adjacent sites on Parcel 1 are allocated to a future hotel development. Unless land could be swapped, this would impede the development of a rail station. Parcels 5A, 5B and 6 on the west side of the tracks were noted by NLDC as the only sites that are really vacant and available for an intermodal transportation center, but they are small and have access and drainage issues. Parcel 3B and 3C are slated for office/R&D space although they have no active projects. If it were feasible to locate the ferry terminal on Fort Trumbull, it would require use of Parcel 1 which is programmed for a hotel and the Coast Guard Museum.
- It would be difficult, if not impossible, to relocate the ferry facilities that are currently located at the downtown site to a new site at Fort Trumbull. Landside space needs, access and waterfront requirements and the current location of the parkland and Coast Guard facilities all present formidable challenges. In addition to the cost, it is also deemed infeasible since the required dredging would activate EPA Section 404(b)1 permit issues, which could kill the project or at least seriously delay it.

4. The existing RITC sites offer the needed capacity and opportunities for improvements, some of which are underway.

- The existing garage/surface parking facilities at the current intermodal sites have the capacity to serve additional rail (including Shore Line East) and ferry passengers. (The Water Street Garage is about three-quarters full at the peak of a summer Saturday (with Cross Sound Ferry fully utilizing its own parking.) The City of New London has funding available that it plans to use to enhance the existing Water Street Garage facility. Functioning Elevators and installation of security cameras are sorely needed to improve the functioning of the facility and are programmed.
- The general sentiment is that the Parade Project, currently under construction, will improve some of the pedestrian and image issues at the existing site. But there remains great interest among stakeholders in improving pedestrian access around the existing sites, along the waterfront and possibly extending to the State Pier.

5. There is existing support for enhanced development around the existing sites and there are some sites for such development.

- At the existing Water Street garage, there is existing space available for transit oriented development to serve visitors and/or to provide for intercity buses.
- The possible departure of The Day printing operation, located on the north side of Atlantic Street adjacent to the Water Street garage, could open up additional area for development.
- Enhancing the RITC at the existing site would make the surrounding area more marketable as the City strives to create a vibrant downtown.
- Enhancing the functional connections and the scope of transportation and ancillary services at the existing sites has the potential to increase the existing positive tax impact. Relocating the RITC to Fort Trumbull has the potential to diminish the positive tax impact of the existing sites and to reduce the potential revenue from private development at Fort Trumbull.

The Stakeholder Steering Committee reached a clear consensus agreeing with the consultant recommendation. With the concurrence of the SCCOG, the current site became the focus of the remaining tasks of the Master Plan and Efficiency Study, which developed a plan for creating an improved RITC at the selected site.

ⁱ Per telephone conversation with Dave Rossiter, ConnDOT Harbor Liaison at the Admiral Shear State Pier.



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2. Existing Physical Facilities

This chapter presents an overview of the existing physical conditions at the time of writing this final report of the transportation facilities located in downtown New London that make up the Regional Intermodal Transportation Center (RITC). Results from passenger surveys conducted as part of the study are also included to present customer ratings about transportation facilities and amenities at RITC. These include the rail station, bus facilities, ferry facilities, parking facilities, taxi stand, vehicular and pedestrian network, and the City Pier area, shown in the aerial photo below as Figure 2-1. Figure 2-2 shows the land parcels based on City Assessor information.

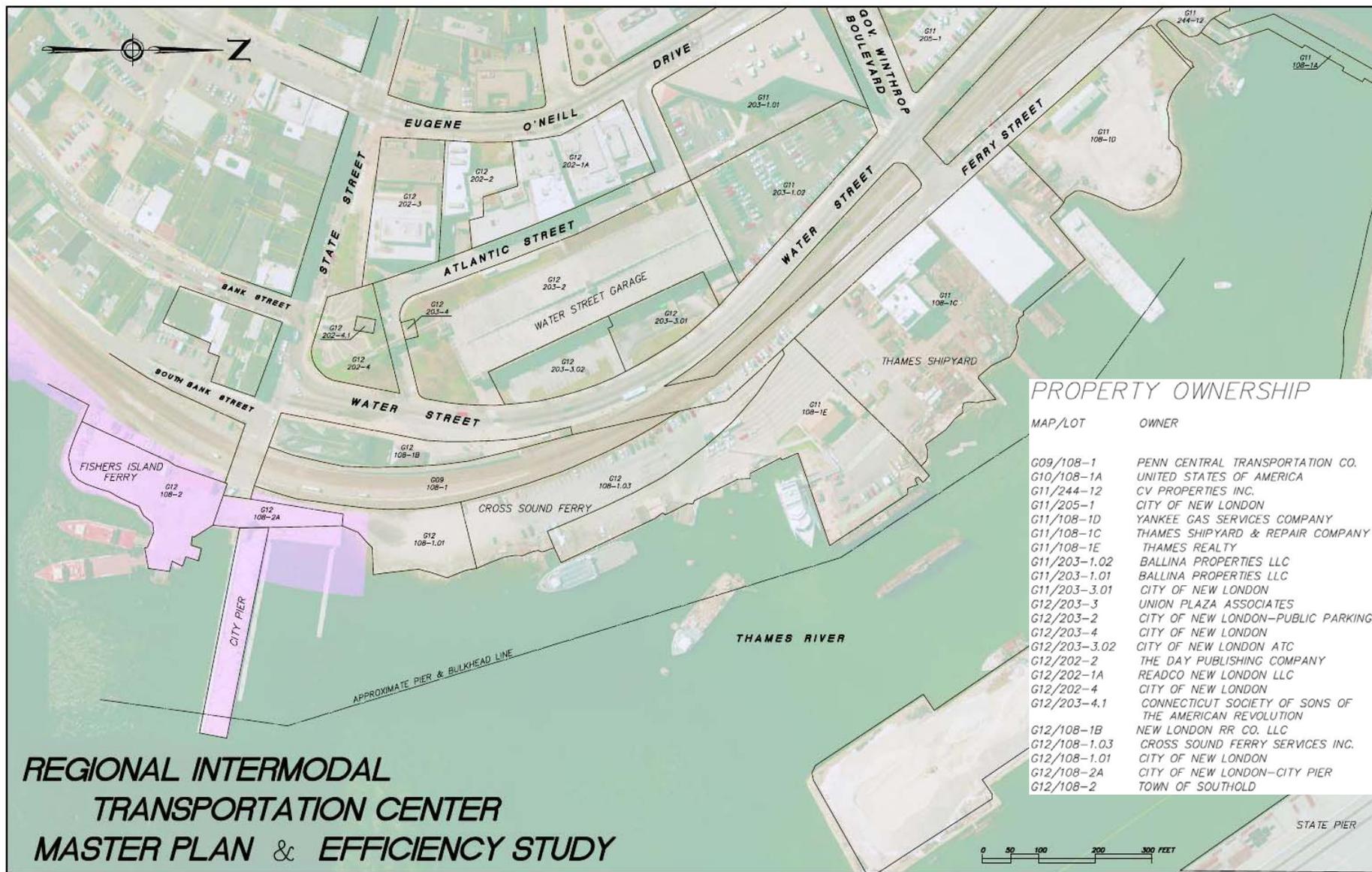
This chapter is presented in eight sections as follows:

- Roadway and Pedestrian Facilities
- Rail and Bus Facilities, including Taxi Stand
- Ferry Facilities
- Parking Facilities
- New London Waterfront Park/City Pier
- Utilities
- Signage and Wayfinding
- Summary of Deficiencies

Figure 2-1: Existing Transportation Facilities in Downtown New London



Figure 2-2: RITC Parcels and Surrounding Environs



Source: City of New London Assessor

2.1 Roadway and Pedestrian Facilities

2.1.1. Roadway Network

The existing RITC is located in downtown New London off Water Street in the east central portion of the city and is close to three major regional access roads - Interstate 95 (I-95) and State Route 32 from the north and Route 1 from the east. Downtown New London is bordered by the Thames River on the east, Huntington Street on the west, Tilley Street on the south and Federal Street on the north. The existing traffic network system in downtown New London consists of many one-way streets and a limited number of two-way streets. Though one-way street patterns improve overall capacity and safety and reduce the number of conflicts, they sometimes confuse drivers who are not familiar with the area. There are a number of public and private parking facilities and on-street parking is provided.

2.1.2. Pedestrian Network

Typical downtown pedestrian amenities are provided at most locations in downtown New London. These include sidewalks, marked crosswalks, and handicap ramps. Pedestrian signals are provided at some of the major signalized intersections. Daily pedestrian activity is low to moderate in downtown, however, major events held during the course of the year greatly increase pedestrian activity in the downtown. Concentrations of pedestrians are most likely to occur at the municipal parking garages and surface lots. Pedestrian walkways are provided from upper levels of the garages to the adjacent streets and buildings. There is currently no pedestrian overhead walkway from the City-owned Water Street Garage to Union Station, the intercity bus terminal, the SEAT bus stop or any of the ferry terminals, although one was proposed several years ago and the project was aborted for several reasons. Instead the Parade Project will be making some improvements to the pedestrian network in the vicinity of the RITC as described below.

The Parade Project

The Parade Project is changing and impacting the area near the transportation facilities. The Parade Project will improve pedestrian safety and increase pedestrian access between the Union Station transportation center and downtown New London. The project removes the landscaped berm located between the Water Street Garage and State Street as well as the pedestrian bridge connecting the plaza to the Water Street Garage. It will provide traffic calming and improved pedestrian crossings as well as a new exterior elevator on the southwest side of the garage replacing the current pedestrian bridge to the Parade. (An inoperable elevator on the north side of the garage is also being repaired; the remaining two elevators on the southwest and southeast sides of the garage will remain closed.) The completed project, which will include exhibits, sculpture and public art and serve as space for public events and festivals, will restore the lower State Street area to its former prominence as the central public space in downtown and will provide an unencumbered view up State Street from the RITC. Construction on the approximately \$10.8 million Parade Project started in September 2008 and was scheduled to be completed by the end of 2009.

Figure 2-3 and Figure 2-4 show the Parade Project and key pedestrian crossings and facilities proposed as part of the Parade Project.

Figure 2-3: A Model of the Parade Project



Source: The Day

2.1.3. Roadways and Sidewalks Adjacent to the RITC

Union Station, the Greyhound Bus Terminal, and the SEAT transfer point all lie along Water Street. Water Street operates as a two-lane, one-way facility in the northbound direction. It widens in several places to accommodate parked taxis, intercity buses and SEAT buses. North of the SEAT bus stop, approaching Governor Winthrop Boulevard, Water Street becomes a 3-lane facility. Sidewalks are provided along the west side of Water Street and along the east side only as far as the northern end of the SEAT bus stop (See Figure 2-5 and Figure 2-6 below). Despite the lack of a sidewalk north of the SEAT bus stop, pedestrians continue to walk along the east side of Water Street using the unpaved area along the railroad right-of-way. Note the condition and esthetics of the railroad right-of-way and fence in Figure 5.

One crosswalk is currently provided across Water Street, connecting the entrance to the Water Street Garage to a point between the intercity and SEAT bus terminals. Plans for the Parade Project, presented above, however, show three new crosswalks: one at State Street, one at the main Union Station entrance, and one at Atlantic Street.

State Street extends – noted on some maps as City Pier/Railroad Avenue¹, along the south side of the Union Station building and crosses the railroad tracks. This provides vehicular access to the Fishers Island Ferry as well as pedestrian access to City Pier, Cross Sound Ferry, and the rail platforms. The sidewalk on the north (Union Station) side of the street provides a level connection between the Water Street sidewalk in front of the building and the southbound rail platform behind the building. The sidewalk does not continue across the tracks but resumes in the City Pier Park. The sidewalk on the south side of the street ends at South Water Street and does not continue across the street or across the tracks. There is currently a crosswalk across at the front of the Station (east side of Water Street). Parade Project plans also show a new crosswalk across South Water Street at State Street and a new sidewalk between South Water Street and the tracks.

¹ For simplicity, this will be referred to as State Street.

Figure 2-5: Sidewalk on East Side of Water Street North of Bus Shelter



Figure 2-6: Same Sidewalk Narrowing to Unpaved Path Approaching Governor Winthrop Boulevard (at Entrance to Cross Sound Ferry)



2.2 Rail and Bus Facilities

Union Station at 27 Water Street and the adjacent Greyhound Bus Terminal and SEAT Bus Stop are all located in the Historic Waterfront District (the central business district). The 0.54 acre site is located on the east side of Water Street and is bounded to the north by rail road tracks, to the south by State Street and to the east by the railroad tracks. The property is privately owned and operated by the New London Railroad Company LLC.

Figure 2-7 shows the railroad station building and Greyhound Bus Terminal building located at Union Station. Each is discussed below, as well as the rail platforms and the SEAT Bus Stop.

2.2.1. Union Station

The Union Station Building

The 26,892 square foot, 2.75-story, brick, historic building was built in 1888 and renovated in the 1970's, and again, beginning in 2002 (see Figure 2-8 below). Union Station was designed in 1885 by noted American architect Henry Hobson Richardson. This was the last of many railroad stations design by Richardson before his death in 1887, though numerous others (including Boston's South Station) were designed by his students. Union Station is particularly large for a Richardson train station and stands out as the only station not built in the style of Trinity Church, Boston. With its multi-faceted roof, prominent arched entrance, and elegant brickwork, this building features many of Richardson's characteristic motifs.

Union Station in New London features a similar layout to the station in Old Saybrook, Connecticut. There is one island platform and a side platform, both of which are high level, not only to allow handicapped accessibility but also because the Acela Express requires high platforms in order to serve a station. Like most railroad stations along the Connecticut coast, the station was originally built for the New York, New Haven and Hartford Railroad in 1888, and has been on the National Register of Historic Places since 1971.

There is a center entrance accessed by a stairway on the front (Water Street side) of the building. There are two other entrances on the front; the one closer to State Street provides an accessible entrance to the first floor lobby. There are two entrances to the back of the building from the rail platform; both are accessed by stairs (see Figure 2-9). The first floor of the station building contains an Amtrak office for ticket sales and general information, a large waiting area, restrooms and an ATM (see Figure 2-10 and Figure 2-11). There is also a large unused space on the first floor at the northern end of the building which was previously used as a baggage room and as part of the restaurant also located on the second floor (which closed by 1984). In the lobby there are some brochures and SEAT schedules but at present, there is very limited general tourist information. The station is open 5:30 am to 12:00 midnight, seven days a week.

Figure 2-7: Union Station Complex

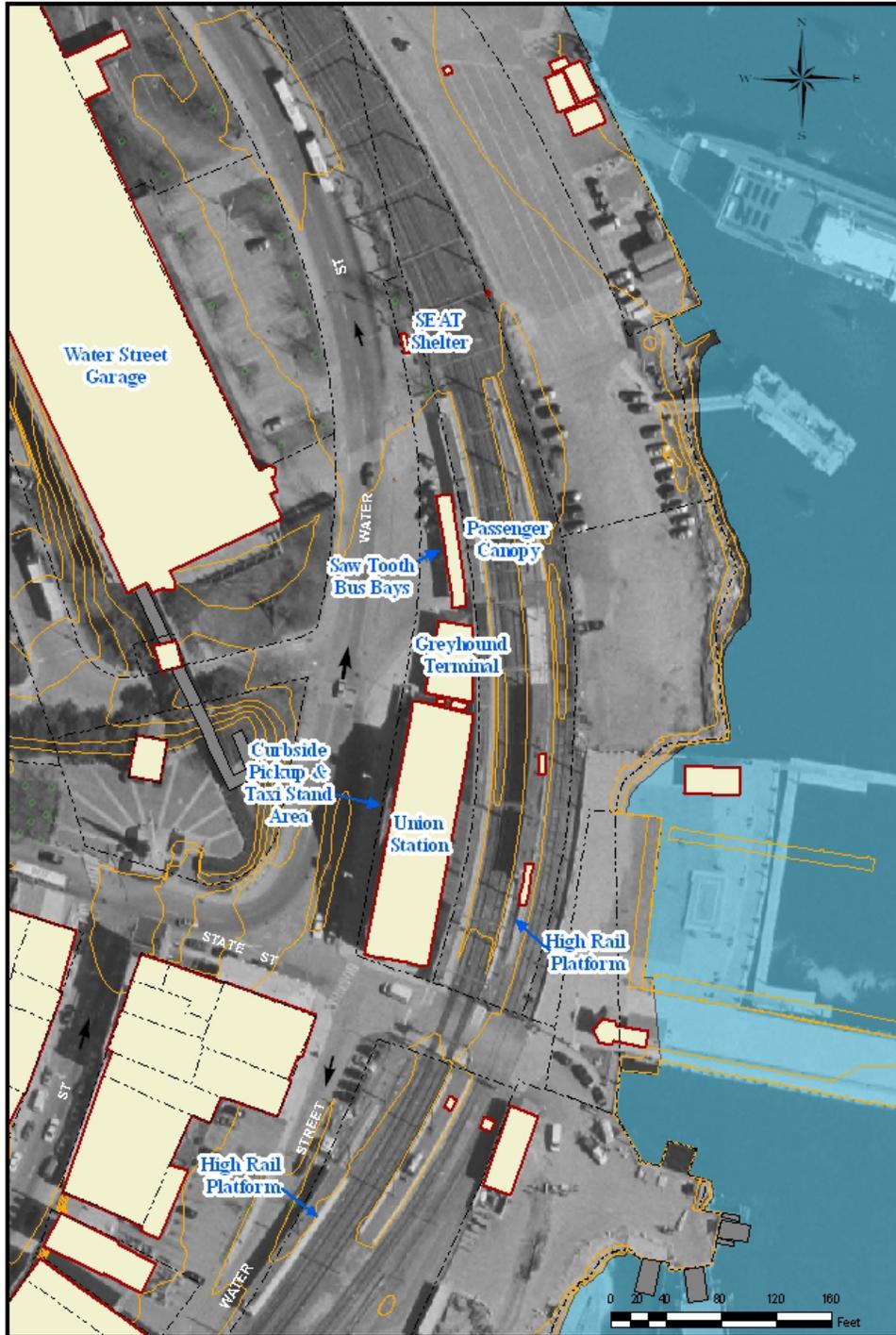


Figure 2-8: Front View of Union Station facing Water Street



Figure 2-9: Rear View of Union Station Building and Railroad Platform Looking North



Figure 2-10: Union Station Lobby



Figure 2-11: Union Station Ticketing Office



The second and third floors of the building have been used for office space but currently about 80% of the square footage in the building excluding the lobby is vacant. The second and third floors have been partially remodeled with sheet rock walls and ceilings. There is elevator access to the upper levels.

The condition of the building was inspected and it was noted that the exterior of the three-level, circa 1888, structure appears to be in reasonably good condition having experienced renovations within the last ten years. The only exception being that the glass canopy in the rear of the building is missing several panels. The roof was replaced in 2002.

A survey of ADA compliance at Union Station was conducted during the week of December 22, 2008. The full survey of the Union Station is attached as Appendix B. The areas of non-compliance include the height of the mirrors in both restrooms and the lack of handicapped employee parking, an accessible route to and from existing employee parking to the building, and appropriate signage for the parking (see Figure 2-12).

Figure 2-12: Women's Bathroom at Union Station Showing Non-ADA Compliant Mirror Height



Railroad Tracks and Platforms at Union Station

There are three sets of railroad tracks located to the rear of the building. The two sets of railroad tracks located closest to the building are for passenger service, primarily Amtrak Northeast Corridor service that operates between Boston and Washington. Trains on these tracks are powered through an overhead catenary. The third set of railroad tracks located to the east of the others is for freight service. The freight track does not have a catenary for electric power. The freight track joins the center track about 800 feet

south of State Street. There is a crossover to the center track about 1,000 north of State Street. North of that point, the freight track diverges and becomes the New England Central Railroad line to Massachusetts and Vermont.

There are paved, passenger boarding “platforms” on both sides of the pair of passenger rail tracks with metal canopies providing shelter for passengers. Both the northbound and southbound platforms extend on both sides of State Street (which is about 40 feet wide). Each has a portion that is at-grade and a portion that is a high-level platform designed to offer level boarding for the Acela Express. According to the station owners, the existing platforms are adequate for the Acela Express.

The at-grade platform for the southbound track, closest to the station building, begins at a point about 420 feet north of State Street (about 150 feet north of the station building) and extends along the back of the station building to State Street at ground level. The section north of the station extends out and blends into the intercity bus loading area and the sidewalk on Water Street (see Figure 3-7 in Section 3.2.). A canopy extends over the entire length of the rail platform north of State Street. A glass extension of the canopy provides covered access to the rear entrances to the station building. Currently, there are some glass panels missing (see Figure 2-13 and Figure 2-14.) Stairways and ramps provide access to the station (see Figure 2-13, Figure 2-14 and Figure 2-15).

The platform for the northbound track lies between the northbound track and the freight track. A low-level platform begins at a point about 140 feet south of State Street and extends across the street to a point 90 feet north of State Street where a high-level platform extends northward for an additional 200 feet (see Figure 2-7 and Figure 2-16.) Beyond this point there is an abandoned section of low-level platform that is not accessible. The northbound platform south of State Street contains a double-length standard bus shelter but otherwise lacks cover. North of State Street, approximately 130 feet of the high-level northbound platform is covered.

Both the northbound and southbound high-level platforms are accessed by a ramp and a stairway at only one end (see Figure 2-16 and Figure 2-17).

There is a gap in the southbound platform south of State Street then an additional canopied high-level platform begins at a point 100 feet south of the State Street crossing and extends southward for approximately 120 feet (see Figure 2-18).

The platform paving and the paving in the surrounding areas is generally in good condition as are the canopied waiting/boarding areas. Lighting could be enhanced through supplemental low level lighting.

Figure 2-13: View of Southbound Platform and Rear of Union Station Showing Missing Panels



Figure 2-14: Stairway Entrances from Southbound Platform to the Rear of Union Station



Figure 2-15: Handicapped Access to the Rear of Union Station at the Low Level Southbound Platform North of State Street



Figure 2-16: High Level Northbound Platform at Union Station North of State Street



Figure 2-17: High Level Southbound Platform at Union Station South of State Street



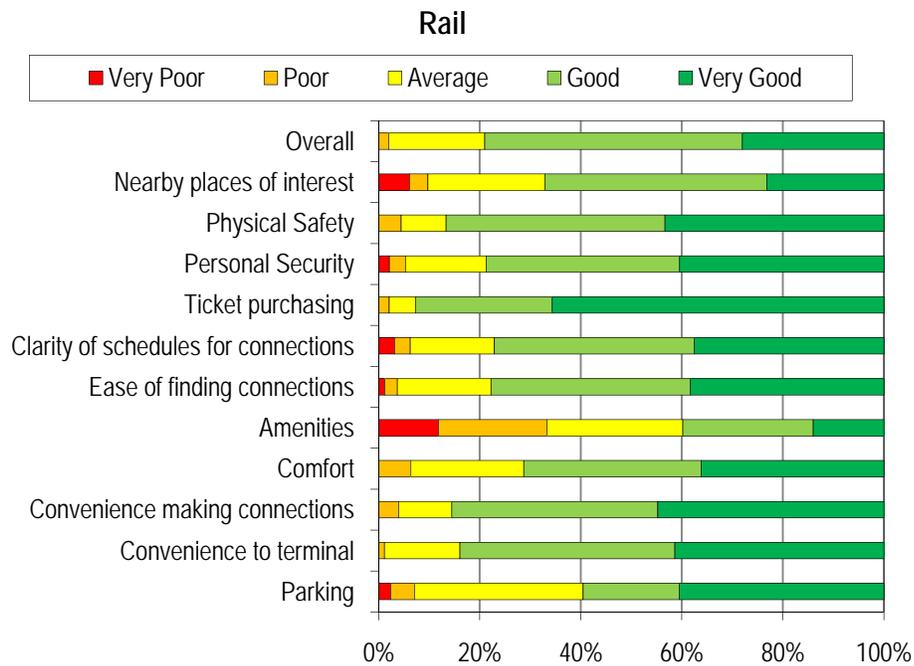
Figure 2-18: View of High Level Platform on the South Side of State Street from Waterfront Park



User Ratings of Conditions at the Rail Station

Surveys of rail users at Union Station were conducted on a Thursday and Saturday in August 2008 and yielded a total of 107 responses. The survey asked the respondents to rate the facilities at the terminal locations based on a list of criteria on a scale from 1 to 5 where 1 was very poor, 2 was poor, 3 was average, 4 was good and 5 was very good. The results are shown in the Figure 2-19. A stacked bar is used to represent the range of responses (as a percent) for each characteristic.

Figure 2-19: Ratings of Facilities by Rail Survey Respondents



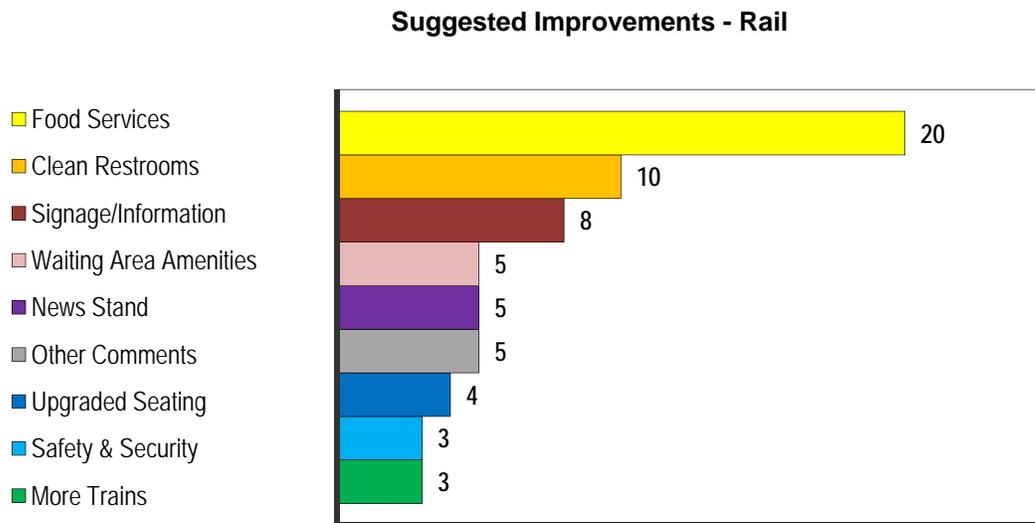
As can be seen in the figure, the majority of respondents rated the facility as good or very good. There were some who rated certain characteristics as poor or very poor. The most notable characteristic with poor or very poor ratings was amenities. Note that only 13% of rail users responding to the survey actually used the parking but some of those who did not use the parking provided a rating for parking. The parking lot users provided a somewhat better rating of the parking, perhaps suggesting that the impression or prior experience with the parking influenced the access mode choice of some of the rail users. Table 2-1 shows the percentage who rated the characteristics as poor or very poor.

Rail survey respondents were asked to identify suggested improvements. The Figure 2-20 shows the results. Sixty three suggestions were made. Twenty of the 63 responses were for food services. The next most popular suggestions were clean restrooms (10 responses) and signage/information (8 responses).

Table 2-1: Percentage of Rail Survey Respondents Giving a Rating of Poor or Very Poor

Amenities at the terminal/station (food services, restrooms, news stand)	33%
Nearby places of interest	10%
Parking	7%
Comfort at the terminal/station (seating, climate control)	6%
Clearly-marked schedules for all transportation modes	6%
Personal Security at the terminal/station	5%
Convenience making connections with the transit service	4%
Ease of finding location of other connections (rail, ferry, bus, taxi, etc.)	4%
Physical Safety at the terminal/station (and while making connections)	4%
Purchasing tickets	2%
Overall Rating	2%
Convenience getting to/from the terminal/station	1%

Figure 2-20: Improvements Suggested by Rail Survey Respondents



2.2.2. The Greyhound Bus Terminal

Physical Conditions

The Greyhound Bus Terminal is located north of the original Union Station in a 1,144-square foot, one story, brick addition to the station building which was built in 1890. The exterior appears to be in reasonably good condition (see

Figure 2-21). The interior contains an area for ticket sales and general information, a freight storage area, a checkout room, passenger restrooms, an office/storeroom and a small indoor waiting area with seating for about 25 people. There is no outdoor seating and some riders have been observed sitting on the ground (see

Figure 2-22). There is a street-level entrance facing Water Street. A rear entrance from the rail platform is closed to the public. A Greyhound schedule is posted inside the building. SEAT paper schedules were also available inside the building.

Figure 2-21: Greyhound Bus Terminal Building



Figure 2-22: Passenger Seated on the Ground outside the Greyhound Bus Terminal Building



Outside, there are two, approximately 45-foot intercity bus bays and two shorter bays to allow other vehicles to park next to the terminal building. There is a dumpster in one of the shorter bays. The bays extend directly off Water Street at about a 30 degree angle. Buses sometime park parallel to the curb instead of using the angle bays; if they use the angled bays, they sometimes need to back out a short distance into Water Street to depart from the terminal. This is not optimal and it is preferable to avoid this for safety reasons.

The angled bus bays cause the wide sidewalk in front of the main station building to narrow in front of the bus terminal building and the sidewalk essentially merges with the rail platform north of the building. At this point adjacent to the bus bays the rail platform canopy is widened to provide shelter for intercity bus riders (see Figure 2-23). Beyond the four bus bays the sidewalk/platform widens again to about 50 feet where a crosswalk across Water Street provides pedestrian access to the Water Street Garage. Beyond the crosswalk the sidewalk becomes the SEAT bus stop.

The bus canopy and the bus waiting areas could be enhanced and upgraded by adding low level lighting, additional architectural treatment and signage.

A survey of ADA compliance at Greyhound Bus Terminal was conducted during the week of December 22, 2008. The full survey of the bus terminal is attached as Appendix B. The areas of non-compliance include the height of the customer service counter, the height of the towel dispensers in both restrooms and the employee access route to the workroom (see Figure 2-24).

Figure 2-23: Combined Rail/Bus Platform and Canopy



Figure 2-24: Greyhound Terminal Women's Bathroom
Showing Non-ADA Compliant Dispenser Height



User Ratings of Conditions at the Greyhound Bus Terminal

Surveys of Greyhound users conducted in August 2008 yielded only 18 responses. *Note this is a very small sample and caution should be exercised in interpreting results.* The survey asked the respondents to rate the facilities at the terminal locations based on a list of criteria on a scale from 1 to 5 where 1 was very poor, 2 was poor, 3 was average, 4 was good and 5 was very good. The results are shown in Figure 2-25. A stacked bar is used to represent the range of responses (as a percent) for each characteristic.

As can be seen in the figure, the majority of respondents rated the facility as good to very good. However, there were a number of respondents giving ratings of poor to very poor, primarily to amenities, comfort and schedules for connections. Note that only two respondents actually used the parking on this trip but that others did rate the parking characteristics; the two respondents that used the parking rated were not dissatisfied. The dissatisfaction registered with parking was from those who used other means of access. Table 2-2 below shows the percentage of the 18 respondents who gave ratings of poor or very poor sorted by the percentage.

Figure 2-25: Ratings of Facilities by Greyhound Bus Survey Respondents

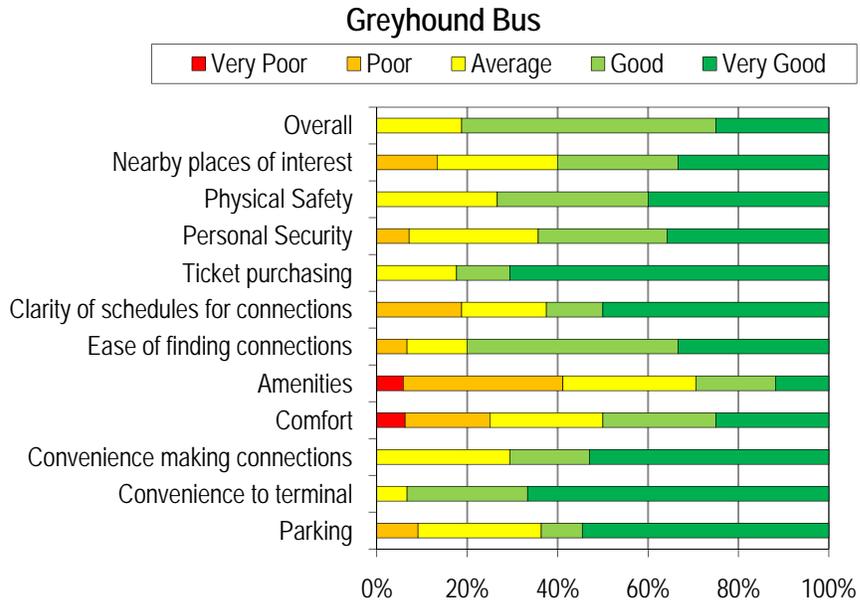


Table 2-2: Percentage of Greyhound Bus Survey Respondents Giving a Rating of Poor or Very Poor

Amenities at the terminal/station (food services, restrooms, newsstand)	41%
Comfort at the terminal/station (seating, climate control)	25%
Clearly-marked schedules for all transportation modes	19%
Nearby places of interest	13%
Parking	9%
Ease of finding location of other connections (rail, ferry, bus, taxi, etc.)	7%
Personal Security at the terminal/station	7%
Convenience getting to/from the terminal/station	0%
Convenience making connections with the transit service	0%
Purchasing tickets	0%
Physical Safety at the terminal/station (and while making connections)	0%
Overall	0%

Greyhound respondents were asked to identify the most improvement needed to the facilities (as an open-ended question). The number of Greyhound responses was very small but a better waiting area was the most frequently cited improvement among these responses.

2.2.3. South East Area Transit (SEAT) Transfer Point

Physical Conditions

South East Area Transit (SEAT) provides local and regional bus service in the southeastern region of Connecticut. SEAT operates an on-street bus stop serving all New London routes on Water Street just north of the intercity bus facility. Water Street widens to accommodate parked buses, in addition to the two lanes of traffic, beginning at the northern end of both the Greyhound Bus Terminal and the southbound rail platform. Passengers use the sidewalk sandwiched between Water Street and the fencing along the

railroad tracks to wait for buses and to transfer between buses. Near the Greyhound Bus Terminal, the sidewalk is over 20 feet wide. It extends northward along Water Street for approximately 300 feet, narrowing as it goes along. At the point where the sidewalk ends, there is a sign prohibiting pedestrians beyond that point and Water Street becomes three lanes with no shoulder or parking lane. SEAT can park seven to eight buses at a time along Water Street.

The SEAT bus shelter, approximately 50 feet north of the end of the rail platform, 220 feet from the Greyhound Bus Terminal building and 380 feet from the entrance to the main Union Station building entrance, is a typical steel and plexi-glass bus shelter structure (see Figure 2-26). Although limited in capacity, the structure is in fair condition and provides some protection for several people from the weather. There are also four wooden benches outside of the shelter, two on either side. At least one bench is broken (see Figure 2-27). The fence separating passengers from the tracks is bent and broken in places. (Note that at the conclusion of this study, the City of New London was in the process of replacing the old cyclone fence with new steel post fencing). Signage, SEAT bus informational routing maps and other important wayfinding information is lacking (see Figure 2-28). High level traditional street lighting is provided via cobra head luminaries. There is no low level pedestrian lighting.

The bus stop is ADA compliant, based on a review of the conditions in December 2008.

Figure 2-26: SEAT Shelter on Water Street



Figure 2-27 : Broken Bench at SEAT Shelter



Figure 2-28: Missing Schedule at SEAT Shelter



User Ratings of Conditions at the SEAT Bus Stop

Surveys of SEAT users conducted in August 2008 yielded 85 responses. The survey asked the respondents to rate the facilities at the terminal locations based on a list of criteria on a scale from 1 to 5 where 1 was very poor, 2 was poor, 3 was average, 4 was good and 5 was very good. The results are shown in Figure 2-29. A stacked bar is used to represent the range of responses (as a percent) for each characteristic.

As is evident in the figure, the majority of riders rated the facility characteristics as good. Nevertheless, there were a significant number of riders rating certain attributes as poor or very poor, as summarized in Table 2-3, sorted by the percentages. The lowest rating was given to amenities at the bus stop followed by comfort. Note that only one SEAT respondent had used the parking facility even though several provided responses about parking; those who responded rated parking very good.

SEAT bus survey respondents were asked to identify the most improvement that needed to be made to the facilities (asked as an open-ended question) and were asked to offer general comments. The following figure shows the results, grouping responses into categories. Eighty two improvement suggestions were made. Forty eight of the 82 responses were about more routes and buses, which is a service rather than facility issue. As can be seen in the figure, only a few comments were related to facilities. Nine suggestions (the next largest number) were about better waiting facilities.

Figure 2-29: Ratings of Facilities by SEAT Bus Survey Respondents

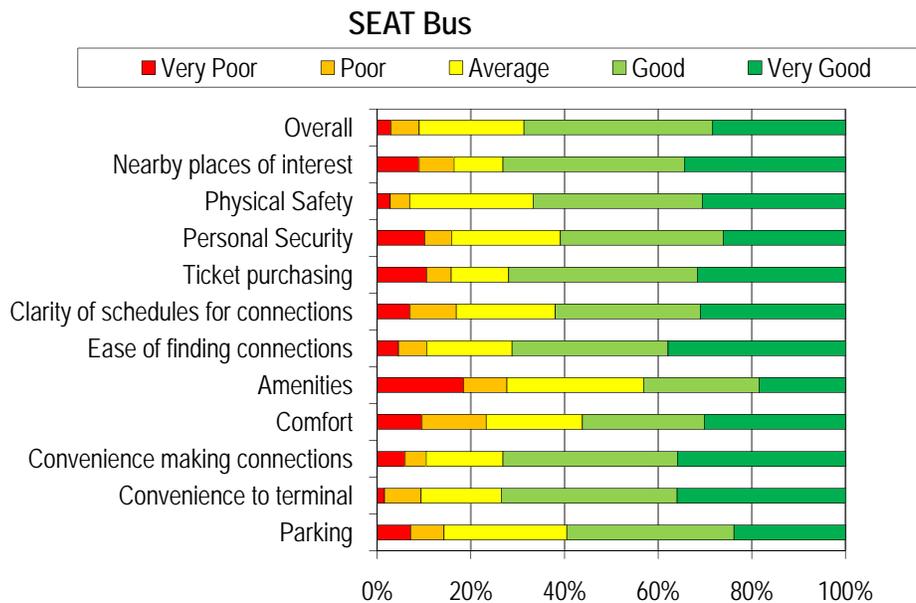
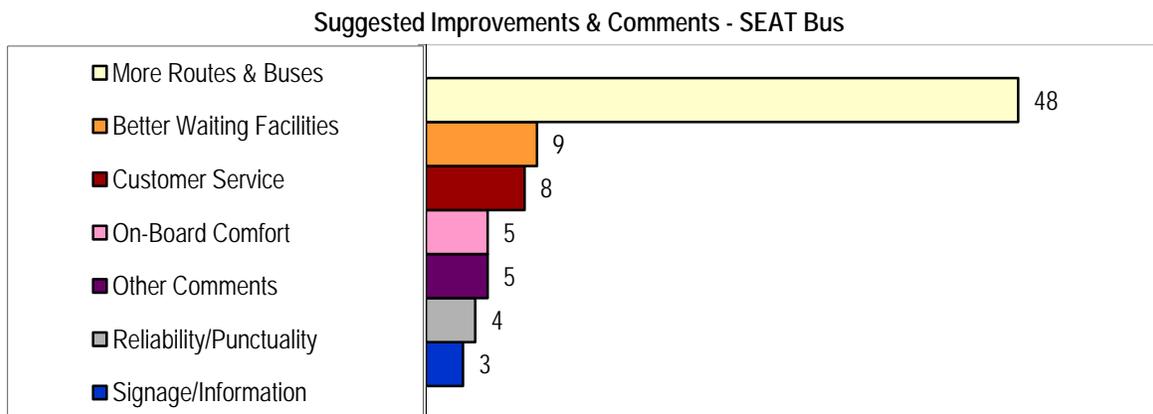


Table 2-3: Percentage of SEAT Bus Survey Respondents Giving a Rating of Poor or Very Poor

Amenities at the terminal/station (food services, restrooms, newsstand)	28%
Comfort at the terminal/station (seating, climate control)	23%
Clearly-marked schedules for all transportation modes	17%
Purchasing tickets	16%
Personal security at the terminal/station	16%
Nearby places of interest	16%
Parking	14%
Ease of finding location of other connections (rail, ferry, bus, taxi, etc.)	11%
Convenience making connections with the transit service	2.2.4. 10%
Convenience getting to/from the terminal/station	9%
Overall	9%
Physical safety at the terminal/station (and while making connections)	7%

Figure 2-30: Improvements Suggested by SEAT Bus Survey Respondents



2.2.5. Taxi Stand

Taxi service is provided by a number of operators. The taxi stand is located on Water Street at the front entrance to Union Station (see Figure 2-31). There is space for approximately eight taxis although the curbside space in front of the building is also used by the SEAT bus to Foxwoods and for passenger pick-up and drop-off and they sometimes interfere with one other. The Union Station owners identified conflicts when buses stop in front of the station, when taxis park (stand) there to wait for business, and when automobiles are also there to either drop-off or pick-up passengers.

Figure 2-31: Taxi Stand at Union Station



2.3 Ferry Facilities

2.3.1. Cross Sound Ferry

Physical Conditions

The Cross Sound Ferry facilities are located at 2 Water Street (see Figure 2-32). The 5.34 acre parcel is located on the east side of Water Street and is bounded on the north by property owned by the Yankee Gas Services Company, by the City Pier Park to the south, the Thames River to the east and the railroad tracks and Water Street to the west. Vehicular access is provided via an at-grade railroad crossing at Governor Winthrop Boulevard onto Ferry Street. Emergency vehicle and pedestrian access is possible from State Street through the City Pier Park. The Cross Sound Ferry facilities are owned and operated by Cross Sound Ferry Services Inc.

The facilities include:

- A 22,048 square foot, two story, brick, office/warehouse building built in 1900
- A 2,350 square foot, single story, brick, warehouse building built in 1900
- A 20,000 square foot, steel, warehouse building built in 1977 with adjacent repair facilities
- A 7,000 square foot, two story, wood frame, handicapped accessible, office/ticket/restroom building built in 1988 (see Figure 2-33), a 560 square foot, single story wood frame, snack stand building built in 1990 (Figure 2-34) and several small, wood frame out buildings
- 130 parking spaces for ferry customers and limited parking for employees
- Four auto ferry slips
- One permanent passenger ferry slip
- One temporary passenger ferry slip

In addition, Cross Sound Ferry leases a 2,500 square foot, single story, concrete block building built in 1964 on the Yankee Gas Services Company property to the north. Cross Sound Ferry also leases an unpaved .49 acre site to the south of its site, owned by the City of New London, which Cross Sound Ferry leases and uses for parking.

Except for the operational facilities and a small 'quick-food' facility, the entire 'public' area is paved and, for the most part, appears to be in generally good condition. The four auto ferry docking access ramps have also been recently rebuilt and appear in very good condition (see Figure 2-35, Figure 2-36 and Figure 2-37).

Vehicular access to the site is provided by the City-owned Ferry Street which is accessible by crossing the railroad tracks at the intersection of Water Street and Governor Winthrop Boulevard. Emergency vehicle access is provided via a 20-foot wide easement running south from the ferry site across City Pier Park onto State Street.

Figure 2-32: Fishers Island Ferry Terminal Entrance Ramp Grade

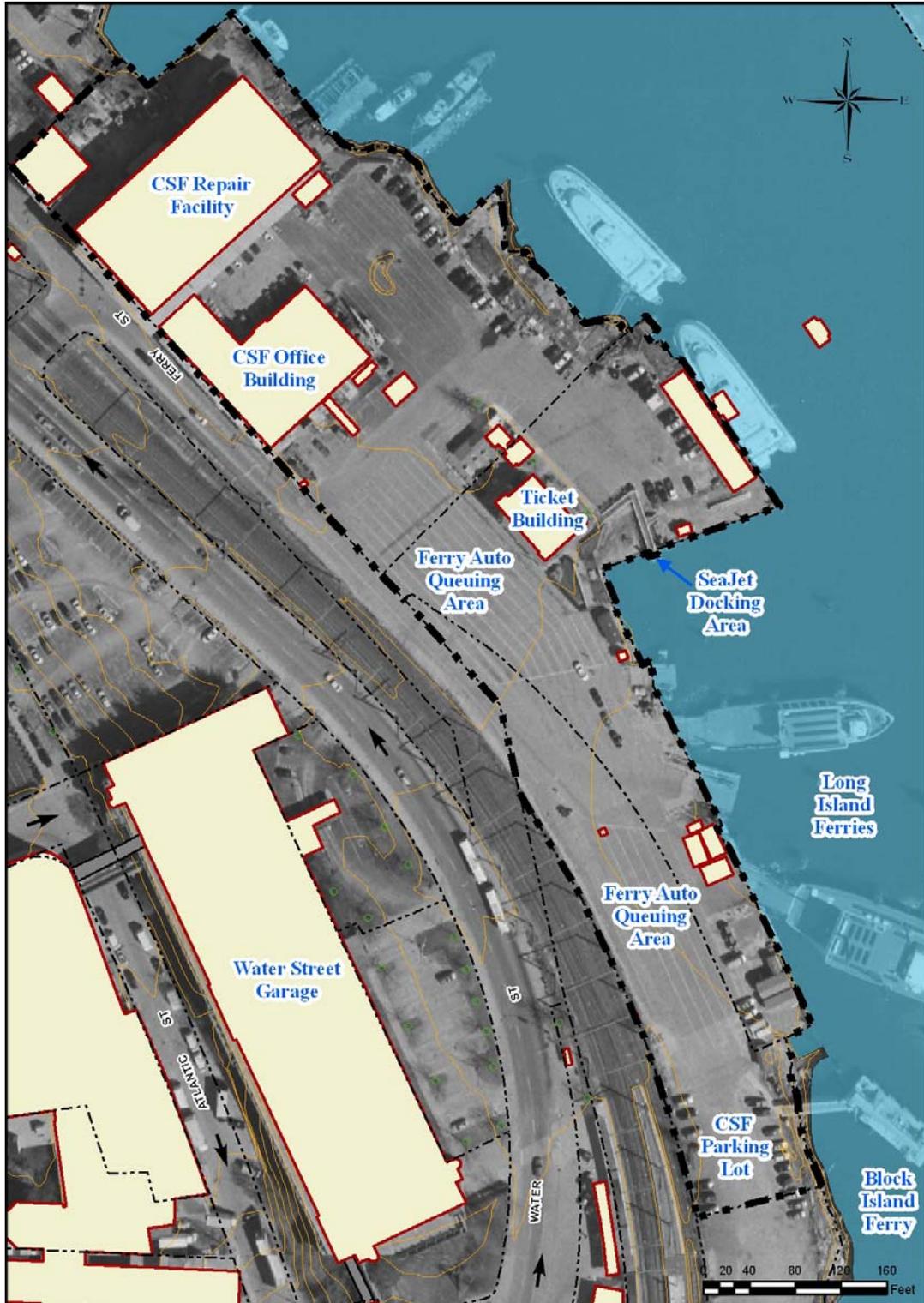


Figure 2-33: Cross Sound Ferry Ticket Building



Figure 2-34: Cross Sound Deli Snack Stand



Figure 2-35: Cross Sound Ferry Auto Ferry to Orient Point, NY





Figure 2-36: Sea Jet Dock



Figure 2-37: Block Island Dock



Pedestrian access to the Cross Sound Ferry facilities is from two points. The first access point is via the existing sidewalk on the south side of Governor Winthrop Boulevard. There, a crosswalk provides access across Water Street but pedestrians must then cross Ferry Street to reach a sidewalk leading into the ferry property. The existing Ferry Street sidewalk needs improvement and there are some curbs without handicap ramps (e.g., the southwest corner of Water Street and Governor Winthrop Boulevard). To reach Governor Winthrop Boulevard from the Water Street Garage, pedestrians can use the sidewalk along the west side of Water Street. Entrance from the Union Station (east) side of Water Street is discouraged as the paved sidewalk ends and narrows to a dirt path (this path is marked with a “no pedestrians” sign). The second pedestrian access point is from State Street across the railroad tracks, north through the City Pier Park and through the unpaved city-owned lot onto the ferry site. Upon entering the site from either point, pedestrians must cross a wide expanse of pavement to reach either of the two ticket buildings, without any clear markings or signage to show the way.

A survey of ADA compliance at the Cross Sound Ferry site was conducted during the week of December 22, 2008. The full survey of the site is contained in Appendix B. The areas of non-compliance include the lack of handicapped accessible routes to and from the building entrance and the lack of designated handicapped parking spaces. Other issues include the height of the customer service counter in the ticket building, the height of the mirrors in both restrooms and the lack of handrails on the handicapped ramp to the ticket building (see Figure 2-38).

Figure 2-38: Cross Sound Ferry Terminal Counter



User Ratings of Conditions at the Cross Sound Ferry Terminal

Surveys of Cross Sound Ferry users conducted in August 2008 yielded 259 responses including 126 on the Block Island Express Ferry (passenger only ferry), 117 on the Long Island Orient Point (auto) Ferry and 16 on the Sea Jet high speed passenger ferry to Long Island. The survey asked the respondents to rate the

facilities at the terminal locations based on a list of criteria on a scale from 1 to 5 where 1 was very poor, 2 was poor, 3 was average, 4 was good and 5 was very good. The results are shown in the following figures for each service separately. *Caution should be exercised in drawing conclusions from the small Sea Jet Ferry sample.*

Block Island Express Ferry User Ratings

As shown in Figure 2-39 below, most Block Island Express ferry respondents rate the facilities as good or very good. There were a significant number of respondents who rated certain characteristics as poor or very poor. These characteristics included amenities, comfort, nearby places of interest and parking. Note that Block Island Express riders do typically park in New London before boarding the ferry at either the Cross Sound Ferry lot, the Water Street Garage or the Julian lot. Note also that those who did park rated the parking facilities better than those who used another means of access, perhaps suggested that their impression or past experience had some impact on their choice of access mode. Table 2-4 below shows the percentage rated each characteristic as poor or very poor, sorted by percentage.

Figure 2-39: Ratings of Facilities by Block Island Ferry Survey Respondents

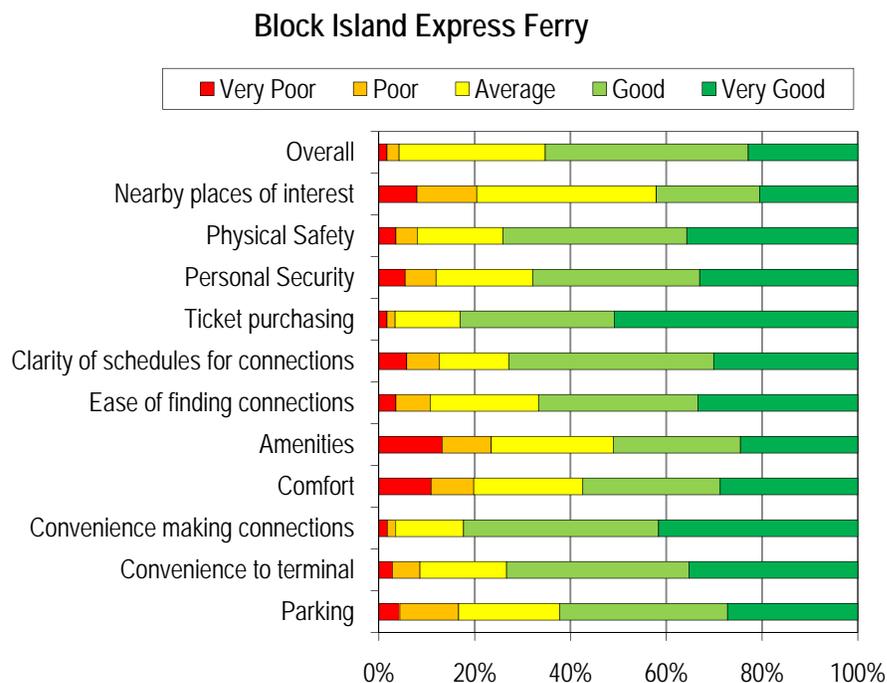


Table 2-4: Percentage of Block Island Ferry Survey Respondents Giving a Rating of Poor or Very Poor

Amenities at the terminal/station (food services, restrooms, newsstand)	23%
Nearby places of interest	20%
Comfort at the terminal/station (seating, climate control)	20%
Parking	17%
Clearly-marked schedules for all transportation modes	13%
Personal Security at the terminal/station	12%
Ease of finding location of other connections (rail, ferry, bus, taxi, etc.)	11%
Convenience getting to/from the terminal/station	9%
Physical Safety at the terminal/station (and while making connections)	8%
Overall	4%
Convenience making connections with the transit service	4%
Purchasing tickets	3%

Long Island Auto Ferry User Ratings

Figure 2-40 below shows the ratings of facilities by the Long Island Ferry survey respondents. Again, the majority of respondents rated the facilities as good or very good; however, there was a small number of respondents who rated certain characteristics as poor or very poor. The characteristics most frequently cited as poor or very poor were amenities and parking. Note that parking may not be an important factor for many auto ferry users since many take their cars on the ferry and few of those who park would park on the New London side. Those who used the parking in New London (about one in five) were somewhat less likely to rate the parking as poor or very poor than those that did not use it (the vast majority). Table 2-5 below shows the percentage rating each characteristic as poor or very poor sorted by the percentage.

Figure 2-40: Ratings of Amenities by Long Island Ferry Survey Respondents

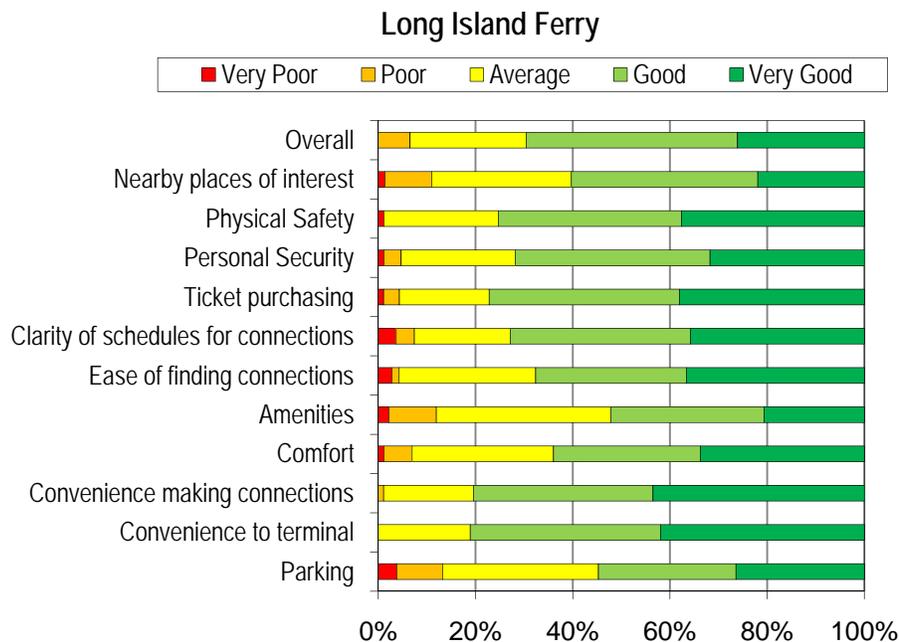


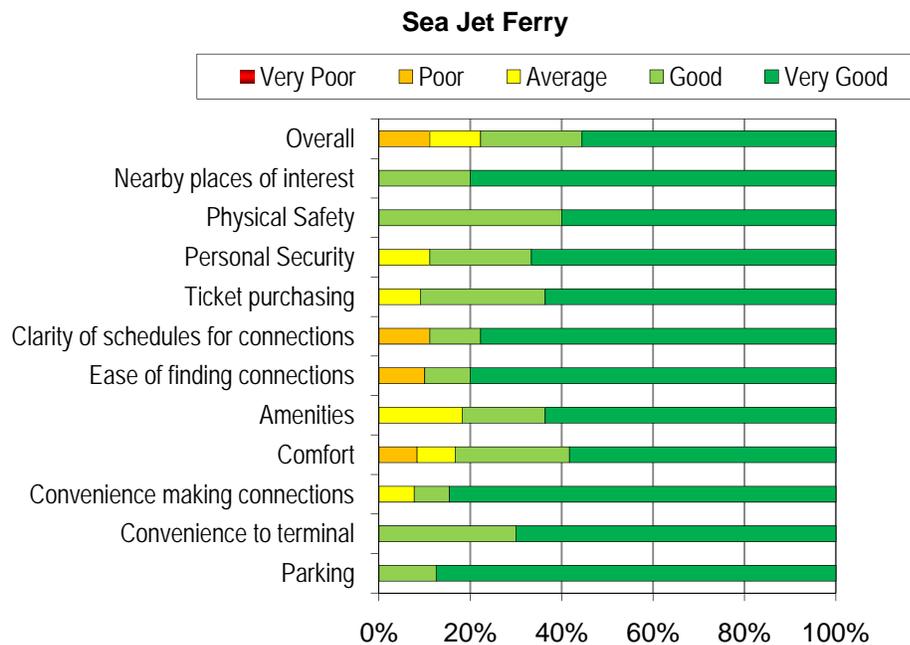
Table 2-5: Percentage of Long Island Ferry Survey Respondents Giving a Rating of Poor or Very Poor

Parking	13%
Amenities at the terminal/station (food services, restrooms, newsstand)	12%
Nearby places of interest	11%
Comfort at the terminal/station (seating, climate control)	7%
Clearly-marked schedules for all transportation modes	7%
Overall	7%
Personal Security at the terminal/station	5%
Ease of finding location of other connections (rail, ferry, bus, taxi, etc.)	4%
Purchasing tickets	4%
Convenience making connections with the transit service	1%
Physical Safety at the terminal/station (and while making connections)	1%
Convenience getting to/from the terminal/station	0%

Sea Jet Passenger Ferry User Ratings

Figure 2-41 shows the ratings of facilities by the Sea Jet Survey respondents. Note again that there were few responses in this sample and it would be difficult to attribute any statistical validity to the results in terms of representing the universe of Sea Jet riders. The results below are provided for informational purposes only. Again most rated the facilities as good or very good and one response rating certain characteristics as poor was obtained. Note that none of the Sea Jet users actually responding used the parking in New London even though some provided a rating for this characteristic.

Figure 2-41: Ratings of Facilities by Sea Jet Survey Respondents

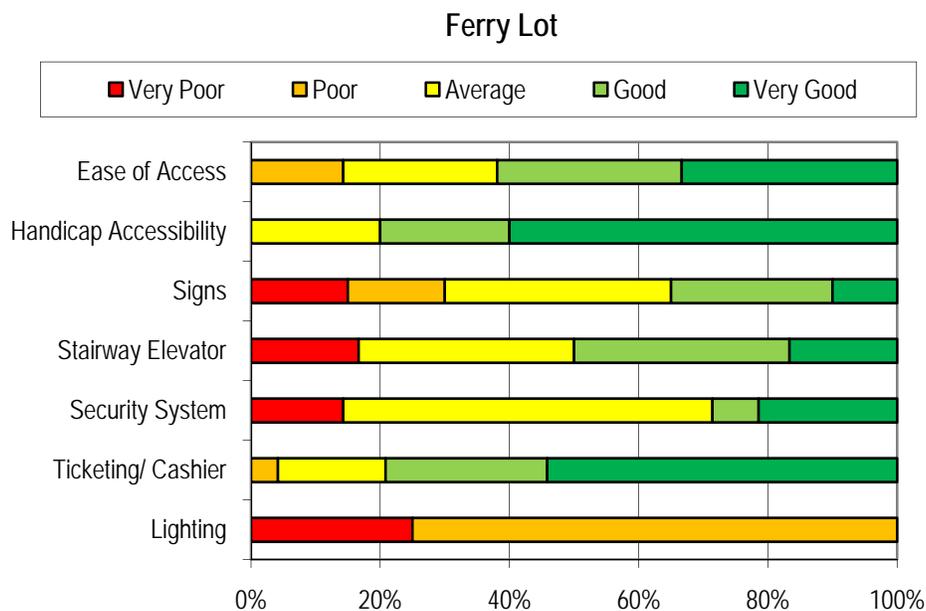


User Ratings of Conditions at the Cross Sound Ferry Parking Lot

Surveys of the Cross Sound Ferry parking facility users conducted on a Thursday and Saturday in August 2008 yielded a total of 24 responses. Respondents were asked to rate the condition of the parking facility using a scale of 1-5, where 5 is very good, 4 is good, 3 is average, 2 is poor and 1 is very poor.

Figure 2-42 shows the ratings of conditions at the Cross Sound Ferry Lot. Overall, this lot exhibited the least dissatisfaction comparing across facilities. However, lighting seemed to be a major problem in that no one was satisfied with this characteristic; all rated lighting as either "Poor" or "Very Poor." The characteristic with the next most dissatisfaction was Signs followed by Stairway/Elevator and Security System. It is not clear what respondents were referring to with the response to Stairway/Elevator since this is a surface parking lot.

Figure 2-42: Ratings of Conditions at the Cross Sound Ferry Lot



2.3.2. Fishers Island Ferry

The Fishers Island Ferry facility is located at the eastern end of State Street. The 0.78 acre parcel is bounded to the north by the City Pier, to the west by Waterfront Park and to south and east by the Thames River. This entire pier was recently rebuilt and appears in very good condition. The Fishers Island Ferry facility is owned and operated by the Town of Southold, New York.

The facilities include a 6,210 square foot, two story, concrete, cinderblock, handicapped accessible, building built in 2005 (see Figure 2-43). The building contains a ticket counter, rest rooms, and office space, and storage and maintenance areas. The building appears to be in very good condition.

There is a large paved area providing for queuing of vehicles as well as a limited number of parking spaces for staff and area for drop-off and pick-up (but not parking) of customers. There are two auto ferry slips.

Vehicular access to the site is provided by a driveway into the site from State Street. Pedestrians can access the site from State Street, City Pier and Waterfront Park.

A survey of ADA compliance at Fishers Island Ferry Terminal was conducted during the week of December 22, 2008. The full survey of the ferry terminal is included in Appendix B. The areas of non-compliance include the lack of a passenger loading zone and a change in sidewalk elevation at the entrance. Other issues include the height of the customer service counter and the fact that the entrance ramp grade is about 1% too steep and lacks handrails (see Figure 2-44).

Figure 2-43: Fishers Island Ferry Terminal



Figure 2-44: Fishers Island Ferry Terminal Entrance Ramp Grade



2.4 Parking Facilities

2.4.1. Water Street Garage

Physical Conditions

The Water Street Garage, located at 160 Water Street is owned by the City of New London and is operated by Pro-Park.

The 2.19 acre garage site is located on the west side of Water Street and is bounded to the north by the Julian surface parking lot, to the south by the Parade site and to the west by Atlantic Street (see Figure 2-45). There are two parcels located between the garage and Water Street, to the northeast is the 0.30 acre site of a former drive-up bank structure now owned by the City. To the southeast is a 0.39 acre paved parking area owned by the City of New London Redevelopment Agency (per the City Assessor records).

The garage is a 286,500+/- square foot (roughly 123 feet wide by 477 feet long), five-level, concrete parking structure with 975 spaces and a 675 square foot office on the first floor. The two upper levels were added in the mid-1980s. The facility is a two-bay camelback helix, with one-way traffic flow. The structure is composed of 9-foot wide precast concrete, single tee deck elements with a 3.5 inch thick cast-in-place concrete topping (see Figure 2-46). Exterior spandrel beams typically span 27 feet between support columns, although the tees are supported independently on columns spaced at 9 feet on center.²

The garage has two main vehicular points of access, one from Atlantic Street at the northwest corner (accessing the second level) and one (a double entry) from Water Street on the first level (see Figure 2-47). The main exit location is at the northeast corner onto Water Street, however, the second level Atlantic Street entry has been converted into a reversible entry/exit area.

Pedestrian access to the garage is from the ground floor on Water Street and from State Street (the Parade) via a pedestrian bridge which is being removed as part of the Parade Project. There is also access to Atlantic Street at grade and across Atlantic Street via a second pedestrian bridge to the READCO property. (See Figure 2-49 and Figure 2-50.) Pedestrian access between levels is provided by four stair towers located at the northwest, southwest, and southeast corners as well as at the center of the facility. The corner stairways are enclosed and are not exposed to the elements, while the center stairway is only protected by being within the garage footprint.

The garage includes three elevators; however at the time of this study, none of the original elevators were functioning (see Figure 2-51). The original elevator on the northwest corner of the building is being repaired. A new elevator will be installed on the southwest corner of the garage as part of the Parade Project. The existing elevator at the north end of the garage will be repaired; the remaining inoperable elevators are to remain closed.

A survey of ADA compliance at the Water Street Garage was conducted during the week of December 22, 2008. The full survey of the garage is attached as an addendum. Among the key issues are: Twenty handicapped spaces are required by code, including 3 van accessible spaces; however only sixteen

² "Condition Appraisal (Reevaluation), Water Street Garage, New London, Connecticut, prepared for the City of New London Office of Development and Planning by Desman Associates, Rocky Hill, Connecticut, Project #40-071117.00-2, October 2007.

handicapped spaces are provided and only 13 of these are in full compliance, none of which are van accessible. Three van accessible spaces should be added along with the appropriate signage. The access aisles, curb ramps and the handrails in the stairwells are not compliant (see Figure 2-52). At the time of the survey, the elevators were not operating, even though one is currently under repair. The employee area lacks a curb ramp which is required for access to the workroom.

Figure 2-45: Water Street Garage

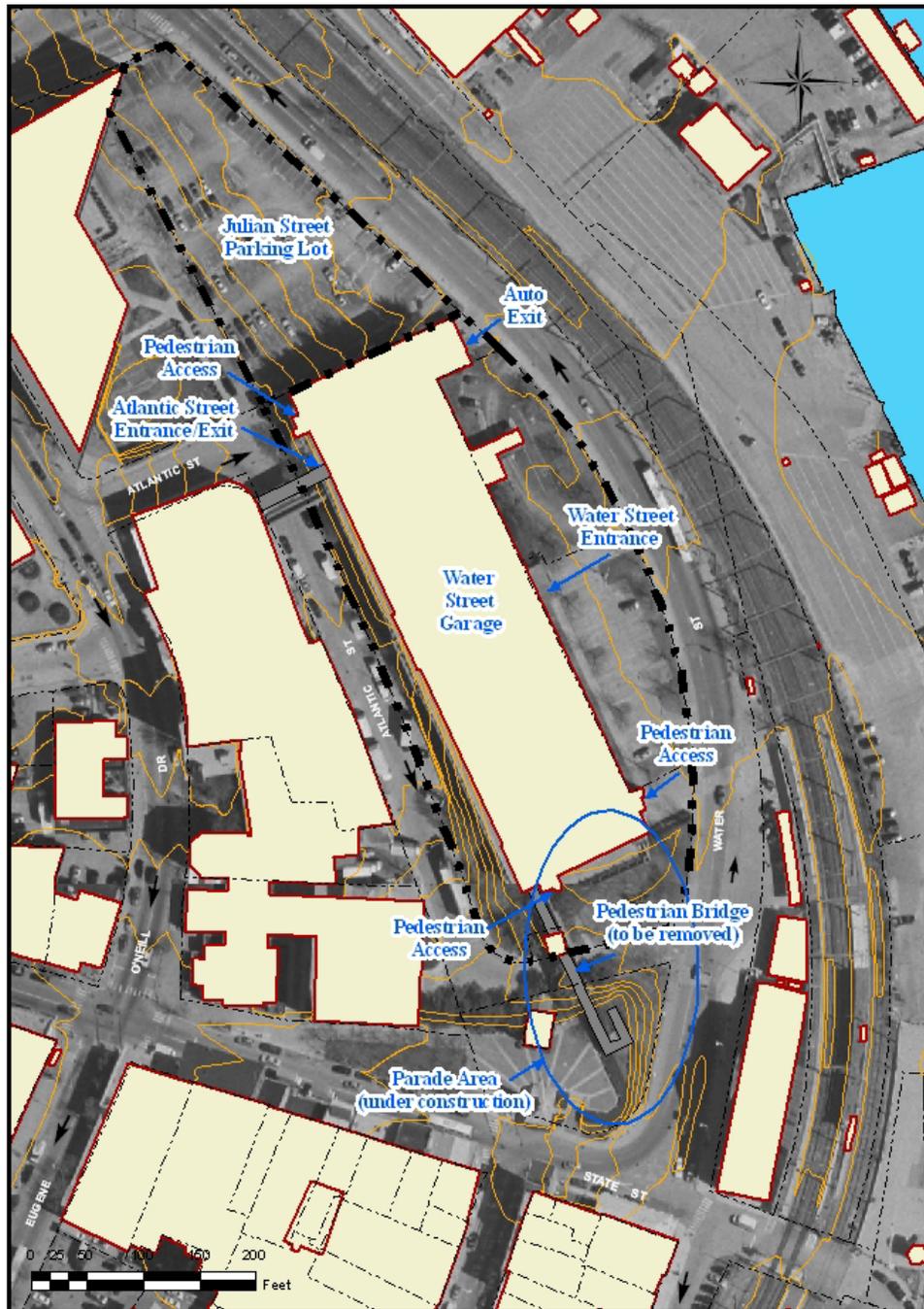


Figure 2-46: Interior View of Water Street Garage



Figure 2-47: Water Street Garage – Water Street Entrance



Figure 2-48: Water Street Garage – Atlantic Street Entrance/Exit



Figure 2-49: Water Street Garage - Rear Pedestrian Entrance



Figure 2-50: Pedestrian Bridge Across Atlantic Street to READCO Building



Figure 2-51: Elevator at Water Street Garage



Figure 2-52: Water Street Garage Pedestrian Walkway



This multi-level concrete structure appears to be in sound condition. However, some spalling of the concrete deck surfaces is evident on certain levels and expansion joints require repairs in a number of locations (see Figure 2-53 and Figure 2-54). Lighting levels could be improved in areas of concentrated pedestrian activity and in general a painting of markings and highlighting of the hardware and amenities would provide a fresh look. The parking survey indicated a lack of security features.

A study of the physical conditions at the Water Street Garage was prepared by Desman Associates for the City's office of Development and Planning in October 2007.³ The study sought to review existing design documents and drawings; investigate the site; conduct field and laboratory testing; analyze and review assessment data; perform value engineering; and prepare a report.

The key findings of the report were, "The current structural condition of the Water Street Garage is considered to be good, though some conditions still exist that present potential liabilities due to falling debris, trip and fall hazards and water leakage onto patron's vehicles parked within the garage. Steps should be taken to alleviate these conditions to assure the continued safe usage and long-term durability of the Water Street Parking Garage."

The report recommended implementing a five-year, phased repair program beginning in 2008. The program would include the following three phases:

- Priority I Repairs
 - Estimated cost of \$1.5 million

³ Ibid.

- To be completed in the next 12 to 24 months
- Work includes: concrete overlay repair, handicapped access repairs, electrical and plumbing repair, elevator repair and replacement, waterproofing repair and painting.
- Priority II Repairs
 - Estimated cost of \$330,000
 - To be completed over the next 24 to 48 months
 - Work includes: more concrete overlay repair, electrical and plumbing repair, waterproofing repair and painting.
- Priority III Repairs
 - Estimated cost of \$685,000
 - To be completed over the next 48 to 60 months
 - Work includes handicapped access repairs, electrical and plumbing repair and waterproofing repair.

The City of New London issued an RFP during the winter of 2009 for an engineering company to prepare the construction documents for the repairs.

Figure 2-53: Concrete Spalling at Water Street Garage



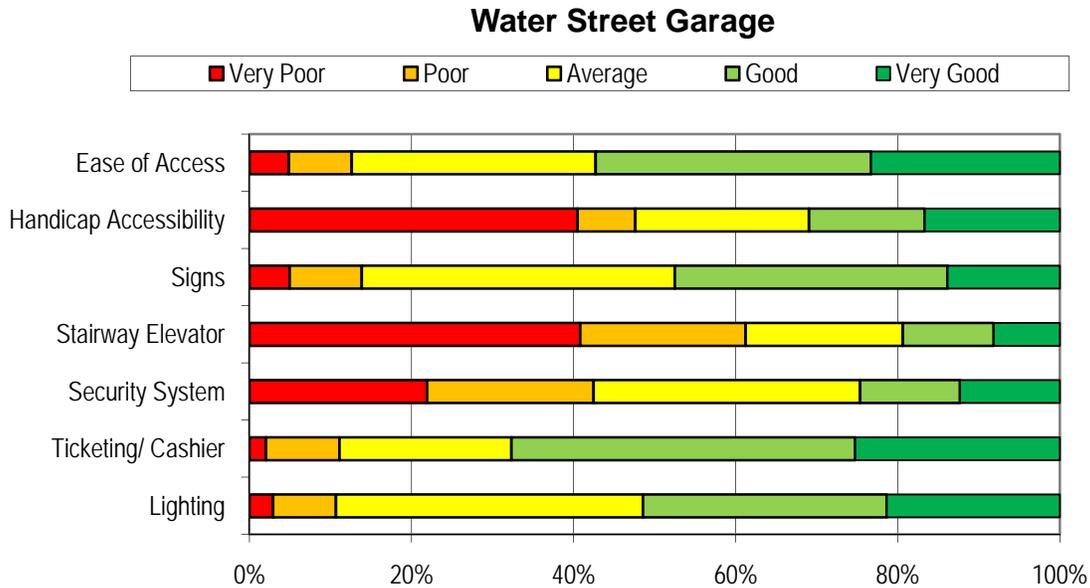
Figure 2-54: Concrete Spalling at Water Street Garage



User Ratings of Conditions at the Water Street Garage

Surveys of the parking facility users conducted on a Thursday and Saturday in August 2008 yielded a total of 106 responses. Figure 2-55 below shows the ratings for the Water Street Garage. A stacked bar is used to represent the range of responses (as a percent) for each characteristic. The greatest dissatisfaction at the Water Street Garage was with the Stairway/Elevator, the Handicap Accessibility and the Security System. Over 40% rated the Stairway/Elevator and Handicap Accessibility as Very Poor. Note that none of the elevators were functioning at the time of the surveys. There was some dissatisfaction expressed with Ease of Access, Signs, Ticketing/Cashier and Lighting by about 10% of respondents.

Figure 2-55: Ratings of Conditions at the Water Street Garage



2.4.2. Governor Winthrop Garage

Physical Conditions

The Governor Winthrop Garage is located at the corner of Governor Winthrop Boulevard and Union Street. The garage is currently owned and operated by Cornish Parking LLC, although it had been City-owned through 2006.

The 1.02 acre site is located on the south side of Governor Winthrop Boulevard and is bounded to the east by Union Street, to the west by a charter school/office building and to the south by the First Church of Christ of New London (see Figure 2-56).

Built in 1970, the Governor Winthrop Garage is a 161,736 square foot, four-story, concrete parking structure that provides 400 parking spaces (see Figure 2-57). The facility is roughly 180 feet wide and 230 feet long and has a total floor area of 132,700 square feet. The facility is a three bay, double-threaded helix with two sloped parking bays and one flat or horizontal bay adjacent and parallel to Church Street. The structure is comprised of 9 foot wide by 3 foot deep, precast/prestressed concrete single tee deck elements with a 3.5 inch thick cast-in-place concrete topping. Exterior spandrel beams typically span 27 feet between support columns.

Vehicular access to the garage is provided at the center bay of the west end of the structure. This entrance is accessed from Meridian Street, formerly a city street now a driveway, off of Governor Winthrop Boulevard, and from Union Street (see entry signage shown in Figure 2-58). Vehicles also exit at the west end of the garage. There is a pedestrian bridge on the south side of the garage from the third level to the commercial businesses that front on State Street (see Figure 2-59). Pedestrian access to the garage is also provided from the ground floor on Governor Winthrop Boulevard, Union Street and the driveway entrance.

Figure 2-56: Governor Winthrop Garage



Figure 2-57: Governor Winthrop Garage (2 views)



Figure 2-58: Signage at Governor Winthrop Garage



Figure 2-59: Pedestrian Bridge to Governor Winthrop Garage



Desman Associates conducted a condition appraisal of the Governor Winthrop Garage for the City of New London in October 2001⁴. The purpose was to perform a reassessment of the facility and update the review it conducted in late 1995 (as reported in its Condition Appraisal Report dated February 1996). The objectives were to review existing design documents and drawings, investigate the site, conduct field and laboratory testing, analyze and review assessment data, conduct value engineering and prepare a report.

⁴ Desman Associates, Condition Appraisal of the Governor Winthrop Parking Garage, prepared for the City of New London Office of Development and Planning, October 2001.

The key findings of the report were, "The structural condition of the Governor Winthrop Parking Garage (Church Street Municipal Parking Garage) should be considered as poor, particularly as it relates to the condition of the exterior spandrel beams and certain portions of the parking deck itself. The roof deck and cast-in-place concrete curbs on this level are experiencing extensive freeze-thaw damage, likely exacerbated by an adverse alkaline/aggregate reaction. Certain conditions identified present liability due to falling debris, trip and fall hazards and water leakage onto patron's vehicles parked within the garage. Steps need to be taken to alleviate these conditions in the near future to assure the continued safe usage and long-term durability of the Governor Winthrop Parking Garage." The report added that "continued deterioration and eventual catastrophic structural failure can be expected unless steps are taken to immediately correct conditions identified ..." The report noted that " Though the facilities' spandrel beams have been temporarily shored, ... Desman is concerned by the temporary nature of this remedial solution" It was also noted that there was no emergency lighting system and that the original emergency intercom system was no longer operational nor were the two elevators. Finally, the report also noted that the facility "was constructed with little or no consideration given to handicap accessibility."

The report recommended implementing a phased repair program beginning in the spring of 2002. The program would include the following two phases:

- Phase I Repairs
 - Estimated cost of \$1,474,000 million
 - To be completed in the next 0 to 12 months
 - Work includes: concrete overlay, concrete stairs and landings, concrete spandrels, concrete guardrails, concrete curbs, handicapped ramp installation, miscellaneous masonry, waterproofing, door and window replacements, elevator repair/replacement, electrical systems, and plumbing and mechanical repairs and painting.
- Phase II Repairs
 - Estimated cost of \$731,000
 - To be completed over the next 12 to 36 months
 - Work includes: concrete surface sealer application on the roof level, intercom installation, revenue control system improvements and pressurized garage wash down facilities.

Members of the study team conducted field visits to observe conditions. The problems noted in the Desman Associates report appear to still exist.

Cornish LLC indicated that the following repairs have been made since they acquired the garage:

- Extensive repair work has been completed on the masonry on the roof level;
- Lighting pole fixtures have been installed on the roof level;
- Security cameras have been installed throughout the garage;
- Various areas of the garage have been painted and more areas will be painted this year.

Some spalling of the concrete surfaces is evident in the stairways on certain levels and repairs are required in a number of locations (see Figure 2-60 and Figure 2-61). The deck has been reinforced as shown in Figure 2-62. The temporary shoring supports are shown in Figure 2-63.

Figure 2-60: Concrete Spalling at Governor Winthrop Garage



Figure 2-61: Concrete Spalling at Governor Winthrop Garage



Figure 2-62: Decking Reinforcement at Governor Winthrop Garage



Figure 2-63: Temporary Shoring Supports at Governor Winthrop Garage



A survey of the ADA compliance was conducted at the Governor Winthrop Parking Garage during the week of December 22, 2008. The full survey of the garage is attached as Appendix B. The key findings of the ADA survey were that: Eight handicapped spaces are required including one van accessible space, however only seven handicapped spaces are provided none of which are in compliance. The signage and the handrails in the stairwells are not compliant. Access aisles and curb ramps are not compliant. Neither of the two elevators is in working order (see Figure 2-64).

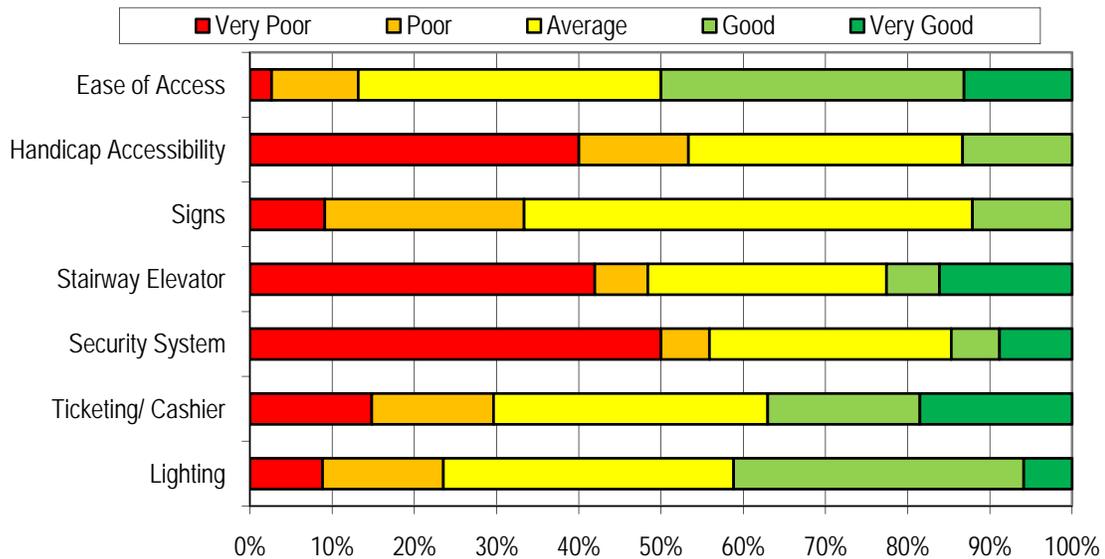
Figure 2-64: Governor Winthrop Garage Elevator



User Ratings of Conditions at the Governor Winthrop Garage

Surveys of the parking facility users conducted on a Thursday and Saturday in August 2008 yielded a total of 36 responses. Figure 65 below shows the ratings of conditions at the Governor Winthrop Garage. A stacked bar is used to represent the range of responses (as a percent) for each characteristic. The users of the Governor Winthrop Garage appear somewhat more dissatisfied than Water Street Garage users. Forty (40%) or more rated the Security System, Stairway/Elevator and Handicap Accessibility as "Very Poor". About half or more of all respondents rated these at least as "Poor." There was also some dissatisfaction with Signs Ticketing/Cashier, Lighting and Ease of Access. Over 30% were dissatisfied with signs, rating that factor as "Poor" or "Very Poor."

Figure 2-65: Ratings of Conditions at the Governor Winthrop Garage
Gov. Winthrop Garage



2.4.3. Eugene O'Neill Drive Surface Lots

Physical Conditions

Figure 2-66 and Figure 2-68 show the location of the two surface lots on Eugene O'Neill Drive. Parking at each of these lots is free, but there is an enforced two hour limit on weekdays for those without monthly permits. There is no limit on the weekends. Monthly parking permits cost \$25.00 per month and are sold by Pro-Park at its Water Street Garage office. There are designated areas for permit parkers.

Eugene O'Neill Drive Surface Lot (North)

The Eugene O'Neill Drive surface lot (North) is located at the corner of Eugene O'Neill Drive and Golden Street (see Figure 2-66). The 0.23 acre site is paved and contains 125 parking spaces. This lot contains a minor slope down to Pearl Street at its southerly end. It has two egress points to Pearl Street. It also slopes down gently to the north to two egress points at Golden Street at the northerly end. Vehicular and pedestrian access is from Pearl and Golden Streets. The lot is owned by the City of New London Redevelopment Agency (per the City Assessor records), although the Agency was dissolved by City Council action in June 2008. Pro-Park, the operator of the Water Street Garage, is also the operator of the unattended surface lots on Eugene O'Neill Drive and sells monthly parking permits for the two surface lots at a price of \$25.00 per month.

In general, the bituminous paving is in fair condition with some minor areas in need of repair. The existing lighting at the lot is provided by cobra head fixtures mounted on telephone poles, (as shown in Figure 2-67) and is adequate.

Wayfinding in general is lacking. There are numerous out-of-date signs and abandoned sign poles located around the North Lot. There are no existing directional or identification signs for the lot. The Downtown

New London Wayfinding Signage Program to be initiated over the next year will provide directional and identification signs for the North Lot and other parking facilities.

Figure 2-66: Eugene O'Neill Surface Lot North

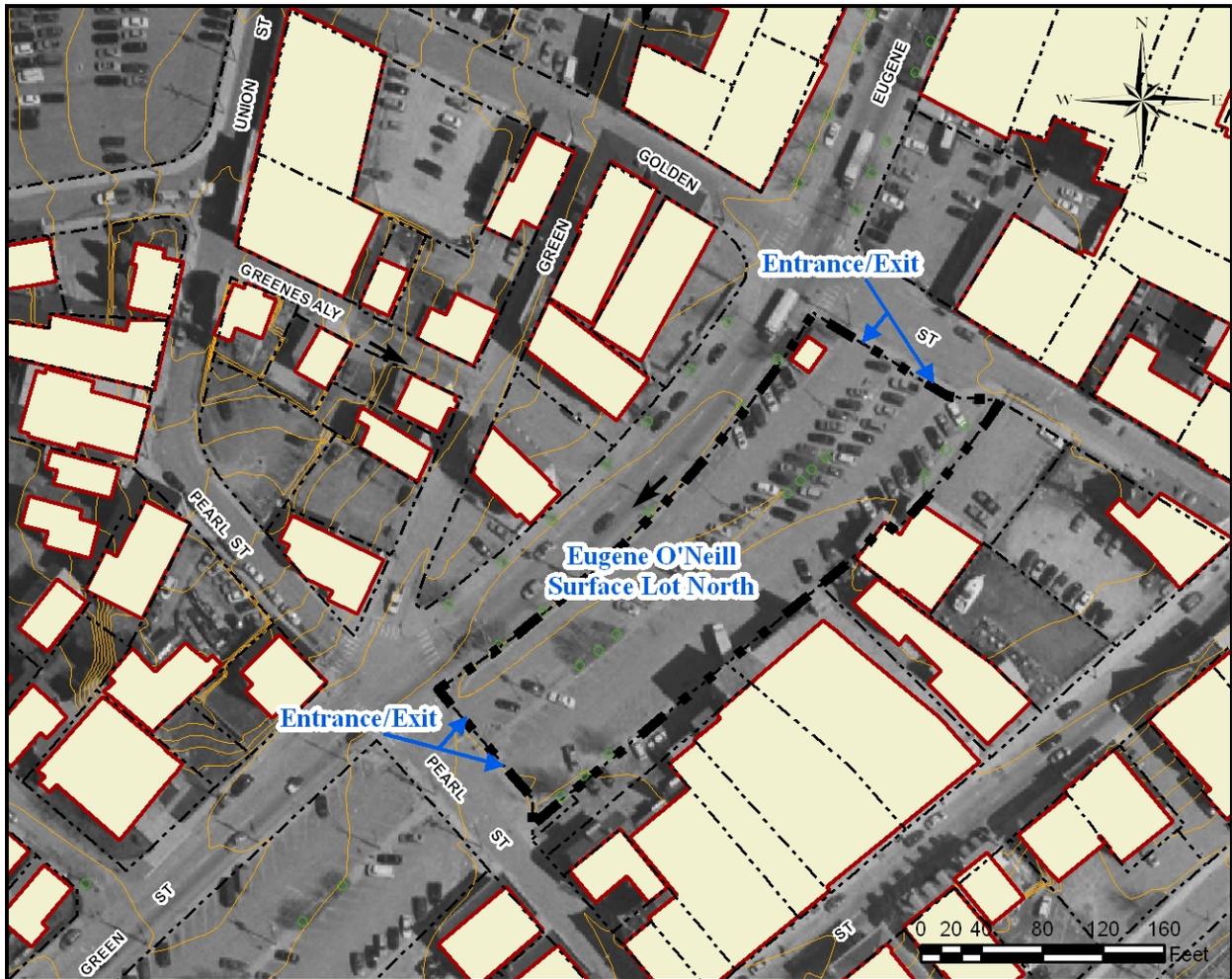


Figure 2-67: Eugene O'Neill Drive Surface Lot (North)



A survey of ADA compliance at the Eugene O'Neill North Parking Lot was conducted during the week of December 22, 2008. The full survey of the lot is attached as Appendix B. Eight handicapped spaces including one van space are required, however only two handicapped spaces are provided and there is no van accessible space. In addition, there is no accessible route provided for the existing handicapped spaces and the handicapped access aisles and handicapped parking signage are not compliant.

Eugene O'Neill Drive Surface Lot (South)

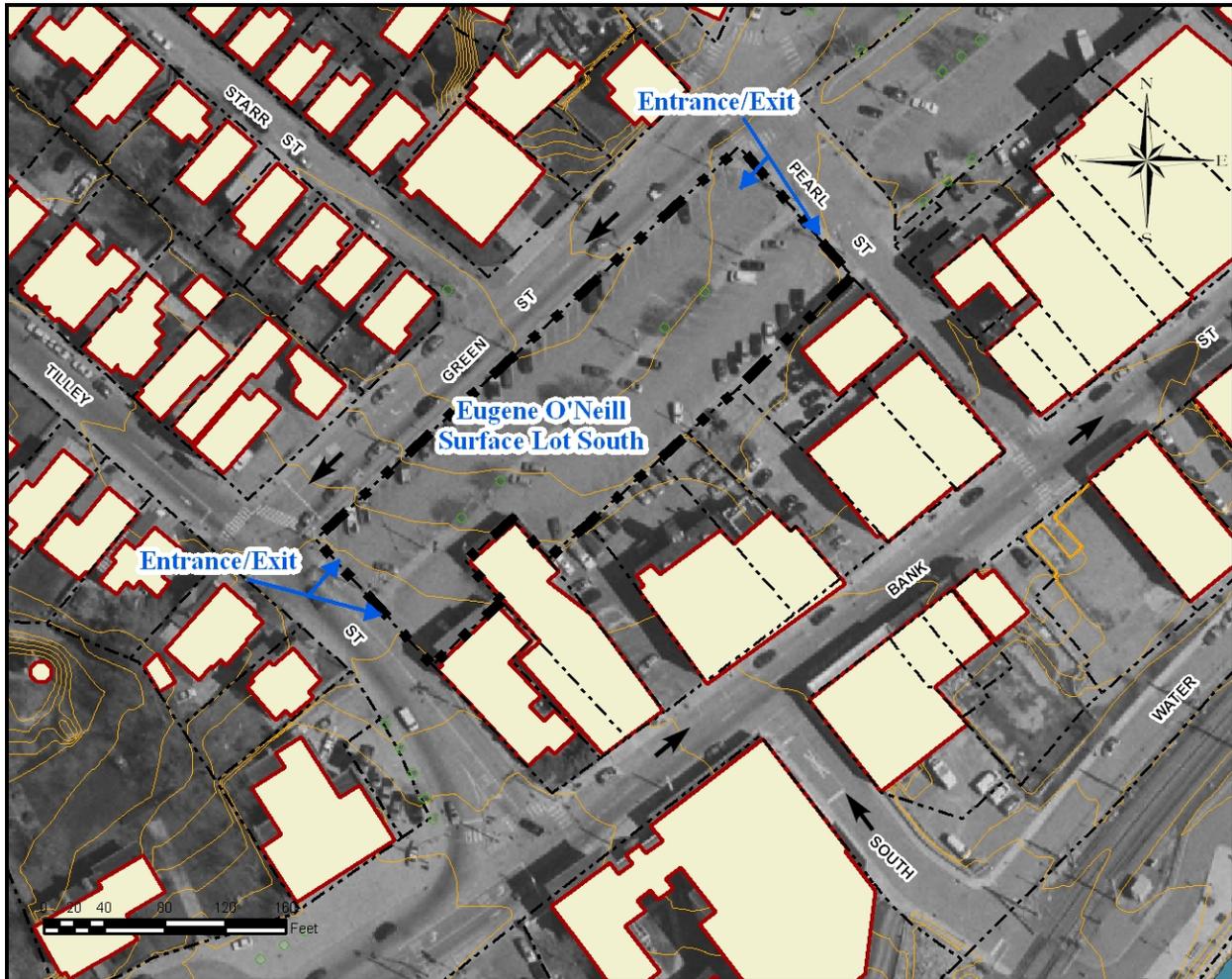
The Eugene O'Neill Drive surface lot (South) is located between Tilley Street and Pearl Street along Green Street in the Central Business District Zone (see Figure 2-68). The 0.97 acre site is paved and contains 130 parking spaces. This lot contains a 4'-6' slope down to Tilley Street at its southerly end and has two egress points to Tilley Street. The lot also slopes 2'-4' down from a 'crown' near the lot mid-point to two egress points at Pearl Street at the northerly end. Vehicular and pedestrian access is from Pearl and Tilley Streets. The lot is owned by the City of New London. Pro-Park, the operator of the Water Street Garage, is also the operator of the unattended surface lots on Eugene O'Neill Drive and sells monthly parking permits for the two surface lots at a price of \$25.00 per month.

The existing lighting at the lot is provided by cobra head fixtures mounted on telephone poles, (as shown in Figure 2-69) and is adequate. The bituminous paving appears to be in fair condition. As can be seen in Figure 2-70, the striping is faded.

There are numerous out-of-date signs and abandoned sign poles located around the South Lot. There are no existing directional or identification signs for the lot. The Downtown New London Wayfinding Signage

Program to be initiated over the next year will provide directional and identification signs for the South Lot, as well as other parking facilities.

Figure 2-68: Eugene O'Neill Surface Lot South



A survey of ADA compliance at the Eugene O'Neill South Parking Lot was conducted during the week of December 22, 2008. The full survey of the lot is attached as Appendix B. Eight handicapped spaces including one van space are required, however only four handicapped spaces are provided, and there is no van accessible space. In addition, there is no accessible route provided for the existing handicapped spaces, and the handicapped access aisles and handicapped parking signage are not compliant (see Figure 2-71).

Figure 2-69: Eugene O'Neill Drive Surface Lot (South)



Figure 2-70: Eugene O'Neill Drive Surface Lot (South) Striping Conditions



Figure 2-71: Eugene O'Neill Drive Surface Lot (South) Pedestrian Access Conditions



User Ratings of Conditions at the Eugene O'Neill Drive Surface Lots

Surveys of the parking facility users conducted on a Thursday and Saturday in August 2008 yielded a total of 22 responses for the north lot and 6 for the south lot. There were few responses from the Eugene O'Neill Drive Surface Lots so caution should be exercised in interpreting results, particularly for the south lot. The results are provided below with that caveat. Figure 2-72 and Figure 2-73 show the survey respondents' ratings of conditions at the Eugene O'Neill Drive Surface Lots. A stacked bar is used to represent the range of responses (as a percent) for each characteristic.

At the north lot, respondents were most dissatisfied with the Security System, Signs and Stairway/Elevator. The most significant issues appears to be security; while this is an open surface lot that may be considered safer than a garage by some people, since no daily parking fees are charged at the site (monthly parking permits are sold by ProPark), it is unattended. It is also not clear why there was dissatisfaction noted for Stairway/Elevator in a surface lot. There was also some dissatisfaction with other characteristics, largely with Ticketing/Cashier and Lighting. Since fees are not collected at the site, Ticketing/Cashier could have been interpreted by survey respondents to mean ticketing of vehicles that are parked overtime and have no permit for long term parking, but this is uncertain. At the south lot, dissatisfaction was noted by the few respondents primarily with Signs, Security System, Stairway/Elevator and Ticketing/Cashier. At both of these surface lots, Ease of Access and Handicap Accessibility were generally rated well.

Figure 2-72: Ratings of Conditions at the Eugene O'Neill North Lot

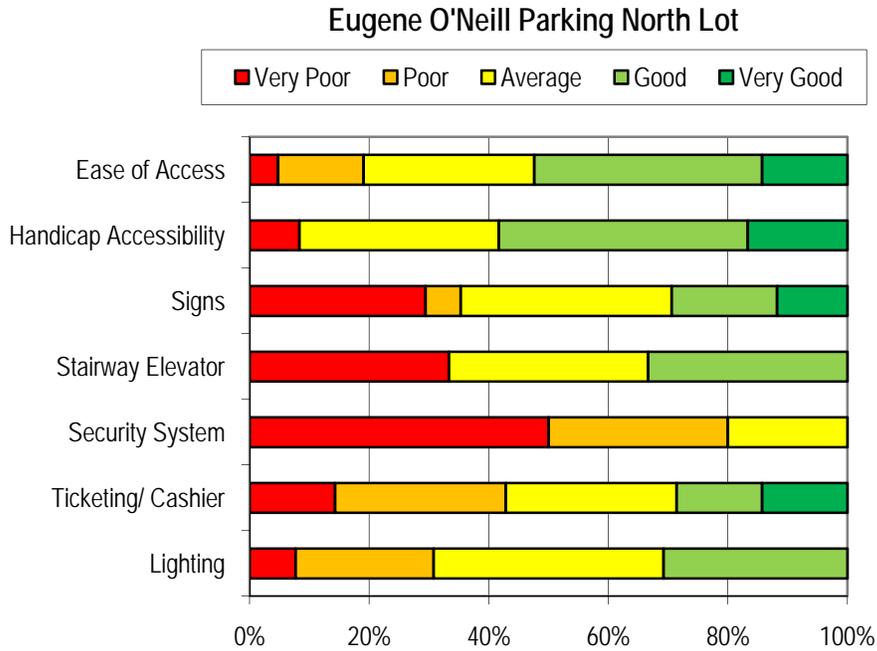
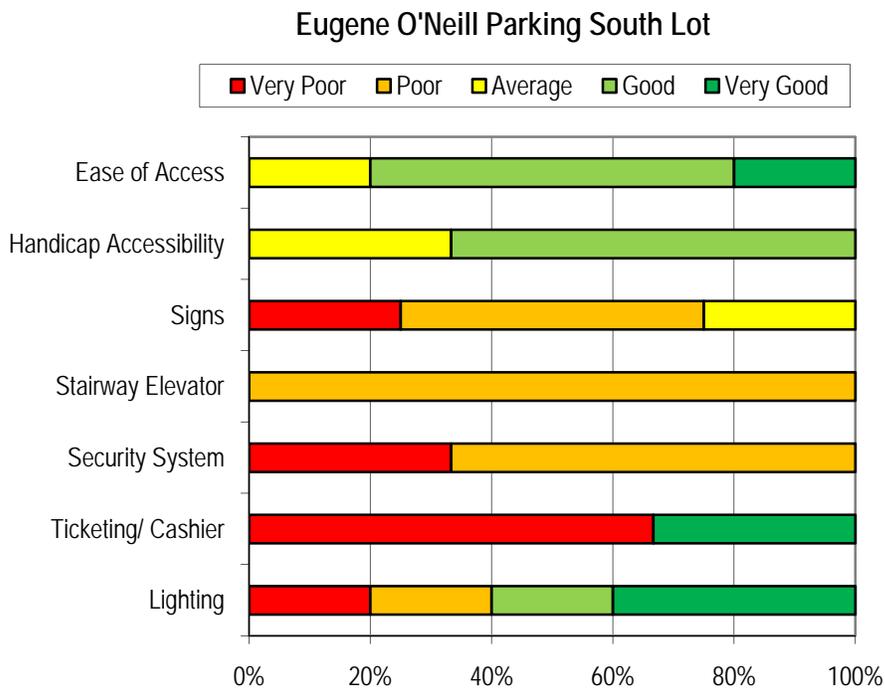


Figure 2-73: Ratings of Conditions at the Eugene O'Neill South Lot



2.4.4. Julian Surface Lot

The Julian Surface Lot (see Figure 2-74 and Figure 2-75) is located at the corner of Water Street and Governor Winthrop Boulevard. The 1.02 acre site is paved and contains 186 parking spaces, and it appears to be in good condition. These spaces serve the Mariner Square office building on weekdays, however, the lot has been opened on summer weekends in recent years for public pay parking. Vehicular access is from Water and Atlantic Streets. Pedestrian access is from Water and Atlantic Streets and Governor Winthrop Boulevard. The site is owned and operated by Ballina Properties LLC.

Observations regarding ADA issues at this lot were made during the week of December 22, 2008. The full survey of the lot is attached as Appendix B. Eight handicapped spaces including one van space are required, however only five handicapped spaces are provided, and there is no van accessible space. There is no accessible route provided for pedestrians in wheelchairs to the existing handicapped spaces. The handicapped access aisles are not compliant nor are the walking surfaces.

Figure 2-74: Julian Surface Lot



Figure 2-75: Julian Surface Lot Sidewalk



2.5 New London Waterfront Park/City Pier

The City of New London Waterfront Park is located east of the railroad tracks extending from the Swing Bridge northward to City Pier, just south of the 0.49 acre City-owned parcel leased to Cross Sound Ferry.

The park is comprised of two sections. The City Pier section of the park (including the public plaza located north of the pier itself) is a 0.44 acre parcel is located south of the Cross Sound Ferry property, north of the Fishers Island Ferry property and east of Union Station. It contains the City Pier which is 264 feet long and 35 feet wide and provides docking facilities to the public (see Figure 2-76). The public is allowed to dock at City Pier for short-term stays (up to four hours) at no charge. The public is allowed to dock overnight at the City Pier but must acquire a permit from the City's Waterfront Coordinator.

Immediately north of the Pier is a brick-paved and lighted public plaza which includes a pavilion for special events (see Figure 2-77). A small wood frame snack building built in 1950 is also located on the public plaza.

Figure 2-76: Waterfront Park and City Pier



Figure 2-77: City Pier Park and Plaza



The remainder of the park is located on a 1.48 acre parcel located south of the Fishers Island Ferry property, north of the Amtrak Swing Bridge and east of the railroad tracks. Waterfront Park opened in 2001 and contains:

- The Children's Discovery Pier is located south of the Fishers Island Ferry property.
- The Amistad Pier is located south of the Children's Pier and is a T-shaped pier, the first portion being 143 feet long and 25 feet wide. The end of the T-shaped pier is 210 feet long and 24 feet wide. It is used for large vessels, i.e. tall ships that can accommodate themselves to a permanent pier.
- Custom House Pier is south of Amistad Pier and is located east of the Custom House which contains public rest rooms, a laundry facility (for use by boaters at the Custom House Pier), and a Police Sub-Station.
- Fisherman's Pier is south of the Custom House and is 287 feet long and 19 feet wide and is part of the 700 foot long walkway extending south towards the Swing Bridge.

All facilities and the pier appear to be in very good condition. Fishing and recreational boat docking are allowed.

A survey of ADA compliance at the City Pier and adjacent park area and the Customs House at Waterfront Park was conducted during the week of December 22, 2008. The full survey of the lot is attached as Appendix B. The City Pier and adjacent park area, as well as the Customs House and Waterfront Park are compliant.

2.6 Utilities

The existing RITC in New London consists of both public and private facilities and is served by the regional public and private utility companies as follows:

- Water and Sewer – City of New London Public Utilities, Water Department
- Electric Power – Connecticut Light and Power (CL&P) (a subsidiary of Northeast Utility Service Company)
- Natural Gas – Yankee Gas Service Company (a subsidiary of Northeast Utility Service Company)
- Communications
 - Telephone/Broadband Communication – Fiber Technologies Networks, LLC and AT&T
 - Digital Cable TV/Phone & High Speed Broadband Internet – Metrocast Communications of Connecticut LLC⁵

Each of these providers offers sufficient capacity to accommodate existing development. All services are provided through existing underground infrastructure. The location of utility infrastructure is shown on a project base map prepared by the study team and supplied under separate cover. Further information on specific utilities is summarized below:

The sanitary sewer service for downtown New London is provided by the City of New London. The sanitary sewer service is maintained and operated by the Veolia Company, (a privately owned Engineering Company) for the City of New London. The main sanitary treatment facility is the Thomas E. Piacenti Regional Water Pollution Control Facility located on the Fort Trumbull peninsula. The treatment facility, originally built in the 1930's, has been updated over the years.⁶

The water service for downtown New London is provided by the City of New London. The water utilities are also maintained and operated by the Veolia Company, for the City of New London. The main water supply is Lake Konomoc, a surface reservoir located in Waterford and Montville. At the time of this report, the City of New London was preparing The Water Supply Plan required by the Connecticut Department of Health⁷ to address future need and demand.

According to the City's Public Utilities representative, the design capacity of the sanitary sewer treatment facility is 10 million gallons per day and the average daily flow is currently 7 million gallons per day. There are peak times when the system's capacity is reached. The age of the water and sewer system downtown varies by location. The existing water system in the vicinity of the intermodal facilities dates back to the 1880s. Various components of the sanitary sewer system have been reconstructed since the 1970s. The Water Street Garage site also accommodates the location of one of the City's major waste water pumping stations (Pump Station #4) which services approximately one-third of the city (the northern third). Pump Station #4 is being relocated inside the Water Street Garage, as part of the Parade Project.

Future users of each utility in the downtown area would have to evaluate the utility service requirements on a project-specific basis.

⁵ Information available from the New London area office located at 61 Myrock Avenue in Waterford, or at <http://www.metrocastcablevision.com>.

⁶ Information on the water and sewer utilities was provided by New London Public Utilities, 860-447-5222.

⁷ Ibid.

2.7 Signage and Wayfinding

2.7.1. Wayfinding for Vehicles

Approaching downtown New London from Route 32 (from the north) and I-95 (from the east) along Eugene O'Neill Drive (heading south), there are signs to the Regional Intermodal Transportation Center. These signs have no logo but are plain directional signs. At the intersection of Eugene O'Neill Drive and Governor Winthrop Boulevard, there are also signs with the red Block Island Ferry logo directing travelers to parking at the Water Street Garage for the ferry and also white parking signs for ferry and train parking. These signs lead to the Atlantic Street entrance to the garage. On Water Street, there are signs directing travelers to parking in the Water Street Garage (Water Street entrance). (See Figure 2-78 and Figure 2-79).

A directional sign at the corner of State Street and Water Street directs vehicles to the Fishers Island ferry eastward down State Street (across the tracks) and to the Orient Point and Block Island ferries northward on Water Street towards Governor Winthrop Boulevard (See Figure 2-80). This may be confusing to pedestrians crossing Water Street from the Water Street Garage in the Parade area since the signage in the Garage directs them toward the southeastern exit from the garage which lead them toward Union Station.

Figure 2-78: Signs to Parking - On East Side of Water Street



Figure 2-79: Signs to Parking- On West side of Water Street



Figure 2-80: Signage in Front of Union Station at Water Street and State Street*



*Note that this picture taken on November 13, 2008 also shows temporary signage indicating that pick-up and drop-off has been shifted to the parking garage due to construction at the Parade site which has reduced the number of lanes on Water Street.

2.7.2. Wayfinding from the Water Street Garage

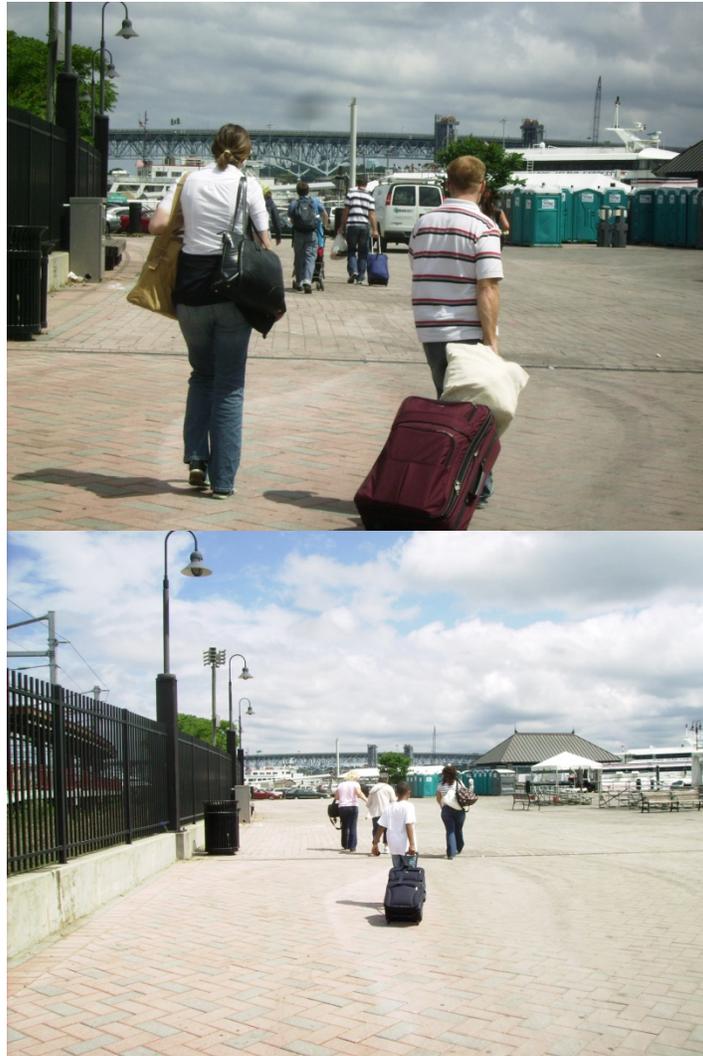
Water Street Garage users (pedestrians) are directed by signs in the Garage toward the southeastern garage exit for "trains and ferries". These red signs (see Figure 2-81) include the Block Island Express logo, the passenger-only ferry whose users are most likely to need parking in New London. Note that the Orient Point auto ferry and Sea Jet passenger ferry users are less likely to park in New London than the Block Island Ferry passengers. The Sea Jet primarily brings Long Island travelers into the region to access the Casino Resorts; these travelers park at Orient Point. Many travelers on the auto ferry drive their cars onto the ferry although some could carpool and park.

Figure 2-81: Signage in the Water Street Garage Directing Travelers to Ferries



As the pedestrians leave the southeastern exit of the Garage, they can easily see the Block Island Ferry terminal across the tracks. However, it is not very clear how to get there. There is a crosswalk at this location which is the logical path to take; it leads to the east sidewalk of Water Street which includes the Greyhound Bus loading area and provides access to the southbound rail platform and Union Station. There is no continuing signage from this point directing the passengers to the Block Island Ferry. The shortest route to the Block Island terminal from this point is to walk south to the State Street railroad crossing and then once across the tracks to walk northward through the City Pier area and the unpaved parking lot areas owned by the City and the Cross Sound Ferry (see Figure 2-82). The pedestrian can walk to the State Street railroad crossing either in front of or behind Union Station. If the pedestrian chose to head south along the southbound train platform at the back of Union Station, and they turn around and look behind them, they might notice signs directing them to walk north (away from the State Street railroad crossing) to access the ferries. If they walk in front of Union Station, there are no additional signs that are visible. If rather than using the crosswalk at the garage exit, they instead proceed south to State Street by walking on the west side of Water Street, they would see the signage directing vehicular traffic from State Street to proceed north up Water Street to access the Block Island and Orient Point ferries and would be inclined to turn back. Thus the current signage is somewhat confusing in first directing people leaving the Garage southward towards Union Station and then having two different types of signs directing people to the north.

Figure 2-82: Pedestrians Traversing City Pier Plaza Going from Union Station to Cross Sound Ferries



Note that while vehicles should proceed north to enter the Cross Sound Ferry terminal, pedestrians who proceed north on the east sidewalk of Water Street will find that the sidewalk ends at the northern end of the SEAT bus stop and a sign prohibits pedestrians beyond this point (See Figure 2-83); at this point they would either need to ignore the sign and proceed on an unpaved narrow area alongside the railroad tracks and fence or cross mid-block (jay walk) to the west sidewalk to arrive at the Governor Winthrop Boulevard intersection.

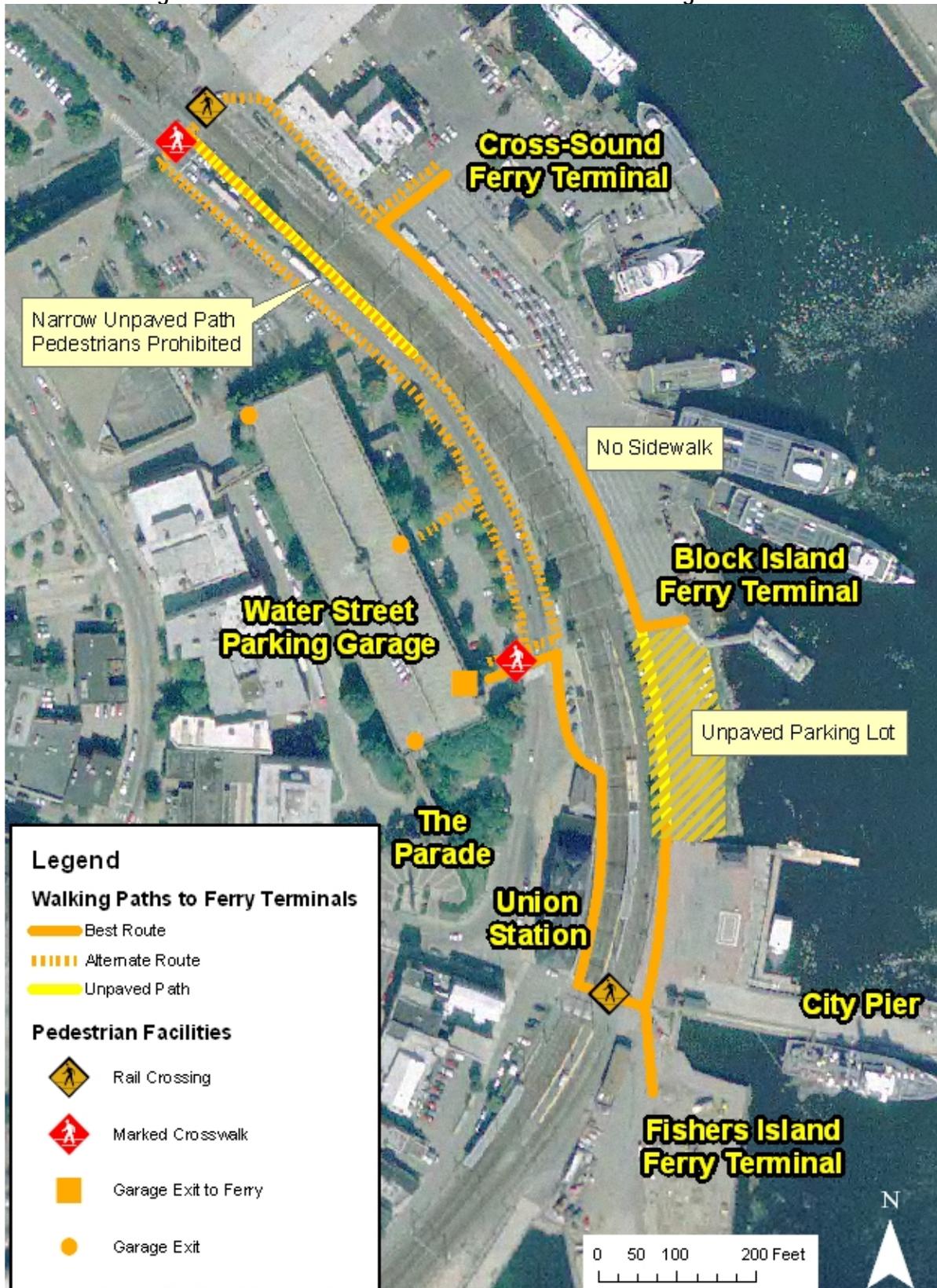
The shortest and safest path to this intersection and entrance to the Cross Sound Ferry would be stay on the west sidewalk along the Water Street Garage, although it should be noted that there is no ramp at the southwest corner of Water Street and Governor Winthrop Boulevard.

Figure 2-84 shows the pedestrian paths described above.

Figure 2-83: Sign Prohibiting Pedestrians on the East Side of Water Street North of SEAT Bus Stop



Figure 2-84: Pedestrian Path from the Water Street Garage to Ferries



2.7.3. Wayfinding from Union Station

There are wayfinding signs on the at-grade southbound platform directing travelers to proceed south to the “station” and directing travelers to proceed north along the platform (behind the station building and the bus terminal building) to ferries, buses and parking (see Figure 2-85 and Figure 2-86). (Note that, as shown in Figure 2-86, there is an unmarked rear door to the Greyhound terminal that directly faces the platform but it is locked and blocked by seating).

Figure 2-85: Wayfinding Signs on the Southbound Platform
Looking south:



Looking north:



Figure 2-86: Rear Door of the Bus Terminal



While travelers who follow these directions can easily then find the crosswalk to the Water Street Garage and either intercity or local buses since both are located at the north end of the platform, it is less clear how to get to the ferries.

As noted earlier, pedestrians who proceed north on the east sidewalk of Water Street will find that the sidewalk ends at the northern end of the SEAT bus stop and a sign is posted saying no pedestrians beyond this point; at this point they would either need to ignore the sign and proceed on an unpaved narrow area alongside the railroad tracks and fence or cross mid-block (jay walk) to the west sidewalk to arrive at the Governor Winthrop Boulevard intersection. It should be noted that there is no ramp at the southwest corner of Water Street and Governor Winthrop Boulevard. There is also signage indicating that Foxwoods SEAT bus users should proceed south to the other end (State Street end) of the platform since the Foxwoods SEAT bus has its official bus stop in front of Union Station near State Street. However, during the construction of the Parade Project, the Foxwoods SEAT bus stop was temporarily located at the SEAT bus stop farther north on Water Street and was more easily accessed from the north end of the platform.

A shorter and easier route to get to the Cross Sound Ferries (particularly the Block Island Ferry which located at the southernmost point on the Cross Sound Ferry property) is to proceed south to the State Street railroad crossing and then once across the tracks, northward across the City Pier plaza and the unpaved parking lots owned by the City and the Cross Sound Ferry. The only logical path to the Fishers Island Ferry is also via the State Street railroad crossing. The Fishers Island Ferry Terminal is very close to Union Station and can be seen easily from the train platforms.

On the northbound platform, it is very easy to see the Cross Sound Ferry property located just across the third (freight track) (see Figure 2-87). The logical path is again to proceed south to the State Street railroad

crossing and then once across the tracks, northward across the City Pier and the unpaved parking lots owned by the City and the Cross Sound Ferry. It is easy to see the Fishers Island Ferry terminal and how to get there. (See Figure 2-88) There is no signage on this platform.

A taxi stand is located immediately in front of Union Station and is marked by curbside sign (see Figure 2-89).

Figure 2-87: Views of the Block Island Ferry Terminal from the Northbound Platform



Figure 2-88: View of the Fishers Island Ferry Terminal from the Northbound Platform



Figure 2-89: Taxi Stand Signage



2.7.4. Wayfinding from the Cross Sound Ferry Terminal

Passengers departing from the Cross Sound Ferry terminal (from Orient Point auto ferries, Sea Jet passenger ferries and Block Island passenger ferries) have no wayfinding signage. Block Island riders are undoubtedly people making return trips and they may need little wayfinding. However, other travelers could require wayfinding signage. The lack of wayfinding signage may have several impacts. It could cause inconvenience and confusion for travelers, as well as reduce the likelihood of visits to nearby areas. The auto traveler departing an auto ferry will naturally follow the automobiles to the exit from the Cross Sound Ferry property at the intersection of Ferry Street and Governor Winthrop Boulevard. The northwest corner of this intersection has been selected by the Main Street program and the City of New London for one of several "Gateway" signs to encourage visits to the Historic Waterfront district.

The pedestrian disembarking from a ferry at the Cross Sound Ferry property has no permanent or highly visible wayfinding signage to the train, intercity buses, local buses, parking garages or Bank Street and State Street retail districts. There is some temporary style signage as shown in Figure 2-90.

Figure 2-90: Signage Directing Cross Sound Ferry Pedestrians to Water Street Garage



Union Station and the adjacent Greyhound Bus Terminal, the SEAT bus stop, the Water Street Garage and the Julian surface parking lot are all viewable across the railroad tracks from the Cross Sound Ferry property. However, it is not very clear how to access these locations across the fenced railroad right-of-way from the ferry property – whether to turn right or left to find the nearest railroad crossing. Most travelers would be inclined to turn left toward the visible Union Station area although Julian lot parkers and some Water Street Garage parkers may be inclined to turn right to the Governor Winthrop crossing (see Figure 2-91).

Figure 2-91: Looking from Cross Sound Ferry Property toward the Governor Winthrop Boulevard



Note that there is a sidewalk on the right hand side of Ferry Street, as shown below in Figure 2-92.

Figure 2-92: Looking from Cross Sound Ferry toward the Governor Winthrop Boulevard Intersection



Those who walk to Union Station have no clear pedestrian path through the Cross Sound Ferry property which is largely marked for auto queuing. While there is no pedestrian sidewalk, a designated dog walking area is provided along the railroad tracks. To get to City Pier and Union Station and then to the Water Street Garage, pedestrians must walk through a parking area that is unpaved. As shown in Figure 2-91 and Figure 2-92 above, temporary signage is placed on the unpaved area to indicate the recommended pedestrian route.

The bus station area is not highly visible unless buses are in the area. The SEAT bus stop has a simple unmarked shelter and a few outdoor benches and the signage along the curb designating the bus stop parking regulations is too small to read from the Cross Sound Ferry site (see Figure 2-93).

Figure 2-93: View of SEAT Bus Stop from Cross Sound Ferry Property



While there is a large “Welcome to New London” sign on the Water Street Garage (in letters along the face of the garage near the roofline), there is nothing that looks inviting to the visitor in terms of restaurants, shopping, etc. that can be seen from this vantage point (see Figure 2-94). Cross Sound Ferry has its own deli on the premises which is the closest location for food, as well as a ticket office with some tourist information and restrooms. In addition, the railroad right-of-way area is unattractive and does not appear well maintained.

Figure 2-94: View of Water Street Garage that Faces Cross Sound Ferry



2.7.5. Wayfinding from the Fishers Island Ferry

While there is no wayfinding signage, travelers arriving on the Fishers Island Ferry can easily see Union Station and the Bank Street and State Street shopping areas. Travelers departing the terminal and seeking other travel modes would naturally head to Union Station. People trying to access other ferries can easily see the other ferries located along the waterfront across the City Pier plaza and would naturally follow this path. Travelers heading to Union Station would be able to easily locate the parking at Water Street Garage as well as the Greyhound terminal and the SEAT bus. Unlike the Cross Sound Ferry, the travelers on the Fishers Island Ferry are either island residents who are frequent users or New London area residents making a return trip. These travelers have less need for wayfinding signage.

2.7.6. Wayfinding Signage from the Greyhound Bus Terminal

From Greyhound Bus Terminal, the location of Union Station rail services, the SEAT bus stop and the Water Street Parking Garage is very clear. The location of the ferry facilities is somewhat less clear to the disembarking Greyhound passenger. Since the Greyhound Terminal is part of the Union Station complex, the wayfinding from Union Station discussed above applies.

2.7.7. Wayfinding Signage from the SEAT Bus Stop

There is no wayfinding signage at the SEAT bus stop. However, from the SEAT bus stop, the traveler can easily see Union Station, the Greyhound Bus Terminal, and the Cross Sound Ferry site across the tracks. Union Station obscures the view of the Fishers Island Ferry terminal (see Figure 2-95). It may not be clear to the traveler headed to the Cross Sound Ferry terminal what the shortest path would be. If they head north toward the Governor Winthrop Boulevard intersection, they face the end of the sidewalk and the sign indicating no pedestrians beyond this point (see Figure 2-96) If they head south to the train station, they may encounter signs suggesting they should head north to the ferries. Currently there are few passenger transfers between the ferries and SEAT.

Figure 2-95: View of Union Station and Greyhound Bus Terminal from the SEAT Bus Stop



Figure 2-96: View Toward the Cross Sound Ferry Site from the SEAT Bus Stop



2.8 Summary of Deficiencies

Most of the physical facilities are in good or very good condition, although some deficiencies were identified through observations of the consultant team and information from user surveys and interviews. The most notable deficiencies were the pedestrian connections, amenities and comfort at the rail and bus facilities, conditions of elevators and stairways as well as concrete spalling at the two garages, inadequate security systems at parking facilities, and wayfinding signage between transportation modes.

Current pedestrian facilities need improvements to ensure safe and convenient access between travel modes and to and from the parking facilities. The most notable deficiencies are between Cross Sound Ferry and the other facilities. Improvements are also needed to and from the Water Street Garage and Julian surface lot and the various transportation services; the Parade Project now under construction will improve pedestrian safety in the vicinity of Union Station through enhanced crosswalks, sightlines and traffic calming.

Union Station has had renovations to the lobby and roof, and the station platforms are in good condition. The Greyhound terminal, leased from the owners of Union Station, is in sound condition but is very basic and has not undergone renovations to enhance its appearance. The SEAT bus stop is minimal as a passenger facility, consisting of a simple shelter and several outdoor benches. It would benefit from improvements to enhance passenger comfort or relocation to Union Station which could provide indoor waiting areas and other amenities. Bus and rail users surveyed indicated particular concerns about

amenities (e.g., food services, newsstand and clean restroom facilities) and comfort at the rail and bus facilities.

Fishers Island Ferry has a new (3-year old) terminal facility that is in very good condition. The Cross Sound Ferry facilities are in good condition. Some of the parking areas in use at Cross Sound Ferry are unpaved. Users of the Cross Sound ferry facilities indicated some concerns about amenities and parking.

The Water Street Garage and Governor Winthrop Garage show evidence of deferred maintenance. In particular, the concrete is spalling. In addition, the elevators at the Water Street Garage need repairs. (A new tower is being constructed at the south end of the garage with a new elevator as part of the Parade Project.) Surveys of users of the parking facilities indicated the most dissatisfaction was with the stairways and elevators at the garages, as well as handicapped access. Another concern expressed in the surveys at the parking facilities was about security features. There is a lack of security systems in the garages and parking lots, including closed-circuit TV and blue light call boxes. The Water Street Garage will have security cameras installed as part of upcoming renovations.

Overall, the transportation facilities are not providing adequate access for the handicapped. Handicapped access in the Water Street Garage was considered to be a problem in the user survey. This may largely be due to the fact that the elevators were out of order. This will be corrected with the installation of a new elevator at the south end as part of the Parade Project. Other deficiencies with ADA compliance include:

- **Union Station:** height of the mirrors in both restrooms, the lack of handicapped employee parking, the lack of an accessible route to and from existing employee parking to the building and the lack of appropriate signage for the parking.
- **Greyhound Bus Terminal:** height of the customer service counter, height of the towel dispensers in both restrooms and the employee access route to the workroom.
- **Cross Sound Ferry:** lack of handicapped accessible routes to and from the building entrance, lack of designated handicapped parking spaces, height of the customer service counter in the ticket building, height of the mirrors in both restrooms, lack of handrails on the handicapped ramp to the ticket building.
- **Fishers Island Ferry Terminal:** lack of a passenger loading zone, a change in sidewalk elevation at the entrance, height of the customer service counter, steep entrance ramp grade and lack of handrails.
- **Water Street Garage:** insufficient number of compliant handicapped parking spaces (and appropriate signage), non-compliant access aisles curb ramps and handrails in the stairwells, lack of a curb ramp to the employee area workroom.
- **Governor Winthrop Garage:** insufficient number of compliant handicapped parking spaces, non-compliant signage, handrails in the stairwells, access aisles and curb ramps, inoperable elevators.
- **Eugene O'Neill Parking Lots (both):** insufficient number of handicapped spaces, lack of accessible route to existing handicapped spaces, non-compliant access aisles and signage.
- **Julian Parking Lot:** Insufficient handicapped parking spaces, lack of accessible route to existing handicapped spaces, non-compliant access aisles and walking surface.
- **Intermodal Connections:** There are a number of missing curbcuts and inaccessible pathways. Customer information (visual and audio) and wayfinding signage need improvement to be ADA compliant.

Additional improvements to the remaining elements are warranted. Lighting and wayfinding signage are lacking. Although many of the survey respondents did not identify that lighting was poor or deficient, lower level pedestrian fixtures will both improve aesthetics and also provide a stronger sense of security. While survey respondents generally identified ease of access as being good; there was less satisfaction with signage. In general, wayfinding signage throughout the city street network is lacking; the existing signage doesn't provide clear and concise messages nor are the signs strategically placed. Better than 30% of the respondents indicated that signage was below average at the Cross Sound Ferry Lot location.

Finally, while there is a large "Welcome to New London" sign on the Water Street Garage (in letters along the face of the garage near the roofline), there is nothing that looks inviting to the visitor in terms of restaurants, shopping, etc. that can be seen by visitors arriving at the RITC particularly for those arriving at the Cross Sound Ferry Terminal, Greyhound Bus Terminal or SEAT bus stop. The railroad right-of-way area is unattractive and does not appear to be well maintained. The Parade Project will improve the area to the south of the Water Street Garage but there is a need to create a more pedestrian- and tourist-friendly area around the RITC.



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3. Transportation Modes at the Regional Intermodal Transportation Center

The New London Regional Intermodal Transportation Center (RITC) is a collection of several transportation terminals and facilities. At the center of the RITC is the historic Union Station. Passenger and freight rail services stop at and/or pass through the station area. Intercity bus services also use the RITC and ferry operators provide service to points in New York State and Rhode Island. Transportation to other parts of the southeastern Connecticut region is provided by the SEAT public transit system and by private bus operators serving the two casino resorts. Local travel within New London is provided by three taxi companies. There are two parking garages and several surface lots in the area serving patrons of the RITC and the local street network connects travelers to I-95 and the rest of the interstate highway network.

Each of these services is discussed below.¹ For each service the discussion includes a description of current operations and services, the utilization of current services, current operational needs and future operational needs. This chapter addresses transportation and terminal operations. Chapter 2 addressed the current condition of the facilities and identifies deficiencies, including deficiencies in accessibility.

3.1 Rail Services

3.1.1. Operations and Services

Passenger Operations

New London is served by Amtrak's Northeast Corridor intercity rail passenger service stopping immediately behind Union Station. Service is provided by both Northeast Regional and Acela Express trains. Both services are operated with electric locomotives. Trains on both services originate at Boston and serve New London en route to New Haven, New York and Washington DC. Some Northeast Regional trains continue to Richmond and Newport News, VA. Shore Line East (SLE), one of Connecticut's two commuter rail services, operates primarily between Old Saybrook and New Haven, with a few trains extending beyond New Haven to Stamford. ConnDOT contracts with Amtrak to operate this service. SLE service is provided using diesel locomotives. One SLE round trip on weekday evenings extends beyond Old Saybrook to and from New London. In addition, three weekday Amtrak intercity trains in each direction honor SLE multi-ride tickets for commuter service between New London and New Haven.

Figure 3-1: Union Station Rail Platforms



In New London, the passenger rail platforms are located adjacent to the Union Station building (Figure 3-1). The platforms extend on both sides of the at-grade crossing of State Street so trains block State Street when they are stopped at the station. This blocks vehicular and pedestrian traffic to City Pier and the Fishers Island Ferry. The at-grade crossing of Governor Winthrop Boulevard also briefly stops vehicular and pedestrian traffic to and from Cross Sound Ferry when passenger trains pass through, although this intersection is clear when trains are stopped at the station.

¹ Because cruise ships dock at the State Pier, which is not part of the RITC, cruise ship operations are not included in this document, except to the extent that shuttle buses to the cruise ships use the RITC.

Passenger rail ticketing and other services are performed inside the main Union Station building (Figure 3-2). The ground level of the station building, open each day from 5:30 AM to 11:20 PM, provides basic facilities that include an Amtrak office, ticket sales counter, a large waiting area, restrooms and an ATM. The station is generally staffed with two ticket agents although this could change with an expected increase in electronic ticketing. Shore Line East shares these facilities. The station is described in greater detail in Chapter 2.

Figure 3-2: Union Station Ticket Counter



Amtrak passengers can purchase tickets online, via PDA, by phone, at the station, or through a travel agent. At Union Station, there are automated kiosks for purchasing tickets and Amtrak agents are also available during all hours the station is open; however, there is no checked baggage service in New London. Shore Line East tickets are sold at the Amtrak ticket counter. Amtrak tickets purchased in advance can be mailed so that passengers can report directly to the train without the need to enter the station building. Online ticket purchases can also be picked up at kiosks in the station or at the ticket counter. Passengers with tickets can access the rail platforms from the ferries, bus terminals or parking facilities without entering the station building.

Freight Rail Operations

Freight rail service in this section of the Northeast Corridor is operated by the Providence and Worcester Railroad (P&W). P&W is the only freight operator with trackage rights on this section of the corridor. Currently P&W operates one train daily in each direction through New London. The trains do not stop, but because the trains range in length from between ¼ mile to one mile, they can block the State Street and Governor Winthrop Boulevard grade crossings for up to five minutes.

The New England Central Railroad (NECR) owns tracks that parallel the west side of the Thames River. A single track enters the Amtrak right-of-way just north of Governor Winthrop Boulevard and parallels the electrified passenger rail tracks through the station area before merging onto the Main Line just south of Union Station. North of the station, the NECR track leaves the Amtrak-owned right-of-way and extends north to Norwich and beyond. This connection between P&W and NECR is not currently in use.

P&W trains did connect with the NECR in New London prior to June of 2008, but that connection has since been moved to Willimantic. When the New London connection was active, P&W trains would switch onto the NECR track south of Union Station. The crossover has a 10 mph restriction so a one mile train would block both nearby grade crossings for up to 12 minutes as the train moved through the station area along the NECR freight track. P&W trains from the east would have to pass through downtown New London and across the Shaws Cove Bridge before reversing direction to switch to the NECR track. Thus, they would block the grade crossings for several minutes traveling westbound, the gates would then open while the train waited approximately 10 minutes for the signal to reverse direction, and then the gates would close again for as long as 12 minutes while the train switched to the NECR track and proceeded north. Note that this connection is no longer being operated but P&W has indicated that they could resume this operation at any time.

Thus, while Amtrak trains pass through the grade crossings in a short amount of time, the time during which the crossing remains blocked by freight trains can be significant enough to adversely impact normal vehicular and pedestrian traffic to and from the two ferry terminals, as well as rail passengers walking between the northbound platform and the station.

Service Levels

AMTRAK trains serve New London year round. The Amtrak schedule (current at the time of this analysis) is shown in Table 3-1. All nine daily Northeast Regional trains serving Boston stop at New London in both directions. The earliest train is in the northbound direction at 5:52 AM, and the last train is in the southbound direction at 11:25 PM. Most Acela Express trains pass through the New London station without stopping but on weekdays two northbound trains and one southbound train stop at the station. The southbound Acela train is scheduled to stop in New London at 6:30 AM, while the northbound trains are at 8:37 AM and 9:08 PM.

While Shore Line East currently operates seven days a week as far as Old Saybrook, at the time of this study, the service to New London operated only on weekdays. SLE service to New London is illustrated in Table 3-2. (Note that, although the Northeast Corridor runs largely north-south, it runs east-west in the state of Connecticut. Thus, while Amtrak lists trains as northbound and southbound, SLE lists them as eastbound and westbound. Amtrak's northbound trains are operating eastbound through Connecticut in the same direction as SLE's eastbound trains.) There are four trains offering SLE commuter service operated in each direction on weekdays, three of which are Amtrak intercity trains open to passengers with the SLE multi-ride tickets. The service is designed for commuting westbound in the morning and returning eastbound in the evening; while one can return from New London in the evening, there is no morning service to New London.

In the westbound direction there are three morning Amtrak/SLE trains and one evening SLE train while in the eastbound direction all four trips operate in the evening. While the SLE train serves intermediate stops en route from New Haven, the Amtrak trains serve only New London, Old Saybrook, New Haven and Stamford.

P&W indicated that they operate one freight train per day in each direction through New London.

3.1.1. Utilization of Services

Ridership

Amtrak annual ridership figures for New London for FY1999 through FY2008 are presented below in Figure 3-3. Ridership, which includes both boardings and alightings, has been consistently increasing in New London; however the annual increase has varied from as little as 1% to as much as 18% in FY2004. Annual growth averaged just under 6% during this nine year time period, yielding a total increase of 61%. New London was the third highest ridership Amtrak station in Connecticut in 2007 (the last year for which comparative data was available) with 161,658 boardings and alightings, following New Haven (640,281) and Stamford (339,932).

Daily ridership data for New London was obtained for FY2008. This was used to calculate monthly ridership shown in Figure 3-4. The figure shows that July and August were clearly the highest ridership

Table 3-1: Amtrak Service to/from New London

Weekday		Weekend	
Southbound	Northbound	Southbound	Northbound
6:30 AM (Acela)	5:52 AM	8:16 AM	5:52 AM
7:51 AM	8:37 AM (Acela)	10:20 AM	9:23 AM
9:54 AM	9:20 AM	11:14 AM	11:23 AM
11:16 AM	10:55 AM	1:17 PM	12:31 PM
12:46 PM	1:32 PM	3:19 PM	3:26 PM
3:17 PM	2:56 PM	4:50 PM	4:26 PM (Sat only)
4:53 PM	4:27 PM	6:17 PM	5:28 PM
7:15 PM	6:22 PM	8:18 PM	7:23 PM
8:19 PM	8:25 PM	11:25 PM	9:26 PM
11:25 PM	9:08 PM (Acela)		10:20 PM (Sun only)
	10:20 PM		
10 Trips	11 Trips	9 Trips	9 Trips

Note: Unless otherwise noted, all trains are Northeast Regional

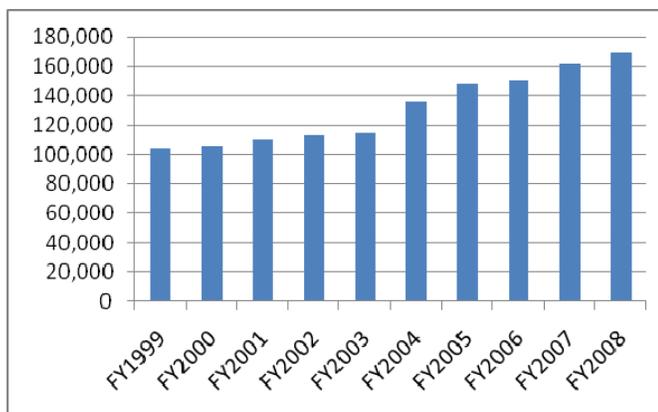
Table 3-2: Shore Line East Service to/from New London

Weekdays	
Westbound Departure	Eastbound Arrival
6:30 AM (AE)	6:22 PM (NR)
7:51 AM (NR)	7:43 PM (SLE)
11:16 AM (NR)	8:25 PM (NR)
7:55 PM (SLE)	10:20 PM (NR)
4 Trips	4 Trips

Note: Service operated through AE (Acela Express); NR (Northeast Regional) and SLE (Shore Line East)

Figure 3-3: Amtrak Annual Ridership at New London

Year	Boardings + Alightings
FY1999	104,735
FY2000	105,530
FY2001	109,729
FY2002	113,085
FY2003	114,756
FY2004	135,749
FY2005	147,842
FY2006	150,455
FY2007	161,658
FY2008	169,112



Source: Amtrak Fact Sheet for State of Connecticut, Fiscal Year 200. FY2008 data provided directly by Amtrak

Figure 3-4: Amtrak FY2008 Monthly Ridership at New London

Month	FY 08 Boardings + Alightings
October, 2007	15,071
November, 2007	14,669
December, 2007	12,988
January, 2008	10,786
February, 2008	12,073
March, 2008	13,195
April, 2008	13,121
May, 2008	14,102
June, 2008	12,657
July, 2008	18,539
August, 2008	18,518
September, 2008	13,393
Total	169,112

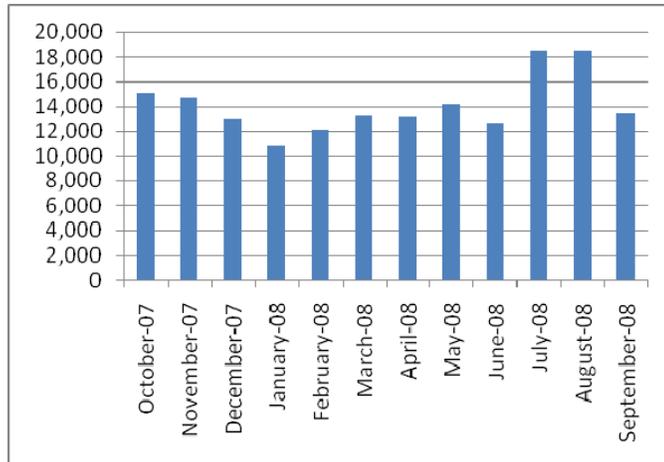
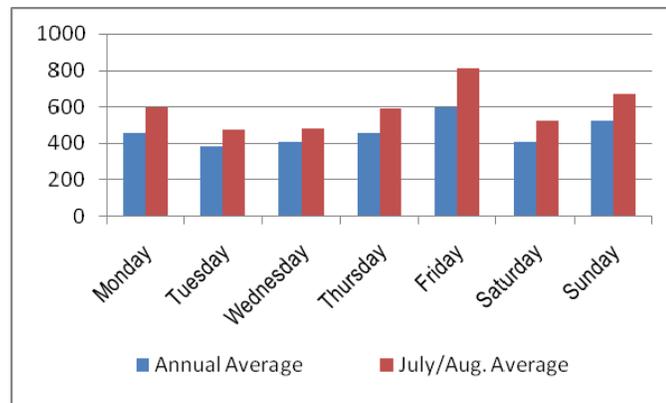


Figure 3-5: Amtrak Average Daily Ridership at New London

Day of Week	FY2008 Boardings + Alightings	
	Annual Average	July/Aug. Average
Monday	459	598
Tuesday	387	477
Wednesday	408	479
Thursday	457	590
Friday	595	808
Saturday	406	522
Sunday	524	670



months² with over 18,500 riders each month. Other months ranged from a high of just over 15,000 in October 2007 to a low of about 10,800 in January 2008. Monthly ridership averaged just over 14,000. Thus, summer ridership was 32% over the monthly average while January ridership was just 77% of the average.

The daily ridership figures generally showed a consistent pattern of variability by day of week as shown in Figure 3-5. Friday exhibited the highest average ridership (595 passengers) for the year, followed by Sunday (524). The lowest ridership days were typically Tuesday, Saturday and Wednesday. Despite the general trend, every day of the week, except Saturday, had days where ridership exceeded 800 passengers. These were generally associated with holiday travel around July 4th, Labor Day, Columbus Day and Thanksgiving, and with summer Fridays. In July and August ridership follows a similar pattern, but with volumes 17%-35% higher than the annual average.

² This coincided with the 2008 spike in gasoline prices.

Ridership data for the entire Shore Line East was provided by the Connecticut Department of Transportation (ConnDOT). The service has been in place since 1990. Initial ridership stabilized in the late 1990's but has been growing since 2000. Ridership growth has been steady in recent years. From 2003 to 2007, Shore Line East ridership grew at an average annual rate of 5.8% from 385,500 riders to 483,600. Ridership in the first eleven months of 2008 (when gasoline prices spiked) was up 75,000 riders, or 17%, but 24,000 of these riders are on the new weekend service that began in July leaving a weekday increase of 11.8%. Ridership at New London station on the one daily SLE train averaged two boardings and 12 alightings daily in November 2008. Ridership on the Amtrak trains providing SLE service was not provided. ConnDOT estimates this figure at 20 boardings per day, indicating that the daily New London SLE boardings total is about 22.

Ridership Characteristics and Travel Patterns

The passenger survey carried out for this study provided some insight into the ridership characteristics and opinions of passengers using various modes, including Amtrak. The survey was administered to Amtrak passengers at Union Station waiting rooms and boarding platforms on Saturday, August 2, 2008 and Thursday, August 7, 2008. A total of 107 responses were collected from passengers waiting for Amtrak service, 66 on Thursday and 41 on Saturday. The responses indicated that:

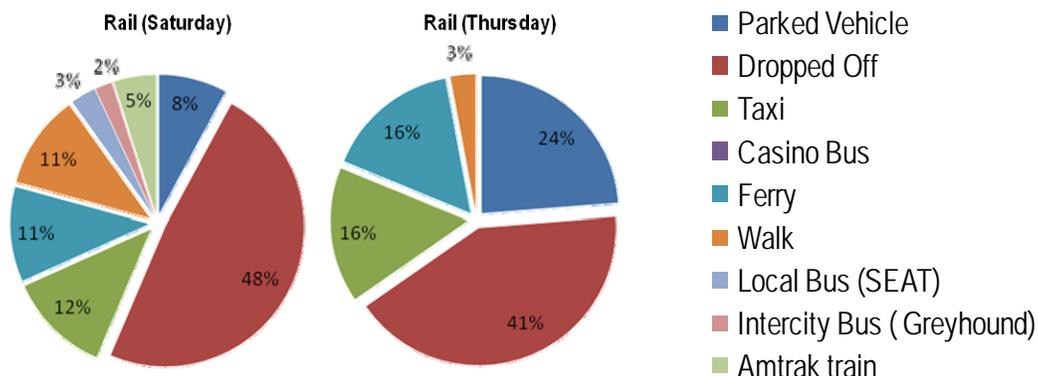
- Most of the Amtrak travel is for social/recreational purposes. Work related trips constituted 25% of the surveys done on Thursday and only 15% on Saturday. Fewer than 5% were making school related trips.
- Amtrak rail service in New London primarily serves riders who travel occasionally. Most of the rail passengers (77% on Thursday and 87% on Saturday) were making their first trip or using the service less than once a month. The rest use it about once or twice a month. There were no respondents traveling more frequently.
- Approximately equal numbers of passengers were traveling to the section of the corridor between New London and Boston and to the section of the corridor between New London and New York. However, 34% of weekday travelers and 13% of the weekend travelers were traveling past New York City to the mid-Atlantic region.
- Information on connections from other modes to Amtrak is presented in Figure 3-6. The largest group of passengers (over 40% on both days) was those who were dropped off at the station. In the Thursday survey, the next largest group (24%) parked their personal vehicles, although only 8% did so on Saturday. A smaller share arrived by ferry or taxi. On Saturday a few people walked or took the bus.
- All but one of the passengers who parked used the Water Street Garage across the street from Union Station.
- While in New London, the majority of rail passengers surveyed indicated that did not visit any local businesses; however 37% did so, mostly visiting restaurants.

Another survey worth noting is the 2008 Shoreline East Customer Satisfaction Survey³. That survey (conducted at all SLE stations except New London) identified that the SLE station at Old Saybrook, approximately 20 miles west of New London and served by all SLE trains, attracts travelers from a wide area. The survey indicated that 26% of ridership at Old Saybrook comes from Waterford, New London and other towns farther north and east. This implies that about 52 of the approximately 202 daily riders

³ Warner Transportation Consulting, prepared for ConnDOT, *2008 Shore Line East Customer Satisfaction Survey Final Report*, August 2008

boarding at Old Saybrook⁴ might use a station in New London if SLE were extended (although some may choose to continue to park for free at Old Saybrook rather than pay for parking in New London). The

Figure 3-6: How Amtrak Passengers Arrived at the Station



survey also indicated that 7% of the 80 Westbrook riders (6 passengers) come from the New London area so they might also use a New London SLE station, yielding an estimate of up to 58 daily boardings (and 58 daily alightings) that might be diverted to a New London SLE stop.

While the private automobile remains the most common access mode to the railroad station, operators of other modes, especially the ferry, recognize the importance of the connection to rail. Cross Sound Ferry noted that many students from Long Island use rail services at New London to connect to colleges in Boston. They typically find a few transfers from each Amtrak train and will wait for those passengers if a train is arriving when a ferry is scheduled to leave. However, the rail and ferry schedules are not coordinated. Several years ago there was a joint ticketing arrangement between Cross Sound Ferry and Amtrak that is not presently active. Fishers Island Ferry also mentioned that transfers to and from the train, primarily to/from New York City, are common occurrences during summer weekends and that being adjacent to the railroad station is important to the Fishers Island Ferry.

3.1.2. Current Operational Needs

Rider Opinions

When asked to rate specific characteristics of their experience at the station, Amtrak users' average responses ranged from fair to good. However, 33% of the respondents rated one characteristic -- amenities at the station (e.g. food services, restrooms and newsstands) -- as poor or very poor. No other characteristic was rated poor or very poor by more than 10% of rail users. Amtrak passengers surveyed who used the parking lot were satisfied with the parking facility. In comparison, the people who were dropped off at the station held a poorer opinion of the parking facilities although fewer than 10% gave them a poor or very poor rating.

Current Operational Needs

Both passenger rail operations appear to be functioning well for current service levels in New London. However, based on the rider opinions expressed in response to the ratings questions and in free format comments, better amenities are needed at the station including things such as more food service options, better restrooms and better signage and information.

⁴ September 2008 ridership reported by ConnDOT

There is a strong desire for improved rail commuter services in the region, and the Southeastern Connecticut Council of Governments (SCCOG) has made this one of its highest priorities in its Regional Transportation Plan prepared in 2007. Shore Line East expansion to New London is planned and is being actively pursued by the Shore Line East Coalition, a subcommittee of New London's City Center District⁵. Several respondents to the Shore Line East Customer Satisfaction Survey expressed the need for adding regular service at the New London stop, although none of those surveys were conducted at the New London station.

3.1.3. Future Operational Needs

Planned Shore Line East Expansion

The Connecticut DOT's 2007 report on Expanding Rail Service on Shore Line East⁶ states that in a planned Phase 2 (planned for the 2009-2010 timeframe and subsequently delayed until 2010⁷), more service will be brought to New London by operating all twelve weekday trains and all nine weekend day trains to/from New London. This is expected to require \$4 million in annual operating costs in addition to a significant capital investment in rolling stock and facilities. Note that no capital improvements to New London's Union Station and no new leasing costs were identified as needed for the SLE expansion in that report. An estimated \$13 million is needed for rolling stock, plus an \$800,000 expansion in yard facilities. The report projects that a 500 car parking facility would be needed in New London at a cost of at least \$6 million. The report projects a \$260,000 increase in revenue from increased ridership, which roughly translates into about 35,000 riders (or 17,500 round trips) annually⁸, or about 62 additional boardings per weekday and 13 boardings per weekend/holiday day. The 62 weekday boardings would be new riders in addition to the estimated 58 current riders from the New London area who now park in Old Saybrook and use Shore Line East but who would be expected to use the station in New London instead. Thus, SLE ridership at Union Station is expected to grow six-fold. While a large percentage of these 120 New London riders boarding in New London would require parking, this is far less than the 500 spaces recommended in the ConnDOT report. After implementation, ConnDOT projects an annual growth in SLE ridership of 4%.

The report also points out several constraints to increasing this service which include negotiating and amending current agreements with Amtrak as they own this part of the Northeast Corridor, as well as increased traffic over the three movable bridges which will require further agreements with Amtrak, the Department of Environmental Protection, U.S. Coast Guard and other agencies. Other constraints identified in the report include availability of personnel, funding to cover additional operating and maintenance costs, and equipment and capital railroad infrastructure requirements.

Phase 3 of the Shoreline East expansion plans include the introduction of bidirectional commuter service between New London and New Haven. SLE would add four weekday eastbound trains making all stops in the morning and six weekday westbound trains making all stops in the evening. Substantial additional capital costs to upgrade intermediate stations for bidirectional operations have been identified for this alternative. No implementation date has been set by ConnDOT.

⁵ The website www.onemorestop.net states : The mission of the Shore Line East Coalition is to extend the existing New Haven to Old Saybrook Shore Line East commuter service one more stop to New London and bring frequent, reliable, and affordable commuter rail service to the commuters, tourists, and residents of southeastern Connecticut.

⁶ ConnDOT, *Expanding Rail Service on Shore Line East*, January 2007

⁷ The Day reported on December 17, 2009 that ConnDOT had announced an additional delay of 1 ½ to 2 months.

⁸ Assuming the ten-ride discounted fare of \$7.40 per one-way trip.

Other service scenarios are also being explored which include preliminary discussions with Rhode Island on possible SLE service expansions to the east of New London.

Amtrak 2030 Master Plan

Amtrak is currently developing a master plan for Northeast Corridor service in the Year 2030. The draft schedules developed for the master planning effort did not increase the amount of service to the New London station. Northeast Regional trains would remain at nine per weekday in each direction. Acela Express schedules call for an increase from 10 to 16 trains per weekday through New London in each direction but there are no plans to increase the number that stop in New London. While the number of trains stopping would not increase, Amtrak could increase capacity by increasing the length of the train up to a maximum of 11 cars per train. The increase in the number of Acela Express trains would result in an additional 12 brief closings of the two railroad crossings each weekday. Amtrak has not explicitly estimated ridership for New London Station in 2030, but they have estimated a nationwide growth factor that would result in a 67% increase to 282,950 annual New London passengers (boardings plus alightings). This translates into an increase in average summer Friday ridership from 808 to 1,350.

Other Potential Service Changes

Advocates have proposed an eastward expansion of MTA/MetroNorth Railroad electric commuter service to New London. The expanded MetroNorth service would replace all SLE service (both services are subsidized by ConnDOT). The expanded service would provide direct, no-transfer commuter-rail type service between New York City and southeastern Connecticut. New bus connections from New London to the casino resorts and Mystic could replace existing casino bus connections to MetroNorth in New Haven that must use heavily congested I-95 to reach the casino resorts. MetroNorth currently has no plans for such expansion, but if implemented as a substitute for Shore Line East, this would likely increase the number of trains, rail ridership to and through New London, and the demand for parking and shuttle bus access.

Future Operational Needs

Increases in the number of SLE and Amtrak trains serving the station could exacerbate the impacts that trains have on pedestrians and vehicles using the State Street at-grade crossing. Operational measures or physical improvements could be needed to mitigate these impacts.

ConnDOT identified the need for more parking (500 spaces) to accommodate New London ridership resulting from the planned SLE Phase 2 expansion although the estimated shift from Old Saybrook (58 weekday riders) and the projected revenue increase (90-120 weekday riders) imply that initial ridership could be much less. New London at present tends to have ample parking available on most weekdays when most SLE ridership would occur. Capacity could become constrained, however, if Cross Sound Ferry reduces its on-site parking, especially on summer Fridays when weekend ferry crowds begin to fill the Water Street Garage. Similar capacity constraints could impact SLE weekend riders in the summer.

In addition, Amtrak will require that SLE trains utilize Track 6 for passenger boarding and alighting. The ConnDOT Office of Rail is currently looking at short term modifications to the Track 2 (northbound) platform to access SLE trains on Track 6. While ConnDOT has stated that it is too early to investigate the possibility of building a future high-level platform on the water side of Track 6, it envisions a potential future platform in this location on the outside of the curved portion of Track 6 (to lessen train-to-platform gap issues) since it would be more functional for passenger service and SLE train positioning.

3.2 Intercity Bus (Greyhound)

3.2.1. Operations and Services

Passenger Operations

Greyhound Bus Lines (owned by First Group since October 2007) provides the only scheduled intercity bus service to/from New London. Scheduled service operates daily between New York and Boston with an intermediate station stop in New London. (Greyhound and other carriers provide additional service between New York and Boston that does not stop in New London – most of these services operate via I-84 through Hartford.) In New London, Greyhound operates out of a small brick building along Water Street on the north side of Union Station (the building is not a part of the original Union Station structure). Greyhound leases the building, presently on a month to month basis, from the private owners of Union Station. The Greyhound terminal building houses ticketing and customer information, freight-handling functions, office space, restrooms, and a small passenger waiting area. The bus station is open and staffed seven days a week, although the hours vary. Generally, one or two employees are present at the station during operating hours.

Greyhound uses 45-foot long, “over-the-road” coaches with a raised passenger seating section and a luggage compartment underneath (buses are 13-feet high). Greyhound buses access the terminal from Eugene O’Neill Drive using Atlantic Street to Water Street to avoid using State Street. Atlantic Street has two sharp turns but it is faster than proceeding via State Street. Atlantic Street can become very congested during special events in New London when State Street is congested or closed, impacting Greyhound travel times. Greyhound service experiences other delays on this route, primarily on I-95 between New London and New York. The worst delays are on Fridays and Sundays. Currently, Greyhound does not coordinate with other New London transportation providers and does not have any policies regarding the holding of buses to accommodate passengers arriving late on other carriers.

The Greyhound bus loading area consists of four saw-tooth style bus bays adjacent to the building (Figure 3-7a). There are two full-sized bus bays and two shorter bays. Despite the saw-tooth design, Greyhound drivers prefer to park parallel to the street and railroad tracks, across the bus bays (Figure 3-7b). This allows easy egress without requiring the bus to back up. The

Figure 3-7: Greyhound Bus Loading Area



bays must be clear of other vehicles, however, so that drivers can pull far enough off the street to access the luggage bays on both sides of the bus. There were persistent problems with cars (and during the Parade Project construction, taxis) parking in the bus bays and restricting bus movement (Figure 3-7c). When this occurs, or when multiple Greyhound buses are in the terminal, buses may need to back out of their sawtooth bays. Occasionally (reportedly about once a day on average) buses are forced to back into Water Street impacting traffic and possibly creating a safety hazard.

Buses typically spend 15 minutes or less at the terminal and there are typically no more than two buses present at the same time (one headed to Boston and one headed to New York), unless a delay occurs or extra service is operated. The longer dwell times occur when buses arrive early and have to wait until their scheduled departure time. Late buses spend as little time as possible in the terminal. While buses are in the terminal, passengers disembark and collect their checked baggage from the bus baggage compartment; freight may need to be unloaded/loaded by the ticket agent; and boarding passengers stow their baggage in the baggage compartment before boarding. If there is sufficient time, through-riders may disembark to stretch, smoke, or use the station restrooms.

Greyhound sells tickets in the terminal and through Greyhound's website. Although online reservations make up only an estimated 15% of New London boardings, about 50% of reservations are made in advance and the majority of the remaining 35% are purchased in advance at the terminal. All passengers, regardless of when tickets were purchased, must obtain a claim check from the agent in the terminal if they are checking baggage. Passengers with international destinations must have their passports checked by the agent. Passengers must carry their own luggage to the bus but Greyhound staff will assist them in stowing bags in the luggage compartment. Tickets are then collected as passengers board the bus.

Freight Operations

Greyhound also carries freight. Its freight business has been growing recently and is currently about five or six pieces per day in New London. Freight consists primarily of larger items that UPS does not accept. Shippers bring freight to the ticket counter and pay for shipping costs at that time. There is a storage room in the terminal for freight and agents are responsible for loading and unloading freight from the bus when it arrives. When freight is taken off the bus it is placed in the storage room and the recipient is called. Recipients then have three days to claim the item before storage charges are incurred.

Service Levels

The Greyhound route operating through New London serves stops in Boston, Providence, and the two casino resorts (Mohegan Sun and Foxwoods) to the northeast and New Haven, Bridgeport, Stamford, White Plains and New York City to the southwest. New London is an intermediate stop on the route to these destinations and no Greyhound bus service currently originates or terminates there. New York City is the southern terminus of the route. Most trips terminate in Boston on the northern end although some weekend express trips terminate in Providence.

Service varies by day of the week. The schedule is shown in Table 3-3. There are typically four to five roundtrips per weekday. Sunday is the busiest day of the week with twelve southbound and nine northbound trips. Fridays and Saturdays have nine and seven round trips respectively. Some weekend service runs express and skips some or all of the Connecticut stops to the southwest of New London. A few of the supplemental weekend trips serving New London also skip the casino resorts and primarily serve the Boston and Providence to New York market. Schedules are not coordinated with those of any other carriers.

3.2.1. Utilization of Services

Ridership

Greyhound does not record ridership by station. Greyhound estimates that about 100 passengers board Greyhound buses at the New London terminal on a typical summer weekday. This increases to about 160 per day on busy weekends (Fridays and Sundays). In lower ridership time periods this drops to as low as 50 boardings on weekdays and 80 on weekend days. Thus, Greyhound carries comparably fewer travelers than other inter-city carriers (Amtrak and Cross Sound Ferry) at the Regional Intermodal Transportation Center (RITC). That and the fact that Greyhound ridership peaks on Fridays and Sundays may explain why there were fewer responses obtained to the passenger survey that was conducted for this study on a Saturday and a Thursday in August, 2008. Greyhound noted that ridership levels were higher in the past when there were more naval operations around the New London area. Greyhound still gets considerable business from the Coast Guard Academy.

Table 3-3: Greyhound Service to/from New London

Monday-Thursday		Friday & Sunday		Saturday	
Southbound	Northbound	Southbound	Northbound	Southbound	Northbound
4:55 AM	8:45 AM	4:55 AM	1:35 AM	4:55 AM	8:45 AM
9:40 AM (Mon only)	12:30 PM	10:15 AM	8:45 AM	9:40 AM	12:30 PM
10:15 AM	5:45 PM	1:05 PM (Fri only)	12:30 PM	10:15 AM	12:55 PM
2:15 PM	9:50 PM	1:35 PM (Sun only)	12:55 PM	2:15 PM	3:10 PM
8:50 PM		2:15 PM	3:10 PM	5:10 PM	5:45 PM
		2:50 PM	5:45 PM	8:50 PM	9:50 PM
		4:35 PM (Sun only)	7:25 PM (Sun only)		9:55 PM
		5:10 PM	8:55 PM		
		6:20 PM	9:50 PM		
		6:55 PM (Sun only)	9:55 PM (Fri only)		
		8:50 PM			
		10:55 PM (Sun only)			
Total: 4 Trips, 5 Monday	Total: 4 Trips	Total: 8 Trips Friday 11 Trips Sunday	Total: 9 Trips	Total: 6 Trips	Total: 7 Trips

Rider Characteristics and Travel Patterns

The passenger survey conducted for this study offers some insight into the rider characteristics and travel patterns for Greyhound intercity passengers; however only 18 responses (9 Thursday and 9 Saturday) were obtained from Greyhound riders and this sample size is insufficient to draw conclusions that are statistically valid. Most (67%) of the passengers were traveling for social or recreational purposes with the remainder traveling for other purposes. Most (72%) of the passengers that boarded Greyhound intercity bus services in New London utilized the service less than once every month or were first time users. The rest of the passengers traveled at least one or twice in a month. Greyhound riders were primarily traveling to destinations located along the Boston-New York corridor.

Conversations with Greyhound indicated that many passengers originating at the New London terminal are from the local New London area, though some come from as far as Norwich. Survey responses indicated that the largest share of passengers (44%) was dropped off at the terminal; however a considerable share

(22%) made their connection through the local SEAT buses. The remainder walked, used the ferry or parked. It should again be noted that this information is based on very few survey responses. Greyhound staff indicated that a substantial number (as much as 50%) of New London passengers use SEAT buses for access.

Greyhound staff recognizes several important connections to other modes and facilities. They noted that students from Long Island take Cross Sound Ferry service to New London and then board Greyhound to get to colleges in Boston. Also, some passengers to/from New York connect to the Fishers Island Ferry. Some passengers taking the bus to New York utilize the Water Street parking garage.

Finally, the survey indicated that the majority of Greyhound passengers (65%), in the course of their trip, visit New London businesses, primarily restaurants and shops. Although few Greyhound riders were surveyed, this percentage was far greater than that found for the other groups of travelers surveyed. This may be because so many riders are New London area residents.

3.2.2. Current Operational Needs

Rider Opinions

Of the few Greyhound passengers who responded to the survey, 41% gave a poor or very poor rating for amenities at the terminal (e.g. newsstand, food services and restrooms). Note that, among the six groups of passengers surveyed, this was the highest percentage of poor or very poor ratings. One in four Greyhound passengers who responded gave a poor or very poor rating for comfort (e.g., seating and climate control) at the terminal and one in five gave a poor or very poor rating for “clearly marked schedules for all transportation modes”. Some of the few passengers who provided comments felt the need for a better waiting area.

Of the passenger groups surveyed, Greyhound passengers were most likely to visit downtown if more shopping, recreation and services were offered.

Deficiencies in Current Operations

Despite the generally poor and antiquated facilities, Greyhound operations in New London function reasonably well. While the capacity of the facility to handle buses is generally adequate, Greyhound indicated that a third full-sized bay would help them to better manage operations during peak times when it is possible for three buses to be at the terminal at the same time. A third bay could be used as a shared facility with other carriers or operators and Greyhound indicated that even the second bay could be shared as long as a third bay was available when needed. Operations could be improved by keeping private vehicles and taxis from infringing on Greyhound space. A terminal design that prevented the occasional need to back out into traffic would be desirable. Also, traffic delays caused by special events in the downtown inhibit operations on specific days.

Greyhound would like to see an improved pedestrian connection to Cross Sound Ferry's Long Island service and would consider moving its terminal closer to the ferry dock in order to develop the market for ferry-bus connecting service. Presently, and especially in the winter, the walk required adversely affects the appeal of the ferry-bus connections. Greyhound would also consider more coordinated schedules, as well as real-time coordination, with Cross Sound Ferry, especially if the physical connection were improved.

Greyhound would like to upgrade the terminal interior, as it is currently doing in many locations. However, Greyhound will not invest in the current New London terminal due to the current month-to-month nature of its lease. Any terminal upgrade or relocation should consider the need to provide close proximity of

counters to bus bays which is important in the handling of freight; also important to be considered is the need for short term parking for freight drop-off and pick-up. The growing freight business may also require additional facilities and enhanced capacity. Greyhound may also consider consolidated ticketing with SEAT, Amtrak and other bus carriers. In such a scenario, however, ticketing agents would have to be able to handle freight as well as passenger ticketing.

3.2.3. Future Operational Needs

Potential future service changes

Several changes are in process within the Greyhound system. Greyhound is adding routes and also undertaking terminal upgrades at many station locations. Based on current information, Greyhound appears to be unlikely to add new routes through New London; however, frequency of bus service could be increased if ridership grows in the future.

Operational Needs

Increased frequency of service is unlikely to require any substantial changes in operational needs beyond those present needs noted above.

3.3 Cross Sound Ferry

3.3.1. Operations and Services

Maritime operations

Established in 1975, Cross Sound Ferry operates ferry services in the region and is one of the largest privately owned ferry operations in the United States. Headquartered in New London, Cross Sound Ferry provides services to and from the North Fork of Long Island (Orient Point, NY) and to and from Block Island, RI (through a sister company, Block Island Ferry Services). While the Long Island line operates both auto and high-speed passenger ferries, only passenger ferry service is offered to Block Island, a small island south of the Rhode Island coast and a popular summer tourist destination. In summer months, Cross Sound's facilities are also used by Viking Fleet to operate one round trip per week to Montauk, on the South Fork of Long Island. Cross Sound's administrative, operations and maintenance functions are located in New London.

Ferry service is offered 364 days a year (with the exception of Christmas) with nine vessels, listed in Table 3-4. (Cross Sound does not handle any commercial freight.) Seven of these vessels can accommodate autos, trucks, motor homes, buses, motorcycles and bicycles, along with passengers. The capacity of these vessels ranges from 20 to 120 cars and 20 to 1,000 passengers, and the journey takes approximately an hour and twenty minutes one way. Cross Sound Ferry also offers high-speed ferry service between Long Island (Orient Point) and New London with its high-speed, passenger-only catamaran, the 400-passenger SeaJet, which covers the 16 mile journey in about 40 minutes. The 530 passenger Jessica W. ferry serves Block Island (RI). Vessels are typically removed from service in the off peak months for routine maintenance. Most of the boats are docked and serviced in New London at night, although one or two of the auto ferries remain at Orient Point overnight in the summer. Cross Sound's sister company, Thames Shipyard and Repair further up the Thames River in New London provides repair and retrofitting services to Cross Sound Ferry.

Ferries operate according to published schedules. Delays sometimes occur in New London when freight trains block the Governor Winthrop crossing. Departures are held for late arriving Amtrak trains on a case

by case basis to accommodate any passengers connecting from the train. The final boat of the day to Block Island is often held for Amtrak passengers.

Table 3-4: Cross Sound Ferry Boats

	John H.	Cape Henlopen	Mary Ellen	Susan Anne	New London	North Star	Caribbean	Sea Jet
Length Overall (feet)	240	327	260	250	260	168	128	122
Date Built	1989	1941	1983	1964	1979	1968	1972	1989
Car Capacity	120	90	85	80	60	35	22	0
Passenger Capacity	1000	900	675	840	300	300	120	400

Source: Cross Sound Ferry www.longislandferry.com

Terminal Operations

In New London the service benefits from easy access to and from I-95 for cars and trucks traveling directly to the ferry and to parking. Most passengers originating in New London access the ferry by car. Ferries to Long Island take trucks as well as passenger vehicles (only one ferry has height restrictions) and passengers without cars. The Block Island Ferry and the high-speed SeaJet service to Long Island do not carry vehicles.

Vehicle access to the terminal site is from Governor Winthrop Boulevard or Water Street, across the tracks, to Ferry Street. Pedestrian access to the site is either through the at-grade railroad crossing at Governor Winthrop Boulevard used by vehicles or through the at-grade crossing at State Street, walking north through the City Pier Park onto the ferry site. Both at-grade crossings can be blocked by passing trains. The at-grade crossing at Governor Winthrop Boulevard is blocked when trains are passing through New London. Amtrak trains move quickly and do not tie up the crossing for long; however the freight trains close off vehicular and pedestrian access for longer periods of time. Pedestrian access across the State Street crossing is blocked by passenger trains when they are stopped at the station.

All vehicles entering the site are greeted by an agent at the Ferry Street entrance (Figure 3-8a). Those who are parking are charged the \$10 fee and are directed to one of the two long term parking areas. Those picking up or dropping off passengers are directed to one of two pick-up/drop-off areas. Those vehicles being taken on board the next ferry to Long Island are directed to a series of numbered lanes in the staging area based on the size of the vehicle (Figure 3-8b). Those with reservations on a later boat are directed to a standby staging area on the far (south) side of the ferry ramps. Currently, the staging areas are barely adequate for ferry volumes. Increases in vehicle volumes will require that areas once used for staging that were converted to long term parking be converted back into staging areas, reducing the availability of on-site long term parking.

Tickets for passengers and their vehicles traveling to Long Island can be booked online, by phone, or using phones in the ticket office (the reservations office is in a separate building). Larger commercial vehicles cannot reserve online and must reserve by telephone. There are discounts for children, same day round trips, and ten-ride ticket books. While there is nearly always adequate capacity for passengers, vehicles typically require advanced reservations. About 50% of reservations are made via the internet. Boarding passes must be picked up inside the New London ticket office at which time ID checks are also conducted. Drivers are otherwise encouraged to remain with their vehicles in the staging area and until they are on board the ferry. Passengers not traveling in vehicles can wait in the ticket office or in an outdoor waiting area. Boarding passes are collected on the ramp as vehicles/passengers enter the boat (Figure 3-8c). If there is capacity remaining on a departing ferry, vehicles waiting in the standby staging area will be allowed

on an earlier trip. Upon arriving in New London, vehicles exit the boat and continue out of the facility without stopping (Figure 3-8d).

Cross Sound Ferry will soon implement an electronic ticketing system which will eliminate the need to pick up boarding passes in the ticket office. Agents will be able to issue boarding passes at the entrance to the site.

The SeaJet high-speed service to/from Long Island is geared to passengers originating on Long Island bound for the casinos in Connecticut. These passengers generally park and purchase their tickets on Long Island and then transfer to casino shuttle buses at the Cross Sound Ferry terminal in New London. The service is designed to provide fast and seamless connections for casino-bound patrons with nothing to distract them on their way to the casinos. Tickets are sold at the ticket office only on the day of travel. Reservations are not taken. Upon request, passengers receive a round trip bus ticket to one of the two

Figure 3-8: Cross Sound Ferry Terminal



casinos at no additional charge. Passengers purchasing a round trip ticket are assigned a return trip time based on the time of their originating trip with passengers on earlier originating trips receiving earlier return times. Changes in return trip time are honored on a space available basis and are arranged with bus operators at the casinos.

Tickets for Block Island passengers can be booked online, by phone, or in person. There are discounts for children and same day round trips. Reservations are strongly recommended. About 65% of reservations are made via the internet. Both reserved tickets and tickets purchased in person must be picked up at the Block Island Ferry ticket booth. Tickets are taken as passengers enter the boat.

Cross Sound provides limited on-site parking at the New London ferry terminal at \$10 per day on a first-come, first-served basis. Parking is provided on an unpaved 70 space lot between the Block Island Ferry terminal and City Pier Park. This lot is partly on Cross Sound Ferry property and partly on land leased from the City. Another area at the north end of the site behind the administrative offices was originally intended for staging but was converted to 60 parking spaces in 2004. There is also a 130 space employee-only parking lot at this end. Cross Sound advertises to its customers that additional parking is available at the Water Street Parking Garage directly across the street from the ferry terminal. Directions from the Water Street Garage to the ferry are provided on the Cross Sound website. Weekend parkers may also be directed to the Julian lot by ferry personnel.

Service Levels

The auto ferry to Long Island offers frequent ferry service 364 days a year. In summer months, 14 round trips are operated on most weekdays (Monday through Thursday) and 23 round trips are operated on peak weekend days (Fridays and Sundays) in August. Examples of the summer schedule for these days are shown in Table 3-5. Schedules vary somewhat from day to day. In the spring and fall, service levels are somewhat reduced with the least service provided in the winter. In January, seven round trips are operated on weekdays and eleven round trips are operated on weekends.

SeaJet high-speed passenger ferry service to and from Long Island operates daily from mid-March through December and weekends (Friday, Saturday and Sunday) in the winter. The SeaJet provides four round trips each day. During the summer peak season, 6 round trips are operated on Fridays and Saturdays, as shown in Table 3-6.

Cross Sound operates three weekday and four weekend passenger-only round trips to Block Island from the end of June to the beginning of September. In June and September only weekend service is operated. The schedule is shown in Table 3-7. In summer months, Viking Fleet operates one round trip per week to Montauk, Long Island, and uses Cross Sound's SeaJet dock.

Table 3-5: Long Island Vehicle Ferry Summer Schedule

Mid-week service (Summer Mon-Thurs)		Maximum service (August Fri & Sun)	
Outbound	Inbound	Outbound	Inbound
7:00 AM	8:20 AM	7:00 AM	8:20 AM
	9:20 AM	7:30 AM	9:20 AM
8:00 AM	10:20 AM	8:00 AM	10:20 AM
9:00 AM		9:00 AM	10:50 AM
	11:20 AM	9:30 AM	11:20 AM
10:00 AM	12:20 PM	10:00 AM	12:20 PM
11:00 AM		11:00 AM	12:50 PM
	1:20 PM	11:30 AM	1:20 PM
12:00 PM	2:20 PM	12:00 PM	2:20 PM
1:00 PM		1:00 PM	2:50 PM
	3:20 PM	1:30 PM	3:20 PM
2:00 PM	4:20 PM	2:00 PM	4:20 PM
3:00 PM		3:00 PM	4:50 PM
	5:20 PM	3:30 PM	5:20 PM

4:00 PM	6:20 PM	4:00 PM	6:20 PM
5:00 PM		5:00 PM	6:50 PM
	7:20 PM	5:30 PM	7:20 PM
6:00 PM	8:20 PM	6:00 PM	8:20 PM
7:00 PM		7:00 PM	8:50 PM
	9:20 PM	7:30 PM	9:20 PM
8:00/8:30 PM		8:00 PM	10:05 PM
		8:45 PM	10:35 PM
		9:45 PM	11:05 PM
14 Trips	14 Trips	23 Trips	23 Trips

Table 3-6: SeaJet Passenger Ferry Schedule

Regular Schedule		Summer Weekends	
Outbound	Inbound	Outbound	Inbound
7:00 AM	8:40 AM	7:00 AM	8:40 AM
9:00 AM	10:40 AM	9:00 AM	10:40 AM
		11:00 AM	12:40 PM
5:00 PM	6:40 PM	5:00 PM	6:40 PM
7:00 PM	8:40 PM	7:00 PM	8:40 PM
		9:00 PM	10:25 PM
4 Trips	4 Trips	6 Trips	6 Trips

Table 3-7: Block Island Passenger Ferry Summer Schedule

Monday-Thursday		Friday-Sunday	
Outbound	Inbound	Outbound	Inbound
8:10 AM	11:00 AM	8:10 AM	11:00 AM
11:30 AM	5:50 PM	11:30 AM	2:20 PM
		2:50 PM	5:50 PM
6:10 PM	9:05 PM	6:10 PM	9:05 PM
3 Trips	3 Trips	4 Trips	4 Trips

3.3.2. Utilization of Services

Ridership

The service from Long Island brings in a large number of customers from Long Island to the casino destinations at Mohegan Sun and Foxwoods. It also serves as a “bridge” from eastern Long Island to New England. Ferry services saw a surge in demand that peaked in 2004 as tourism continued to grow around New London and increasing highway congestion made road travel a less desirable option. Cross Sound Ferry noted that in 2004, the auto ferry peaked at 1.1 million annual passengers and 495,000 vehicles, while the SeaJet passenger-only service carried 250,000 passengers. They noted a decline in ridership after 2004 of approximately 5% with the auto ferry currently carrying just over one million passengers in 2007. The SeaJet carried about 230,000 passengers in 2007. The Block Island Ferry peaked in 2005 with 105,000 passengers, with 2007 annual ridership just under 100,000 and 2008 expected to be around 88,000.

Cross Sound Ferry indicated that the peak ridership months are July and August with about 30% of annual vehicle and passenger volume on the Long Island Auto ferry occurring in those two months. Figure 3-9 shows monthly ridership for the two Long Island services (the auto ferry and the SeaJet) combined for the peak year of 2004. The figure also shows monthly vehicle volumes on the auto ferry. The figure shows the peaking of ridership in July and August and the lowest ridership in December through March. Vehicle volumes are slightly less peaked, possibly due to peaking of ridership on the passenger-only SeaJet in summer months. (Cross Sound Ferry did not provide separate monthly ridership data for the SeaJet, nor did they provide data more recent than 2004.) The Block Island Ferry operates only in the summer.

Cross Sound Ferry identified Sundays as the highest ridership days, followed by Fridays, with the lowest ridership occurring mid-week. Cross Sound Ferry provided examples of daily ridership from 2004 (2005 for Block Island) shown in Table 3-8 (note that the SeaJet did not operate in January 2004 and the Block Island Ferry is summer-only). With the recent decline in ridership and vehicle traffic noted above, Table 3-9 shows estimated 2008 ridership on the four types of days.

Figure 3-9: Long Island Ferry 2004 Monthly Volumes

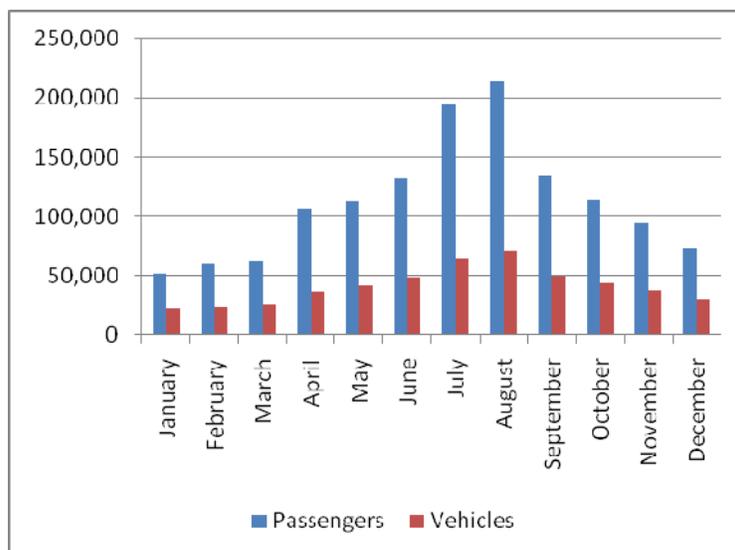


Table 3-8: Typical Daily Cross Sound Ferry Ridership (2004/2005)

	Auto Ferry Vehicles	Auto Ferry Passengers	SeaJet Passengers	Block Island Passengers
Peak Summer Sunday	3,193	8,541	1,031	2,050
Summer Weekday	1,744	3,867	797	1,806
January Sunday	962	2,298	310	
January Weekday	567	998		

Table 3-9: Estimated Daily Cross Sound Ferry Ridership (2008)

	Auto Ferry Vehicles	Auto Ferry Passengers	SeaJet Passengers	Block Island Passengers
Peak Summer Sunday	3,033	8,114	949	1,695
Summer Weekday	1,657	3,674	733	1,494
January Sunday	914	2,183	274	
January Weekday	539	948		

Rider Characteristics and Travel Patterns

Cross Sound Ferry recognizes rail as an important link and counts on some transfers from each Amtrak train, which it expects will increase in the future. The operator noted that students from Long Island use the ferry to connect to rail to Boston. They also noted that about 85% of SeaJet riders use the casino shuttle buses. Most are day trippers who are retired. Others come for a weekend of entertainment and gambling. Block Island passengers also tend to be day trippers.

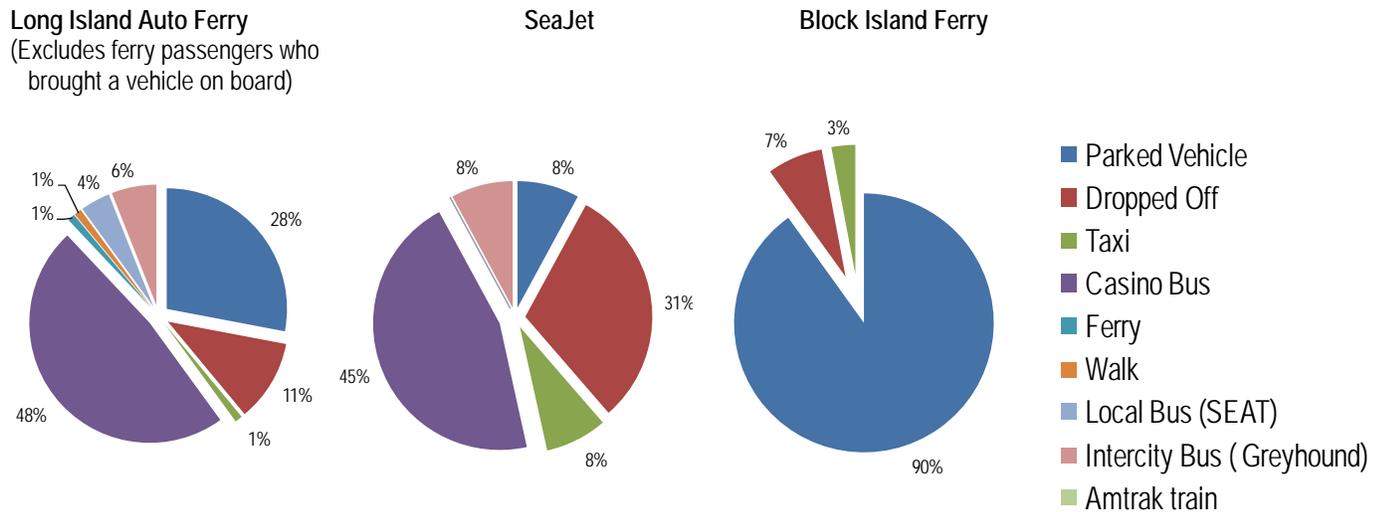
The passenger survey conducted for this study offered some useful insights into rider patterns. For the Long Island auto ferry, 118 survey responses were obtained. There were 28 responses on Saturday August 9th and 90 on Sunday August 17th. For the Block Island passenger ferry, 126 responses were obtained on Saturday August 9th. For the SeaJet, only 16 responses were obtained on Friday August 8th. Some of the key conclusions that can be drawn from these responses are:

- Most ferry passengers come in groups of 2 to 4, which comprise 82% of Long Island Ferry, and 77% of Block Island Express Ferry passengers. Less than 10% travel alone.
- The Block Island Express Ferry and SeaJet serve narrow, largely tourist markets with 95% of travelers making recreational trips.
- On the Long Island auto ferry, 64% of the respondents leaving New London indicated that they were on their return leg of a round trip while only 23% were on the originating leg of their trip indicating that most patrons are probably New York State residents
- While data from Cross Sound Ferry indicate that about 49% of passengers drive a vehicle onto the Long Island auto ferry (and many more are likely passengers on those vehicles), 75% of survey respondents arrived in a vehicle on Saturday August 9th but only 11% did so on Sunday August 17th, indicating that the larger August 17th group of survey respondents is probably not a representative group of auto ferry travelers.
- The mode of access for those responding to the survey who did not bring their cars on board the auto ferry is shown in Figure 3-10. Almost half (all of them on August 17th) reported using a casino bus to reach the ferry even though casino buses only meet the auto ferry on days when the SeaJet is not running (SeaJet was running that day). Thus, the August 17th survey is again not typical of ferry riders and must have included a tour group traveling by bus.
- With 48% of those not bringing a car on board the auto ferry reporting use of a casino bus, only 28% reported parking their cars in New London and 11% reported being dropped off. Very few passengers utilized the intercity bus or the SEAT service. No passengers reported using the Amtrak connection. Excluding August 17th and looking only at the August 9th data, all but one rider who did not bring a car on board parked a car in New London.
- Also shown in Figure 3-10, only about half of the SeaJet passengers surveyed reported using the casino bus shuttle, even though Cross Sound Ferry reports that the figure averages around 85%.
- Also shown in Figure 3-10, most (91%) passengers on the Block Island Ferry brought their own cars and utilized parking in New London. Only about half of these reported where they parked but 80% of those reporting indicated that they parked at the Water Street Garage and 20% reported other downtown locations. None reported parking on ferry property (most likely because on-site parking fills early in the day). Most of the respondents who did not park were dropped off. No passengers reported using the Amtrak connection.
- Few ferry passengers visited any businesses downtown during the trip – only 12% of Long island ferry riders, 14% of SeaJet riders and 17% of Block Island ferry riders.

Although none of the Cross Sound Ferry passengers surveyed indicated that they connected from Amtrak, 12% of Amtrak passengers surveyed indicated that they connected from the ferries. This could result from

the much greater number of ferry riders in comparison to the number of Amtrak riders and/or the fact that those connecting from Fishers Island were not distinguished from Long Island ferry riders in the rail survey.

Figure 3-10: How Cross Sound Ferry Passengers Arrived at the Terminal



3.3.3. Current Operational Needs

Rider Opinions

The riders on the ferries to Long Island gave good ratings for most characteristics of the New London terminal including convenience in making connections, comfort and amenities at the terminal station, ease of finding locations of connections, ease of finding schedules, purchasing tickets, and safety and security at the terminals. Parking, amenities and nearby places of interest got the lowest ratings, each with 11%-13% of respondents giving poor or very poor ratings.

The riders on the ferries to Block Island gave lower ratings than the Long Island ferry riders. Amenities were rated poor or very poor by 23% of Block Island Ferry respondents and comfort was rated as such by 20% of respondents, reflecting the lack of amenities around the Block Island ferry dock. Nearby places of interest were rated poor or very poor by 20% reflecting the isolated location of the terminal. Parking was rated poor or very poor by 17% indicating dissatisfaction with the primary mode of access to this service. (Note that none parked at the Cross Sound Ferry site.) Other characteristics did not receive poor or very poor ratings from more than 13%.

Deficiencies in Current Operations

No needs or deficiencies have been identified in Cross Sound's maritime operations. At present, the terminal staging areas are adequate. The 130 on-site customer parking spaces, however, are rarely sufficient for the volume of Block Island passengers on summer weekends and tend to fill with the first trip of the day. Limited parking on-site forces passengers who do not take their vehicles on board (mostly Block Island passengers) to park on the opposite side of the railroad tracks in the Water Street Garage which has poor pedestrian connections to the ferry landing. The same poor pedestrian access affects riders transferring to and from Amtrak trains and Greyhound buses. Cross Sound Ferry has continuously expressed its concern about the safety and convenience of passengers who must walk across the tracks to parking and other travel modes. Cross Sound Ferry has expressed a strong desire for a pedestrian bridge over the railroad tracks to the train station, bus terminal and garage to address these poor pedestrian connections.

Much of the other 70-space, unpaved on-site parking area near the Block Island terminal is leased from the City and so its long-term availability is not guaranteed. Cross Sound's 130 space employee parking lot is leased from Yankee Gas, so its long-term availability is also not guaranteed.

A minor problem in access to its site that Cross Sound faces is the at-grade crossing at Governor Winthrop Boulevard that is blocked when trains pass through the crossing. Passenger trains tend not to be a problem but freight trains can block the intersection for several minutes and can be disruptive if this coincides with a ferry arrival or departure.

3.3.4. Future Operational Needs

Potential Future Service Changes and Related Operational Needs

While ridership peaked in 2004 and has been slightly lower in recent years, it is expected to recover in the coming years as the economy recovers, recreational travel continues to grow, and I-95 construction in Connecticut and Long Island Expressway traffic encourage drivers to seek alternate routes to New England.

Cross Sound has not made projections of future demand but can and expects to respond quickly to the changing demands of the traveling public. Cross Sound representatives anticipate increasing demand as traffic and congestion on I-95 and the Long Island Expressway increase and believe they are ready to respond as the needs arise. They are able to add additional ferry trips to meet the demand and even increase the size of their vessels.

Cross Sound does not have specific plans for new services; however, they have long considered adding service to the South Fork of Long Island and have considered reinstating high-speed passenger service to Martha's Vineyard that was discontinued in 2003. Nantucket is another possible future destination. Cross Sound believes that expansion of high-speed passenger services would best be accompanied by construction of a new high-speed ferry terminal at the site of the Block Island Ferry ticket building and had developed a plan to do so in conjunction with a plan for a pedestrian bridge over the railroad tracks. This terminal would include indoor ticketing facilities, restrooms, and an indoor waiting area and could include additional amenities and concessions.

Increased demand and new services would affect landside capacity. Increased vehicle ferry traffic would force Cross Sound to convert parking areas to vehicle staging, increasing the demand for off-site parking facilities and the need for improved pedestrian connections. New passenger-only services would also increase the demand for off-site parking. Construction of a new high-speed ferry terminal would also take up space now used for parking.

3.4 Fishers Island Ferry

3.4.1. Operations and Services

Maritime Operations

The Fishers Island Ferry operates from New London and provides passenger and freight service to Fishers Island, a small island that is part of Suffolk County, NY, although located just 7 miles southeast of New London. The ferry is the only commercial route to the island. The ferry is operated by the Fishers Island Ferry District, a public entity financed through a special tax district. The District has a terminal with an operations office in New London and a terminal with a business office on the island. Ticketing is handled in New London. There are freight-handling crews at both terminals.

Ferry service is offered 365 days a year to Fishers Island with two vessels accommodating autos, trucks and passengers. The larger ferry, *Race Point*, was built in 1985, is 162-feet long and can carry 250 people and 28 autos⁹. This boat is the primary boat in service and operates in the spring, summer and fall. It is typically removed from service in the winter for routine maintenance. It carries most of the commercial traffic (trucks and freight). The smaller ferry, *Munnatawket*, was built in 1978, is 132-feet long and can carry 209 people and 21 autos. This boat operates along with *Race Point* in the summer and in the winter when *Race Point* is out of service. It is typically removed from service for routine maintenance in the spring or fall. Generally, both boats operate in the summer and only one at a time operates during the rest of the year. The boats are docked and serviced in New London at night and when not operating. Major maintenance is conducted in the off-season through a competitive bidding process since the District is a public entity.

Boats operate round trips between the two terminals according to published schedules. Delays sometimes occur in New London when trains block the State Street crossing. Departures are held until after trains depart both to accommodate any passengers connecting from the train and to accommodate any vehicles caught on the other side of the railroad crossing. In addition to Amtrak trains, freight trains are also reported to occasionally block the crossing. The final boat of the day will be held up to ten minutes (20 minutes on Fridays) if they are informed of a passenger who is arriving late. Sometimes the boat captain will contact Amtrak bridge attendants to determine whether he should hold for a late train.

Terminal Operations

The ferry carries automobiles as well as passengers traveling without cars. A staging area is provided for vehicles waiting to board the ferry. There is also a small short-term parking area in New London for anyone dropping off or picking up a passenger or package. There is no long term parking provided on the New London site.

Ticketing is generally handled at the New London end. All tickets sold are round trip tickets. Tickets are either for a single round trip or are sold as a 10-ride commuter book. There are discounts for children and seniors, and year-round island residents receive a substantially reduced rate. While there is nearly always adequate capacity for passengers, vehicles typically require advanced reservations. About 75% of reservations are made via the internet, with the remainder made in person. (Phone reservations are not accepted for passenger vehicles.) Both reserved tickets and tickets purchased in person must be picked up inside the New London ticket office. Boats load 30 minutes prior to departure. Tickets are taken as vehicles/passengers enter the boat. Random ID checks for security purposes are conducted at the ticket office and when boarding. Passengers receiving the resident discount must also show a valid Island ID Card.

Commercial Vehicle and Freight Operations

Commercial vehicles must make reservations by phone. There is a separate fee structure for commercial vehicles based on length and weight of the vehicle. While there are a considerable number of trucks using the ferry, the operators estimate that about half of the goods carried to and from the island are handled as freight. The District maintains a freight office at both terminals. The offices are open nine hours per day, six days a week. There are typically dozens of daily truck deliveries to the freight offices in peak season. These include UPS and Fedex vehicles, as well as local merchants and private individuals. Freight can consist of anything from small packages to construction materials. Anyone can drop off a package; no

⁹ Trucks typically take up more space than autos and reduce the number of vehicles carried accordingly.

reservations are needed. Freight is handled by ferry staff typically using freight wagons which are loaded and rolled onto and off of the ferry by ferry staff. Freight recipients are notified by phone when an item arrives; no delivery services are provided.

Service Levels

The ferry service operates all year long with peak service lasting four months from mid-May to mid-September with five to eleven daily round trips. The service during weekdays begins at 4:40 AM and the last trip departs from New London at 6:30 PM. The most service, eleven round trips, is offered on Fridays when the service extends to 10:00 PM. The least service is offered on Saturdays. Summer schedules for these two days of the week are shown in Table 3-10. In the off peak season four to seven round trips are

Table 3-10: Fishers Island Ferry Summer Schedule

Minimum Service (Saturday)		Maximum Service (Friday)	
Outbound	Inbound	Outbound	Inbound
		4:40 AM	6:25 AM
7:00 AM	9:00 AM	7:00 AM	9:00 AM
10:00 AM	11:45 AM	11:00 AM	1:15 PM
12:15 PM	2:00 PM	1:00 PM	3:00 PM
		2:45 PM	4:30 PM
3:30 PM	5:30 PM	3:30 PM	5:30 PM
		5:15 PM	6:45 PM
6:30 PM	8:00 PM	6:30 PM	8:00 PM
		7:15 PM	8:45 PM
		8:30 PM	10:00 PM
		10:00 PM	11:30 PM
5 Trips	5 Trips	11 Trips	11 Trips

offered with the most service on Fridays. A special holiday schedule offers more trips on a few popular holidays and reduced service during others.

3.4.2. Utilization of Services

Ridership

The island has a year-round population of about 500 that swells to 3,000 in the summer. Ferry operators indicated that the ferry typically carries about 160,000 passengers and 40,000 vehicles annually, with a significant seasonal variation. Operators report that annual ferry ridership is stable and may be increasing slightly.

Detailed ridership data by day was provided by the ferry operator for calendar year 2008. Daily passenger and vehicle volumes are recorded only for trips from New London to Fishers Island. The number of return trips each day had to be estimated. With no information on how long passengers stay on island, all passengers were assumed to be either daily commuters or weekend visitors¹⁰. In 2008, the ferry carried

¹⁰ Return volumes were assumed to equal the arriving volumes on most days, reflecting the commuter traffic to the island. However, Friday arriving volumes are generally much higher than other days, so Friday return volumes were capped at the average volume for the previous four weekdays, with the excess shifted to a Sunday return on the same weekend. Thus Friday arrivals were assumed to be split between weekday daily commuters and weekend visitors. Similar adjustments were made for long holiday weekends.

over 153,000 passengers and over 42,000 vehicles. Passenger and vehicle volumes by month are shown in Figure 3-11¹¹. Ridership clearly peaks in summer months with a 2008 peak monthly volume of about 20,000 passengers and 5,000 vehicles. Volume in winter months was typically below one half of that in summer months.

Estimated average volumes by day of week are shown in Figures 3-12 and 3-13 for passengers and vehicles, respectively. In both cases the average daily volumes for July and August are shown versus the average daily volume for the entire year. It can be seen that weekday (Monday-Wednesday) passenger volumes average about 30-40% higher in the summer, while weekend (Friday-Sunday) volumes average 60-95% higher in the summer in comparison to annual averages. Vehicle volumes reflect a similar trend.

Figure 3-11: Fishers Island Ferry 2008 Monthly Volumes

Month	Passengers	Vehicles
January	8,784	2,176
February	7,405	1,994
March	8,869	2,406
April	10,644	2,924
May	15,712	4,374
June	19,826	5,166
July	20,168	5,608
August	19,940	5,878
September	12,624	3,590
October	13,125	3,670
November	9,554	2,721
December	6,876	2,114
	153,526	42,620

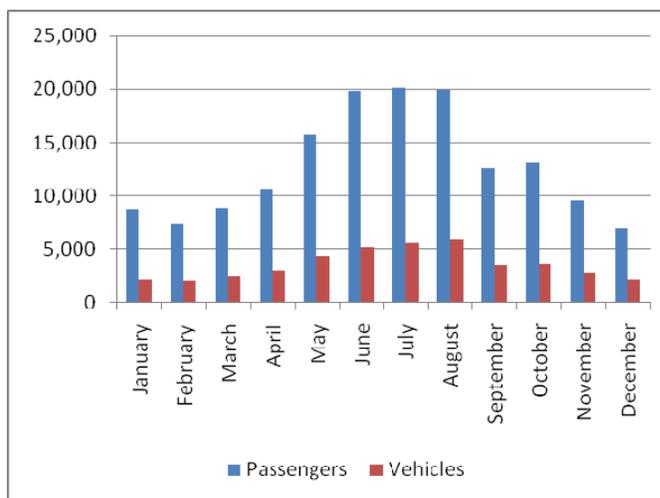
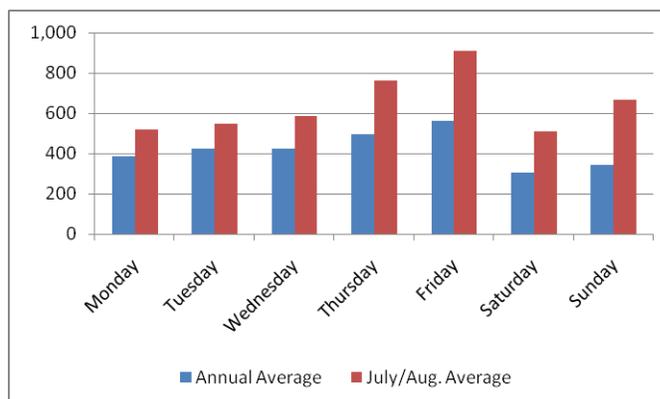


Figure 3-12: Fishers Island Ferry Average Weekday Passenger Volumes

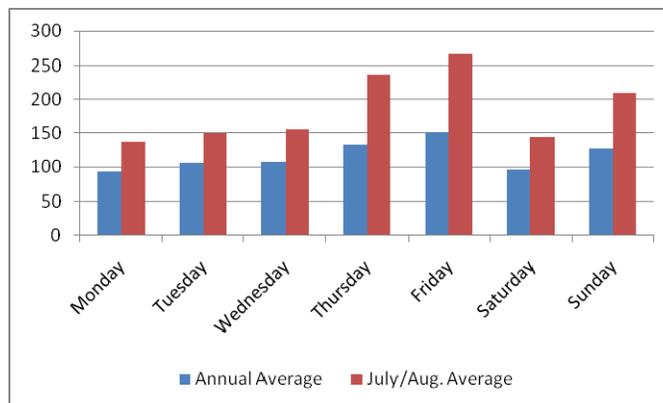
	Annual Average	July/Aug. Average
Monday	384	518
Tuesday	422	549
Wednesday	424	587
Thursday	496	763
Friday	560	909
Saturday	306	509
Sunday	345	668



¹¹ Because only trips going to the island were reported, and all passengers were assumed to be either daily commuters or weekend visitors, people spending longer periods on the island could cause early summer month ridership estimates to be somewhat high and later summer months to be somewhat low.

Figure 3-13: Fishers Island Ferry Average Weekday Vehicle Volumes

	Annual Average	July/Aug. Average
Monday	93	138
Tuesday	106	150
Wednesday	108	156
Thursday	133	236
Friday	152	266
Saturday	97	145
Sunday	127	209



Rider Characteristics

Fishers Island Ferry District representatives report that ferry riders consist of year round and seasonal island residents. There is no tourist business as the island offers little in terms of recreation and entertainment for non-residents. There is a magnet school on the island that serves about 30 Connecticut students who use the ferry every school day. There are daily commuters too – mostly contractors who live in Connecticut, who park their cars in New London and access their work trucks parked on the island.

Fishers Island considers itself part of the southeastern Connecticut community. According to the Ferry operators, its passengers patronize local downtown businesses. Fishers Island Ferry customers are much more oriented to southeastern Connecticut businesses than those of other intercity modes, primarily due to the lack of shopping and services on the island.

The passenger survey conducted for this study did not include passengers on the Fishers Island Ferry. However, surveys of riders on Amtrak indicated that 16% of weekday and 11% of weekend passengers connect from one of the ferries. Fishers Island Ferry operators report that some of the ferry passengers use the train from New York on summer weekends. They also report occasional connections from Cross Sound Ferry from Long Island to Fishers Island, but bus connections are uncommon. Ferry operators reported that some of the weekend residents park in the Water Street garage; however, they report that daily commuters to the island generally park for free on New London streets and know of locations where the two-hour parking limit is typically not enforced.

3.4.3. Current Operational Needs

The newly-built terminal facility at the New London site is not reported to have any significant operating deficiencies and has adequate passenger amenities; however there are some ADA compliance issues. Access to the site, for both vehicles and pedestrians, is a critical concern for safe and efficient operations. There is a need to maintain truck access (including 18-wheelers) to site. The ferry operators have voiced the need for safer pedestrian access, possibly via a bridge or tunnel, as the train crossing is potentially hazardous as well as a source of delays in ferry operations. Major events in downtown New London also impede access to the ferry terminal, particularly for vehicles needing to access the site through congested streets and crowds of pedestrians. Operators did not voice any concerns over the availability of parking. Ferry operators are not interested in joint ticketing with the other modes at New London due to security concerns, which they presently handle while ticketing.

3.4.4. Future Operational Needs

Fishers Island Ferry operators indicated that ridership is stable and there will likely be little need for any significant expansion of service on their vehicle ferries. There has been some consideration of adding a third boat which would be a passenger-only high-speed ferry that could complete the trip in 20-30 minutes instead of about 40 minutes. The District has not committed to this or made any plans to change schedules to include such a boat. However, since ridership is not expected to grow substantially, this may just tend to concentrate some of the passenger-only demand at certain times. Vehicle demand would remain unchanged or could be concentrated at fewer times if vehicle-ferry schedules were curtailed with the introduction of passenger-only service. Addition of a third boat would also require an additional ferry slip in New London. There are currently only two slips but there is room to construct a third.

3.5 Casino Shuttle Bus

3.5.1. Operations and Services

Shuttle Operations

Both Foxwoods and Mohegan Sun casino resorts provide shuttle buses to meet most SeaJet high-speed ferry services in New London. The bus services to each casino are operated by separate private bus companies. The services are designed to provide fast and seamless connections for casino-bound patrons with nothing to distract them on their way to the casinos. The number of buses traveling to each casino is determined by the bus operators based on passenger counts sent by Cross Sound Ferry after each boat departs from Orient Point. During peak season, the number of buses needed for a single ferry trip can be as many as eight or nine. The casino coach buses load and unload passengers on the Cross Sound Ferry property behind the Long Island Ferry ticket office where they can directly embark and disembark from the SeaJet high-speed ferry (Figure 3-14). Buses enter and exit the site via Governor Winthrop Boulevard and make non-stop connections directly to and from the casino resorts.

Sea Jet passengers are able to use the casino shuttle bus services at no cost, and those over 21 receive a free food and gambling voucher package from the casinos valued at over \$30. Tickets are sold at Orient Point and passengers are able to walk directly from the ferries to waiting shuttle buses in New London without the need to enter the ticket office.

Figure 3-14: Casino Bus Loading Area



Service Levels

Shuttles meet three of the four daily SeaJet round trips. Connections are made to the 8:40 AM, 10:40 AM and 8:40 PM SeaJet arrivals and to the 7:00 AM, 5:00 PM, and 7:00 PM SeaJet departures. Service operates 364 days per year (shuttles meet vehicle ferries on winter weekdays when the SeaJet does not operate). Two additional round trips are operated on summer weekends.

3.5.2. Utilization of Services

Ridership information for the shuttle services was not obtained from the casinos; however, Cross Sound Ferry reports annual ridership on the SeaJet of about 230,000 passengers, 85% of which use the casino shuttles for an annual total of about 196,000 riders. This also indicates a peak summer Sunday ridership of about 875 (in 2004) and summer weekday ridership of about 675. Ridership on January weekends would

be about 260. Ridership data for weekdays in January (when the SeaJet does not run and shuttles meet the vehicle ferry) was not obtained.

3.5.3. Current Operational Needs

The current operation is reported to be working well with no improvements needed.

3.5.4. Future Operational Needs

Proposed Regional Tourist Transit System

SCCOG commissioned a study in 2003 to develop a business plan for an intermodal connection between the RITC and various attractions in the region including the two casino resorts (Foxwoods and Mohegan Sun) and Mystic¹². The study recommended that a tourist circulator be provided operating between New London, Mystic and the two casino resorts. The proposed tourist transit system would include the following four regional routes when fully implemented:

- Route A: Mohegan Sun – New London – Mystic
- Route B: Foxwoods – New London
- Route C: Foxwoods – Mystic
- Route D: Mohegan Sun – Foxwoods

In addition, the plan envisioned future linkages between the regional routes and other destinations. Figure 3-15 shows the proposed full implementation route system. Only Routes A and B would serve New London. Route A would operate between Mohegan Sun and Mystic with stops in New London both downtown and at the ferry terminal. Route B would operate from Foxwoods non-stop to New London stopping at both the ferry terminal and downtown. This design allows the system to subsume the existing services between the two casino resorts and the high speed passenger ferries while still preserving the direct shuttle nature of the existing service. Service would operate from 9 am to midnight on most days with service extending to 2 am on Friday and Saturday night. Frequencies would vary by season and by time of day. The most frequent service would operate during weekend peak hours in the summer season. At this time the frequency would be as in Table 3-11 for the two demand scenarios:

Proposed Initial Implementation

The implementation of the tourist transit system was envisioned to begin with a pilot system. Figure 3-16 shows the Pilot System which is envisioned to consist of three regional routes as follows:

- Route A: Mohegan Sun – New London- Mystic
- Route C: Foxwoods – Mystic
- Route D: Mohegan Sun – Foxwoods

In the pilot system, it is assumed that the current casino coach service would be maintained as a separate service to connect to the high speed passenger ferries. During the peak weekend in the summer season, the frequency of service shown in Table 3-12 was envisioned in the pilot system:

Only Route A would serve New London, meaning buses operating every 15 minutes in each direction in addition to the existing casino shuttles.

¹² SCCOG, *Intermodal Connections Study Southeast, Final Report*, 2005, prepared by TranSystems

The tourist circulator system has not yet been implemented and funding has not been secured, although a grant-in-aid to partially fund the pilot system was appropriated from the State DOT, provided the grant is equally matched from non-state sources. At this time, SCCOG has not been able to secure the required non-state matching funding for the pilot system and the State funding has lapsed.

Potential Ridership

The Intermodal Connections Study projected a range of ridership for the fully implemented system. The range was based on differences in the extent to which potential riders respond to the availability of new transit services. For a peak summer Saturday, ridership on the entire system was projected to be between 9,365 and 19,465 riders. The study did not specify the year for which these estimates were made, but it

Figure 3-15: Full Implementation Tourist Transit System

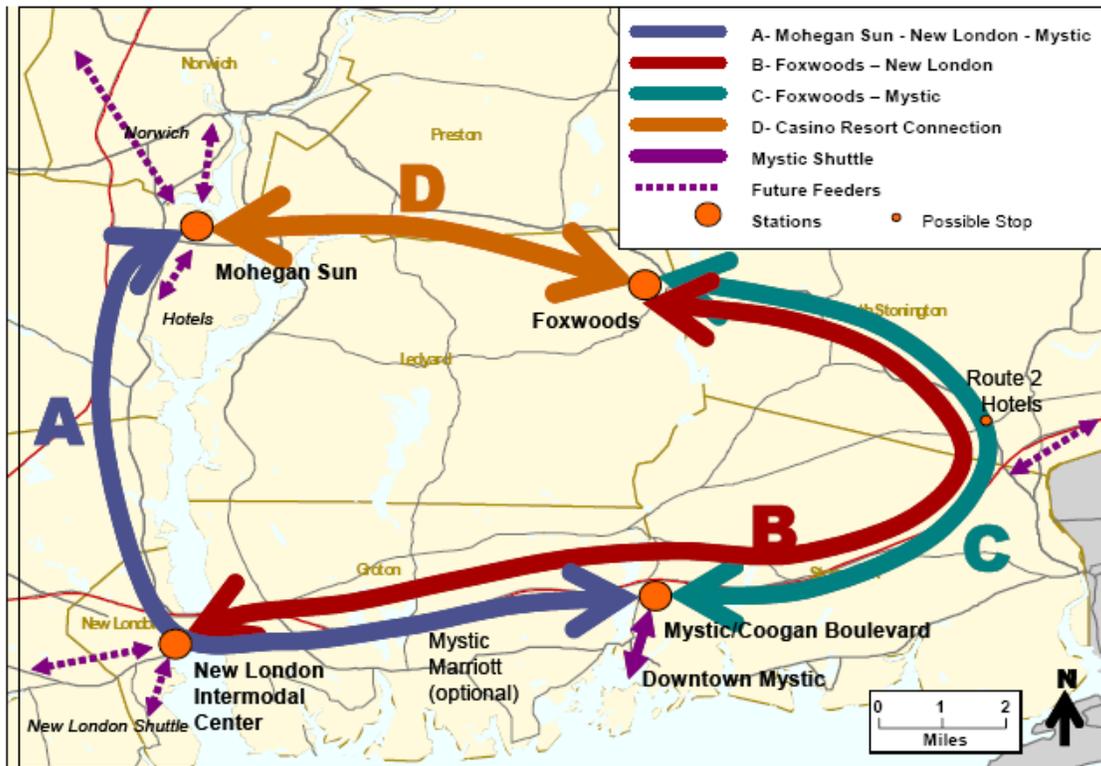


Table 3-11: Proposed Tourist Transit System Service Frequency
During peak hours on summer weekends

Route	Low Demand Scenario	High Demand Scenario
Route A:	4 per hour	6 per hour
Route B:	2 per hour	2 per hour
Route C:	4 per hour	10 per hour
Route D:	5 per hour	10 per hour
Mystic Shuttle:	4 per hour	10 per hour

was envisioned that full system implementation would be at least five years after the initial startup of the system, or no sooner than 2010.

The study did not publish detailed estimates of ridership by destination because of the inherent uncertainty associated with very detailed projections. Nevertheless, unpublished estimates of ridership to and from New London shed some light on the number of riders who might use stops at the RITC. The study did not make the assumption that there would significant new development in New London so much of the New London ridership was assumed to be intermodal connections to both the ferry and train. In the low demand scenario, New London ridership was estimated at 3,130 boardings and alightings on a peak summer Saturday (of these, 2,879 were assumed to be intermodal connections - up from 800 estimated existing connecting trips from the ferry). In the high demand scenario, New London ridership was estimated at 4,584 on a peak summer Saturday (with 4,065 assumed to be intermodal connections). No distinction was made in the study between ferry connections and rail connections; however, it is likely that the share of connecting trips that are to/from rail would increase.

Figure 3-16: Proposed Pilot Tourist Transit System

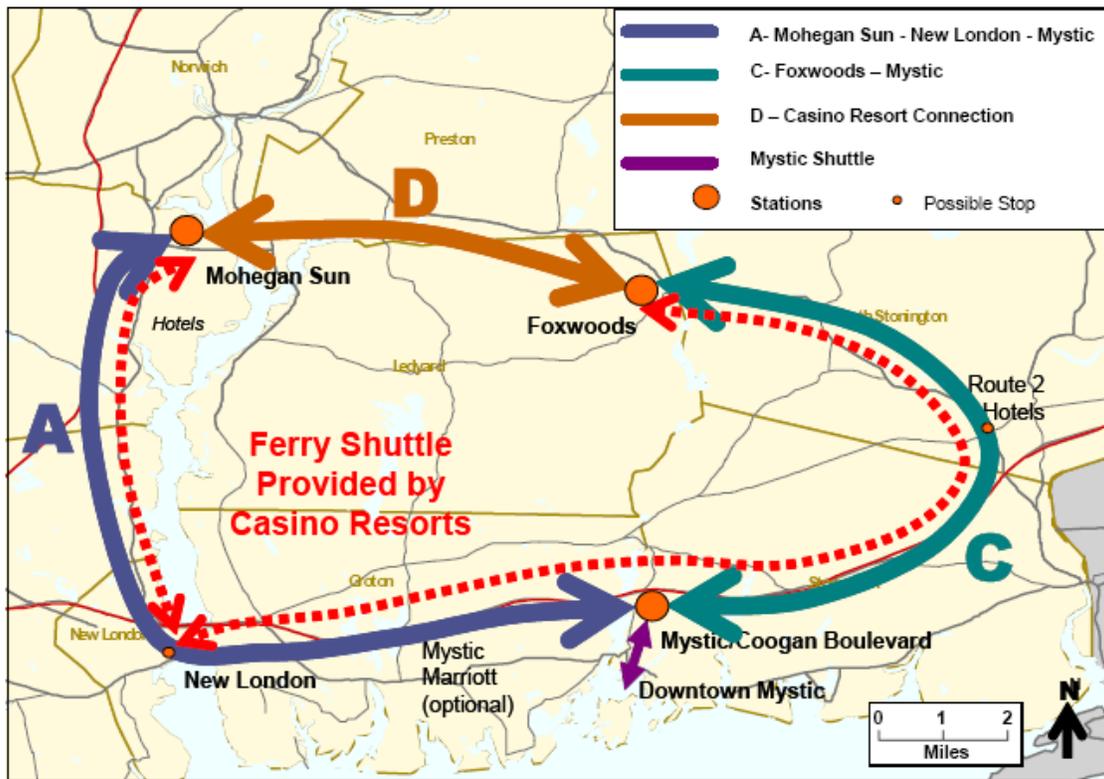


Table 3-12: Proposed Tourist Transit System Pilot Service Frequency
During peak hours on summer weekends

Route	Frequency
Route A:	4 per hour
Route C:	4 per hour
Route D:	5 per hour
Mystic Shuttle:	4 per hour

For the pilot system, no ridership projections were made. For the present study, ridership levels equal to half of the low demand scenario are assumed. In the pilot system, intermodal connection trips to the casinos would continue to be served by casino shuttles and there would be no direct connection to

Foxwoods other than the Route 108 bus. Thus, the pilot system would serve an estimated 289 peak summer Saturday trips, consisting of trips destined to New London and intermodal connections in New London bound for Mystic. The casino shuttles would serve up to 1,257.

Operational Needs

In the full implementation system, it was envisioned that there would be major-stops or transit centers at two locations in New London – at the RITC and at the Ferry Terminal. The latter was envisioned to serve the arriving and departing ferry passengers for the direct casino connections and because planning for an improved RITC had not yet begun. It was envisioned that the tourist shuttle bus stop at the RITC in New London would be equipped with an enhanced shelter, lighting, one medium and one enhanced dynamic sign with lighting, an electrical hook up and a trash receptacle.

The full system, in peak season, would result in six to eight buses per hour accessing the stop or stops at the RITC. An access route that is largely uninhibited by delays caused by railroad crossings would be desirable. Convenient intermodal connections from Cross Sound Ferry, Amtrak, and Greyhound would also be needed at the RITC. Communications with these operators regarding bus and train arrivals and delays could also make connections more seamless, as would joint ticketing and promotion of services. Convenient connections to SEAT buses would also be needed to provide connections to local and regional destinations for employees and local residents visiting the regional attractions.

Again, it should be emphasized that as of this time, SCCOG has not been able to secure funding for the pilot or full system.

3.6 SEAT Local Bus Service

3.6.1. Operations and Services

SEAT Operating Structure

SEAT (Southeast Area Transit) is the local bus service provider for the Southeastern Connecticut region (New London, Norwich, Groton and the nearby communities). SEAT is a multi-municipal public agency created by the local municipalities and acting ordinances similar to the Southeastern Connecticut Council of Governments. It consists of nine member towns: East Lyme, Griswold, Groton, Ledyard, Montville, New London, Norwich, Stonington and Waterford. SEAT also operates bus routes through four non-member towns. Though SEAT is not a state agency, all SEAT fixed assets and land are owned by the Connecticut Department of Transportation (ConnDOT) and are leased to SEAT. First Transit, a private contractor, manages the service. SEAT buses are primarily 35-foot and 40-foot transit buses stored and maintained at a ConnDOT-owned facility in Preston. All drivers report to work in Preston and deadhead their buses (i.e., operate closed door) to begin their routes in New London and Norwich.

Figure 3-17: SEAT New London Hub



New London Transfer Hub Operations

SEAT is operated as a "pulse system." This means that a set of buses, each serving a different route, is scheduled to arrive and depart from a transfer hub at the same time at regular intervals throughout the day.

The region has transfer hubs/pulse points in New London, Norwich, and Groton. The Water Street bus stop

(Figure 3-17) is the New London hub; it serves four local (within New London) routes and four regional “corridor” routes (connecting New London to other municipalities). These eight New London SEAT bus routes are as follows:

Corridor Routes

- Route 1/101: New London to Norwich via Route 32
- Route 2: New London to Groton and Norwich via Routes 117/184 or Route 12
- Route 3: Niantic-New London-Groton via Routes 161 and 1
- Route 108: New London-Groton-Olde Mistick Village-Foxwoods express

Local Routes

- Route 12: Broad Street/Jefferson Avenue serving Jefferson Ave./ Crystal Mall/ New London shopping Center and Senior Center
- Route 13: Montauk Avenue/Ocean Avenue serving Senior Center/L&M Hospital/ Ocean Beach
- Route 14: Crystal Avenue/Colman Street, also serving Crystal Mall and New London Mall
- Route 15: Jefferson Avenue/Colman Street serving New London and Waterford (evenings only)

The three daytime local routes operate hourly on the hour from the Water Street hub. The four corridor routes generally operate every two hours on the hour and are staggered so that only two buses serve the hub at a time. Routes 1 and 3 operate from New London on the “odd” hours from 7:00 AM to 5:00 PM (with additional trips on Route 101 at 6:00 and 8:00 AM). Routes 2 and 108 operate from New London on the “even” hours from 8:00 AM to 6:00 PM with earlier and later service (from 6:00 AM to 10:00 PM) on Route 108. Thus, under current schedules, typically five buses meet at the hub each hour and a maximum of six buses serve the hub at any one pulse time.

Of the seven routes, three (Routes 1, 3, & 108) approach downtown from the north along Eugene O’Neill Drive. These are joined by two more (Routes 12 & 13) approaching from the west along State Street. These five continue east along State Street to Bank Street where they are met by two more (Routes 3 & 14). All seven routes then turn north and use Water Street to reach the RITC area. When departing, the seven routes head north on Water Street. Four continue out along Water Street while three turn west onto Governor Winthrop Boulevard, then south onto Eugene O’Neill Drive and follow Green and Bank Streets out of downtown.

At the RITC, Route 108 stops in front of the Union Station building (except during the Parade Project construction) while the other routes stop in the SEAT bus stop area which consists of about 400 feet of curb space along Water Street just north of the rail and intercity bus stations. Buses in that area line up along the curb at pulse time. Buses generally arrive a few minutes before the hour giving passengers time to transfer. Buses then depart simultaneously on the hour. There are no permanent SEAT supervisors stationed at the hub although mobile supervisors randomly check on operations. If a bus is running late, the operator will notify the dispatcher at the Preston headquarters who will make a decision as to whether to instruct buses on other routes at the hub to hold. SEAT does not monitor service by any other providers at the hub and does not hold buses for passengers transferring from other modes.

Service Levels

Table 3-13 provides an overview of the span of service and frequency on the New London routes. Table 3-14 shows the weekday schedule for all New London routes. As indicated above, the three daytime local routes operate hourly while the four corridor routes generally operate every two hours. Local routes make ten to eleven trips daily, while corridor routes have longer hours and make six to eleven trips during the day. Most of the services operate Monday through Saturday with Sunday trips on the New London/Mohegan Sun/Norwich corridor route (101) and the Olde Mistick Village/Foxwoods route (108).

Joint Ticketing and Supplemental Services

Amtrak sells fares on SEAT Route #108 to Foxwoods through a joint ticketing arrangement. To serve these passengers the Route #108 (Foxwoods/ Olde Mistick) stops in front of the Union Station building instead of at the main SEAT Water Street hub bus stop. SEAT also runs additional shuttles from Union Station to Mystic when cruise ships are in port. Cruise ship operators generally provide shuttles from the State Pier to Union Station and use the Route 108 stop in front of the station. Route 108 and supplemental shuttle buses are then moved to the regular SEAT stop.

Table 3-13: SEAT Bus Services

SEAT Routes	Days of operation	Span of Service (at New London)	Headway	Total Trips/ day
<u>Corridor Routes</u>				
1/101: Norwich/New London (Rt. 101 via Mohegan Sun)	All Days	Mon-Sat 6 AM to 11 PM Sunday: 7 AM - 6 PM	60-120 min 60 min Sun.	11
2: Norwich/ Groton/New London	Mon-Sat	8 AM to 6 PM	120 min	6
3: Groton/New London/Niantic	Mon-Fri	7 AM to 5 PM	120 min	6
108: New London/ Olde Mistick Village/ Foxwoods	All Days	6 AM to 10 PM Sunday: 6 AM to 6 PM	120 min	9 M-Sat. 6 Sun.
<u>Local Routes</u>				
12: Jefferson Ave/Crystal Mall/ New London Shopping Center/ Senior Center	Mon-Sat	8 AM to 6 PM	60 min	11
13: Senior Center/ L& M hospital/ Ocean Beach	Mon-Sat	7 AM to 6 PM (Sat: starts at 8 AM)	60 min	12 M-F 11 Sat.
14: Crystal Ave./New London Mall/ Crystal Mall/ NL Shopping Center/Colman St.	Mon-Sat	8 AM to 6 PM	60 min	11
15: New London/ Waterford (evening service)	Mon-Sat	7 PM to 12 Mid	60 min	5

3.6.1. Utilization of Services

Originating and Transferring Ridership

SEAT reports systemwide ridership in FY 2008 as 1,158,771 annual passenger trips. Ridership has increased on the order of 8%-9% in four of the last five years. There is some seasonal variation, with ridership in August (the highest month) averaging about 19% higher than in February (the lowest month).

SEAT does not collect data on ridership by stop, so there is no information from SEAT on the number of originating or transferring riders using the Water Street hub bus stop; however, the number of transfers used on SEAT bus routes serving New London may be a reasonable approximation of the number of transferring riders. In October 2008, for the routes serving New London, there were 52 transfer riders for

every 100 paid riders. Ridership data by route and date for the same month indicates average daily paid ridership (excluding transfers) of 1,456 on the seven routes in New London. This implies that there are approximately 763 daily weekday transfers, most of which probably occur at the Water Street stop; however, this is likely to be an over-estimate since some of these could be transferring in Groton or Norwich on the routes that connect to those cities. Therefore, it was assumed that 75% of these transfers occur on Water Street, or about 572 daily transfers. These transfers, if spread over 17 hourly pulses, would imply an average of 34 transferring passengers per hourly pulse. The number of originating (non-transferring) passengers cannot be determined from available data. Saturday ridership is comparable to weekdays, but on Sundays there are only two New London routes operating so transfers would be minimal. Therefore, with 306 weekdays and Saturdays per year, annual transfers are estimated at 175,000.

Table 3-14: New London SEAT Schedule

Time	Monday-Saturday		Sunday	
	Corridor routes	Local Routes	Corridor routes	Local Routes
6:00 AM	101, 108	-	108	-
7:00 AM	1, 3*	13*	101	-
8:00 AM	101, 2, 108	12, 14, 13	101, 108	-
9:00 AM	1, 3*	12, 13, 14	101	-
10:00 AM	2, 108	12, 13, 14	101,108	-
11:00 AM	1, 3*	12, 13, 14	101	-
12:00 PM	2, 108	12, 13, 14	101,108	-
1:00 PM	1, 3*	12, 13, 14	101	-
2:00 PM	2, 108	12, 13, 14	101, 108	-
3:00 PM	1, 3*	12, 13, 14	101	-
4:00 PM	2, 108	12, 13, 14	101,108	-
5:00 PM	1, 3*	12, 13, 14	101	-
6:00 PM	2, 108	12, 13, 14	101, 108 (both end)	-
7:00 PM	101, 1 (ends)	12, 13, 14 (all end) 15 begins	-	-
8:00 PM	108	15	-	-
9:00 PM	101	15	-	-
10:00 PM	108 (ends)	15	-	-
11:00 PM	101	15	-	-

* indicates service that does not operate on Saturdays

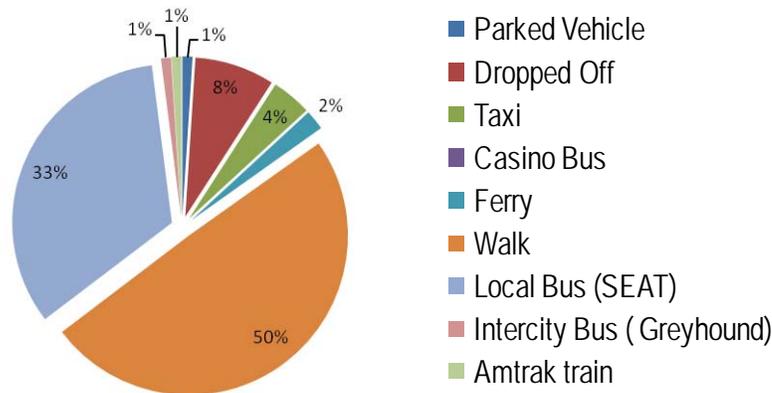
Rider Characteristics and Travel Patterns

Most SEAT riders making transfers in New London reportedly use the Water Street hub bus stop near Union Station to do so. Some conclusions about travel patterns can be drawn from the passenger survey conducted for this study in August 2008, which gathered 85 responses from SEAT passengers at the Water Street bus stop (36 on Thursday and 49 on Saturday). The data indicated:

- SEAT buses at the Water Street terminal are used most by daily commuters for work and business (64% of respondents). They also serve significant proportions of people making social/recreational trips (18%) and shopping and personal trips (17%). Only one respondent used it to travel to and from school.

- The vast majority (84%) of SEAT riders surveyed use SEAT at least once a week.
- Most of the passengers surveyed were bound for stops in New London, Groton, and Norwich and at the Crystal Mall.
- As shown in Figure 3-18, only about one third of SEAT passengers boarding at the Water Street stop reported making a transfer. About half of the passengers reported walking to the terminal. Very few made connections through other modes; 12% were dropped off or took a taxi. The actual percentage making transfers is believed to be much higher since transferring passenger spend less time waiting and would have been less likely to complete the survey.

Figure 3-18: How SEAT Passengers Arrived at the Terminal



The survey, as well as information provided by SEAT, indicated that there are very few passengers connecting from Amtrak to Route 108. SEAT tracks the number of Amtrak tickets received. For the first eleven months of 2008, only 387 Amtrak tickets were received or about 35 per month (or less than one round trip per day). This ranged from 14 in April to 64 in May. Most Route 108 passengers are simply transferring from other SEAT routes. However, SEAT is promoting the Amtrak connection and hopes to improve ridership.

3.6.2. Current Operational Needs

Rider Opinions

The passenger survey also gathered responses regarding rider opinions about the SEAT Water Street bus stop. As with most of the other rider groups surveyed, SEAT riders rated the amenities at this location (such as restrooms, newsstands and food services) lowest among the attributes with 28% rating them poor or very poor. Also, 23% rated passenger comfort at the bus stop to be poor or very poor. Other attributes like parking, ease of finding schedules for all modes, personal security at the terminal, and nearby places of interest also got poor/very poor ratings from a significant share (14%-17%) of respondents. Among the six traveler groups surveyed, SEAT passengers gave the lowest or second lowest ratings to every category except amenities (where they gave the third lowest ratings behind Greyhound and Amtrak passengers).

Deficiencies in Current Operations

While there are clearly deficiencies in the current SEAT bus stop on Water Street (including a lack of shelter, restrooms and information), it functions fairly well operationally. A location closer to, and more integrated with, the Greyhound terminal and Union Station is desired by SEAT. SEAT operations could benefit from sharing passenger waiting, information, and ticketing functions with other operators such as Greyhound and Amtrak. SEAT would also consider sharing bus bays with Greyhound in order to better

integrate services and support functions. SEAT would also like to have the Route 108 stop closer to other SEAT buses, while still providing the Amtrak connection.

SEAT reported that there are sometimes problems with taxis encroaching on their bus stop area along Water Street. SEAT did not report any issues with traffic circulation near the RITC during normal operation; however, special events cause considerable vehicle and pedestrian congestion making hub operations very difficult.

SEAT would like to be able to move some operating functions to New London, such as having bus drivers report at New London instead of at the SEAT facility in Preston. To support this, the New London terminal would need to include a small office, driver break room, employee restrooms and employee parking.

3.6.3. Future Operational Needs

Potential Future Service Changes

SEAT has no plans for additional routes. However, SEAT is waiting for funding to increase the frequency on corridor routes to hourly. This will translate into seven or eight buses at every pulse instead of the current five or six. There is a possibility that all routes could increase to every 30 minutes sometime in the future. This would not affect the space needed at the terminal but would increase the number of pulse times during the day and would presumably mean more total daily ridership using the terminal. This would probably reduce the number of riders using the terminal at any one time since the effect on ridership of a doubling of service would likely be less than a doubling of ridership. Typically, such an increase in service might result in a 25%-50% increase in ridership at best.

Future Operational Needs

The current 400-foot long curbside terminal facility on Water Street appears to be able to accommodate six to seven buses and so could probably accommodate the possible increase in service levels if Route 108 remains in front of the station. Any reconfigured terminal space should be designed to accommodate at least seven buses.

3.7 Taxis and Other For-Hire Services

3.7.1. Operations and Services

There are a number of taxi and car services operating in downtown New London. These include Harry's Cab Service, Port City Taxi and Yellow Cab/Curtin Transportation Group. These three companies generally have about 22-28 taxis in operation at any given time.

A taxi stand is located on Water Street in front of Union Station (Figure 3-19a). The area is about 150-feet in length and was shared with private vehicles dropping off and picking up passengers at the station and also with the SEAT Route 108 bus. (A few days each year, the area is also shared with buses shuttling passengers to and from cruise ships docked a short distance away at the State Pier.) Although each function has a designated section of curb space, there was considerable overlap in their use. Taxis not currently serving customers generally go to Union Station to wait for a fare, although this is reportedly not the only taxi stand in the city. Taxis there can pick up passengers coming out of the station but can also leave to pick up elsewhere when customers phone for a cab. Thus, taxis at the station are not necessarily there to serve customers from the RITC. Taxi operators indicated that there was room for as many as about twelve taxis in front of the station and it was not uncommon for as many as eight to ten taxis to be there. When the Parade Project was underway, taxis had to find somewhere else to park (Figure 3-19b), and many used the Greyhound bays although Greyhound attempted to keep them out.

Taxi companies also serve the ferry terminals. Passengers may walk to the taxi stand from the ferries but typically they call for service and cabs drive over to the ferry terminal.

There are currently no other for-hire transportation services at the station such as auto or bicycle rental services.

Figure 3-19: Union Station Taxi Stand



3.7.2. Utilization of Services

One of the taxi companies, representing about one fourth of the taxis in the city, noted that they pick up between 15 and 30 passengers a day at the station. Most are local trips, with some passengers going to the casino resorts. The other companies could not estimate the number of passengers picked up at the station. The access mode shares from the passenger survey showed that about 16% of Amtrak passengers used a taxi to access the station. This would indicate that about 30-50 passengers a day reach the station by taxi.

3.7.3. Current Operational Needs

Taxi operators indicated that, before Parade construction, the size of the area shared by taxis and private vehicles dropping off passengers was adequate most of the time but could be bigger. During Parade construction, they had no officially sanctioned place to stand. The Parade Project has changed this area and was intended to make improvements in safety and make the area more pedestrian friendly. The Parade Project leaves about 100-feet of curb space in front of the station (a 50% reduction in the pre-construction curb space). This space is separated from traffic by a flush island (although it was originally proposed to be a raised island with sloped curbing). The curb in front of the station has been bumped out near each end of the island (at the State Street intersection and at the crosswalk before the Greyhound terminal) constraining entry and exit into the area. The area, as modified, has capacity to park only about five vehicles parallel to the curb¹³. Thus, both the post-Parade Project situation leaves taxis with less space to park than before construction. Taxis will likely need additional taxi stand space, though given that some of the waiting cabs do not ultimately pick up passengers at the station, all of this this space need not be at the train station. There is a lack of bicycle storage at the RITC. There may be opportunities in a variety of locations at or around Union Station to add bike racks (e.g., at City Pier, along South Water Street, in front of the Water Street Garage, etc.).

¹³ Taxi operators reported that they used to back in to angle parking and that this provided more capacity. However, this does not appear to be compatible with the current traffic flow and the design incorporated in the Parade Project.

3.7.4. Future Operational Needs

Demand for taxis trips to and from the RITC can be expected to mirror overall ridership at the station, and probably most closely match rail and Greyhound bus ridership. As ridership increases on those modes, the number of taxi trips may increase.

If New London becomes a more attractive destination for travelers, there may be sufficient demand to support auto rentals at the station. These could be traditional auto rentals or they could be membership-based services such as Zip-Car. Either would require parking spaces near the station to store vehicles. Traditional auto rentals would require, at a minimum, a rental counter located in the station or nearby and could require other facilities. Zip-Cars typically do not require anything beyond parking spaces for the vehicles.

Increased visitation of attractions in New London could also potentially support a bicycle rental concession. This would require a rental counter and secure storage space for the bicycles.

3.8 Automotive Traffic

3.8.1. Operations

Access Routes to the RITC

Much of the RITC is located along Water Street which is a one-way street serving as a major connection from downtown New London to I-95. The section of the road between State Street and Governor Winthrop Boulevard provides access to the Union Station building, the southbound rail platform, the Greyhound Bus terminal and the SEAT transfer hub, all located on the east side of the street. On the west side of the street, it provides access to the Water Street Garage.

State Street and Governor Winthrop Boulevard run perpendicular to Water Street and cross the railroad tracks. State Street provides vehicular access to the Fishers Island Ferry as well as pedestrian access to the northbound rail platform, City Pier and Cross Sound Ferry. Governor Winthrop Boulevard connects to Ferry Street east of the railroad tracks providing vehicular access to Cross Sound Ferry facilities.

Eugene O'Neill Drive, Atlantic Street, Bank Street, and South Water Street also provide important vehicular and pedestrian connections near the RITC. All are one-way streets. The access routes and major streets in the vicinity of the RITC are described in greater detail in Chapter 2.

The intersections at State Street and Bank Street, Eugene O'Neill Drive and State Street, Eugene O'Neill Drive and Governor Winthrop Boulevard, and Water Street and Governor Winthrop Boulevard are signalized. Nearby intersections that are not signalized are: State Street and South Water Street, Atlantic Street and Water Street, and Atlantic Street and Eugene O'Neill Drive. Entry from State Street westbound to Water Street and Atlantic Street to Water Street are controlled by STOP signs.

Railroad Crossings

There are two at-grade railroad crossings at the RITC that significantly impact access to transportation facilities. The signalized crossing at Governor Winthrop Boulevard is the only vehicular access route to the Cross Sound Ferry terminal. Access is briefly blocked approximately 40 times per weekday when passenger trains pass through, and is blocked for longer periods twice each day when P&W freight trains pass through. Currently P&W does not connect to NECR in New London so the longer delays that once took place are no longer occurring. On weekends, 23 passenger trains pass through the crossing on

Saturday and 26 on Sunday. A combined schedule of all passenger trains using the crossing is shown in Table 3-15.

The second crossing is at State Street (Figure 3-20) which is used for vehicular access to the Fishers Island Ferry as well as pedestrian access to the northbound rail platform, City Pier and Cross Sound Ferry. When one of the 23 daily Amtrak or SLE trains is stopped in the station, vehicular and pedestrian access is blocked. The crossing is also briefly blocked by each of the 17 Acela trains that do not stop. Access is blocked for longer periods twice each day when freight trains pass through.

Table 3-15: Schedule of All Trains Passing through New London

Weekday			Weekend		
5:52 AM	NB	NE Regional	5:52 AM	NB	NE Regional
6:30 AM	SB	Acela	8:16 AM	SB	NE Regional
7:36 AM	SB	<i>Acela (no stop)</i>	9:23 AM	NB	NE Regional
7:51 AM	SB	NE Regional	9:35 AM	SB	<i>Acela (no stop) Sat. only</i>
8:36 AM	SB	<i>Acela (no stop)</i>	10:14 AM	NB	<i>Acela (no stop) Sat. only</i>
8:37 AM	NB	Acela	10:20 AM	SB	NE Regional
9:20 AM	NB	NE Regional	11:14 AM	SB	NE Regional
9:54 AM	SB	NE Regional	11:23 AM	NB	NE Regional
10:13 AM	NB	<i>Acela (no stop)</i>	12:31 PM	NB	NE Regional
10:36 AM	SB	<i>Acela (no stop)</i>	12:35 PM	SB	<i>Acela (no stop)</i>
10:55 AM	NB	NE Regional	1:17 PM	SB	NE Regional
11:16 AM	SB	NE Regional	2:14 PM	NB	<i>Acela (no stop)</i>
12:13 PM	NB	<i>Acela (no stop)</i>	2:35 PM	SB	<i>Acela (no stop)</i>
12:36 PM	SB	<i>Acela (no stop)</i>	3:19 PM	SB	NE Regional
12:46 PM	SB	NE Regional	3:26 PM	NB	NE Regional
1:32 PM	NB	NE Regional	4:14 PM	NB	<i>Acela (no stop) Sun. only</i>
1:36 PM	SB	<i>Acela (no stop)</i>	4:26 PM	NB	NE Regional Sat. only
2:13 PM	NB	<i>Acela (no stop)</i>	4:35 PM	SB	<i>Acela (no stop) Sun. only</i>
2:36 PM	SB	<i>Acela (no stop)</i>	4:50 PM	SB	NE Regional
2:56 PM	NB	NE Regional	5:28 PM	NB	NE Regional
3:13 PM	NB	<i>Acela (no stop)</i>	5:35 PM	SB	<i>Acela (no stop) Sun. only</i>
3:17 PM	SB	NE Regional	6:14 PM	NB	<i>Acela (no stop) Sun. only</i>
4:27 PM	NB	NE Regional	6:17 PM	SB	NE Regional
4:36 PM	SB	<i>Acela (no stop)</i>	7:23 PM	NB	NE Regional
4:53 PM	SB	NE Regional	8:14 PM	NB	<i>Acela (no stop) Sun. only</i>
5:11 PM	NB	<i>Acela (no stop)</i>	8:18 PM	SB	NE Regional
5:51 PM	SB	<i>Acela (no stop)</i>	9:26 PM	NB	NE Regional
6:06 PM	NB	<i>Acela (no stop)</i>	10:20 PM	NB	NE Regional Sun. only
6:22 PM	NB	NE Regional	11:25 PM	SB	NE Regional
6:41 PM	SB	<i>Acela (no stop)</i>			
7:10 PM	NB	<i>Acela (no stop)</i>			
7:15 PM	SB	NE Regional			
7:43 PM	NB	Shore Line East			
7:55 PM	SB	Shore Line East			
8:08 PM	NB	<i>Acela (no stop)</i>			
8:19 PM	SB	NE Regional			
8:25 PM	NB	NE Regional			
9:08 PM	NB	Acela			
10:20 PM	NB	NE Regional			
11:25 PM	SB	NE Regional			

Note: Times are estimated for Acela non-stop trains

Figure 3-20: State Street Railroad Crossing



3.8.1. Utilization of Facilities

Current Traffic Volumes and Level of Service

Based on traffic information documented in a recent study¹⁴, vehicular access and traffic operations on the roadways and intersections are, in general, good during the winter season. To understand traffic operations during a summer Saturday, turning movement count data was collected on Saturday, August 2, 2008 during the morning (7:00 AM – 9:00 AM), mid day (11:00 AM – 1:00 PM), and afternoon (4:00 PM – 6:00 PM) peak periods at the following intersections:

- State Street and Bank Street
- State Street and Water Street
- Governor Winthrop Boulevard and Ferry Street
- Governor Winthrop Boulevard and Water Street

These counts were adjusted to represent a typical summer Saturday based on auto ferry vehicle volume data. The resulting peak hour traffic volumes are shown in Figure 3-21.

A study of the capacity was conducted to determine the ability of the roadways and intersections to accommodate summer Saturday traffic under various levels of service. Level of Service (LOS) is a qualitative measure of the effect of a number of factors including intersection geometrics, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of an intersection. Six levels of service are defined by letter designations ranging from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Generally, LOS D is considered acceptable. Results from the capacity analysis during the morning (AM), mid day, and afternoon (PM) under 2008 (summertime) Saturday conditions indicate that all signalized and stop-controlled intersections operate well with an overall intersection LOS C or better during all peak hours. Figure 3-22 illustrates the LOS conditions.

¹⁴ Wilbur Smith Associates, Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, 2007

Figure 3-21: Peak Hour Traffic Volumes (2008 Existing Conditions)

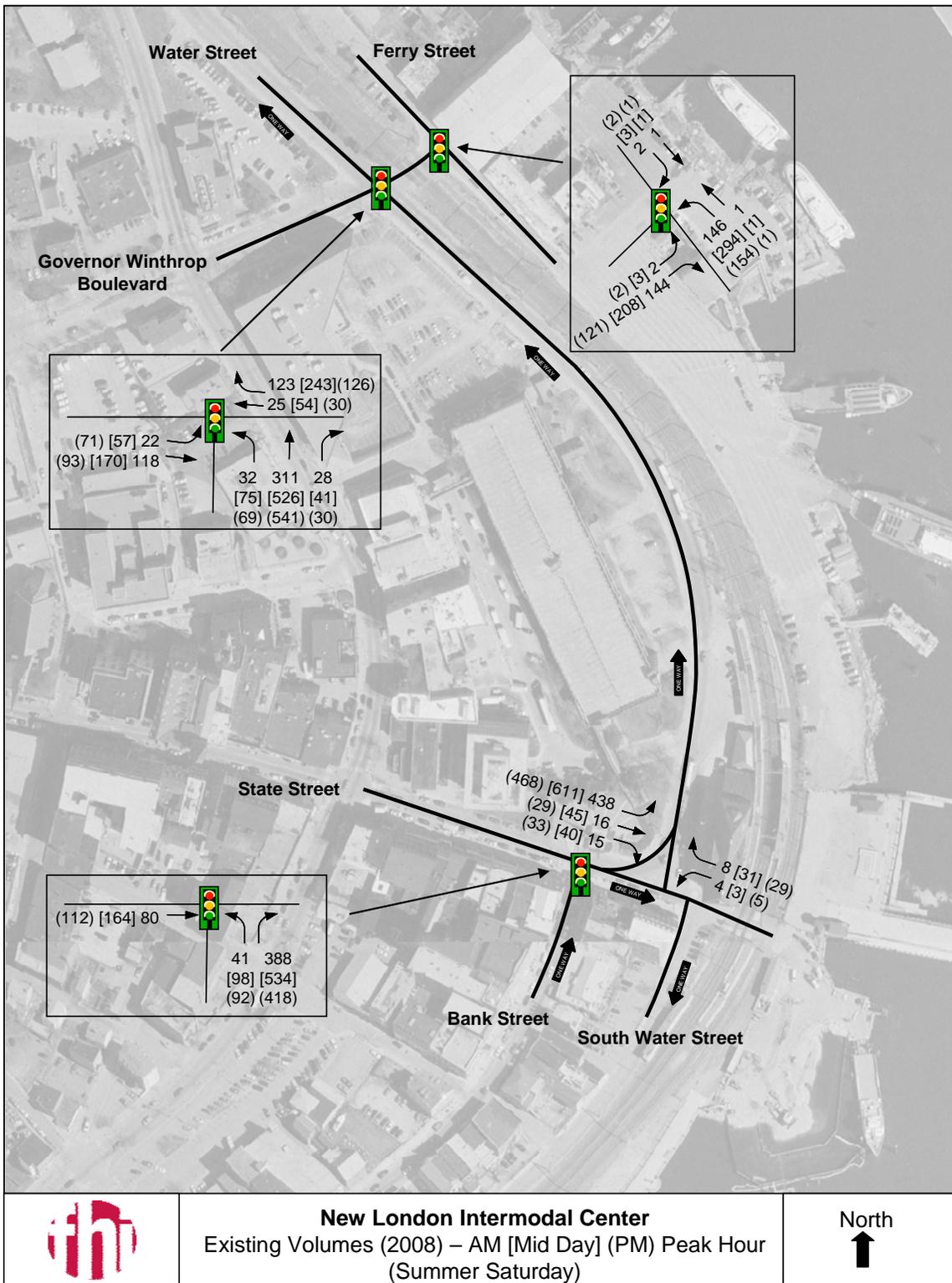
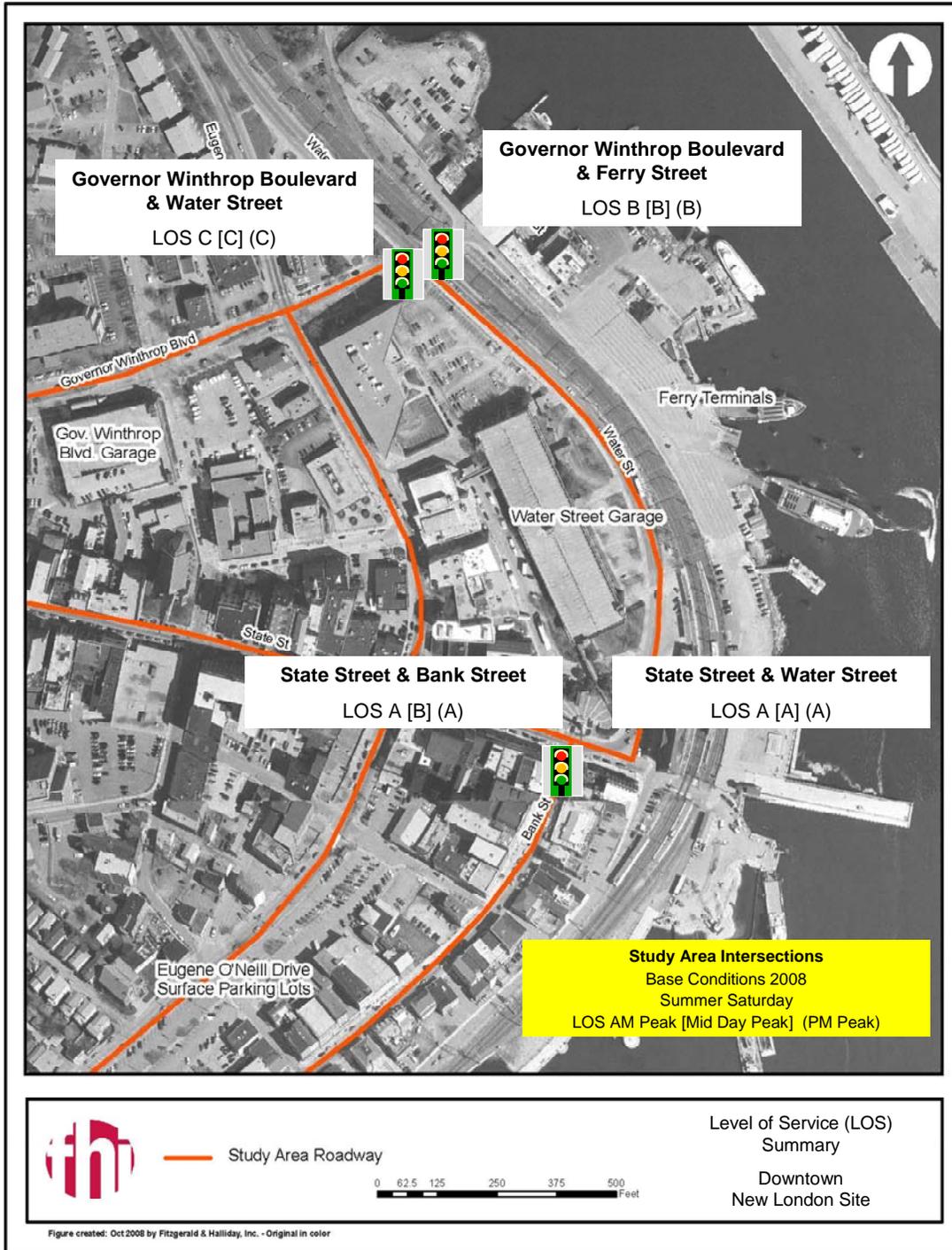


Figure 3-22: Level of Service Summary (2008 Existing Conditions)



Curbside activity

Prior to Parade construction, an approximately 150-foot section of Water Street in front of Union Station was shared among taxis, private vehicles dropping off and picking up passengers and the SEAT Route 108 bus. On a few days each year (nine days in 2008), when cruise ships were docked at the State Pier, as many as 20 shuttle buses operated between the State Pier and this area, displacing the other uses. Greyhound and SEAT buses utilize their own terminal areas farther north along Water Street and move in and out of traffic. Crosswalks to access the Water Street Garage are located before and after the Greyhound terminal. There has been significant potential for conflicts between operators, between operators and private vehicles, and between vehicles and pedestrians. The Parade Project is expected to change the character of this important section of Water Street.

3.8.2. Current Operational Needs

Current roadway operations are acceptable; thus roadway improvements are not required to accommodate existing traffic. Though one-way street patterns improve safety and reduce the number of conflicts, they can confuse drivers who are not familiar with the area. Also there are concerns about delays and safety at the at-grade railroad crossings at State Street and Governor Winthrop Boulevard. Operational changes or physical improvements to eliminate these conflicts and concerns would be desirable. Pedestrian safety and vehicle conflicts along Water Street should be improved by the Parade Project.

The Parade Project is changing the area near the RITC and includes improvements designed to increase safety and make the area more pedestrian friendly. The Parade Project will leave about 100 feet of curb space in front of the station. This space will be separated from traffic by a narrow at-grade island. The curb in front of the station will be bumped out near each end of the island (at the State Street intersection and at the crosswalk before the Greyhound terminal) constraining entry and exit into the area. The area will have capacity to park only about five vehicles and will have to be shared by taxis and private vehicles picking up and dropping off passengers. Given that this area could previously accommodate around 12 vehicles and it was not uncommon for up to ten taxis to be standing in this area, this area is likely to be overloaded on a regular basis. Taxis standing in this area may prevent other vehicles from picking up and dropping off passengers. It is unlikely that SEAT buses will be able to use this small area, nor would cruise ship shuttle buses.

3.8.3. Future Operational Needs

While the pickup/drop-off and taxi area in front of the station is likely to be overloaded in the short term, it is likely to see increased use as Shore Line East service is expanded to New London, as soon as 2010. Taxis and private vehicles may need to be separated and provided with more space in the vicinity of the RITC.

Some growth in traffic in New London is likely to occur independent of traffic growth associated with the RITC. The most recent traffic study estimated a 2% background growth rate in traffic¹⁵. This would partially be the result of new downtown developments and partially the result of growth in travel using the RITC. Increasing traffic may cause intersections that currently operate at an acceptable level of service to become unacceptable or fail. Possible increases in RITC-related traffic are discussed in Section 3.3 and the traffic level of service impacts and traffic mitigation options will be addressed as study recommendations are developed.

¹⁵ Wilbur Smith Associates, Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, 2007

3.9 Parking

3.9.1. Parking Facility Operations

Several parking facilities are available for the use by patrons at the RITC and people working and visiting downtown New London area. These include two garages (the Water Street Garage and the Governor Winthrop Garage) and four surface lots.

Figure 3-23: Water Street Garage



The Water Street garage (Figure 3-23) is closest to Union Station, located just across Water Street. The 3.5-story structure has 975 spaces (recently this number was reported to be reduced to 940). About 200-300 spaces are obligated to be available for use by Amtrak passengers. While owned by the City, the garage is operated by Pro-Park. Parking at the Water Street garage costs \$1 per hour up to a maximum of \$6 per day, Monday through Thursday. To reflect the fact that peak usage is on weekends, on Friday through Sunday the hourly rate is \$2, with a maximum of \$8 on Fridays and \$15 per day on weekends. Monthly rates are \$69 per month and \$156 for three months. The garage has a combined entrance/exit on Water Street at the center of the building and an exit onto Water Street at the north end of the building. A cashier is on duty only at this exit. There is also an entrance/exit on Atlantic Street at the north end of the building. This exit cannot be used by cash customers.

Farther west into the Central Business District, and away from the waterfront, at the intersection of Governor Winthrop Boulevard and Union Street, the Governor Winthrop Garage offers 400 parking spaces. This formerly City-owned garage is now owned and operated by Cornish Parking. The garage has no hourly rates charging \$10 per day or \$55 per month. It is only open for entry from 8 AM until noon. A flat weekend rate of \$15 is charged for parking all weekend.

The two City-owned surface lots on Eugene O'Neill Drive are located north and south of Pearl Street and offer a total of 155 spaces. Parking is free, but there is a two hour limit enforced on weekdays. For longer term usage, a monthly parking permit for these surface lots can be purchased for \$25. There is no time limit on weekends or for permit users.

The other surface lot in the Central Business District is the 186-space privately-owned Julian Parking lot located adjacent to the north side of the Water Street Garage. It is not open to the public on weekdays when it serves the adjacent office building, but has been opened on summer weekends when ferry passengers create additional demand and when rates at the Water Street garage are higher. When open, the lot is available from Friday evening through Sunday at a cost of \$15 per day.

On the eastern side of railroad tracks, Cross Sound Ferry offers a 130-space parking area for its patrons and another 130 spaces for its employees. The lot is staffed and parking is available on a first-come/first-served basis for a fee of \$10 per day. The passenger spaces are split between the unpaved lot to the south of the site that is partially owned by the City of New London and leased to Cross Sound Ferry, and space behind the administration building that has been temporarily converted from a vehicle staging area. Fishers Island Ferry does not provide long term parking.

Throughout downtown New London there is free on-street parking with an enforced two-hour limit only on weekdays.

3.9.2. Utilization of Facilities

Parking Revenues

Daily parking revenue data for the Water Street Garage was obtained from the City of New London for the months of January and August 2008. The data shows revenue separately for parkers paying monthly rates and parkers paying daily rates. The total monthly revenue for each type is shown in Table 3-16.

Those paying monthly rates are most likely people working in downtown New London. The data shows that monthly rate total revenue is 56% higher in August than in January, possibly indicating differences in seasonal employment and also possibly less availability of on-street free parking in the summer. At \$69/month, these revenue figures translate into 197 monthly parkers in January and 307 in August. Daily rate parking revenues, however, are over seven times higher in August than in January, reflecting the highly seasonal use of the garage. Daily rates vary according to the number of hours parked and the day of the week, so revenue data cannot be directly translated into numbers of parked vehicles.

The daily rate revenues were provided by individual date for the two months. This can be used to understand the difference in utilization of the garage on different days of the week. Figure 3-24 shows the average daily revenue from day rate parkers for January and August 2008.

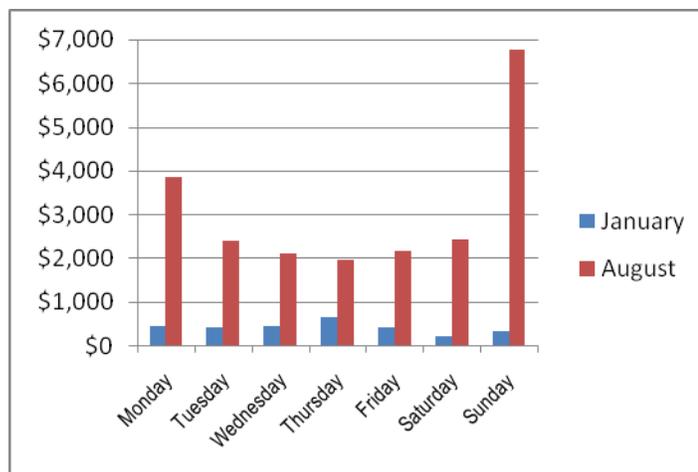
It should be noted that the day of week reflects the day on which parkers exited the garage, regardless of how many days they may have parked there. Thus, in August, Sunday is by far the day with the highest revenue, as this likely includes revenue vehicles parked for the weekend while people traveled to Block

Table 3-16: Water Street Garage Monthly Parking Revenue

	January	August
Daily	\$13,764	\$98,409
Monthly	\$13,576	\$21,157
Total	\$27,340	\$119,566

Figure 3-24: Water Street Garage Average Daily Revenue for Day Rate Parkers

Day	January	August
Monday	\$457	\$3,869
Tuesday	\$428	\$2,425
Wednesday	\$466	\$2,130
Thursday	\$667	\$1,962
Friday	\$429	\$2,167
Saturday	\$240	\$2,441
Sunday	\$363	\$6,765



Island. Similarly, Monday is the second highest day, probably from people taking a long weekend. Tuesday through Saturday all experienced much lower average revenue than Sunday and Monday, with Thursday having the lowest average daily rate revenue.

While January daily rate revenue is just a fraction of August revenue, January daily rate revenue shows a very different pattern by day of week. Saturdays and Sundays experienced the lowest average revenue. Thursdays experienced the highest revenue, though only about a third of August Thursdays, the lowest revenue day in August.

Parking Utilization

A parking occupancy survey was conducted for the study on Saturday August 2, 2008 to capture parking demand during peak summer conditions. The survey examined the two parking garages and four surface lots. While the goal was to capture peak summer conditions, inclement weather resulted in less than typical peak summer weekend patronage. The counts indicated that the Cross Sound Ferry parking lot was filled to capacity but the two parking garages were utilized to less than half their capacity. Cross Sound Ferry reported that the Block Island Ferry, a major source of cars parked in some of these facilities, carried only 740 passengers that day, by far the lowest ridership of the five Saturdays between July 26th and August 23rd. The other four Saturdays ranged between 1,510 passengers and 1,156 passengers. Thus the Saturday peak occupancy reflected in the August 2nd data does not reflect the summer Saturday peak occupancy under typical peak summer conditions.

An adjustment was made to reassess the summer peak Saturday occupancy at the parking facilities. For a conservative analysis, several calculations and assumptions were made. First, the Block Island Ferry ridership was expanded by 82.4% to reflect the average of the four mid-summer Saturdays with more favorable weather conditions. Second, it was assumed that the ferry lot could not accommodate any additional parkers and that the additional parkers would use the other parking facilities in proportion to the number in each lot parking to use the ferry as indicated by the August 2nd windshield survey of parkers (discussed below). Third, it was assumed that the additional parkers arrive over the course of the day in the same pattern as those on August 2nd and have the same average vehicle occupancy. Finally, no changes were made in the number of non-ferry parkers reported on August 2nd.

On August 2nd, 456 ferry passengers parked at the various parking facilities in Downtown. Based on the above assumptions, under ideal summer peak Saturday conditions, it is estimated that 831 ferry passengers park their vehicles in the parking facilities, and that the summer peak Saturday occupancy at the six parking facilities is estimated at a total of 1,341. Table 3-17 presents a summary table of the estimated parking occupancy under ideal summer peak conditions. It should be noted that counts were repeated in 2009 on a sunny Saturday in early August to verify the adjusted figures. The results showed that the adjusted counts were fairly close to the new one day count.

The table shows that, under current peak summer Saturday conditions, there are still over 200 spaces available at each of the two garages, as well as some space in the Eugene O'Neill lots and probably the Julian lot. It should be noted that other summer activities in the downtown could increase the number of non-ferry parkers and the number of such parkers could also be somewhat higher when the weather is good, but there was no data from which to estimate the possible impact. It should also be noted that there is no guarantee that the 186 spaces in the Julian lot will be open to the public in the future, which would increase the demand on other facilities.

Table 3-17: Estimated Peak Summer Saturday Parking Utilization

	Total Spaces	Peak Occupancy	Peak % Occupied	Time of Highest Occupancy	Lowest Occupancy	Lowest % Occupied	Time of Lowest Occupancy
Water Street Garage	975	747	77%	12:00 - 1:00 pm	370	38%	7:00 - 8:00 am
Governor Winthrop Garage	400	150	38%	3:00 - 4:00 pm	97	24%	7:00 - 8:00 am
Eugene O'Neill Surface Lot (1)	125	125	100%	6:30 - 7:00 pm	28	22%	7:00 - 7:30 am 8:00 - 8:30 am
Eugene O'Neill Surface Lot (2)	130	35	27%	6:30 - 7:00 pm	15	12%	1:30 - 3:00 pm
Julian Surface Lot	186	142	76%	8:00 - 8:30 am	56	30%	7:00 - 7:30 am
Cross Sound Ferry	130	142	109%	8:00 - 8:30 am	97	75%	7:00 - 7:30 am
Total	1946	1341	69%		663	34%	

(1) Eugene O'Neill Surface Lot (corner of Eugene O'Neill Drive and Golden Street)

(2) Eugene O'Neill Surface Lot (corner of Green Street & Pearl Street)

Characteristics and Travel Patterns of Parkers

Responses gathered during the passenger survey conducted for this study in August, 2008 indicated that a large percentage of passengers traveling by ferry make use of parking in New London. The vast majority (91%) of Block Island Ferry passengers park in New London, while a number of Long Island Ferry passengers also park in New London. A significant percentage (24%) of weekday Amtrak passengers also used the parking facilities. Passengers on the other surveyed transportation modes at New London (SeaJet, Greyhound, and SEAT) did not utilize parking very frequently¹⁶. Nearly all of the Amtrak passengers who parked reported using the Water Street Garage. Ferry passengers reported a mixture of facilities used, although the vast majority of the Long Island Ferry parkers and 41% of the Block Island Ferry parkers did not indicate which parking facility they used. Of the 63 Block Island Ferry parkers who indicated where they parked, 81% said they parked in the Water Street Garage, 13% parked in the Governor Winthrop Garage and 6% parked in the Eugene O'Neill lots. None of the Block Island passengers surveyed indicated that they parked on ferry property (probably because the ferry lot fills early in the morning). The Julian lot was not listed on the survey form as a possible choice.

A windshield survey of parking customers was also conducted for this study on Saturday August 2nd and Thursday August 7th. The survey forms were placed on the windshields of automobiles using the surface parking lots (except for the Julian Lot due to a lack of permission to do so) and the two garages. The parking survey form was provided with a postage-free, mail-back feature. The numbers of responses obtained are indicated in Table 3-18. (The number of responses gathered represents the number of survey forms returned and not the actual number of customers using each lot on either day.)

Respondents' reasons for parking are shown in Table 3-19, separately for Saturday and Thursday surveys. The responses indicated that on Saturday, the most common reason for parking at both the ferry lot (86%) and the Water Street Garage (50%) was to access the ferry (the survey form did not specify which ferry). The next most common reasons for parking at the Water Street Garage were working in New London (26%) and taking the train (15%). The most common reason for parking at the Governor Winthrop Garage was working in New London (50%) followed by taking the ferry (14%) and taking the train (5%). On Saturday the majority of respondents at two of the facilities were long term parkers (parking for 1 day or

¹⁶ It should be noted that Fishers Island Ferry passengers were not surveyed so their use of parking in New London is not known, although it is believed to be significant.

Table 3-18: Parking Survey Responses Received

Parking Facility	Saturday	Thursday
Water Street Garage	70	36
Governor Winthrop Garage	23	13
Eugene O'Neill Lots	7	21
Ferry Lot	14	10
Total	114	80

Table 3-19: Reasons for Parking

Saturday	Work in New London	To take Ferry	To take Train	Visit	To take Bus	Other	Total
Water Street Garage	26%	50%	15%	0%	0%	9%	100%
Governor Winthrop Garage	50%	14%	5%	5%	0%	27%	100%
Eugene O'Neill North	33%	17%	0%	0%	0%	50%	100%
Eugene O'Neill South	0%	0%	0%	100%	0%	0%	100%
Ferry Lot	0%	86%	0%	7%	0%	7%	100%

Thursday	Work in New London	To take Ferry	To take Train	Visit	To take Bus	Other	Total
Water Street Garage	50%	28%	19%	0%	0%	3%	100%
Governor Winthrop Garage	85%	15%	0%	0%	0%	0%	100%
Eugene O'Neill North	50%	13%	6%	0%	0%	31%	100%
Eugene O'Neill South	80%	0%	20%	0%	0%	0%	100%
Ferry Lot	0%	100%	0%	0%	0%	0%	100%

more). Long term parkers accounted for 59% of respondents at the Water Street Garage and 86% of respondents at the Cross Sound Ferry Lot.

On Thursday, the most common reason for parking at all but the ferry lot was working in New London. All of the ferry lot respondents, 28% of the Water Street respondents and 15% of the Governor Winthrop respondents were connecting to the ferries. Nineteen percent of Water Street Garage users were connecting to Amtrak services on Thursday. On Thursday, the majority of respondents were short term parkers.

3.9.3. Current Operational Needs

Opinions of Parking Customers

The parking customer survey also gathered drivers' opinions about the parking facilities in the downtown New London area that serve patrons of RITC.

Responses indicate that:

- Almost all the users rated the facility where they parked to be either "accessible" or "easily accessible" to their destination.

- A majority of users on both days at all facilities (except the Governor Winthrop Garage) rated the cost of parking as “reasonable” or “very reasonable”. A larger percentage of Governor Winthrop Garage users both on Thursday and Saturday rated the fee as too high.
- Regarding the ratings of attributes such as signage, security, accessibility, and ticketing, the responses reflected an overall dissatisfaction with signage and security at several parking facilities.
 - The Water Street Garage security system was rated “very poor” or “poor” by 42% of the respondents. (The security system is not in operation and there are no cameras.)
 - 56% of the respondents at Governor Winthrop garage rated the security system as “very poor” or “poor”, while 33% rated the signage as “very poor” or “poor”. (The security system is not in operation and there are no cameras.)
 - 30% of the respondents at the Cross Sound Ferry lot rated the signage as “very poor” or “poor”.
 - The Eugene O’ Neill surface lots received a “very poor” or “poor” rating by a majority of respondents on security systems and by nearly half on signage.

Opinions of Passengers on Each Travel Mode

To capture additional information about the opinions regarding parking facilities, the passenger surveys conducted on each mode also asked for ratings of parking. Here the responses of passengers who were dropped off at the terminal were compared to those who used the parking facilities, and the response of the overall population of respondents. The data did indicate that people who did not use the parking facilities had a more negative opinion of them than those who did. (Note that elevators were not in operation at either garage during the survey period.)

Deficiencies in Current Parking Operations

Based on the responses to the parking customer survey, most of the parking lots and garages were found lacking with respect to security and signage. Concerns regarding safety and security in parking lots were also expressed in the comments written in on the survey questionnaires. Users of the Governor Winthrop Garage were also displeased with the cost of parking there. As discussed in Chapter 2, the parking garage users were also dissatisfied with the stairway/elevator facilities and other physical elements.

3.9.4. Future Operational Needs

Parking in New London serves an important function for downtown activities and is a significant feature of the RITC for thousands of passengers using the various transportation modes there. Future downtown developments as well as transportation improvements will impact parking demand and, potentially, capacity.

The Parade Project, currently underway, is installing pedestrian improvements and traffic calming measures in downtown near the RITC and is replacing the current pedestrian bridge connecting Water Street Garage and the Parade with a new exterior elevator. This will lead to better pedestrian access to the Garage and possibly greater utilization of the facility by travelers. Other improvements to the Water Street Garage are also underway and will include the installation of cameras and repair of the elevators.

Adjacent to the Water Street Garage, at the Julian parking lot site, a new high rise building is proposed. The owners have obtained an agreement with the City to have rights to use 100 spaces in the Water Street Garage. This could impact the long term availability of parking in the garage for other uses and may impact the availability of the Julian lot.

Several possible transportation improvements noted earlier could also impact downtown parking needs. Expansion of Shore Line East would create additional parking demand on weekdays, and eventually, on

the weekend as well. Expansion of service or new services at the Cross Sound Ferry terminal could reduce or eliminate long term parking at that site shifting current parkers (primarily on weekends) to the Water Street Garage and creating new parking demand as well.

Finally, the City is looking into introducing on street parking meters in the downtown area. These would not likely directly affect weekday users of the transportation modes, as on-street spaces are already limited to two hours on weekdays. If the meters are used on weekends it could increase the need for off-street long term parking facilities during peak summer weekends.

3.10 Summary of Deficiencies and Needs for the Transportation Modes

The deficiency mentioned most often by travelers is the general lack of amenities in each of the facilities. The Union Station area lacks any retail amenities, vending machines or food concessions. Restroom facilities are locked and in need of improvement. SEAT passengers have no restrooms. While the rail station has a substantial waiting area, the Greyhound waiting area is cramped and antiquated. SEAT has only a single standard outdoor bus shelter and a few benches.

Both ferry operators have adequate indoor ticketing facilities for the vehicle ferries, though indoor waiting areas are limited. The Block Island passenger ferry has no indoor waiting area and no nearby restroom. While there is a single food concession at the Long Island ferry terminal, there are no other retail or food concessions at either ferry terminal. Surveyed passengers expressed dissatisfaction with places to visit near the ferry terminal.

Deficiencies in transportation operations are mostly related to bus services. The Greyhound bus bays are not configured in the fashion that Greyhound prefers and operators are sometimes forced to back into Water Street to exit the terminal. Greyhound also desires access to a third bay. While the amount of space allotted to SEAT is adequate, SEAT would prefer a location closer to the station and would like an indoor facility for a supervisor and for operators to report for work.

Traffic issues focus on the two railroad crossings. The crossings at State Street and Governor Winthrop Boulevard are closed for 40 Amtrak and two long freight trains each day. This impacts the ability of pedestrians and vehicles to access both ferry terminals. Downtown festivals and events also cause general traffic problems affecting bus operations and access to the ferry terminals, particularly the Fishers Island terminal.

There are also conflicts between different uses on Water Street. Prior to Parade construction, taxis and private vehicles picking up passengers competed for space on Water Street in front of the Union Station building. These vehicles also occasionally interfered with SEAT Route #108 which stops in that area. With Parade construction ongoing, taxis and cars often park in the Greyhound bays interfering with their operations. After construction is completed, the taxi and pick-up area in front of the station building will be smaller than it was previously, potentially creating more conflicts and congestion.

Finally, some parking facilities are in poor condition, most are located far from the ferry terminals, and parking capacity may not be adequate for future needs. Survey respondents rated the security, signage and elevators at parking facilities poorly. The majority of passengers using the Block Island Ferry must park across the tracks at the Water Street garage where signage and access routes to the ferry are poor. The future of the surface parking lots located closest to the ferry is also uncertain. Replacement parking and capacity for future expansion may be needed. (Future parking needs are discussed in Section 3.14.2)

3.11 Interconnectivity of the Modes at the Transportation Center

Whether connecting between public transportation modes, parking a vehicle to use a public transportation, or traveling to or from downtown New London, all passengers become pedestrians at some point. The success of any intermodal center hinges on the ability to provide easy pedestrian connections both between modes and to the surrounding area. As important as the physical connections is the need to provide information across modes through marketing, wayfinding and posted information. Seamless ticketing systems can also make connections easier. Finally, the availability of amenities and services can make connections more convenient and comfortable. This section addresses these aspects of interconnectivity between the modes at the New London RITC.

3.11.1. Pedestrian Access and Connections

Key Intermodal Connections

While there are many transportation modes and services converging at the same location, some modes benefit more from that convergence than others. Also, for each operator or service, it may be more important to connect to certain services than to others. Based on the existing conditions observed and on conversations with the operators regarding current and future needs, Table 3-20 shows the more important connections for each operator or service. In the table, key current connections are denoted with an "C", while future connections are denoted with an "F". The following describes how these key connections to the ticketing area and the boarding area for each mode are currently made, including the physical and operational obstacles that are encountered.

To Amtrak and Shore Line East

Access to the Amtrak (and Shore Line East) ticketing area inside Union Station is easiest from the passenger car drop-off area/taxi stand and SEAT Foxwoods bus on Water Street immediately in front of the station. The walk from the Water Street garage (the closest parking facility excluding the Cross Sound Ferry parking located adjacent to City Pier) is also short and the Parade Project should improve the pedestrian crossing. Access to the Amtrak ticketing area from the ferries is more difficult. The easiest connection, although about 600-feet, is probably the Fishers Island Ferry where passengers must walk the length of the ferry's vehicle staging area and then cross the tracks to the back of the station building. Passengers from the Block Island and Long Island ferries must walk between 600-feet and 1,100-feet from the ferries, across the staging area, along the railroad tracks through an unpaved lot, through City Pier Park and across the tracks to the back of the station. Access routes to Union Station are shown in Figure 3-25, with the route from the SEAT stop and Greyhound shown in Figure 3-25a and the route from Cross Sound ferry, through the staging area and parking lot, in Figure 3-25b. After getting tickets in the station, northbound passengers must walk along the platform to State Street to cross the tracks and access the northbound platform. Ferry passengers traveling north (typically those from Long Island) who already have their rail tickets can access the northbound platform directly without crossing the tracks twice. It should also be noted that none of the ferries, or even the SEAT bus, have schedules that are coordinated with Amtrak. Also, Amtrak does not communicate with ferry operators or hold trains for passengers arriving from late ferries.

Table 3-20: Key Connections between Services

	Intercity Modes			Short Distance Modes					Local Modes		Vehicle Access	
	Amtrak	Greyhound	Long Island Auto Ferry	Fishers Island	Block Island Ferry	SeaJet	Casino shuttles	SLE	SEAT	Taxi	Parking	Roadway Access
Amtrak			C	C	C		F		C	C	C	
Greyhound			C						C			
Long island Auto Ferry	C	C										C
Fishers Island	C										C	C
Block Island Ferry	C						F				C	
SeaJet							C					
Casino shuttles	F				F	C		F	F			
SLE							F				F	
SEAT	C	C					F		C			
Taxi	C											
Parking	C			C	C			F				C
Roadway Access			C	C							C	

Figure 3-25: Access Routes to Union Station



from SEAT and Greyhound



from Cross Sound Ferry

To Greyhound

Access to the Greyhound ticketing area just north of the Union Station building is easy from the rail platforms¹⁷, from the adjacent SEAT bus stop/transfer hub and from the adjacent taxi stand in front of the building. Access from the Long Island ferry is much more difficult. Passengers from the Long Island ferry must walk up to 1,300-feet from the ferry, across the loading area, south along the railroad tracks through an unpaved lot, through City Pier Park and across the tracks at State Street and north along Water Street (or the southbound rail platform) to the bus terminal building. (The direct line-of-sight distance for this walk is only about 600-feet.) After passengers get their tickets, buses then pick up passengers adjacent to the terminal building. Passengers who already have bus tickets and no baggage to check can access the buses directly without entering the terminal building. It should also be noted that the ferry schedule and the Greyhound schedule are not coordinated in any way although Greyhound is interested in doing so. Also, Greyhound does not communicate with Cross Sound Ferry so that they could hold buses for passengers arriving late from the ferries.

To the Long Island Auto Ferry

Access to the Cross Sound Ferry Long Island Ferry ticket office, located just north of the ferry slips, is difficult from most other modes. From Amtrak traveling southbound (as most Long Island-bound passengers are doing), passengers must wait for the train to depart, cross the tracks at State Street, walk through City Pier Park (Figure 3-26a), across the unpaved parking area (Figure 3-26b), through the vehicle staging area for the ferries (past all of the ferry slips) and across to the ticket office, a distance of about 1,200-feet. Passengers from Greyhound face a similar, but slightly longer, walk traveling along the southbound rail platform before following the same route. Ferry passengers must then walk between 150-feet and 350-feet from the ticket office to the boats. Ferry schedules are not coordinated with those of any other operator. Finally, unlike most other modes, the Long Island Ferry carries vehicles so direct vehicular access is important. The ferry terminal is conveniently located for auto access from I-95 and Route 32. The only difficulty is the railroad crossing on Governor Winthrop Boulevard where Amtrak trains cause brief delays but where freight trains often cause more lengthy delays.

Figure 3-26: Access Route to Cross Sound Ferry



looking north from State Street



looking south from the Block Island terminal

¹⁷ Although they must go to the front of the building since the rear entrance is locked and blocked and there is no connection between the Union Station lobby and the Greyhound terminal.

To the Block Island Ferry

Access to the Cross Sound Ferry Block Island ticket office, located south of most of the ferry slips, is somewhat shorter than that for the Long Island Ferry. From Amtrak traveling southbound, passengers must wait for the train to depart, cross the tracks at State Street, walk through City Pier Park, across the unpaved parking area to the ticket office, a distance of about 700-feet. From Amtrak northbound, the walk is slightly shorter. Ferry passengers must then walk a short distance from the ticket office to the ferries. Block Island Ferry schedules are not coordinated with Amtrak. Cross Sound will hold ferries for late trains but has no direct means of communication with Amtrak to determine train status. Unlike the Long Island Ferry, the Block Island Ferry is a seasonal passenger-only service (i.e., no vehicles are transported) so the need for direct vehicular access is replaced by a need for considerable parking. Cross Sound Ferry provides limited on-site parking, which fills up early in the day; so many passengers must park in the Water Street Garage or the Julian lot (which is open only on summer weekends). Although the Water Street Garage pedestrian exit at the southeast corner of the garage (to which ferry passengers are directed by signage) is less than 300-foot line-of-sight from the ticket office, passengers must cross Water Street, walk along Water Street or the southbound rail platform and follow the route from the Amtrak platform to the ticket office, a distance of over 1,100-feet. This is shorter than walking via the Governor Winthrop Boulevard crossing and Ferry Street (1,400-1,900 feet, depending on the garage exit used). From the Julian lot, passengers cross at the Governor Winthrop Boulevard crossing and follow the vehicle route along Ferry Street into the ferry terminal, a distance of over 1,000 feet.

To the SeaJet Long Island Passenger Ferry

Most SeaJet passengers purchase a package ticket at the Long Island terminal giving them bus transportation directly between New London and either the Mohegan Sun or Foxwoods Casino Resort. Buses provided by the two casino resorts park adjacent to the SeaJet slip and passengers walk directly onto the ferry from the buses. Cross Sound Ferry and the contracted bus operators communicate the number of passengers and the time of arrival as needed for a seamless operation.

To the Fishers Island Auto Ferry

Access to the Fishers Island Ferry ticket office, located on the waterfront south of State Street, is not as difficult as that to the other ferries. From Amtrak traveling northbound (as most Fishers Island-bound passengers are doing), passengers walk only about 250-feet across the ferry's vehicle staging area to the ticket office. Passengers who park in New London face a longer walk depending on their exact parking location. Those using the Water Street Garage must cross Water Street, follow Water Street or the southbound rail platform to State Street, cross the tracks at State Street and then walk 250-feet across the ferry's vehicle staging area to the ticket office. Ferry passengers must then walk about 150-feet from the ticket office to the ferry. Ferry schedules are not coordinated with those of any other operator; however, the ferry operator will hold the last boat of the day for a passenger with a late connection and the boat captain communicates with Amtrak to determine whether there is a late connecting train. Finally, like the Long Island Ferry, Fishers Island Ferry carries vehicles. Access to the terminal is via Huntington Street and State Street from I-95 northbound. The route follows city streets and is subject to delays especially during summer months when festivals are held in the downtown. A more common difficulty for both pedestrian access from the garage and auto access is at the railroad crossing on State Street where Amtrak trains stopped in the station block the crossing and where freight trains often cause more lengthy delays. Currently the Parade Project has blocked access to Water Street from the Fishers Island Ferry site and exiting vehicles are directed to use South Water Street (a difficult turn for some trucks given the Amtrak employee parking along the tracks), but this is temporary.

To SEAT

The SEAT hub bus stop on Water Street is conveniently located adjacent to the Greyhound terminal for passengers alighting from Greyhound buses and taking SEAT to a local destination. Many SEAT-to-SEAT transfers occur within the SEAT transfer hub area. The connection from Amtrak is important primarily for SEAT Route 108 which is marketed as a connecting service for Amtrak to Foxwoods in the published Amtrak timetable (although there are few current users). This connection has been made easy as, prior to Parade construction, Route 108 loaded directly in front of Union Station instead of with the other SEAT buses. The future stop location for Route 108 has not been determined. The schedule for Route 108, however, does not appear to be coordinated with the arrival of Amtrak trains, nor is the bus held for late arriving trains. The pre-Parade construction location of the Route 108 stop, in front of Union Station, was not as beneficial for the many SEAT riders who transfer between Route 108 and other SEAT buses as they needed to walk from one end of the Greyhound terminal area to the other.

To Taxis

The taxi stand is located immediately in front of Union Station¹⁸. Access from Amtrak southbound is simply through or around the station building. Access from Amtrak northbound is via the State Street crossing. Greyhound is a short distance away on Water Street. The walk from the Fishers Island Ferry is about 600-feet and includes crossing the tracks at State Street. Taxis will pick up passengers at the Cross Sound Ferry property if called.

To the Casino Shuttles and the Proposed Tourist Transit System

Currently, the casinos run shuttle services which connect almost seamlessly with the SeaJet high speed passenger ferry to Long Island. The proposed tourist transit system should connect with Amtrak/SLE, SEAT and the Block Island Ferry as well. This will require multiple shuttle stops in downtown New London unless RITC improvements provide more direct access between facilities. The locations of these stops should be planned considering the need to connect with each of these services, as well as provide access to downtown New London.

To Parking

Access to the Water Street Garage for passengers arriving by car is fairly easy via Eugene O'Neill Drive and Atlantic Street. Traffic at State Street can be avoided. For passengers returning to the garage from the northbound rail platform and the ferries, most must walk fairly long distances crossing the tracks at State Street and then crossing Water Street (which will be improved by safety and traffic calming measures included in the Parade Project). Ferry passengers must walk through the unpaved parking lot, and through City Pier Park, before reaching the State Street crossing. A few passengers from Long Island ferries may make the longer walk via Governor Winthrop Boulevard instead.

Access to the Cross Sound Ferry parking lot, Julian lot and Governor Winthrop Garage for passengers arriving by car is also fairly easy via Eugene O'Neill Drive and Governor Winthrop Boulevard. Passengers returning from Cross Sound Ferry walk a short distance to their cars in the ferry lot, but must walk a longer distance, crossing the tracks at Governor Winthrop Boulevard and then crossing Water Street, to reach the Julian lot. The Governor Winthrop Garage is two blocks further up Governor Winthrop Boulevard. Amtrak passengers who may use the garage must also walk a long distance, crossing the tracks at State Street (if coming from the northbound platform) and walking two blocks up State Street to Union Street to reach the garage.

¹⁸ The stand has been temporarily relocated during Parade construction; however, plans call for it to be restored in approximately its original location.

Access to the Eugene O'Neill lots for passengers arriving by car requires driving a slightly longer distance along Eugene O'Neill Drive and crossing State Street. Passengers returning to the lot from the northbound rail platform and the ferries follow the same path to State Street as they would to the Water Street Garage, but then must turn onto Bank Street and Golden Street to reach the lot.

To the Highway System

Vehicles departing from the various transportation modes that constitute the RITC to the highway system generally use Water Street. The Cross Sound Ferry parking lot, Long Island auto ferry, and Fishers Island Ferry all funnel departing vehicles across the tracks onto Water Street. Vehicles departing from the Long Island Ferry and ferry parking lot must cross the railroad tracks at Governor Winthrop Boulevard, and thus may face delays due to passing trains. Vehicles departing from the Fishers Island Ferry must cross the railroad tracks at State Street, facing possibly longer delays due to trains stopped in the station. They may also be delayed more by traffic and pedestrians when festivals are being held in the downtown area and are currently affected by the Parade Project construction. Vehicles departing from the Governor Winthrop Garage and Julian lot follow Governor Winthrop Boulevard to Water Street, and the Water Street Garage funnels traffic directly onto Water Street, for an easy exit from the city. Departing from the Eugene O'Neill lots may be more difficult as traffic must use Bank Street and State Street, passing through the Parade area, to reach Water Street.

3.11.2. Access to/from Downtown

For connecting passengers who wish to visit downtown New London, the ease of the walk differs by mode. Those connecting to Amtrak or Greyhound, who pick up their ticket in the station or bus terminal building, likely get their tickets first and are then able to exit to Water Street. After the Parade Project is completed, they will be able to easily walk through the improved Parade area to State and Bank Streets if they have time before their ticketed departure time. Those connecting to Amtrak or Greyhound who already have tickets, those connecting to SEAT or a taxi, and those who are returning to their cars in the Water Street Garage are also able to divert directly up State Street to visit downtown on their way to their connection. Most of these (except northbound rail passengers coming from the ferries) are already passing along the downtown side of the tracks.

Passengers connecting to the ferries, given the greater distance from downtown of the ferry ticket offices as compared to their arriving modes, face a decision. Do they walk to the ferries to check-in first, turn around to walk back to downtown and then walk back to arrive at the boat just before departure; or do they visit downtown first and then try to allow enough time to check-in just before boarding the ferry? This choice either limits their willingness to turn around and walk back to visit downtown or reduces the amount of time they have to visit downtown so they allow enough time to check in before embarking on the ferries. Undoubtedly, the likelihood of visiting downtown is negatively impacted by the inconvenience of the walk to and from the ferry terminal.

Those taking vehicles on the auto ferries who wish to make a stop in downtown New London have to find parking downtown. Those traveling to Fishers Island are likely quite familiar with New London and know where to park and what to do. They embark and disembark on State Street and pass right through downtown. Long Island Ferry passengers are typically making long distance trips and are less likely to be familiar with New London. When embarking on a ferry in New London they need to check in and remain with their vehicle. When disembarking from the auto ferry, they exit to Governor Winthrop Boulevard and turn right onto one-way Water Street to leave the city, but could choose to drive into downtown via Governor Winthrop Boulevard and Eugene O'Neill Drive and park if they had a desire to do so. New

London Main Street plans to erect a gateway sign at the northwest corner of the Water Street/Governor Winthrop Boulevard intersection to encourage such travelers to stop in downtown New London before getting on the highway.

While the current casino shuttle services that meet the SeaJet high-speed passenger ferry are designed to rapidly transport ferry/casino customers to the casinos, as opposed to encouraging them to come into downtown, the proposed tourist transit system is designed to provide better access to downtown New London for visitors throughout the region. A well-situated downtown stop, in addition to a stop at the ferry terminal would be needed for the new tourist bus system.

3.11.3. Good Connections to Maintain

The above discussion identified, for each mode, where the pedestrian routes for key intermodal connections are good and where they are lacking. Good connections are close together, on good surfaces, esthetically pleasing, weather protected and free from obstructions and delays. Poor connections require long walks through less hospitable areas and may involve crossing railroad tracks at gated at-grade crossings that are often closed. In designing improvements to the RITC, it will be important to maintain those key pedestrian connections that are good, while improving those that are deficient. The good connections, as noted above, that should be maintained include:

- Greyhound to/from SEAT
- SEAT 108 to/from Amtrak southbound (northbound requires crossing the tracks)
- Greyhound to/from taxis and pick-up/drop-off
- Amtrak to/from taxis and pick-up/drop-off (although some may have to cross the tracks)
- Amtrak northbound to Fishers Island (southbound requires crossing the tracks)
- SeaJet high-speed passenger ferry to/from the casino shuttles
- Amtrak southbound, Greyhound, and SEAT to/from the Parade and downtown
- Roadway access to the Long Island Auto Ferry and to the Water Street Garage, Governor Winthrop Garage and surface lots

This list represents the most important connections to maintain. There are other good quality connections that are made less frequently. While less critical, these should also be maintained if at all possible.

3.11.4. Deficiencies in Current Connections

The most difficult key connections to make are those that involve crossing the railroad tracks and accessing the ferry terminals. These include

- Greyhound to/from the Long Island Ferry
- Amtrak to/from the Long Island Ferry and the Block Island Ferry
- Water Street and Governor Winthrop garages to/from the Block Island Ferry
- Union Station and southbound rail platform from the Fishers Island Ferry
- Taxis and Water Street Garage to/from the Fishers Island Ferry
- Downtown to/from the Long Island Ferry and the Block Island Ferry

Other less than optimal connections result from pedestrians and vehicles needing to cross the railroad tracks at State Street where trains in the station can cause delays and pedestrian areas are not clearly distinguished from the roadway. These include:

- Amtrak/SLE northbound platform to/from the Water Street Garage, SEAT 108 and taxis

-
- Amtrak/SLE northbound platform to Union Station lobby and ticket counter
 - Fishers Island Ferry roadway access

Finally, there is a general lack of coordination of schedules and lack of real time status information shared among operators. The SeaJet passenger ferry and the casino shuttles are coordinated in both ways. There are no other cases of coordinated schedules among any of the modes. The only other known real time coordination is between the Fishers Island Ferry and Amtrak in very limited instances.

3.11.5. Potential Future Deficiencies

The major changes expected or possible in the future include the proposed regional tourist transit system and the Shore Line East expansion. Beyond these changes, some operators anticipate incremental increases in ridership and service frequency and Cross Sound Ferry may introduce service to new destinations. This may result in some increase in parking demand, particularly for Cross Sound Ferry. Shore Line East will require good connections to parking and an adequate parking supply. The tourist transit system will require good connections to the SeaJet and Block Island passenger ferries and to Amtrak, as well as to SEAT (largely for employee travel to tourist centers).

The key connections affected, therefore, would include insuring connections from an adequate number of parking spaces to the rail station and to the ferries. Providing well-located stops for the tourist transit system at the ferry terminal, rail station and SEAT bus stop will be key to its success. The frequency of the proposed shuttles will largely eliminate the need for schedule coordination with other modes at most times; however, some coordination will be necessary at low ridership times and to coordinate the hours of service with the schedules of other modes. Real-time communications at such times may also be beneficial.

3.12 Marketing, Ticketing, Information and Wayfinding

3.12.1. Joint Marketing and Ticketing

There are currently few joint marketing and ticketing activities among the transportation operators serving New London. The best and most successful example is the joint service provided by Cross Sound Ferry and the two casinos. Casino shuttle schedules are presented jointly with SeaJet ferry schedules on the Cross Sound website and published schedules and both casino websites have links to Cross Sound Ferry. Cross Sound Ferry issues the tickets that are used on the shuttles.

Another example is the joint marketing of Amtrak and SEAT Route 108 to Foxwoods. Amtrak includes the SEAT schedule in its timetable and through service tickets incorporating the fare for the SEAT trip are sold by Amtrak. Amtrak then reimburses SEAT for through service tickets used on SEAT. This example has not been very successful in generating ridership.

Amtrak and Shore Line East also have a joint ticketing arrangement since most Shore Line East service to New London is provided by Amtrak trains. The Amtrak trains accepting SLE multi-ride tickets are listed on the SLE schedule alongside SLE trains. SLE service is not mentioned in the Amtrak timetables.

At one time Amtrak had joint ticketing arrangements with Cross Sound Ferry but this agreement lapsed due to changes in Amtrak personnel. Cross Sound Ferry indicated that it would consider reinstating the arrangement especially if pedestrian connections can be improved and the arrangement could result in increased awareness of its ferry service.

3.12.2. Availability of Connection Information

All of the operators in New London have websites describing their services, including schedules and, in most cases, the ability to make reservations and/or buy tickets online. The operators have varying levels of information on their websites about other operators and how to make connections in New London. Operators focused on New London tend to have more New London-specific information than national carriers.

The ferries tend to have the most information on other operators on their websites. Cross Sound Ferry provides the schedules for the casino connections and has links to the websites for Amtrak, SLE and Greyhound. It also provides phone numbers for the New London taxi companies. Fishers Island Ferry also has several links including Amtrak, SLE and Cross Sound Ferry. Neither ferry website provides information on how to connect to other services.

Amtrak's timetable, available on its website, includes the SEAT Route 108 schedule but has no information on how to connect. The SEAT website does not include any links to other operators but has phone numbers for Amtrak, SLE, Greyhound, Fishers Island Ferry and Cross Sound Ferry. The Greyhound website does not have any information on New London connections.

There are other websites, for example newlondonmainstreet.org, that list all of the carriers but not how to connect between them.

While all of the operators provide online information through their websites, most (with the exception of SEAT) also provide on-site information in their own terminals as well. All of this information is provided indoors; none of the operators post their schedules outside although Amtrak train announcements can be heard outside. Furthermore, the various operators provide little on-site information about the other modes. Connecting passengers must find their way to the other terminals to obtain schedule and fare information.

3.12.3. Wayfinding in the RITC

Wayfinding and signage are very important components of the connections between modes. Because there are so many physical components to wayfinding, this was discussed in Chapter 2. In general, wayfinding signage throughout the city street network is lacking; the existing signage does not provide clear and concise messages nor are the signs strategically placed. Wayfinding signage between transportation modes is generally deficient and is sometimes inconsistent or directs pedestrians to a less than optimal route. A majority of the problems relate to wayfinding for pedestrian access to and from the Cross Sound Ferry site, both for the Long Island Ferry and the Block Island Ferry. The Main Street program and the City of New London are currently developing a signage project to encourage visits to the Historic Waterfront district which should be coordinated with any new RITC signage.

3.12.4. Information on Downtown New London

The transportation providers serving New London do not provide information on downtown New London attractions on their websites. Many provide directions to their terminal by automobile and some include a map. Cross Sound Ferry provides some information on things to do in southeastern Connecticut. While New London proper is not featured, there is a link to the City's website for information on things to do.

In its terminal, Cross Sound Ferry has brochures on things to do in New London. Greyhound and Union Station do not consistently have such brochures in their waiting areas.

Cross Sound Ferry is also taking a step to promote New London in cooperation with the Chamber of Commerce of Eastern Connecticut. Beginning late in the summer of 2008, representatives were stationed on board the ferries distributing information on things to do in New London. The program is planned to resume in the summer of 2009.

3.12.5. Deficiencies in Marketing, Ticketing, Information and Wayfinding

Joint marketing and ticketing among New London operators is minimal and schedule information and information on how to connect to other modes is lacking both pre-trip and on-site. Wayfinding signage is minimal, non-existent or misleading. Little information on downtown New London is available through the transportation operators. Performance of the RITC as a transportation center could be improved by more joint marketing and ticketing efforts and improved pre-trip and on-site information on how to make connections. A centralized system to provide real time connection information in all terminals may be beneficial. Downtown New London could benefit from more information on downtown attractions and activities being provided in advance, both on vehicles and in the station area.

3.13 Amenities and Commercial Services

3.13.1. Current Amenities in the RITC

An important component in making intermodal connections more pleasant is the availability of passenger amenities. These include restrooms, sheltered waiting areas, climate control and benches.

Both the Fishers Island Ferry and the Cross Sound Ferry provide restrooms for their patrons. Union Station and Greyhound have locked restrooms with signs restricting access to their customers only. There are no separate restrooms for SEAT (riders typically use the Greyhound restrooms) or at the Block Island Ferry ticket booth (passengers must walk 400' across the vehicle ferry ramps to use the restrooms located at the Long Island Ferry ticket office). There are no public restrooms at the Water Street Garage or in the Parade area. Furthermore, when asked to rate several characteristics of the transportation services, riders of Greyhound, Amtrak, SEAT and the Block Island ferry all gave the worst ratings of all characteristics to amenities at the terminal.

Waiting areas differ by mode as well. Amtrak and Shore Line East passengers have a large attractive waiting area inside Union Station with seating for about 50 (Figure 3-27). Platforms are covered but are open on the sides. There is minimal outdoor seating. Greyhound has a much smaller waiting area in its building with seating for about 25 that is in need of updating. Greyhound has a covered outdoor waiting area with no seating. Auto ferry passengers often wait in their vehicles, but Cross Sound Ferry has a waiting area inside its Long Island ticket office (Figure 3-28a). There is an outdoor covered gangway for Block Island Ferry passengers outside the ticket office (Figure 3-28b) but capacity is limited and some passengers have to wait in an uncovered area. (Note that Block Island service is summer only so an indoor waiting area is less necessary.) Fishers Island Ferry does not have an indoor waiting area although there is a lobby. SEAT has only one small unheated bus shelter and several unsheltered benches that are in need of repair.

Figure 3-27: Union Station Waiting Area



Figure 3-28: Cross Sound Ferry Ticket Offices



3.13.2. Current Commercial Services in the RITC

Another important component is the availability of commercial services. These include food concessions/restaurants and retail, including both convenience concessions (such as newsstands) and nearby shopping for longer stays.

Food concessions and restaurants in the RITC are limited. The Union Station building has only vending machines. A restaurant previously located in the building closed many years ago. There is a snack bar adjacent to the Long Island Ferry ticket office on the Cross Sound Ferry site (Figure 3-29) and a seasonal snack bar at City Pier Park that is passed by pedestrians crossing the tracks at State Street en route to any of the ferry terminals. There is one restaurant on the south side of State Street on the downtown side of the railroad crossing. Not far away, but off the path followed by connecting passengers, there are fast food and other restaurants along Bank Street. Many of these have open-air decks facing South Water Street and the river.

Figure 3-29: Cross Sound Ferry Food Concession



There are no newsstands or other non-food concessions in the RITC, nor are there other types of shopping in the immediate area where connecting passengers would normally walk. Nevertheless, there are shops, restaurants and galleries along State and Bank Streets in New London within a ten minute walk of most of the RITC for connecting passengers who are able to take the time to visit the city.

3.13.3. Potential for Additional Amenities and Commercial Services

The SEAT bus stop area is most in need of amenities such as restrooms, shelters and improved seating. The Greyhound terminal lacks outdoor seating and the indoor facility is in need of improvement. An improved Block Island Ferry building with restrooms and an indoor waiting area would also be beneficial. (Cross Sound Ferry developed plans for a new high speed ferry terminal that was to be served directly by the proposed pedestrian bridge project that was aborted.) Additional food concessions and/or restaurants would benefit connecting passengers. With the largest connecting pedestrian volumes currently passing through the State Street rail crossing, locations close to that point, including in and around the Union Station Building could be the optimal location to serve connecting passengers.

3.14 Future Ridership and Service Scenarios and Impacts

The master plan for the RITC will need to consider transportation needs well into the future. The plan must consider a shorter range (2015) and longer range (2030) time frame. Unfortunately few, if any, of the individual transportation providers were able to provide estimates of ridership or service levels that far into the future. Some provided general ideas about potential future expansion while others simply plan to react to the market as it develops. Therefore, it was necessary for the consultant team to develop future scenarios based on an assumed level of growth in travel on each mode and an estimate of each operator's likely response to that growth.

3.14.1. Ridership and Service Scenarios

High and Low Demand Scenarios

Two future transportation scenarios were developed, reflecting lower and higher growth rates. The higher demand scenario can be equated to one in which New London, and the southeastern Connecticut region, become a more attractive destination. In this case, recent high growth rates in ridership on some services would continue and would be accompanied by growth in ridership on other services that have had recent ridership losses. The lower demand scenario reflects more modest improvements in the region accompanied by more modest rates of ridership growth on most services. Ridership growth rates were estimated based on recent and longer term trends for each mode. The recent sharp downturn in the economy complicated this process and therefore both scenarios assume a period of no net growth over the next two to three years. Both scenarios then reflect a recovery period of moderate to high growth through 2015 (although the high demand scenario assumes that the recovery starts somewhat sooner). Both scenarios then assume a slightly lower average annual rate of growth through 2030. The ridership scenarios are presented in the following section. It should be noted that these reflect assumptions based on past trends and input from the operators and are intended for the purpose of setting reasonable upper and lower bounds for decision-making concerning the RITC facility. They should be used with caution and should not be taken as projections of future travel resulting from a comprehensive demand analysis (which would be beyond the scope of this study).

Service changes accompanying each demand scenario were also developed in order to assess future operational needs. Planned or anticipated expansions of Shore Line East and SEAT services are included in the near and long term. The high demand scenario also incorporates the proposed Tourist Transit System and includes new ferry services by 2030. Additional trips on the ferries, Greyhound and Shore Line East are incorporated as warranted by demand. While Amtrak has indicated that no new Northeast Corridor service can be added, additional stops by Acela trains are assumed in the high demand scenario. The service scenarios are presented below after the ridership scenarios.

It should be noted that new transit oriented development at the RITC is not explicitly included in these transportation scenarios. The impacts of such development will be incorporated later in the study as development opportunities at the RITC are identified.

Ridership Scenarios

Ridership growth assumptions for the two scenarios are shown in Table 3-21, alongside a summary of recent ridership trends. Ridership on all existing services is not assumed to exceed current levels for several years due to the current economic downturn. The first year above current levels is assumed to be 2012 in the low scenario and 2011 in the high scenario. Assumed growth rates beyond those years differ for different types of services due to differences in markets served, differences in past trends and different

Table 3-21: RITC Future Ridership Scenarios
Annual Ridership Growth Assumptions¹⁹

Modes	Recent Annual Trend	Low Scenario ²⁰			High Scenario ²¹		
		2009-2011	2012-2015	2016-2030	2009-2010	2011-2015	2016-2030
Amtrak ²²	5.6% since 1999 (New London only) ²³	no net change from 2008			no net change from 2008		
Shore Line East	5.8% since 2003 (systemwide)	Ph. 2 projections in New London	4%	2%	Ph. 2 projections in New London	6%	4%
Greyhound ²⁴	unknown	no net change from 2008			no net change from 2008		
Long Island Auto Ferry ²⁵	peaked in 2004 -5% in 2005, then stable	no net change from 2008	1%	1%	no net change from 2008	2%	2%
Casino Shuttles/ Tourist System	-2.8% since 2003 (assumed same as SeaJet)	no net change from 2008	2%	1%	no net change from 2008	2/3 of low demand scenario (shuttles remain)	average of low and high demand scenarios
SeaJet Passenger Ferry ²⁴	-2.8% since 2003	no net change from 2008	2%	1%	no net change from 2008	3%	2%
Block Island Passenger Ferry ²⁶	-6% since 2005						
Other Passenger Ferries	none currently operated	NA	NA	NA	NA	NA	See note ²⁷
Fishers Island Auto Ferry ²⁸	stable	no net change from 2008	0%	0%	no net change from 2008	0%	See note ²⁹
SEAT	7.7% since 2003 (systemwide)	no net change from 2008	6%	4%	no net change from 2008	8%	6%

¹⁹ Both scenarios assume little to no growth over the next few years, then a recovery through 2015, followed by more moderate steady growth through 2030.

²⁰ Low Scenario assumes that an economic recovery begins in 2012 and that future non-tourist ridership increases at less than recent trends through 2015. Average annual increases through 2030 are assumed to be less than in the 2013-2015 period. Small increases in tourist ridership are assumed.

²¹ High Scenario assumes that an economic recovery begins in 2011 and that future non-tourist ridership increases at close to recent trends through 2015. Average annual increases through 2030 are assumed to be less than in the 2013-2015 period. More significant increases in tourist ridership are assumed, including a new tourist transit system.

²² Long term rail ridership growth assumed to be less than the very high growth rates of recent years and more consistent with longer term trends.

²³ Annual Amtrak New London ridership growth was 2.3% from 1999-2003 but 8.1% from 2003-2008.

²⁴ Data not available on Greyhound New London ridership. Growth assumed to match Amtrak.

²⁵ Projected growth in vehicular travel on I-95 is approximately 1.5% annually. Ferry travel assumed to be lower in low scenario and higher in high scenario. Low scenario growth is equivalent to projected growth in Suffolk County NY population.

²⁶ Growth rate in recreational ferry travel is assumed to be lower than that of non-tourist intercity travel since ridership has declined in recent years despite increases in other travel modes at the RITC.

²⁷ Ridership assumed to equal ½ of current Block Island ridership.

²⁸ Fishers Island Ferry District projects stable ridership. The addition of a possible future high-speed passenger ferry is assumed in 2015.

²⁹ No increase in vehicular travel. A 25% increase in passengers is assumed due to new passenger-only ferry.

expected service changes. In general, the scenarios assume a slight mode shift toward rail and bus transportation in both intercity and local travel. They assume the rate of growth in auto ferry traffic to be around that projected for highway travel in southeastern Connecticut while the rate of growth in tourist travel is slightly higher.

The recent trend for both Amtrak ridership to New London and Shore Line East system-wide ridership has been a nearly 6% annual increase in ridership (although Amtrak average annual growth jumped from 2.3% before 2003 to over 8% in recent years). Shore Line East is expected to begin operations to New London in the next few years and ridership in 2010/2011 is assumed to equal projections for the proposed Phase 2 expansion. Rail ridership to New London, in the high scenario, is then assumed to grow at the recent 6% rate annually until 2015, then at 4% annually thereafter. In the low scenario, it is assumed to grow at 4% until 2015, then at 2% thereafter (closer to the Amtrak pre-2003 growth rate). Historic ridership data was not available from Greyhound, so the rail growth rates were used since these services serve somewhat similar intercity travel markets in the Northeast Corridor.

The Long Island Auto Ferry recently experienced a decline in patronage but ridership is believed to have stabilized. Ridership is not assumed to exceed current levels until 2010/2011. Assumed growth after that time was based on projected growth rates for traffic on I-95. A recent study³⁰ projected growth rates along various portions of I-95 in southeastern Connecticut averaging about 1.5% annually. Therefore, auto ferry traffic is assumed to grow at 1% annually beginning in 2011 in the low demand scenario and 2% annually beginning in 2010 in the high demand scenario.

The Fishers Island Auto Ferry is not assumed to experience any increase in ridership. Ridership has been stable for several years and the operators do not expect much change. The Island is small and has a stable population. Some passenger ridership increase is assumed by 2030 in the high scenario, the result of the possible introduction of new high-speed passenger service.

The Block Island passenger ferry, the SeaJet high-speed passenger ferry service, and the accompanying casino shuttles cater to a recreational market. Ridership on these services has seen a slight decline in recent years, especially on the Block Island service. These services are not assumed to exceed current ridership levels until 2010/2011. They are then assumed to grow, in the low scenario, at 2% annually until 2015 and 1% thereafter, and in the high scenario, at 3% annually until 2015 and 2% thereafter. In 2030, the high scenario also assumes two new high-speed ferry services operated by Cross Sound Ferry – most likely a restoration of high-speed passenger service to Martha's Vineyard and new high-speed passenger service to Montauk on Long Island's south fork. The high scenario also assumes the implementation of the proposed tourist transit system, with the pilot system in place by 2015 and the full system in place before 2030. Year 2015 ridership is assumed to be 2/3 of the low demand scenario developed for that system in the 2005 study, and year 2030 ridership is assumed to be the average of the low and high demand scenarios³¹.

SEAT has experienced the highest ridership growth of any of the operators in recent years (7.7% annually since 2003), though ridership was somewhat stagnant before 2003. After 2011 ridership is assumed to grow at 6% until 2015 and then at 4% afterwards in the low scenario. In the high scenario, after 2010 ridership is assumed to grow at 8% until 2015 and then at 6% afterwards. This high growth rate in the high

³⁰ Clough, Harbour & Associates LLP, *I-95 Corridor Feasibility Study*, published approximately 2003

³¹ Working files from the SCCOG Intermodal Connections Southeast Study (by TranSystems) were used to estimate ridership to/from New London proper for the pilot system in 2015, and both to/from New London and to/from intermodal connections (rail and ferry) for the full system in 2030.

scenario is assumed to be supported by service frequency improvements, new local routes before 2030, and expansion of Sunday service.

Table 3-22: RITC Future Service Scenarios

Modes	Service Level Assumptions			
	Low Scenario		High Scenario	
	2015	2030	2015	2030
Amtrak	No change	No change	5 Acela trains stop in each direction; no change in NE Regional	8 Acela trains stop in each direction; no change in NE Regional
Shore Line East	Phase 2 implemented	Phase 3 implemented	Phases 2 and 3 implemented	Two additional daily round trips
Greyhound	No change	2 additional daily trips each direction	1 additional daily trip each direction	4 additional daily trips each direction
Long Island Auto Ferry	No change	additional trips as needed (with existing fleet)	No change	additional trips as needed possible expansion of fleet
Casino Shuttles/ Tourist System	No change	Matches SeaJet expansion	Pilot tourist system operated	Full tourist system operated
SeaJet Passenger Ferry	No change	1 additional daily round trip (7 summer weekend round trips; 5 round trips other days)	No change	Second boat added; 10 summer weekend round trips; 6 round trips other days
Block Island Passenger Ferry	No change	1 additional daily round trip (5 summer weekend round trips; 4 round trips other days)	No change	Second boat added; 7 weekend day round trips; 4 weekday round trips
Other Passenger Ferries	none	none	none	Service to Martha's Vineyard 2/day Service to Montauk 2/day (summer only)
Fishers Island Auto Ferry	No change	No change	No change	New passenger ferry added; 4 daily round trips in peak season
SEAT	Hourly service on all routes	Hourly service continued	30 minute service and hourly Sunday service on all routes	30 minute service; hourly Sunday service; Foxwoods route eliminated; two new routes

Service Scenarios

Assumptions regarding service changes for the two scenarios are shown in Table 3-22. With some exceptions, service levels on existing services are not assumed to change significantly by 2015. This is partly in response to the assumed limited ridership growth rates described above, as well as the fact that in many cases the existing service levels supported higher ridership levels just a few years ago.

Amtrak is currently completing a master plan for Northeast Corridor in 2030. Amtrak has stated that the number of Northeast Regional trains operating through New London is not expected to change through 2030. (Any increase in demand can be accommodated by increasing the number of coaches in each train.) The number of Acela trains is expected to increase from 10 to 16 in each direction by 2030 although there are no plans to increase the number of these making stops in New London. Therefore, the low demand scenario assumes no change in the number of Amtrak trains stopping New London despite higher

ridership. The high demand scenario assumes that Amtrak increases the number of Acela trains stopping in New London to half of all Acela service, in order to respond to an increasing demand for travel as the region becomes a more popular destination.

Shore Line East's phased expansion plans, detailed earlier in this report, are assumed to be implemented in both scenarios. In the low scenario, Phase 2 occurs by 2011 and Phase 3 after 2015. In the high scenario, Phase 2 occurs by 2010 and Phase 3 occurs before 2015. In the high scenario, Shore Line East service is assumed to increase further by an additional two daily round trips sometime before 2030.

In 2015, the twelve Phase 2 Shore Line East trains in each direction will result in an increase in the daily number of weekday trains crossing State Street from 40 to 64. By 2030, the six additional Amtrak trains in each direction and four to eight additional Shore Line East trains in each direction will result in an increase in the daily number of weekday trains crossing State Street to between 84 and 92, more than doubling the current number. P&W has the capacity to carry more freight on its existing daily trains; however, it cannot be predicted whether a second daily freight train would be needed in the future.

As noted previously, Greyhound has no specific expansion plans. Any increases in service to New London can be expected to result from increased demand throughout the corridor rather than from increases in demand specific to New London. While overall New York to Boston corridor ridership trends are beyond the scope of this study, the low scenario assumes that service would not increase by 2015 but would increase by two additional daily trips in each direction by 2030. The high scenario assumes that service would increase by one additional daily trip in each direction by 2015 and would increase by four additional daily trips in each direction by 2030.

Cross Sound Ferry has stated that they can and will adjust service on the Long Island Ferry to meet demand. It is not known how much excess capacity exists on the auto ferry in peak or off-peak seasons. However, it was assumed that a 10% increase in volume could be accommodated with existing service levels and that, beyond that level, the number of trips operated would increase proportional to travel volume. This would result in no increase in the number of ferry trips in 2015 in either scenario, but a 10% increase in service in the low scenario and a 35% increase in service in the high scenario in 2030.

Cross Sound Ferry will also adjust service on the SeaJet and Block Island high-speed passenger ferries to meet demand. With only modest increases in ridership assumed, both SeaJet and Block Island services are assumed to remain unchanged in 2015 in both scenarios. In the low demand scenario, only one additional daily round trip on each service is assumed in 2030. In the high demand scenario, more significant ridership increases are assumed. For the SeaJet, four additional round trips (for a total of ten) are assumed on weekends and two (for a total of six) on weekdays. For Block Island, three additional round trips (for a total of seven) are assumed on weekends and one (for a total of four) on weekdays. On both services, the weekend service levels would not be possible with just one boat, so Cross Sound Ferry would need a second boat for each of these services on weekends. Additionally, in the high demand scenario, two new high-speed ferry services are assumed in 2030 – a restoration of high-speed passenger service to Martha's Vineyard and new high-speed passenger service to Montauk on Long Island's south fork. A combined total of four round trips on summer weekend days are assumed to these two destinations.

The casino shuttle buses would mimic the service levels on the SeaJet in the low demand scenario. In the high demand scenario, casino shuttle buses would continue to meet the SeaJet in 2015, but would be replaced by the tourist transit system before 2030. The proposed tourist transit system is assumed to be implemented only in the high demand scenario. The pilot system (which has no direct shuttles to the ferry)

was previously assumed to be implemented before 2015. The full system (including ferry shuttles) was assumed to be implemented before 2030. In 2015, service on the Mohegan Sun to Mystic route via New London was assumed to operate every 30 minutes in each direction, with service every 15 minutes during peak times on peak summer weekends. (Foxwoods passengers would transfer in Mystic.) In 2030, on peak summer weekends, service on that route would operate every 15 minutes at most times and would increase to every 12 minutes during peak times. Also in 2030, another route would operate non-stop from New London to Foxwoods every 30 minutes year round. As previously explained, funding for this proposed system had not been secured at the time of completion of this study.

Service on the Fishers Island Auto Ferry is not assumed to change in either scenario. The high demand scenario in 2030 includes a new high-speed passenger-only ferry with four daily round trips in peak season.

SEAT is assumed to experience the largest increase in overall system ridership, based on recent trends of high ridership increases and stated goals of increasing service frequency. In the low demand scenario, service on corridor routes is assumed to increase to hourly. In the high demand scenario, service on all routes is assumed to increase to every 30 minutes and hourly service is added on Sunday. By 2030, in the high demand scenario, two new routes are assumed to operate from the New London terminal while the Foxwoods route (Route 108) would be replaced by the new tourist transit system route from New London to Foxwoods.

Other services that would continue serve the RITC or be added in the future include taxis, cruise ship shuttle buses, and car and bike rentals. Taxi use can be expected to increase in both scenarios, and can be expected to most closely follow the increase in Amtrak ridership and the addition of Shore Line East service. The cruise ship market is dependent on other factors but it can be assumed that cruise ships will continue to visit the city on a very limited number of days each year in either scenario. On those days, shuttle buses are likely to continue to bring passengers to the Historic Waterfront District and the RITC. The RITC may be able to support new services, such as car and bike rentals, and can be considered as improvement plans are developed.

3.14.2. Impacts on the RITC

Annual Ridership Increases

The scenarios described above would result in the growth in passengers and vehicle volumes (on ferries) shown in Table 3-23. The percentages shown reflect the growth from current (calendar or fiscal year 2008) ridership that would result from the assumptions described above for each scenario. Table 3-24 shows the annual ridership and vehicle volumes that would result from this growth.

The tables show that the higher growth rates assumed for rail and intercity (Greyhound) bus would result in substantial ridership increases, especially by 2030. Ridership on these modes would increase by 57% in the low scenario and 141% in the high scenario. The lower growth rates for Cross Sound Ferry would result in ridership and vehicle volumes equaling or barely exceeding peak 2004 levels by 2015, but increasing by roughly one fourth over current levels in 2015 and by roughly one half over current levels in 2030. Fishers Island Ferry volumes are assumed to be stable except for an increase in passenger resulting from new passenger service in the 2030 high scenario. The high growth rates assumed for SEAT would result in more than a doubling of ridership in the 2030 low scenario to more than a tripling of ridership in the high scenario.

Table 3-23: Future Scenario Ridership Growth Assumptions

Transportation Mode	Low		High	
	2008-2015	2008-2030	2008-2015	2008-2030
Amtrak	17%	57%	34%	141%
Shore Line East *	17%	57%	34%	141%
Greyhound	17%	57%	34%	141%
Long Island Auto Ferry	4%	21%	10%	49%
Casino Shuttles / Tourist Transit	8%	26%	16%	56%
SeaJet Ferry	8%	26%	16%	56%
Block Island Ferry	8%	26%	16%	56%
Fishers Island Ferry	0%	0%	0%	25%
SEAT	26%	127%	47%	252%
Long Island Ferry Vehicles	4%	21%	10%	49%
Fishers Island Ferry Vehicles	0%	0%	0%	0%

* Shore Line East growth over Phase 2 expansion projections

Table 3-24: Future Scenario Annual Ridership
One-way trips

Transportation Mode	Current	Low		High	
		2015	2030	2015	2030
Amtrak	169,112	197,837	266,263	226,310	407,572
Shore Line East		76,041	102,341	86,985	156,654
Greyhound	68,000	79,550	107,064	90,999	163,885
Long Island Auto Ferry	1,000,000	1,040,604	1,208,109	1,104,081	1,485,947
Casino Shuttles / Tourist Transit	196,000	212,157	246,307	227,218	
Tourist Transit				26,000	389,000
SeaJet Ferry	230,000	248,959	289,034	266,633	358,853
Block Island Ferry	88,000	95,254	110,587	102,016	137,300
New Ferries					44,000
Fishers Island Ferry	160,000	160,000	160,000	160,000	200,000
SEAT	175,000	220,933	397,889	257,132	616,233
Total Passengers	2,086,112	2,331,336	2,887,594	2,547,374	3,959,444
Long Island Ferry	470,000	489,084	567,811	518,918	698,395
Fishers Island Ferry	40,000	40,000	40,000	40,000	40,000
Total Vehicles	510,000	529,084	607,811	558,918	738,395

Daily Ridership Increases

Ridership and vehicle data presented in the previous section on individual modes, as well as detailed data provided by some operators, were used to estimate daily ridership on each mode for four different example days. The four example days were defined as follows:

- Peak Summer Sunday – A summer Sunday typical of the three or four busiest Sundays of the year
- Summer weekday – an average Tuesday or Wednesday in July and August
- January Sunday – an average Sunday in January
- January weekday – an average Tuesday or Wednesday in January

July and August are the peak months for all operators and for the Water Street Garage, while the winter months (December through February), typically have the lowest ridership.

Sundays were selected as the peak demand days because Cross Sound Ferry reported that Sunday is their busiest day. Sunday is also the highest revenue day in the Water Street Garage in summer months. Sunday is the second highest ridership day for Amtrak (next to Friday) and the third highest ridership day in summer for the Fishers Island Ferry (next to Friday and Thursday). Greyhound reported that Sundays and Fridays are their highest ridership days. Mid-week days (typically Tuesday and Wednesday) have the lowest ridership for most of these operators. Commuter services, such as SEAT and Shore Line East, have consistent ridership on weekdays and lower ridership on weekends.

Table 3-25 shows the Sunday (both Peak Summer and January) ridership that would result from the assumed growth rates for the two scenarios. Figure 3-30 graphically illustrates the peak summer Sunday figures. The table and figure show that currently just under 14,000 people board or alight at the RITC on a peak summer Sunday. (This represents total boardings and alightings so connecting passengers are counted twice.) Under the low scenario, the total would be expected to increase slightly in 2015 and increase to over 16,000 by 2030. In the high scenario, it would increase to almost 16,000 by 2015 and to over 25,000 by 2030. As the table shows, the vast majority of these (over 80% in most cases) are ferry riders, with the majority of these on the Long Island auto ferry. However, while ferry ridership would grow, the share of passengers who are ferry users would be expected to decline in the future, especially in the high scenario. Amtrak and Greyhound initially make up only 8% of current passengers, but would be expected to increase to 10% in 2030 under the two scenarios. The casino shuttle and future tourist system would grow from 6% to 14% of passengers. Shore Line East is not expected to have substantial weekend ridership and most SEAT service would only operate on Sundays in the high scenario. In January, the SeaJet and Block Island ferries do not operate, so the Long Island Ferry accounts for just 65% of current Sunday ridership and would be expected to decline to as low as 47% in 2030 under the high scenario. Amtrak and Greyhound would be expected to grow from about 15% to about 19% of RITC ridership.

Table 3-26 shows the weekday (both summer and January) ridership that would result from the assumed growth rates for the two scenarios. The table shows that currently over 8,000 people board or alight at the RITC on a summer weekday (again, connecting passengers are counted twice). Under the low scenario, this would be expected to increase to over 9,000 in 2015 and to over 11,000 by 2030. In the high scenario, this would increase to 10,000 by 2015 and to over 16,000 by 2030. Again, the vast majority of these (over 70%) are ferry riders. The share of passengers who are ferry users would again be expected to decline in the future, especially in the high scenario. Amtrak and Greyhound initially make up only 8% of current passengers, but would be expected to increase to 10% in 2030 under the two scenarios. The casino shuttle and future tourist system ridership, while increasing in numbers would maintain its 7% share and grow to 10% with the full tourist transit system in 2030. Shore Line East, when extended to New London, is expected account for about 3% of weekday riders. SEAT currently accounts for about 7% of riders, but the high growth rate assumed for SEAT would result in an increase in share to between 12% and 14%. In January, the Long Island Ferry accounts about 40% of current Sunday ridership and would be expected to decline to as low as 25% in 2030 under the high scenario. Amtrak and Greyhound would be expected to grow maintain a 17% share of ridership. The casino and tourist system would maintain around a 6-7% share while Shore Line East would carry about 10% and SEAT would be expected to grow from about 22% to as much as 32% on January weekdays.

Table 3-25: Future Scenario Weekend Ridership

Transportation Mode	Peak Summer Sunday					January Sunday				
	Current	Low		High		Current	Low		High	
		2015	2030	2015	2030		2015	2030	2015	2030
Amtrak	760	889	1,197	1,017	1,832	353	413	556	472	851
Shore Line East		58	79	67	121		58	79	67	121
Greyhound	320	374	504	428	771	160	187	252	214	386
Long Island Auto Ferry	8,114	8,443	9,803	8,958	12,057	2,183	2,272	2,637	2,410	3,244
Casino Shuttles	806	873	1,013	935		233	252	293	270	
Tourist Transit				275	3,647				54	804
SeaJet Ferry	949	1,027	1,192	1,100	1,480	274	297	345	318	428
Block Island Ferry	1,695	1,835	2,131	1,966	2,645					
New Ferries					848					
Fishers Island Ferry	746	746	746	746	933	165	165	165	165	206
SEAT				462	1,108				378	906
Total Passengers	13,390	14,246	16,664	15,954	25,441	3,368	3,645	4,326	4,349	6,945
Long Island Ferry	3,033	3,157	3,665	3,349	4,507	914	951	1,104	1,009	1,358
Fishers Island Ferry	248	248	248	248	248	68	68	68	68	68
Total Vehicles	3,281	3,405	3,913	3,597	4,755	982	1,019	1,172	1,077	1,426

Figure 3-30: Future Scenario Peak Summer Sunday Ridership

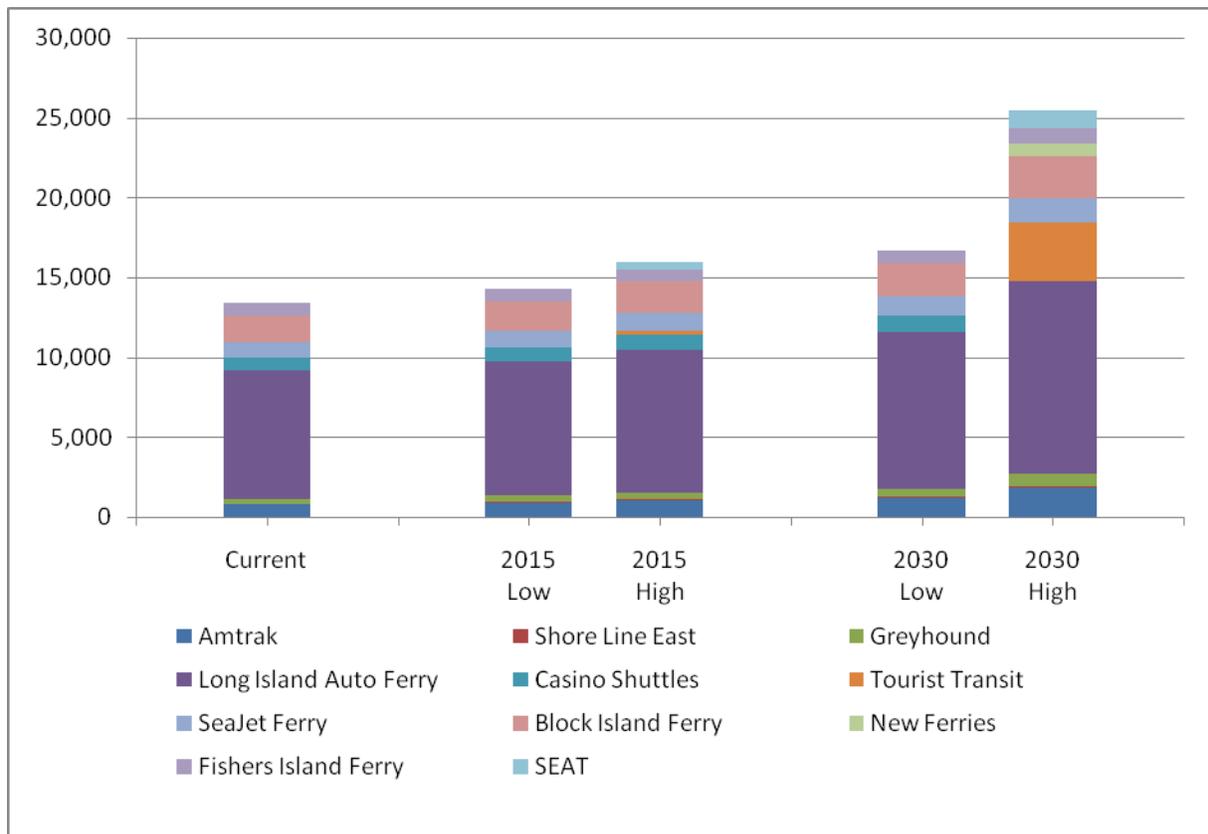


Table 3-26: Future Scenario Weekday Ridership

Transportation Mode	Summer Weekday					January Weekday				
	Current	Low		High		Current	Low		High	
		2015	2030	2015	2030		2015	2030	2015	2030
Amtrak	476	557	749	637	1,147	316	370	498	423	762
Shore Line East		281	378	321	578		281	378	321	578
Greyhound	200	234	315	268	482	100	117	157	134	241
Long Island Auto Ferry	3,674	3,823	4,438	4,056	5,459	948	987	1,145	1,047	1,409
Casino Shuttles	623	675	783	723		175	189	220	203	
Tourist Transit				105	1,569				26	384
SeaJet Ferry	733	794	921	850	1,144					
Block Island Ferry	1,494	1,617	1,877	1,732	2,330					
New Ferries					747					
Fishers Island Ferry	573	573	573	573	716	327	327	327	327	409
SEAT	629	794	1,430	924	2,215	515	650	1,171	757	1,813
Total Passengers	8,402	9,347	11,465	10,188	16,388	2,381	2,921	3,896	3,237	5,596
Long Island Ferry	1,657	1,724	2,002	1,829	2,462	539	561	651	595	800
Fishers Island Ferry	153	153	153	153	153	72	72	72	72	72
Total Vehicles	1,810	1,877	2,155	1,982	2,615	611	633	723	667	872

Increased Demand for Connections

The growth in the share of RITC passengers using Amtrak and the addition of Shore Line East service will increase the need to provide good connections from Union Station to parking facilities such as the Water Street Garage. Increased rail traffic is also likely to result in an increased demand for taxi service at the station and would likely result in an increase in the share of ferry riders (Long Island, Block Island and Fishers Island) accessing the ferries by train. Thus, connections between Union Station and both of the ferry terminals are likely to become even more important in the future.

Growth in Greyhound ridership is not likely to affect modes as significantly as growth in rail ridership since few Greyhound riders use modes other than local SEAT buses. However, connections between Greyhound and the Long Island Ferry will still be important. The high growth rates assumed for SEAT would result in substantial ridership increases but few SEAT riders connect to other services.

The introduction of the tourist transit system replacing the casino shuttles and SEAT Route 108 would increase the need for tourist bus connections to Amtrak and SEAT, as well as connections to all of the Cross Sound Ferry services (SeaJet, Long Island and Block Island).

Operational Needs

The increases in ridership and service resulting from the growth rates assumed in each scenario would impact the operations of each transportation provider at the RITC.

The planned increase in the number of Amtrak Acela trains passing through, the assumed increase in the number of Acela trains stopping, and the addition of Shore Line East would result in more trains serving the station and more trains using the two grade crossings. Allowing more Acela trains to stop in New London would impact Acela operations, adding time to each affected trip. The increased number of rail passengers will also result in more people passing through the Union Station building and platform area. Greater

passenger volumes will also expand the need for taxi and passenger pick-up and drop-off in front of the station. Similarly, Greyhound ticketing facilities and waiting area will have to accommodate more people and the Greyhound bays, after 2015, will need to handle a few more buses each day.

Increases in auto volumes on the Long Island Ferry will likely require Cross Sound Ferry to reallocate parking areas to become staging areas, probably sometime after 2015, especially in the high scenario. This parking will need to be replaced and additional parking spaces will be needed to accommodate increasing Block Island Ferry ridership. (Parking needs are discussed below) In both scenarios, Cross Sound Ferry would need to use its existing fleet to provide more service and may need to expand its fleet. In the high scenario, new high-speed passenger-only ferry boats would be needed to accommodate increased service levels and to operate new services.

Under both scenarios SEAT would need to accommodate a substantial number of additional transferring passengers at its facility at the RITC. Increased corridor route frequency in either scenario will create a need to layover six buses instead of five at pulse time. The increase in frequency in the high scenario will not require additional space but would result in much more SEAT activity visible at the RITC SEAT bus stop.

Increase in Parking Demand

While ridership typically peaks on Sundays and Fridays, the number of cars parked in New London peaks on Saturdays, reflecting the fact that many people park their cars for the weekend and travel on Friday and Sunday. Peak summer Saturday parking counts presented in Section 3.9.2 indicated that the two parking garages and four surface lots currently accommodate an estimated 1,341 parked vehicles, representing 69% of their capacity of 1,946. Of the three facilities most directly serving the RITC, the Cross Sound Ferry lot typically fills to capacity while the Water Street Garage and Julian lot are an estimated 77% full. Surveys and supplemental analyses indicated that 915 (68%) of the 1,341 parked cars belonged to RITC patrons, mostly ferry passengers.

Future parking demand under each scenario was determined using an estimated share of passengers parking vehicles for each ferry service and then relating the resulting current number of total ferry passengers to the number of currently parked vehicles belonging to ferry patrons. This resulted in a factor that was used to calculate parked vehicles from the estimated number of future ferry passengers under each scenario. For parkers coming to downtown for other purposes, a 1% annual growth factor was employed for the low scenario and a 2% annual growth factor was employed for the high scenario.

The resulting estimates of parked vehicles on a summer weekend are shown in Table 3-27 and Figure 3-31. The table relates the total number of parked vehicles to the total capacity of all six parking facilities. The figure contrasts the number of parked vehicles versus the capacity of all six parking facilities, of the three facilities nearest the RITC and the Water Street Garage alone. Both the table and figure contrast the parking demand of RITC users and other purposes. Parking facilities are generally considered adequate if no more than 90% of capacity is utilized. The table shows that in the low scenario, demand would not exceed 88% of total capacity (although some individual facilities will likely fill to capacity). In the high scenario, higher growth rates and expanded ferry services would increase demand to well over current total capacity. In either scenario, the Water Street Garage and Julian lot would likely fill to capacity, forcing either RITC patrons and/or people with downtown destinations to park at the Governor Winthrop Garage or Eugene O'Neill lots.

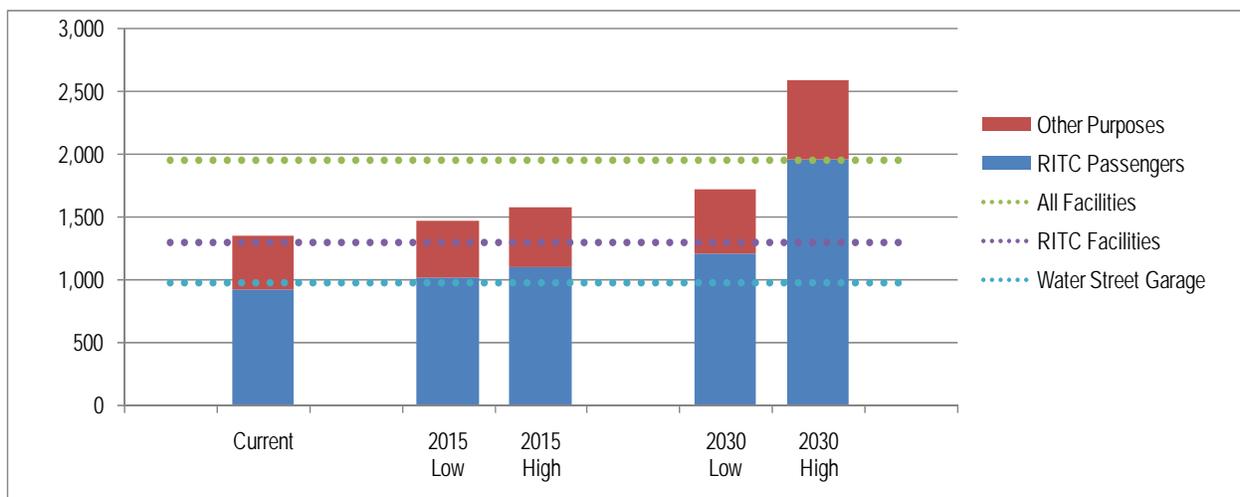
Looking just at demand generated by the RITC, RITC parkers currently use 47% of the available spaces at the six facilities. Future estimates show that this would increase to 62% in 2030 in the low scenario, and in the high scenario, would take up all of the available capacity leaving none for non-RITC patrons. Because

Table 3-27: Future Peak Summer Weekend Parking Demand

	Current	Low		High	
		2015	2030	2015	2030
RITC Users:					
Existing Ferries	831	896	1,037	958	1,287
New Ferries					413
Amtrak	84	98	132	113	203
Shore Line East		22	30	25	45
Non-RITC Users:					
Work in New London	236	246	285	261	351
Other	190	198	230	210	283
Total Vehicles	1,341	1,460	1,714	1,566	2,581
% Total Parking Capacity (all facilities)	69%	75%	88%	80%	133%
Parked Vehicles of RITC Users					
% Total Parking Capacity (all facilities)	47%	52%	62%	56%	100%
% RITC Parking Capacity (three facilities*)	71%	79%	93%	85%	151%
% Water Street Garage Capacity	94%	104%	123%	112%	200%

* Cross Sound Ferry lot, Water Street Garage, and Julian lot

Figure 3-31: Potential Parking Impacts- Peak Summer Saturday



some facilities are much more convenient to the RITC, and to the ferries in particular, than others, it may be more useful to compare RITC parking demand to the capacity of just the three most convenient facilities – the Cross Sound Ferry lot, the Water Street Garage, and the Julian lot. The table shows that RITC parkers currently use 71% of the capacity of these three facilities. This would increase to 93% in 2030 in the low scenario. This would leave little room for other users of these facilities, although there would be capacity in other downtown parking facilities. In the high scenario, RITC parkers would exceed the capacity of the three most convenient facilities by over 50% even if no one else parked there.

With increasing vehicle volumes on the Long Island Ferry, it is likely that the Cross Sound parking lot will need to be converted into additional staging areas and will no longer be available for parking. Furthermore, the Julian lot may be developed and would no longer be available for ferry parking. This would reduce the three most convenient parking facilities down to one – the Water Street Garage. The last line of the table compares the total RITC parking demand to capacity of the Water Street Garage alone. Without the Cross Sound and Julian lots, current demand would fill the garage to 94% of capacity – essentially full, leaving no room for other types of users. Estimated future demand would result in 2030 RITC demand exceeding the capacity of the garage by 23% in the low scenario and 100% in the high scenario. Even 2015 demand would exceed capacity in both scenarios. Thus, eliminating the two lots would almost immediately create a significant need for new parking.

Traffic Impacts

Forecasted traffic growth in New London, the additional traffic generated from increased ridership and vehicle volumes at the RITC, and potential new development at the RITC site are anticipated to negatively impact traffic operations if no roadway improvements are implemented. A capacity analysis was conducted assuming the future 2030 high growth scenario, with 2% annual background growth³², and no new development at the RITC. (The impacts of new joint developments will be examined later in the study as development potential at the site is identified.) The capacity analysis was conducted to determine the ability of the roadways and intersections to accommodate future summer Saturday traffic in a worst case (2030 high demand) scenario. The low demand scenario would be expected to have less significant impacts.

The resulting 2030 peak hour high demand scenario traffic volumes are shown in Figure 3-32. Results from the capacity analysis are shown in Figure 3-32. The results indicate that most of the study area intersections would operate with an acceptable overall intersection level of service (LOS D or better) during a summer Saturday under future 2030 high demand scenario conditions. However, the intersection of Governor Winthrop Boulevard with Water Street would be expected to have critical movements that operate poorly (LOS E or F) during the mid day peak hour under 2030 summer Saturday conditions. The results show that the overall intersection could be expected to operate at LOS F during the mid day peak hour under these conditions if no roadway improvements were implemented.

The intersection of Governor Winthrop Boulevard with Water Street would be impacted by expansion of ferry vehicle traffic, expansion of passenger pickup/drop-off traffic on Water Street, and increased traffic from the parking facilities assumed in the high growth scenario. However, the expected background traffic growth unrelated to the RITC is the most significant contributing factor to the expected deterioration in level of service. Delays at this intersection could impact Greyhound, SEAT, taxi and Cross Sound Ferry operations. The intersection is adjacent to the at-grade railroad crossing; thus, both property-line and physical constraints limit the type of improvements (such as widening to provide additional lanes) that can be implemented to improve traffic operations. It would be possible to adjust the signal timing to improve the overall performance of the intersection; however, this intersection is controlled by a single traffic signal controller, which also controls the intersection of Governor Winthrop Boulevard with Ferry Street, thereby limiting low cost signal phasing and timing options. Measures to improve the performance of this intersection can be developed as improvements to the RITC are identified.

³² As projected in Wilbur Smith Associates, Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, 2007

Facility Needs

Ridership and service under the future scenarios will likely require some additional or enhanced transportation facilities in addition to expanded parking. While current rail facilities are likely to be adequate, the area for taxis and passenger pick-up and drop-off may need to be expanded, and bus facilities may need to be expanded and enhanced. Ferry operators may also need to add facilities to accommodate the expanded services reflected in the high scenario.

In the short term, the immediacy of peak summer weekend parking need is dependent on the availability of parking at Cross Sound Ferry and the Julian lot. If those remain available, additional parking may not be needed until after 2015. Under either scenario, additional parking will be needed well before 2030. By 2030, in the low demand scenario, peak summer weekend parking demand would be near the total capacity of all downtown parking facilities, while in the high scenario, higher growth rates and expanded ferry services would increase demand to well over total capacity. RITC parkers alone would take up all of the available capacity in the high scenario, leaving no room for other users. If RITC parkers were limited to the three closest facilities, they would nearly fill the facilities even in the low scenario. On weekdays, parking facilities are not as highly utilized as on summer weekends. Shore Line East expansion is expected to increase weekday parking demand, but weekday demand is still not likely to exceed the capacity needed for peak summer weekends.

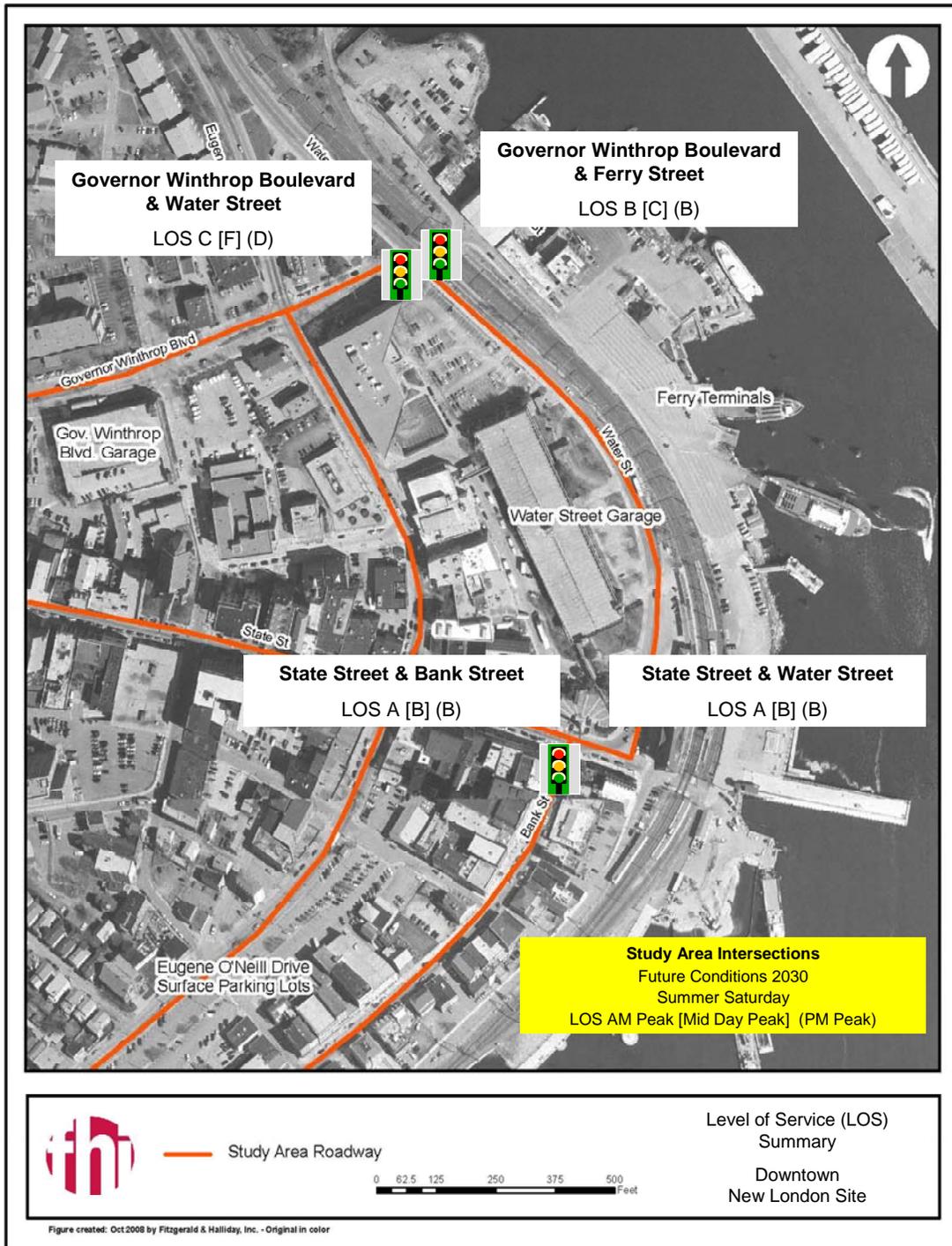
In the near term, as Shore Line East is expanded and rail ridership grows, additional space will be needed close to the station for passenger pick-up/drop-off and for taxis. It may be necessary to establish a holding area for taxis away from the taxi stand at the station to allow for efficient use of the space in front of Union Station.

Next to the station, Greyhound currently operates with essentially 2 bays but would like to have access to at least three. Increased ridership and expanded service, especially in the high scenario, would make access to a third bay even more desirable. Greyhound's ticketing and waiting area is also not likely to be adequate to accommodate expanded ridership and service.

SEAT currently operates with a minimal facility at the RITC. If ridership continues to grow at something even close to current growth rates, the number of SEAT passengers using the RITC will increase significantly. Increased frequency will further increase the number of passengers and will make the facility utilized for a much larger percentage of the day and all weekend. This increased use would make the case for an enhanced facility with an enclosed waiting area and additional amenities. While the SEAT Water Street hub has ample room to pulse the six existing routes (the seventh route, Route 108, stops at a different location), adding more than one new route (as in the 2030 high scenario) may require additional space at the facility.

The proposed tourist transit system included in the high scenario would also create a need for additional bus facilities. In 2015, the pilot system would have a single route operating through New London in both directions. This is likely to require a single bus bay at the RITC near Union Station if service is every 30 minutes, but would require a second bay as service becomes more frequent by 2030. Also by 2030, the bus bay near Union Station currently used by the SEAT Foxwoods route (Route 108) would be converted to use by the Foxwoods tourist transit route since it would replace the SEAT route. Thus, the tourist transit system would require three bus bays at the station by 2030. On a very limited number of days, the RITC bus facility would also need to accommodate a number of cruise ship shuttle buses.

Figure 3-33: Level of Service Summary (2030 High Scenario Conditions)



Depending on the improvements in pedestrian connections in the RITC, the tourist transit buses may or may not need an additional stop at the Cross Sound Ferry terminal. In 2015, it is assumed that the existing casino shuttle buses would continue to serve the ferry as they do today. By 2030, the casino shuttles would be replaced by the tourist transit buses which may continue to need a facility on ferry property if good pedestrian access is not available to the stop to be used by non-ferry passengers.

Cross Sound Ferry has expressed interest in constructing a new high-speed passenger ferry terminal at the site of the Block Island ticket office and dock. This would serve the Block Island Ferry, SeaJet and any new passenger ferry services. While a new facility with improved bus access would benefit existing services, it would be even more desirable with the expanded service and new services under the high scenario. The facility could include a bus loading area adjacent to the dock, or could be connected to a bus loading area across the tracks by a pedestrian bridge.

3.15 Summary of Operational and Service Needs

This chapter identified that the Regional Intermodal Transportation Center includes many elements that are working well and should be maintained. There are also many elements that are in need of improvement. Future ridership increases, expansion of services, growth in tourism, and new development in New London will likely create new needs that must be addressed in the future. Each of these areas is summarized in this section.

3.15.1. Current Elements to be Maintained

Operational Elements

For the most part, each individual transportation provider's operation is working fairly well. Amtrak operates smoothly through New London; buses come and go with minimal delays from local traffic on most days. Ferry operations go smoothly. Parking facilities fill on only a few days each year.

Key Connections

Several key connections between modes were identified. Where these key connections are good, they should be maintained. Good connections are close together, on good surfaces, esthetically pleasing, weather protected and free from obstructions and delays. The good connections that should be maintained include:

- Greyhound to/from SEAT
- SEAT 108 to/from Amtrak southbound (northbound requires crossing the tracks)
- Greyhound to/from taxis and pick-up/drop-off
- Amtrak to/from taxis and pick-up/drop-off (although some may have to cross the tracks)
- Amtrak northbound to Fishers Island (southbound requires crossing the tracks)
- SeaJet high-speed passenger ferry to/from the casino shuttles
- Amtrak southbound, Greyhound, and SEAT to/from the Parade and downtown
- Roadway access to the Long Island Auto Ferry and to the two garages

There are also several other good quality connections that are made less frequently. While less critical, these should also be maintained if at all possible.

3.15.2. Current Deficiencies and Needs

Modal Improvement Needs

Bus facilities and operations are most in need of improvement. Greyhound's ticketing and waiting area is antiquated and there is no outdoor waiting area or outdoor seating. The bus bays are not configured in the fashion that Greyhound prefers and create possible safety concerns. Greyhound also desires access to a third bay. SEAT would prefer a location closer to the station and would like an indoor facility for operations personnel. SEAT's passenger facilities are minimal and need improvement.

While both ferry operators have adequate indoor ticketing facilities for the vehicle ferries, indoor waiting areas are limited. The Block Island passenger ferry has no indoor waiting area and no restroom. A more substantial passenger ferry terminal building is needed.

Traffic and Parking Needs

Traffic issues focus on the two railroad crossings. The crossings at State Street and Governor Winthrop Boulevard are frequently closed, impacting the ability of pedestrians and vehicles to access both ferry terminals. Downtown festivals and events also cause general traffic problems affecting bus and ferry operations. The area in front of Union Station, even after Parade construction is complete, may be too small for efficient use by the taxis and private vehicles picking up and dropping off passengers.

Parking facilities are located far from the ferry terminals and may not be adequate for current needs if existing surface parking at Cross Sound Ferry and the Julian lot become unavailable. Security, signage and elevators at the parking facilities are poor. Many passengers using the Block Island Ferry must park in the garages and walk long distances and across the tracks. Wayfinding signage and access routes from the garages to the ferry terminals are poor.

Connectivity and Information Needs

Several key connections between facilities have been identified as deficient. The most difficult key connections to make are those that involve crossing the railroad tracks and accessing the ferry terminals. The major obstacles are the distances involved, level changes, wayfinding signage, condition of the pathways and delays and safety at the two railroad crossings. The key connections identified as deficient include:

- Greyhound to/from the Long Island Ferry
- Amtrak to/from the Long Island Ferry and the Block Island Ferry
- Water Street and Governor Winthrop garages to/from the Block Island Ferry
- Union Station and southbound rail platform from the Fishers Island Ferry
- Taxis and Water Street Garage to/from the Fishers Island Ferry
- Downtown to/from the Long Island Ferry and the Block Island Ferry

Other less than optimal connections result from pedestrians and vehicles needing to cross the railroad tracks at State Street. Trains in the station can cause delays and pedestrian areas are not clearly distinguished from the roadway. These include:

- Amtrak/SLE northbound platform to/from the Water Street Garage, SEAT 108 and taxis
- Amtrak/SLE northbound platform to Union Station lobby and ticket counter
- Fishers Island Ferry roadway access

There is a general lack of coordination of schedules and real time status information shared among operators. There is virtually no coordination of schedules among any of the modes.

Joint marketing and ticketing among New London operators is minimal and schedule information and information on how to connect to other modes is lacking both pre-trip and on-site. Wayfinding signage is minimal, non-existent or misleading. Little information on downtown New London is available through the transportation operators. Performance of the RITC as a transportation center could be improved by more joint marketing and ticketing efforts and improved pre-trip and on-site information on how to make connections. A centralized system to provide real time connection information in all terminals may be beneficial. Downtown New London could benefit from more information on downtown attractions and activities being provided in advance, both on vehicles and in the station area.

Amenities and Commercial Needs

The deficiency that was mentioned most often by passengers is the general lack of amenities in each of the facilities. The Union Station area lacks any retail amenities or food concessions. Restroom facilities are locked and in need of accessibility improvements. SEAT passengers have no restrooms. While the rail station has a substantial waiting area, the Greyhound waiting area is cramped and antiquated. SEAT has only a single standard outdoor bus shelter and a few benches. While there is a single food concession at the Long Island Ferry terminal, there are no other retail or food concessions at either ferry terminal.

3.15.3. Future Operational and Service Needs

Expected Need for Operational and Service Improvements

Two transportation scenarios were developed. The scenarios reflect assumptions based on past trends and input from the operators and are intended for the purpose of setting reasonable upper and lower bounds for decision-making concerning the RITC facility. They should be used with caution and should not be taken as projections of future travel.

Both scenarios result in increased demand for transportation services at the RITC. The modal growth assumptions in both the scenarios would result in greater increases in rail and bus ridership than in ferry travel. This would be consistent with a slight general shift towards public transit modes in both intercity and local travel, accompanied by modest increases in auto related ferry travel. The higher of the two demand scenarios reflects not only greater growth in travel on all modes, but also reflects an increase in tourism in the region and an increase in recreational travel both within the region and to/from the region using expanded passenger ferry services. New transit oriented development at the RITC is not explicitly included in these transportation scenarios.

Both scenarios incorporate Shore Line East service to New London and expanded service by most operators to accommodate demand. The high demand scenario also includes new and expanded services to increase ridership. The high demand scenario includes more Acela service stopping in New London, increased frequency on Greyhound and SEAT, increased frequency on all of Cross Sound Ferry's services, and new high-speed passenger ferry services.

The increases in ridership and service resulting from the growth rates assumed in each scenario would impact the operations of each transportation provider at the RITC. The increased number of rail passengers would result in more people passing through the Union Station building and platform area. Greater passenger volumes would also expand the need for taxi and passenger pick-up and drop-off in

front of the station. Similarly, Greyhound ticketing facilities and waiting area would have to accommodate more people and the Greyhound bays, after 2015, would need to handle a few more buses each day.

Increases in auto volumes on the Long Island Ferry would likely require Cross Sound Ferry to convert parking areas to become staging areas, probably sometime after 2015, especially in the high scenario (generating additional off-site parking needs). In both scenarios, Cross Sound Ferry would need to use its existing fleet to provide more service and may need to expand its fleet. In the high scenario, new high-speed passenger-only ferry boats would be needed to accommodate increased service levels and to operate new services.

Under both scenarios SEAT would need to accommodate a substantial number of additional transferring passengers at its facility at the RITC. The increase in frequency in the high scenario will also result in much more SEAT activity visible at the RITC.

Increased rail traffic would likely also result in an increase in the share of ferry riders (Long Island, Block Island and Fishers Island) accessing the ferries by train. Thus, connections between Union Station and both of the ferry terminals are likely to become even more important in the future. Increased rail travel is also likely to result in an increased demand for taxi service and passenger pick-up in front of the station.

Impact on Future Facilities

The demand for parking is a key element in determining future facility needs. If the Cross Sound parking lot is needed for auto ferry staging, and the Julian lot is developed without public replacement parking, existing demand would create an immediate need for additional parking. Otherwise, under either scenario, additional parking may not be needed before 2015 but would certainly be needed well before 2030. By 2030, in the low demand scenario, peak summer weekend parking demand would be near the total capacity of all downtown parking facilities, while in the high scenario, higher growth rates and expanded ferry services would increase demand to well over total capacity. RITC parkers alone would take up all of the available capacity in the high scenario, leaving no room for other users. If RITC parkers were limited to the three closest facilities, they would nearly fill the facilities, even in the low demand scenario. It is also likely that additional space will be needed for taxis and for passenger pick-up/drop-off, possibly through the creation of an off-site taxi holding area. Increased traffic at the Water Street intersection with Governor Winthrop Boulevard may result in unacceptable traffic levels of service that would need to be addressed.

Ridership and service under the future scenarios will likely require some additional or enhanced facilities. While current rail facilities appear to be adequate to meet future demand, it was determined late in the study that Shore Line East service when expanded will be shifted to Track 6 (the freight track) at Amtrak's request. Connecticut DOT will modify the existing platform and may consider construction of an additional platform in the future to the east side of Track 6. Bus facilities may need to be expanded and enhanced. Greyhound may need access to a third bay. Greyhound's ticketing and waiting area would likely need to be enhanced and expanded. For SEAT, increased corridor route frequency in either scenario will create a need to layover an additional bus and any new routes would further increase space requirements. The increase in frequency in the high scenario would result in much more SEAT activity visible at the RITC bus stop. This increase in vehicles using the facility and the accompanying increase in ridership would make the case for an enhanced facility with an enclosed waiting area, additional amenities and an indoor facility for operating personnel. The proposed tourist transit system included in the high scenario would also create a need for additional bus facilities, both close to downtown and accessible to the Cross Sound Ferry terminal. At Cross Sound Ferry, the tourist transit buses would replace the casino shuttles using the same, or preferably enhanced, facilities.

Ferry operators may also need to add facilities to accommodate the expanded services reflected in the high scenario. Cross Sound Ferry may wish to construct a new high-speed passenger ferry terminal at the site of the Block Island ticket office and dock, serving the Block Island Ferry, SeaJet and any new passenger ferry services. Fishers Island would need a new ferry slip if they begin operation of a passenger-only ferry.

Current and future operational and facility needs for all modes, the need for improved connections between modes, the need for additional parking and the need for improved amenities will play a key role in developing improvements to the Regional Intermodal Transportation Center. It is hoped that that these improvements will create a more efficient transportation center while providing the potential for greater economic benefit both to the City of New London and the southeastern Connecticut region.