

Task 3 & 4 Technical Memorandum  
Existing and Future Services and  
Operational Needs

DRAFT

Regional Intermodal Transportation Center  
Master Plan and Efficiency Study

Southeastern Connecticut  
Council of Governments

February 2009



EXPERIENCE | Transportation

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## Table of Contents

1. Transportation Modes at the Regional Intermodal Transportation Center.....	1
2. Interconnectivity of the Modes at the Transportation Center.....	53
3. Future Ridership and Service Scenarios and Impacts .....	65
4. Summary of Operational and Service Needs .....	81



# 1. 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.<sup>1</sup> 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 Technical Memorandum addresses transportation and terminal operations. The Task 2 Technical Memorandum, *Survey of Existing Physical Conditions*, addresses the current condition of the facilities and identifies deficiencies, including deficiencies in accessibility.

## 1.1 Rail Services

### 1.1.1. 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.

In New London, the passenger rail platforms are located adjacent to the Union Station building (Figure 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

Figure 1: Union Station Rail Platforms



<sup>1</sup> 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.

Ferry when passenger trains pass through, although this intersection is clear when trains are stopped at the station.

Passenger rail ticketing and other services are performed inside the main Union Station building (Figure 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 *Task 2 Technical Memorandum: Survey of Existing Physical Conditions*.

Figure 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.

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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 is shown in Table 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, service to New London operates only on weekdays. SLE service to New London is illustrated in Table 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.

#### **1.1.1. Utilization of Services**

##### *Ridership*

Amtrak annual ridership figures for New London for FY1999 through FY2008 are presented below in Figure 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 4. The figure shows that July and August were clearly the highest ridership

**Table 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

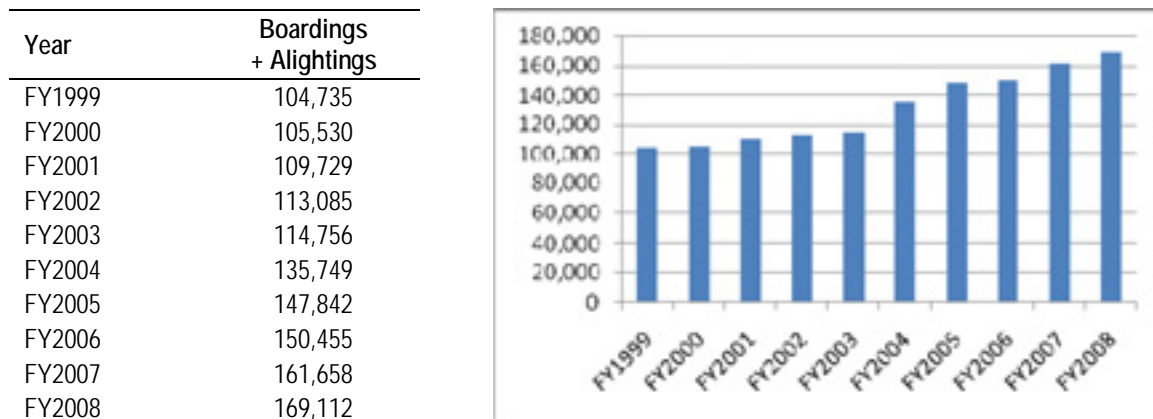
**Note:** Unless otherwise noted, all trains are Northeast Regional

**Table 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: Amtrak Annual Ridership at New London**



*Source: Amtrak Fact Sheet for State of Connecticut, Fiscal Year 200. FY2008 data provided directly by Amtrak*

Figure 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
<b>Total</b>	<b>169,112</b>

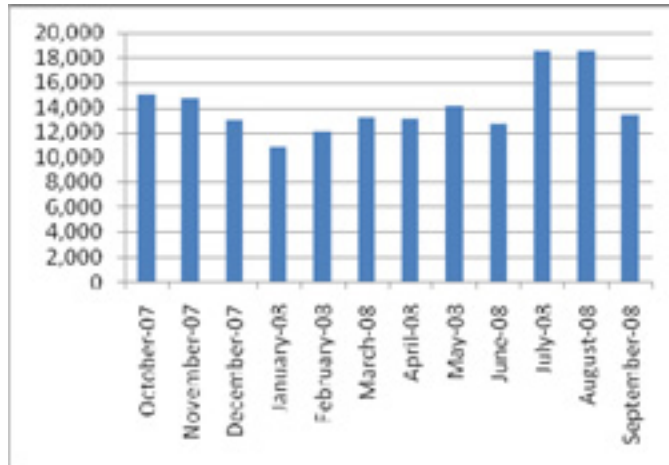
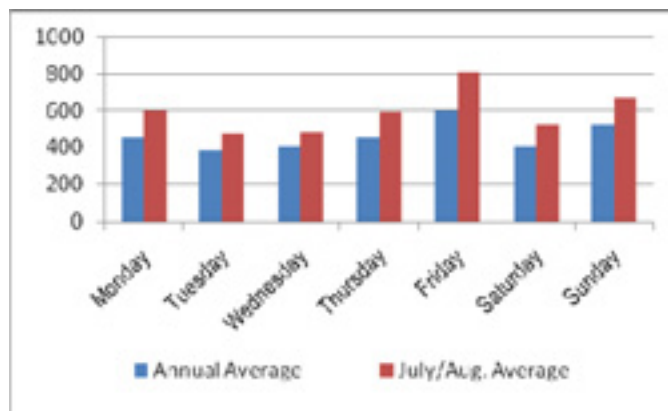


Figure 5: Amtrak Average Daily Ridership at New London

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



months<sup>2</sup> 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 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 4<sup>th</sup>, 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.

Ridership data for the entire Shore Line East was provided by ConnDOT. The service has been in place since 1990. Initial ridership stabilized in the late 1990's but has been growing since 2000. Ridership

<sup>2</sup> This coincided with the 2008 spike in gasoline prices.

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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 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.

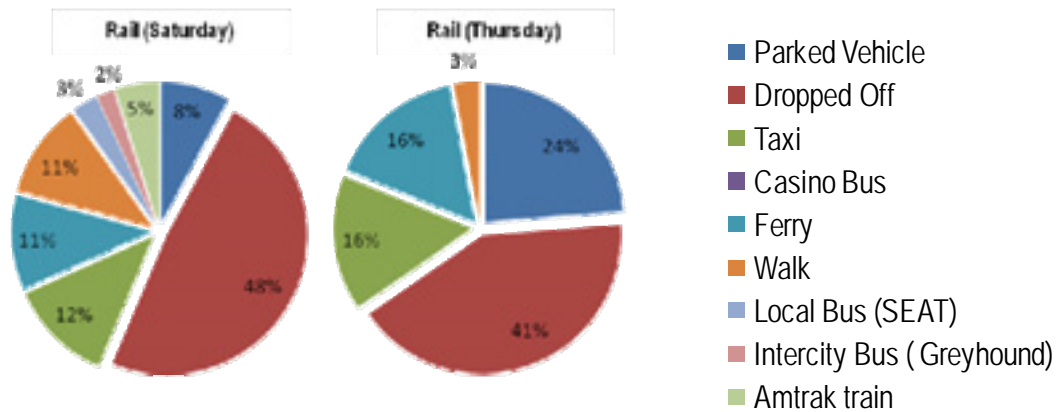
Another survey worth noting is the 2008 Shoreline East Customer Satisfaction Survey<sup>3</sup>. That survey (conducted at all SLE stations except New London) identified that the SLE station at Old Saybrook, approximately 20 miles west of New London and served by all SLE trains, attracts travelers from 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 boarding at Old Saybrook<sup>4</sup> 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

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<sup>3</sup> Warner Transportation Consulting, prepared for ConnDOT, *2008 Shore Line East Customer Satisfaction Survey Final Report*, August 2008

<sup>4</sup> September 2008 ridership reported by ConnDOT

Figure 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.

### 1.1.2. 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.

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

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Transportation Plan. 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 District<sup>5</sup>. 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.

### 1.1.3. Future Operational Needs

#### *Planned Shore Line East Expansion*

The Connecticut DOT's report on Expanding Rail Service on Shore Line East<sup>6</sup> states that in a planned Phase 2 (planned for the 2009-2010 timeframe and recently announced as being delayed until 2010), 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) annually<sup>7</sup>, 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.

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.

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<sup>5</sup> The website [www.onemorestop.net](http://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.

<sup>6</sup> ConnDOT, *Expanding Rail Service on Shore Line East*, January 2007

<sup>7</sup> Assuming the ten-ride discounted fare of \$7.40 per one-way trip.

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## *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 do 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 has 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.

## **1.2 Intercity Bus (Greyhound)**

### **1.2.1 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 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 7b). This allows easy egress without requiring the bus to back up. The 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 are persistent problems with cars (and now with the Parade Project underway, taxis) parking in the bus bays and restricting bus movement (Figure 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

Figure 7: Greyhound Bus Loading Area



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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. 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.

## **1.2.1. 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: – 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.

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## 1.2.2. 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.

## 1.2.3. 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.

### 1.3 Cross Sound Ferry

#### 1.3.1. 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 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 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](http://www.longislandferry.com)

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## *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.

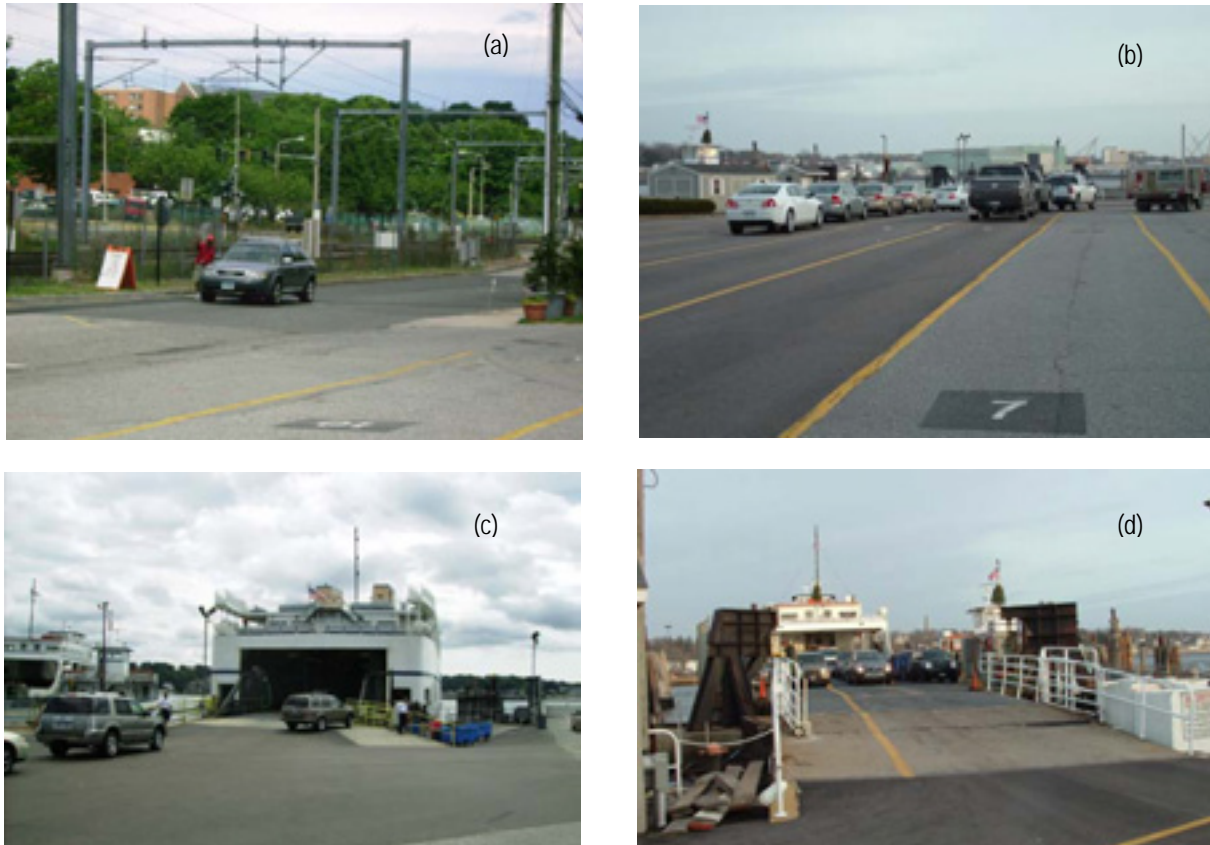
All vehicles entering the site are greeted by an agent at the Ferry Street entrance (Figure 8a). Those who are parking are charged the \$10 fee and are directed to one of the two long term parking areas. Those picking up or dropping off passengers are directed to one of two pick-up/drop-off areas. Those 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 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 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 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 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 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 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 7. In summer months, Viking Fleet operates one round trip per week to Montauk, Long Island, and uses Cross Sound's SeaJet dock.

**Table 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 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 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

### 1.3.2. 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 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 8 (note that the SeaJet did not operate in January 2004 and the Block Island

Figure 9: Long Island Ferry 2004 Monthly Volumes

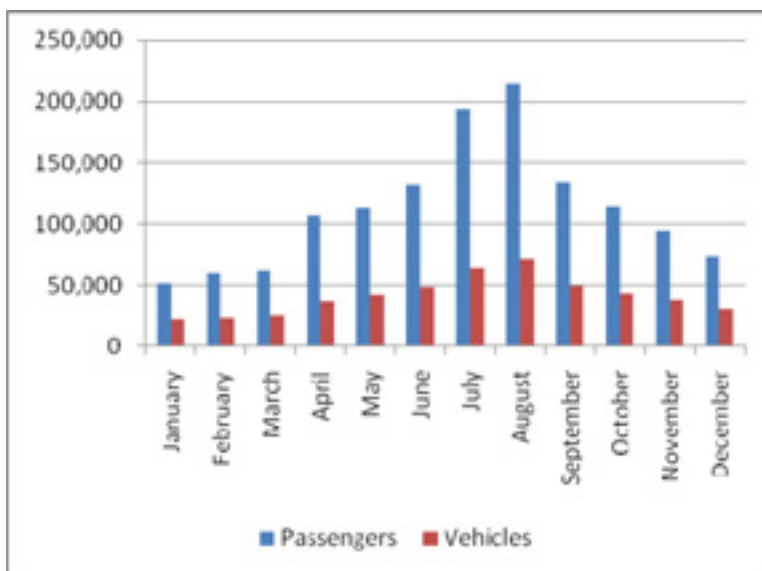


Table 8: Typical Daily Cross Sound Ferry Ridership (2004/2005)

	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 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		

Ferry is summer-only). With the recent decline in ridership and vehicle traffic noted above, Table 9 shows estimated 2008 ridership on the four types of days.

#### *Rider Characteristics and Travel Patterns*

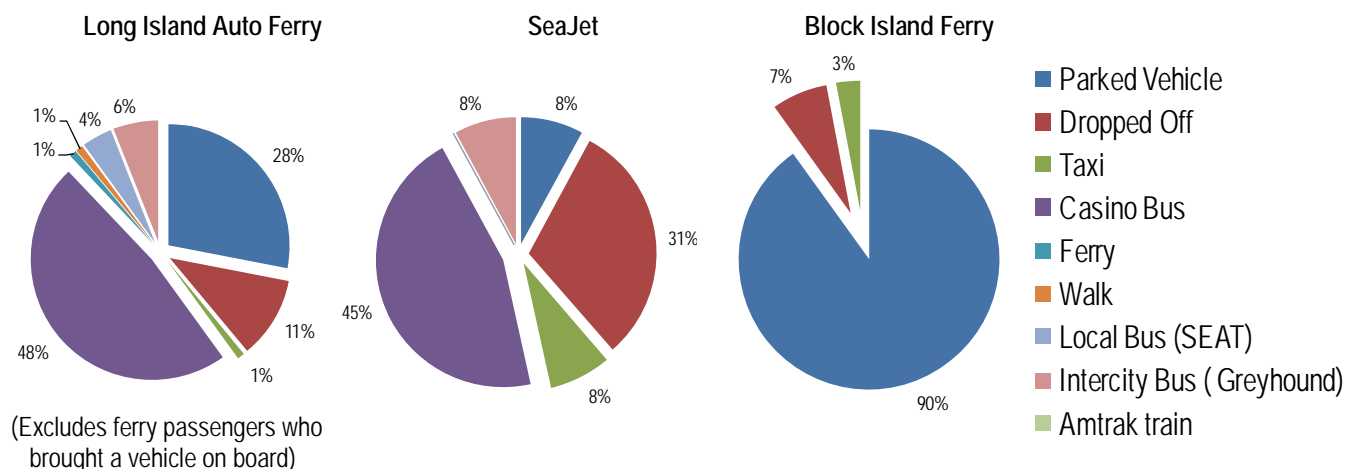
Cross Sound Ferry recognizes rail as an important link and counts on some transfers from each Amtrak train, which it expects will increase in the future. The operator noted that students from Long Island use the ferry to connect to rail to Boston. They also noted that about 85% of SeaJet riders use the 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 9<sup>th</sup> and 90 on Sunday August 17<sup>th</sup>. For the Block Island passenger ferry, 126 responses were

obtained on Saturday August 9<sup>th</sup>. For the SeaJet, only 16 responses were obtained on Friday August 8<sup>th</sup>. 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 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 9<sup>th</sup> but only 11% did so on Sunday August 17<sup>th</sup>, indicating that the larger August 17<sup>th</sup> 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 10. Almost half (all of them on August 17<sup>th</sup>) 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 17<sup>th</sup> 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 17<sup>th</sup> and looking only at the August 9<sup>th</sup> data, all but one rider who did not bring a car on board parked a car in New London.
- Also shown in Figure 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 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.

Figure 10: How Cross Sound Ferry Passengers Arrived at the Terminal



- 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.

### 1.3.3. 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.

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### 1.3.4. 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.

## 1.4 Fishers Island Ferry

### 1.4.1. 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 autos<sup>8</sup>. 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

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<sup>8</sup> Trucks typically take up more space than autos and reduce the number of vehicles carried accordingly.

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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 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 10. In the off peak season four to seven round trips are

**Table 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.

#### 1.4.2. 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 visitors<sup>9</sup>. In 2008, the ferry carried over 153,000 passengers and over 42,000 vehicles. Passenger and vehicle volumes by month are shown in Figure 11<sup>10</sup>. 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 12 and 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

<sup>9</sup> 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.

<sup>10</sup> 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 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

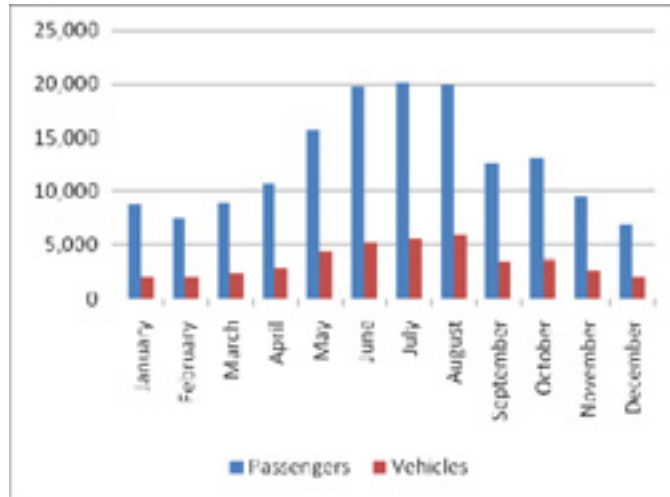


Figure 12: Fishers Island Ferry Average Weekday Passenger Volumes

	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

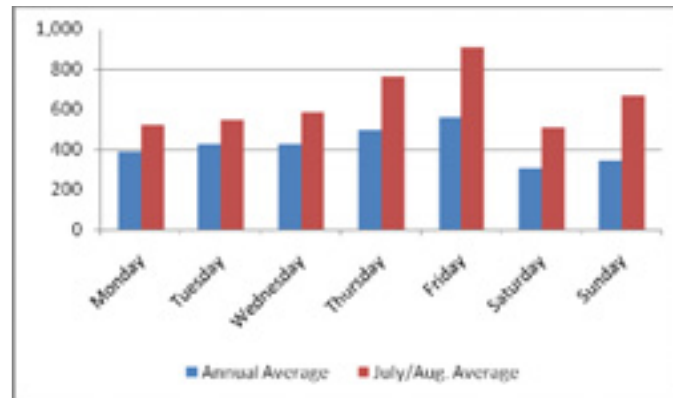
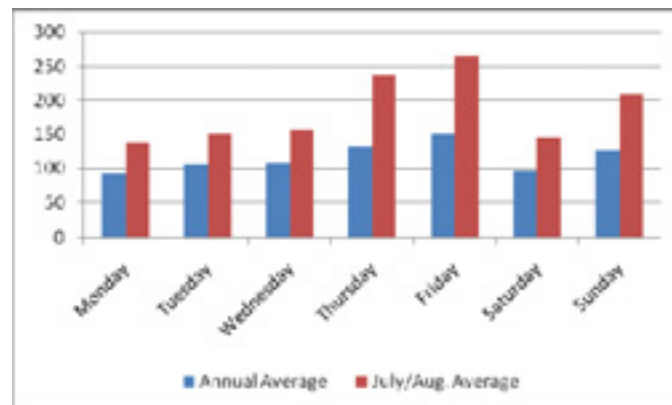


Figure 13: Fishers Island Ferry Average Weekday Vehicle Volumes

	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



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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.

### *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.

#### **1.4.3. 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.

#### **1.4.4. 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.

## 1.5 Casino Shuttle Bus

### 1.5.1. 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 14). Buses enter and exit the site via Governor Winthrop Boulevard and make non-stop connections directly to and from the casino resorts.

Figure 14: Casino Bus Loading Area

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.



#### *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.

### 1.5.2. 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.

### 1.5.3. Current Operational Needs

The current operation is reported to be working well with no improvements needed.

### 1.5.4. 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

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Sun) and Mystic<sup>11</sup>. 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 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 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 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 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.

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.

#### *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

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<sup>11</sup> SCCOG, *Intermodal Connections Study Southeast, Final Report*, 2005, prepared by TranSystems

Figure 15: Full Implementation Tourist Transit System

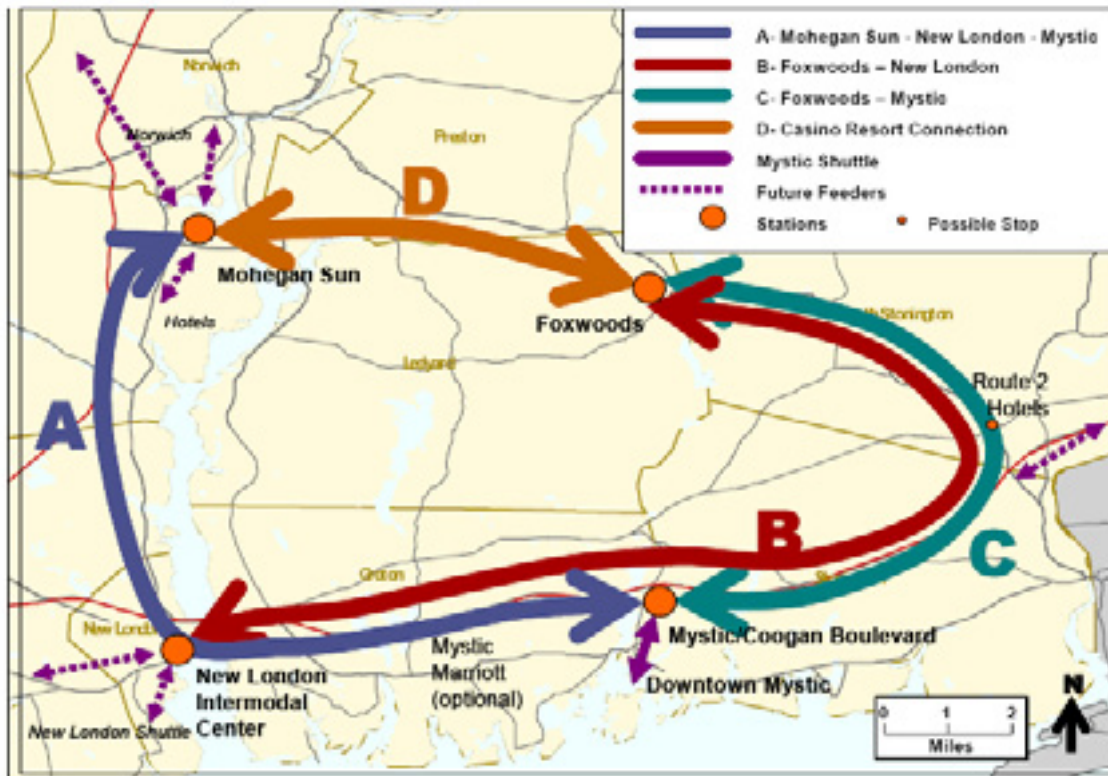


Table 11 – Proposed Tourist Transit System Service Frequency  
*During peak hours on summer weekends*

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 16: Proposed Pilot Tourist Transit System

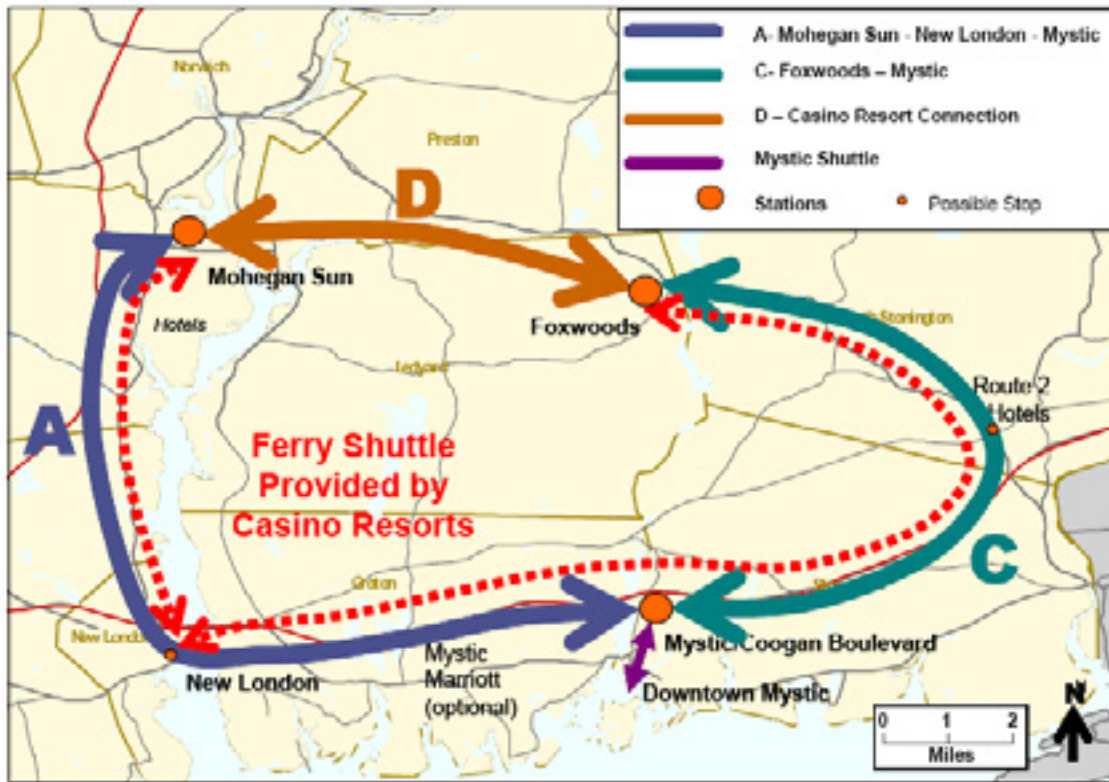


Table 12 – Proposed Tourist Transit System Pilot Service Frequency  
*During peak hours on summer weekends*

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.

## 1.6 SEAT Local Bus Service

### 1.6.1. 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.

#### *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 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:

Figure 17: SEAT New London Hub



#### 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-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 (1, 3, & 108) approach downtown from the north along Eugene O’Neill Drive. These are joined by two more (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 (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 currently, due to 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 13 provides an overview of the span of service and frequency on the New London routes. Table 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 Mystick 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/Mystic) 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 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/ 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

### 1.6.1. 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 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	-	-

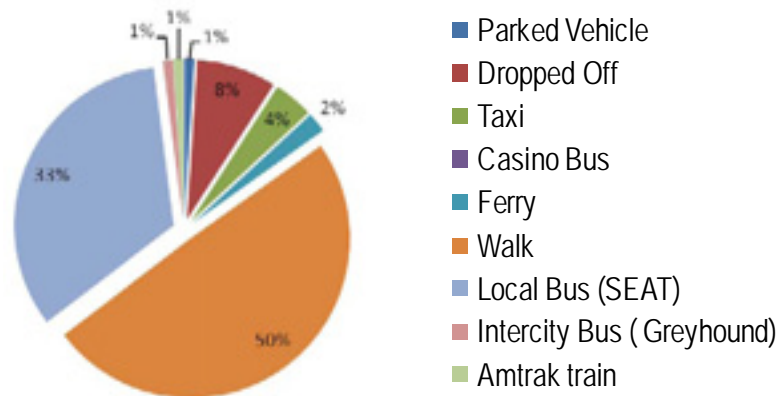
\* indicates service that does not operate on Saturdays

*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 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 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.

### 1.6.2. 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.

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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.

### 1.6.3. 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.

## 1.7 Taxis and Other For-Hire Services

### 1.7.1. Operations and Services

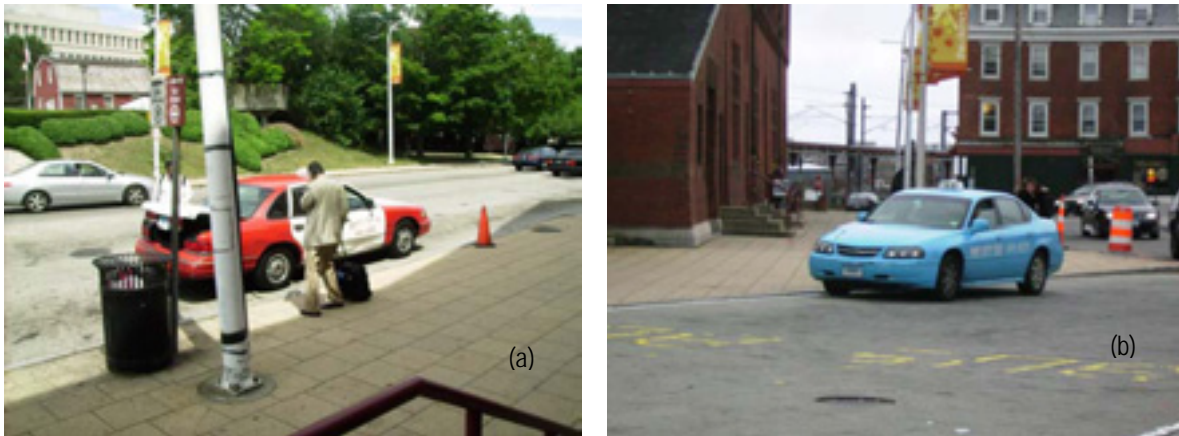
There are a number of taxi and car services operating in downtown New London. These include Harry's Cab Service, Port City Taxi and Yellow Cab/Curtin Transportation Group. These three companies generally have about 22-28 taxis in operation at any given time.

Prior to Parade construction, a taxi stand was located on Water Street in front of Union Station (Figure 19a). The area was 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 was also shared with buses shuttling passengers to and from cruise ships docked a short distance away at the State Pier.) Although each function had a designated section of curb space, there was considerable overlap in their use. The area served as the taxi stand for all of New London. Taxis not currently serving customers would generally go to Union Station to wait for a fare. Taxis there could pick up passengers coming out of the station but could also leave to pick up elsewhere when customers phone for a cab. Thus, taxis at the station were 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. Currently, with the Parade Project underway, taxis must find somewhere else to park (Figure 19b). Many use the Greyhound bays but Greyhound has 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 19: Union Station Taxi Stand



### 1.7.2. 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.

### 1.7.3. 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. Currently, with Parade construction, they have no officially sanctioned place to stand. The Parade Project will change this area and is intended to make improvements in safety and make the area more pedestrian friendly. The Parade Project will leave about 100-feet of curb space in front of the station (a 50% reduction in the pre-construction curb space). This space will be separated from traffic by a raised island with sloped curbing. 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. Thus, both the current situation and post-Parade Project situation leave taxis with less space to park than before construction. Taxis will likely need additional taxi stand space, though given that many of the waiting cabs do not ultimately pick up passengers at the station, this space need not be at the train station.

### 1.7.4. 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.

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Increased visitation of attractions in New London could also support a bicycle rental concession. This would require a rental counter and secure storage space for the bicycles.

## 1.8 Automotive Traffic

### 1.8.1. 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 the Task 2 Technical Memorandum.

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 15.

The second crossing is at State Street (Figure 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 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 20: State Street Railroad Crossing



### 1.8.1. Utilization of Facilities

#### *Current Traffic Volumes and Level of Service*

Based on traffic information documented in a recent study<sup>12</sup>, 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 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 22 illustrates the LOS conditions.

<sup>12</sup> Wilbur Smith Associates, Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, 2007

Figure 21 – Peak Hour Traffic Volumes (2008 Existing Conditions)

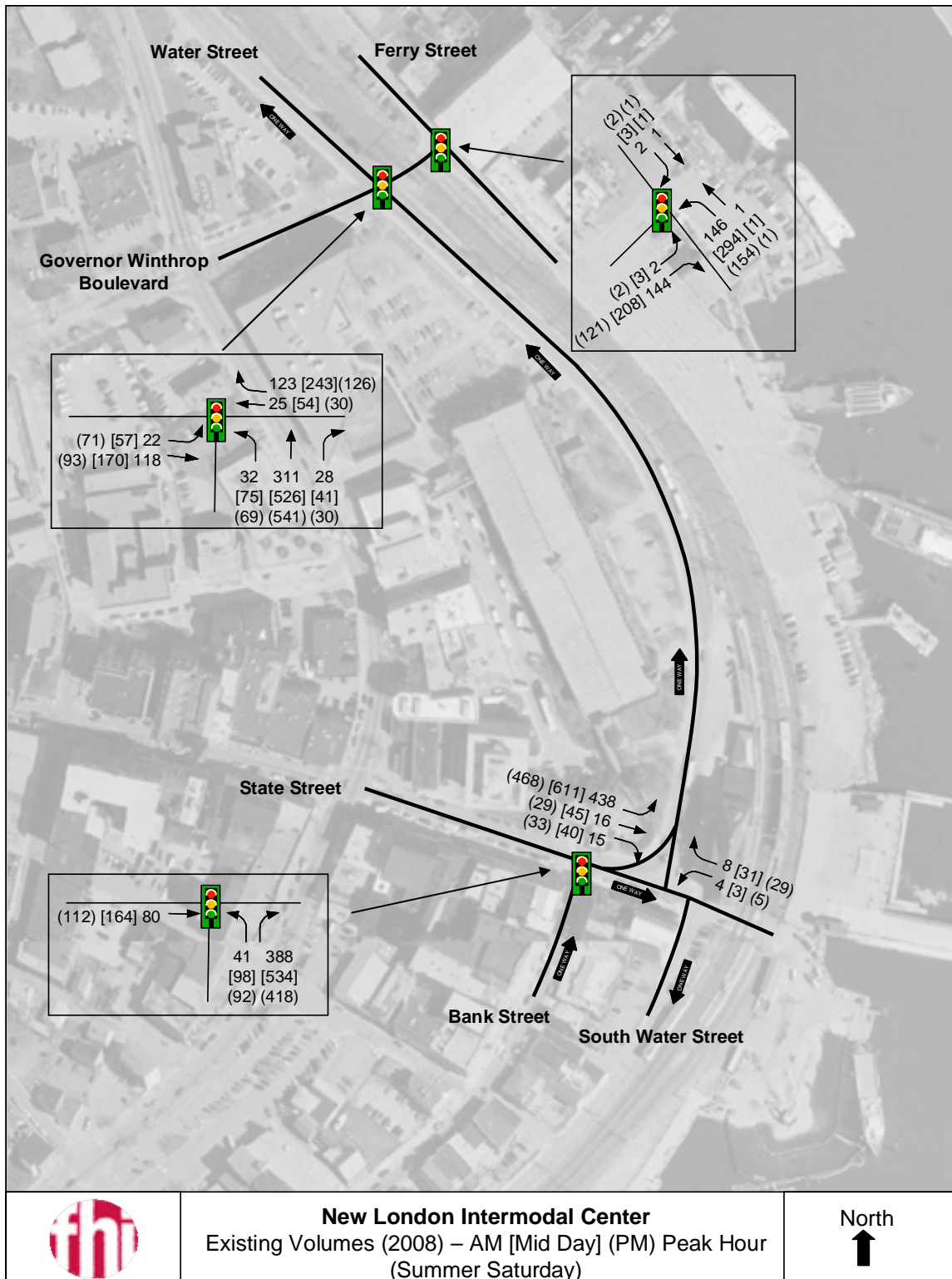
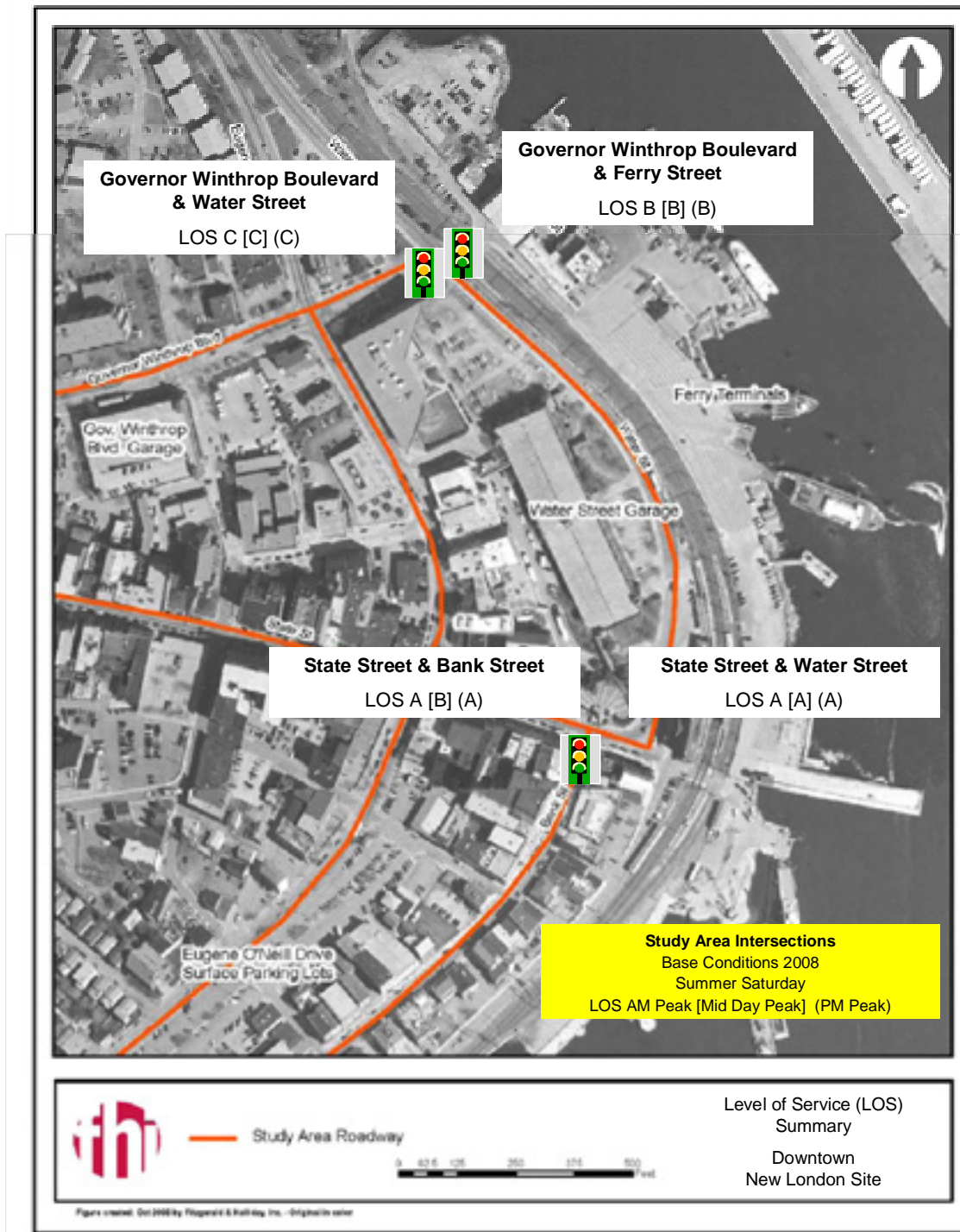


Figure 22: Level of Service Summary (2008 Existing Conditions)



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### *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.

#### **1.8.2. 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 raised island with sloped curbing. 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.

#### **1.8.3. 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 traffic<sup>13</sup>. 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 and the traffic level of service impacts and traffic mitigation options will be addressed as study recommendations are developed.

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<sup>13</sup> Wilbur Smith Associates, Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, 2007

## 1.9 Parking

### 1.9.1. 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.

The Water Street garage (Figure 23) is closest to Union Station, located just across Water Street. The 3.5-story structure has 975 spaces. 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.

Figure 23: Water Street Garage



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.

### 1.9.2. 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 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 24 shows the average daily revenue from day rate parkers for January and August 2008.

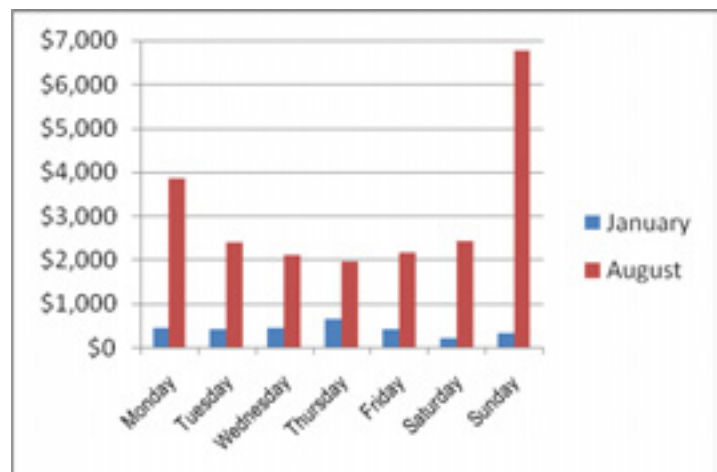
It should be noted that the day of week reflects the day on which parkers exited the garage, regardless of how many days they may have parked there. Thus, in August, Sunday is by far the day with the highest revenue, as this likely includes revenue vehicles parked for the weekend while people traveled to Block

**Table 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 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



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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 2<sup>nd</sup> 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 2<sup>nd</sup> 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 2<sup>nd</sup> and have the same average vehicle occupancy. Finally, no changes were made in the number of non-ferry parkers reported on August 2<sup>nd</sup>.

On August 2<sup>nd</sup>, 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 17 presents a summary table of the estimated parking occupancy under ideal summer peak conditions.

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 17 Estimated Peak Summer Saturday Parking Utilization

	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)

### *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 frequently<sup>14</sup>. 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 2<sup>nd</sup> and Thursday August 7<sup>th</sup>. 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 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 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

<sup>14</sup> 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 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
<b>Total</b>	<b>114</b>	<b>80</b>

Table 19: Reasons for Parking

Saturday	Work in	To take	To take	Visit	To take	Other	Total
	New London	Ferry	Train		Bus		
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	To take	To take	Visit	To take	Other	Total
	New London	Ferry	Train		Bus		
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.

### 1.9.3. 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 elsewhere in the Task 2 Technical Memorandum, the parking garage users were also dissatisfied with the stairway/elevator facilities and other physical elements.

#### **1.9.4. 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.

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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.

## 1.10 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.

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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 3.2.5.)



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## 2. 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.

### 2.1 Pedestrian Access and Connections

#### 2.1.1. 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 20 shows the more important connections for each operator or service. In the table, key current connections are denoted with a “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 25, with the route from the SEAT stop and Greyhound shown in Figure 25a and the route from Cross Sound ferry, through the staging area and parking lot, in Figure 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 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 25: Access Routes to Union Station



(a)

from SEAT and Greyhound



(b)

from Cross Sound Ferry

### *To Greyhound*

Access to the Greyhound ticketing area just north of the Union Station building is easy from the rail platforms<sup>15</sup>, 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 26a), across the unpaved parking area (Figure 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 26: Access Route to Cross Sound Ferry**



*looking north from State Street*



*looking south from the Block Island terminal*

<sup>15</sup> 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.

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### *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.

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### *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 Station<sup>16</sup>. 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.

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<sup>16</sup> The stand has been temporarily relocated during Parade construction; however, plans call for it to be restored in approximately its original location.

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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.

### **2.1.2. 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

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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.

### 2.1.3. 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.

### 2.1.4. 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.

### 2.1.5. 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.

## 2.2 Marketing, Ticketing, Information and Wayfinding

### 2.2.1. 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.

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### 2.2.2. 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](http://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.

### 2.2.3. 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 *Task 2 Technical Memorandum: Survey of Existing Physical Conditions*. 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.

### 2.2.4. 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.

### 2.2.5. 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.

## 2.3 Amenities and Commercial Services

### 2.3.1. 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 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 28a). There is an outdoor covered gangway for Block Island Ferry passengers outside the ticket office (Figure 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 27: Union Station Waiting Area

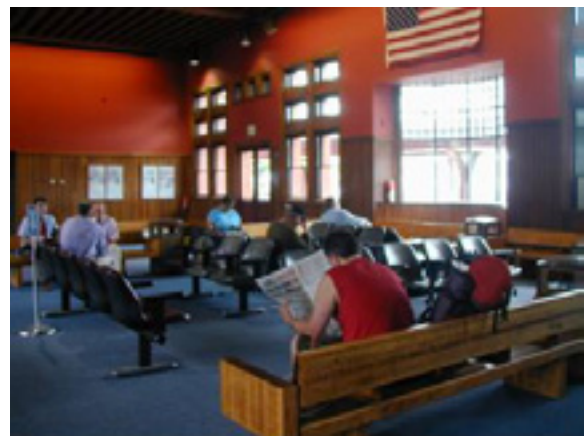


Figure 28: Cross Sound Ferry Ticket Offices



### 2.3.2. 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 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 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.

### 2.3.3. 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.



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## 3. 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.

### 3.1 Ridership and Service Scenarios

#### 3.1.1. 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.

#### 3.1.2. Ridership Scenarios

Ridership growth assumptions for the two scenarios are shown in Table 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 21: RITC Future Ridership Scenarios**

Modes	Recent Annual Trend	Annual Ridership Growth Assumptions <sup>17</sup>					
		Low Scenario <sup>18</sup>			High Scenario <sup>19</sup>		
		2009-2011	2012-2015	2016-2030	2009-2010	2011-2015	2016-2030
Amtrak <sup>20</sup>	5.6% since 1999 (New London only) <sup>21</sup>	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 <sup>22</sup>	unknown	no net change from 2008			no net change from 2008		
Long Island Auto Ferry <sup>23</sup>	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 <sup>24</sup>	-2.8% since 2003	no net change from 2008	2%	1%	no net change from 2008	3%	2%
Block Island Passenger Ferry <sup>24</sup>	-6% since 2005						
Other Passenger Ferries	none currently operated	NA	NA	NA	NA	NA	See note <sup>25</sup>
Fishers Island Auto Ferry <sup>26</sup>	stable	no net change from 2008	0%	0%	no net change from 2008	0%	See note <sup>27</sup>
SEAT	7.7% since 2003 (systemwide)	no net change from 2008	6%	4%	no net change from 2008	8%	6%

<sup>17</sup> 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.

<sup>18</sup> 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.

<sup>19</sup> 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.

<sup>20</sup> 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.

<sup>21</sup> Annual Amtrak New London ridership growth was 2.3% from 1999-2003 but 8.1% from 2003-2008.

<sup>22</sup> Data not available on Greyhound New London ridership. Growth assumed to match Amtrak.

<sup>23</sup> 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.

<sup>24</sup> 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.

<sup>25</sup> Ridership assumed to equal ½ of current Block Island ridership.

<sup>26</sup> Fishers Island Ferry District projects stable ridership. The addition of a possible future high-speed passenger ferry is assumed in 2015.

<sup>27</sup> No increase in vehicular travel. A 25% increase in passengers is assumed due to new passenger-only ferry.

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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 study<sup>28</sup> 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 scenarios<sup>29</sup>.

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

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<sup>28</sup> Clough, Harbour & Associates LLP, *I-95 Corridor Feasibility Study*, published approximately 2003

<sup>29</sup> 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.

**Table 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

scenario is assumed to be supported by service frequency improvements, new local routes before 2030, and expansion of Sunday service.

### 3.1.1. Service Scenarios

Assumptions regarding service changes for the two scenarios are shown in Table 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

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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) is assumed to be implemented before 2015. The full system (including ferry shuttles) is assumed to be

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implemented before 2030. In 2015, service on the Mohegan Sun to Mystic route via New London is 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.

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.

## 3.2 Impacts on the RITC

### 3.2.1 Annual Ridership Increases

The scenarios described above would result in the growth in passengers and vehicle volumes (on ferries) shown in Table 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 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 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 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
<b>Total Passengers</b>	<b>2,086,112</b>	<b>2,331,336</b>	<b>2,887,594</b>	<b>2,547,374</b>	<b>3,959,444</b>
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
<b>Total Vehicles</b>	<b>510,000</b>	<b>529,084</b>	<b>607,811</b>	<b>558,918</b>	<b>738,395</b>

### 3.2.2. 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.

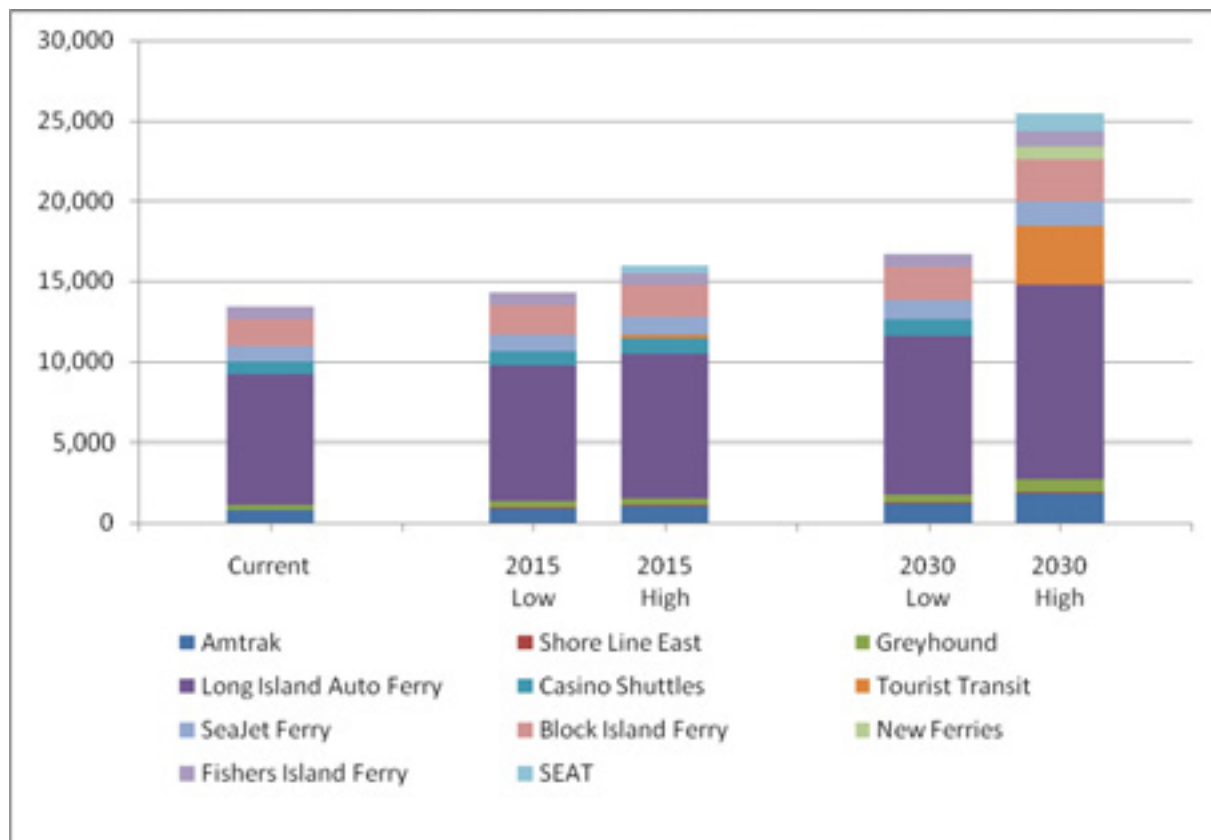
Table 25 shows the Sunday (both Peak Summer and January) ridership that would result from the assumed growth rates for the two scenarios. Figure 30 graphically illustrates the peak summer Sunday figures. The table and figure show that currently just under 14,000 people board or alight at the RITC on 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 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 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
<b>Total Passengers</b>	<b>13,390</b>	<b>14,246</b>	<b>16,664</b>	<b>15,954</b>	<b>25,441</b>	<b>3,368</b>	<b>3,645</b>	<b>4,326</b>	<b>4,349</b>	<b>6,945</b>
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
<b>Total Vehicles</b>	<b>3,281</b>	<b>3,405</b>	<b>3,913</b>	<b>3,597</b>	<b>4,755</b>	<b>982</b>	<b>1,019</b>	<b>1,172</b>	<b>1,077</b>	<b>1,426</b>

Figure 30: Future Scenario Peak Summer Sunday Ridership



**Table 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
<b>Total Passengers</b>	<b>8,402</b>	<b>9,347</b>	<b>11,465</b>	<b>10,188</b>	<b>16,388</b>	<b>2,381</b>	<b>2,921</b>	<b>3,896</b>	<b>3,237</b>	<b>5,596</b>
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
<b>Total Vehicles</b>	<b>1,810</b>	<b>1,877</b>	<b>2,155</b>	<b>1,982</b>	<b>2,615</b>	<b>611</b>	<b>633</b>	<b>723</b>	<b>667</b>	<b>872</b>

### 3.2.3. 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).

### 3.2.4. 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

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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 Section 3.2.5.) 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.

### **3.2.5. 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 1.9.2 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 27. The table relates the total number of parked vehicles to the total capacity of all six parking facilities. 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 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	915	1,016	1,199	1,095	1,948
% 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

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.

### 3.2.6. 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 growth<sup>30</sup>, 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

<sup>30</sup> As projected in Wilbur Smith Associates, Pedestrian Safety and Access Improvements to the Intermodal Transportation Facility, 2007

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(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 31. Results from the capacity analysis are shown in Figure 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.

### 3.2.7. 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.

Figure 31 –Peak Hour Traffic Volumes (2030 High Scenario Conditions)

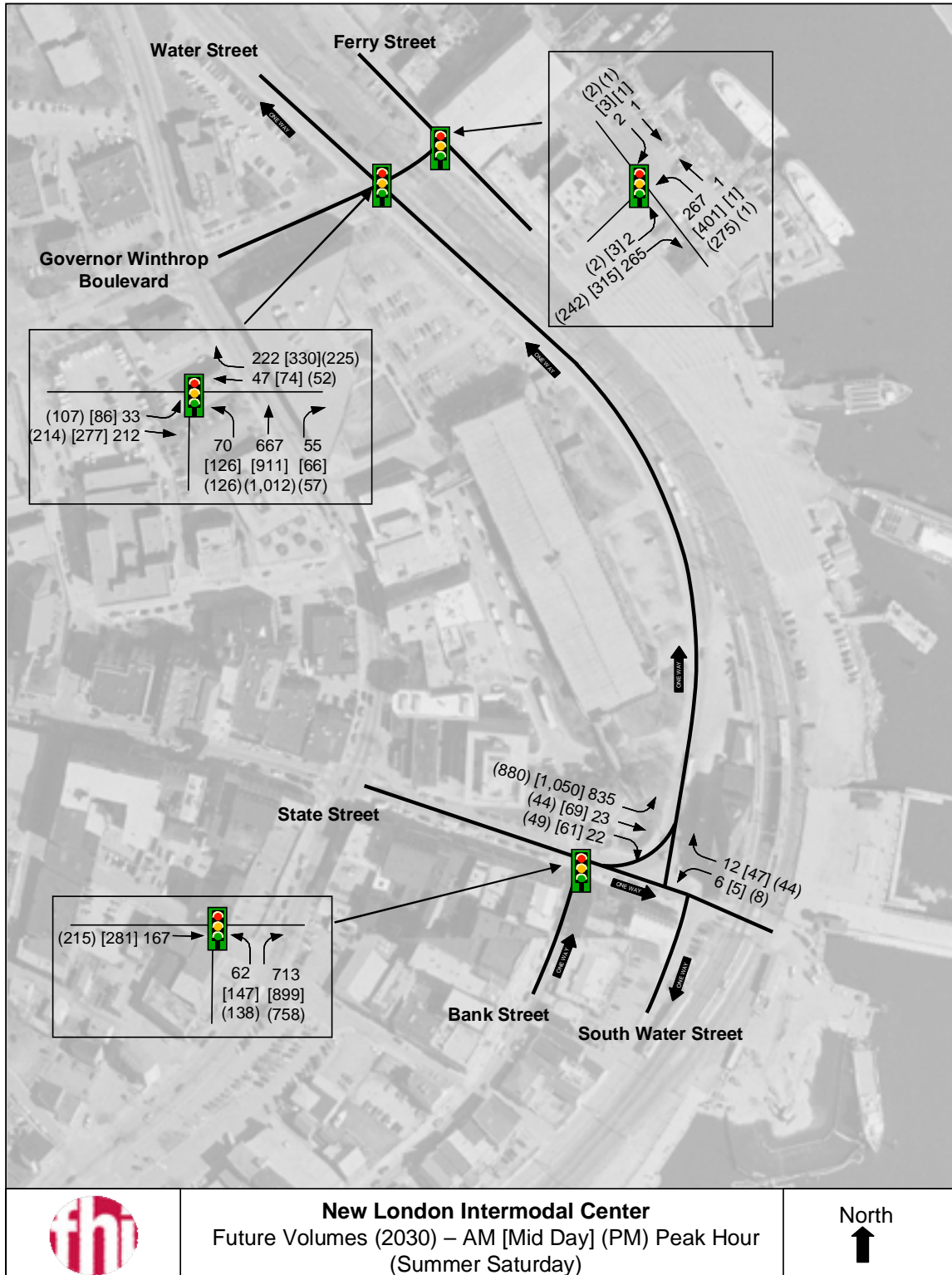
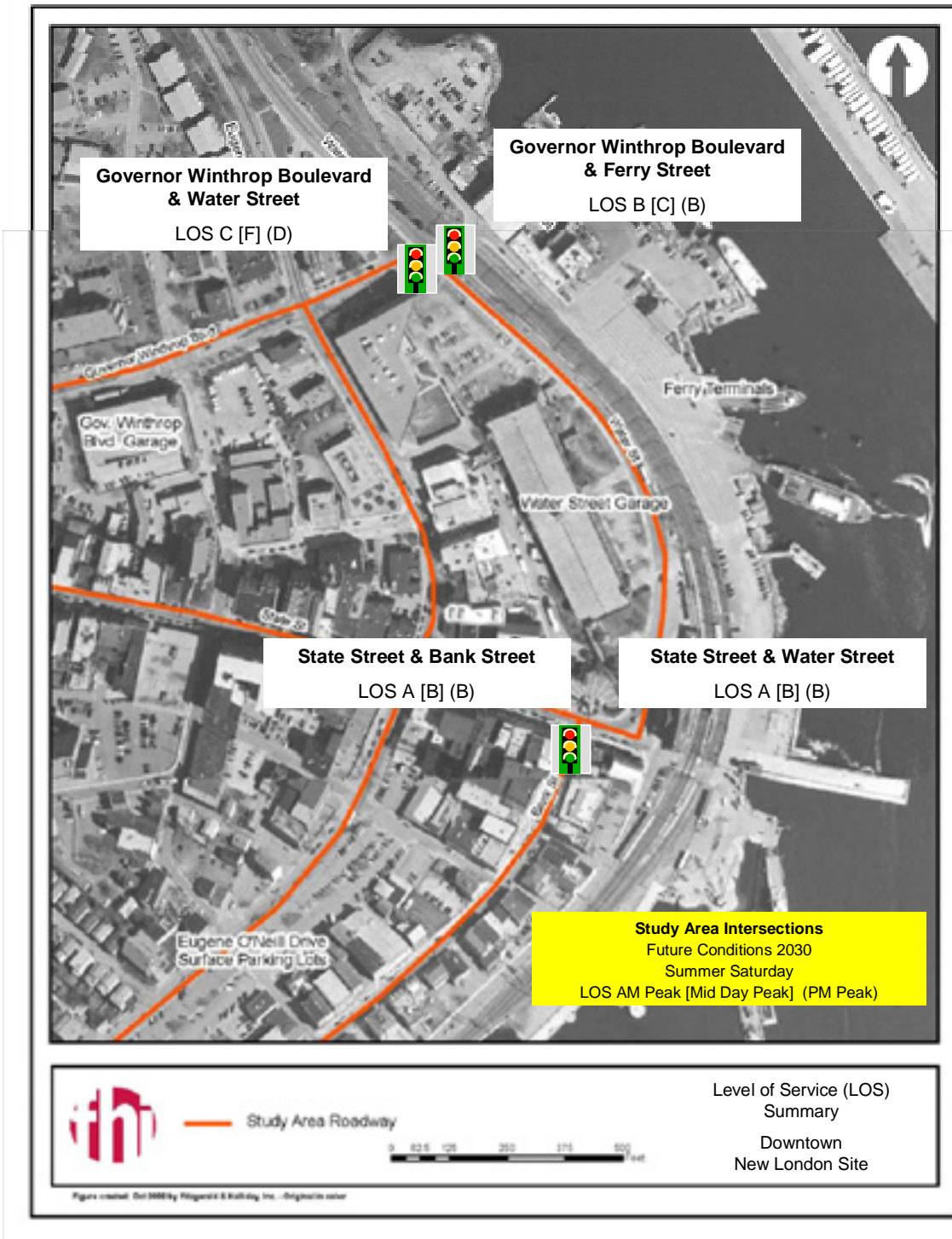


Figure 32: Level of Service Summary (2030 High Scenario Conditions)



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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.

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.

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## 4. Summary of Operational and Service Needs

This report 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.

### 4.1 Current Elements to be Maintained

#### 4.1.1. 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.

#### 4.1.2. 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.

### 4.2 Current Deficiencies and Needs

#### 4.2.1. 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.

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### 4.2.2. 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.

### 4.2.3. 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.

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#### 4.2.4. 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.

### 4.3 Future Operational and Service Needs

#### 4.3.1. 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.

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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.

#### 4.3.2. 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 are likely to be adequate, 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.



**Boston Office**  
38 Chauncy Street  
Boston, MA 02111  
(857) 453-5450  
Fax (857) 453-5451