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4. Market Analysis

4.1 Introduction

4.1.1. Study Purpose

This chapter examines the market development potential at and in the general area around Union Station (i.e., downtown New London), the current and future site of the RITC. Through a demographic and economic overview of the RITC site area, as well as analyses examining the residential, office and retail market development potential of the station and surrounding areas, this market analysis considers the land uses and services that can complement the RITC. This analysis was prepared using an industry standard research process, taking into consideration emerging demographic and economic factors, transit oriented development factors, and public/private development opportunities. The analysis provides quantitative and qualitative information and data analysis in order to examine the market demand and development potential for the site and station area.

4.1.2. Study Area Overview

Study Area Definition/Description

New London is located in southeastern Connecticut halfway between Boston and New York City on the shores of the Thames River and the Long Island Sound. The boundary of New London's Historic Waterfront District runs along Huntington Street, Federal Street, Water Street, and Tilley Street. Train tracks run along the Thames River on the downtown's eastern perimeter. Union Station is located at 27 Water Street in the Historic Waterfront District on the waterfront. Union Station is a historic railroad station and is the anchor for transit oriented development. The market analysis focuses on the Historic Waterfront District in New London, referred to later in this chapter for convenience as "downtown". The photos in Figures 4-1 and 4-2 below show a busy street in downtown New London during Sailfest and an early morning streetscape in downtown which shows the historical character in the New London buildings.

Figure 4-1: Downtown New London Pedestrians

Figure 4-2: Downtown New London Streetscape

Development History/Historical Character/Industry

New London is an historic city founded by European settlers in 1646[1] New London's waterfront location allowed the city to grow rapidly throughout the 1700s. By the mid 1800s, demand for whale oil peaked and the harbor became America's third leading whaling port[2] Shipwrights, coopers, riggers, grocers, painters, blacksmiths, and bankers were among the mass of businesses to build along the river, in addition to the homes of wealthy maritime merchants[3] The wealth that whaling brought into the city provided the capital to fund many of downtown's historic buildings. Downtown New London is included under the National Register of Historic Places and much of the 18th and 19th century architecture still exists throughout the downtown. A number of the historic buildings have been or are under rehabilitation, including Union Station, the Bacon Building, Crocker House, and the Mohican Hotel building.

The historical character is preserved in the retail shops, business offices, residential units and restaurants in downtown today. For example, the upper floors of the Crocker House, built in 1873, have been converted into market rate apartments that cater to young professionals and empty-nesters. The Hygienic Art Gallery is located in a building that was originally built as a whaling company's provisioning store and crew's quarters. The historic character is a large part of the charm and attraction that makes New London a unique place for specialty shops, restaurants, and leisure visitors.

The major industry clusters in the City of New London are bioscience and healthcare, defense, maritime, and creative arts and technology. The core company in the bioscience and healthcare cluster is Pfizer, Inc.(which recently, after this market analysis was completed, announced its departure from its New London site) and the major hospital is Lawrence & Memorial, which employ 6,200 and 2,200 persons respectively. In New London, the maritime cluster is supported by the deep water port facility at Admiral Shear State Pier which handles bulk cargo vessels and cruise ships. In 2007, 37 ships came through the port facility (30 cargo ships and seven passenger cruise ships) carrying over 170 million metric tons of cargo (mainly forest products and copper). General Dynamics Electric Boat (in Groton) and the US Coast Guard Academy (in New London) are major employers in the defense industry cluster, with a total of 9,300 jobs. Finally, creative arts and technology activities are emerging economic drivers in New London. The Garde Arts Center has over 80 performances each year, and art galleries such as the Alva Gallery, the Burnished Chariot Gallery, the Golden Street Gallery, and the Hygienic Art Gallery and Sculpture Garden feature regionally and nationally known artists. Performing arts venues and art galleries attract emerging and established artists to New London. In fact, in southeastern Connecticut, "it is estimated that there are over 4,000 employees and self employed residents involved directly in the Art and Creative Cluster"[4]

Transportation and Infrastructure

By the 1800s, the New London harbor offered ferry services along the coast with connections to New York, Hartford, Providence, and Boston on elegant coastal steamers[5] Today, ferries connect New London to Orient Point (NY), Fishers Island (NY), Montauk Harbor (NY) and Block Island (RI). Railroads came to New London in 1846, linking rail and steamboat travel along the coast. Union Station was built in the 1880s, replacing a much less impressive rail depot from 1852[6] The primary modes of transportation in New London are still concentrated around the waterfront.

[1] Historic New London Map, published by *The Day*
[2] Bank Street, New London Ct, A Self-Guided Walking Tour, New London Landmarks, Inc.
[3] Ibid
[4] Southeastern Connecticut Enterprise Region, 2008
[5] Bank Street, New London Ct, A Self-Guided Walking Tour, New London Landmarks, Inc.
[6] State Street, New London Ct, A Self-Guided Walking Tour, Lyman Allyn Art Museum

The current RITC exists as a set of adjacent transportation sites surrounding Union Station. The RITC hosts several local and intercity transportation modes, including: Amtrak (shown in Figure 4-3) and Shore Line East rail services; the Cross Sound Ferry, Fishers Island Ferry, and additional docking space at City Pier and nearby State Pier (shown in Figure 4-4); Greyhound, casino resort shuttles, and local SEAT bus services; taxi services; and public and private parking facilities. In addition to the public transportation options in New London, the city is also well connected to major roadways. I-95 runs just north of downtown New London and intersects I-395 approximately six miles west of downtown. The Boston Post Road (US Route 1) also runs just outside downtown New London before linking with I-95 to the north of downtown.

Figure 4-3: Amtrak train

Figure 4-4: State Pier

Public Policies and Plans

Consistency between the recommendations in this chapter and existing public policies and plans is important for ensuring that efforts are not duplicated and publically approved efforts are not undermined. Documents reviewed prior to beginning the market analysis were the City of New London Plan of Conservation and Development (2007), the City of New London Comprehensive Economic Development Strategy (2003), New London Downtown Action Agenda (2001), New London New Vision: A Comprehensive Urban Development Program for Connecticut, Progress Report (1999), and New London Downtown Master Plan (1998). Additionally, during the period of this market analysis, the City was undertaking a solicitation process for a study of the impacts of an Incentive Housing Zone (IHZ) on the downtown. The information presented in this market analysis will play an integral part in the analysis of a proposed IHZ.

There are existing policies in place to help promote development in the downtown area. The City has a business rent subsidy program to attract new businesses, an enterprise zone (which includes the downtown area) that provides tax incentives, a revolving loan fund for small and medium sized businesses, commercial and mixed use building rehabilitation program, a façade improvement program and a city center sign improvement program. The City and other economic development groups (such as the Downtown New London Association, City Center District and Main Street New London) have made great efforts to spur development in the downtown.

Land Use/Zoning

Existing land uses in downtown include residential, office, retail, warehouse, government operations, and open space. In regard to zoning, the downtown is located in the Central Business District (CBD) 1 and 2 zones. The CBD 1 and 2 zones are intended to provide for and encourage a variety of retail businesses,

business and professional offices, service businesses, entertainment and cultural establishments. Also, these zones support the provision of adequate parking and pedestrian areas. The CBD 1 zone is centered on State and Bank Streets and is more restrictive in the allowable uses. Retail uses are the preferred ground floor use; residential is not allowed (except for live-work units) and office is only permitted by special permit. The concentration of retail and service uses is in an effort to achieve continuity of frontage to strengthen the retail presence[7].

Cultural and Tourist Attractions

Southeastern Connecticut is the largest tourism district in the state with regard to tourist expenditures and revenues collected by local governments and the state. Travel and tourism expenditures in southeastern Connecticut ($3.4 billion dollars were spent in 2001) are one and a half times higher than the next highest district (greater New Haven had $1.3 billion in 2001). However, high tourism expenditures in southeastern Connecticut are directly related to the presence of casino resorts. At the same time, New London and the subregion around New London (Mystic, Groton, etc.) constitute a tourist destination separate from the casino resorts and attracting additional tourists to this region will inevitably support new shopping and dining opportunities.

A variety of recreational and cultural activities are available in New London. The city has 26 small shops, 32 restaurants, cafes and bars[8], 4 antique stores[9], and an eclectic artist's community with 8 galleries[10] exhibiting new works on a regular basis. Several historic sites also exist throughout the city, including the Antientist Burial Ground, the Custom House Maritime Museum, the Hempsted House, Nathan Hale Schoolhouse, Monte Cristo Cottage, Fort Trumbull State Park, the Pequot Chapel and Pequot Colony, and the Shaw-Perkins Mansion. The city is also home to Connecticut College, Mitchell College, and the United States Coast Guard Academy. Casino resorts are a large attraction to southeastern Connecticut, and casino resort sponsored buses operate from downtown New London high-speed passenger ferry to each casino resort (Foxwoods and Mohegan Sun).

Downtown New London has a strong presence in the provision of arts and culture for the region. As mentioned earlier, the Garde Arts Center hosts performances that attract residents living within a 30 minute drive-time from the Center. Performances at the Garde include Broadway series, ballets, musicians, and opera to name just a few. The Garde and other arts/cultural venues attract day-trippers from the southeastern Connecticut region to New London. Figure 4-5 shows the Garde Arts Center in New London.

[7] City of New London Zoning Regulations, Sections 530 and 535 CBD 1 and 2, amended 9/30/2008
[8] New London's Historic Waterfront Dining Guide, New London Main Street
[9] Historic Waterfront District Map & Guide, New London Main Street
[10] Ibid

Figure 4-5: The Garde Art Center, New London

4.1.3. Summary of Strengths, Challenges and Opportunities

Site visits, interviews with stakeholders (see Appendix C), and market analysis revealed common themes of strengths, challenges, and opportunities in downtown New London. These selected strengths, challenges, and opportunities were discussed with regard to their relationship to the improvement of the RITC.

- Strengths: historic downtown with unique characteristics, , national trends of residential, office and retail shifts into urban centers, growth in key industries (professional/scientific, maritime, and creative arts and technology), a large regional tourist industry, existing demand for market rate downtown residential space, eclectic niche of retailers and restaurants, entertainment and arts venues, local and regional metropolitan connections (Boston, New Haven, Stamford, New York, Philadelphia, and Washington), and an historic multimodal transportation center in downtown serving as an origin or destination for 1.8 million passengers annually

- Challenges: difficult/expensive renovations, obsolete retail spaces, perception of crime, low traffic counts, national economic downturn, difficult pedestrian environment connecting the train station, ferries and downtown, low occupancy of existing commercial space, predominantly lower income population in the city, small downtown residential population, and a relatively small downtown worker population

- Opportunities: build on local economic and demographic trends with an expanded residential presence downtown for empty nesters and young professionals, attract businesses in key employment industries, encourage more tourist visits to the area, encourage niche retailers, bolster downtown entertainment/arts/cultural events, improve streetscape to attract public transportation users to the downtown, and expand the marketing/branding program of downtown and the RITC to capture a larger share of the “culture class” emerging in the new economy and visitors who use the various transportation modes

4.2 Demographic & Economic Profile

4.2.1. Study Area Context

To understand demographic and economic characteristics surrounding Union Station in downtown New London, a demographic and economic analysis of selected areas was performed including downtown New London, a half-mile walkshed surrounding Union Station, the City of New London, and New London County. To put these conditions into context, characteristics of households and employment within these areas each of these defined areas were compared.

4.2.2. Analysis Areas

Downtown (Historic Waterfront District) New London is the primary analysis area. As shown below in Figure 4-6, New London's downtown northern boundary runs along Federal Street and up approximately to the corner of Hallum and Water Streets. The eastern and southern downtown perimeters follow the edge of the waterfront. Union Station is situated in the center of the downtown's eastern border on the waterfront. The downtown's western boundary is Huntington and Reed Streets, not including the primarily residential blocks between Reed and Starr Streets northwest of Blinman Street.

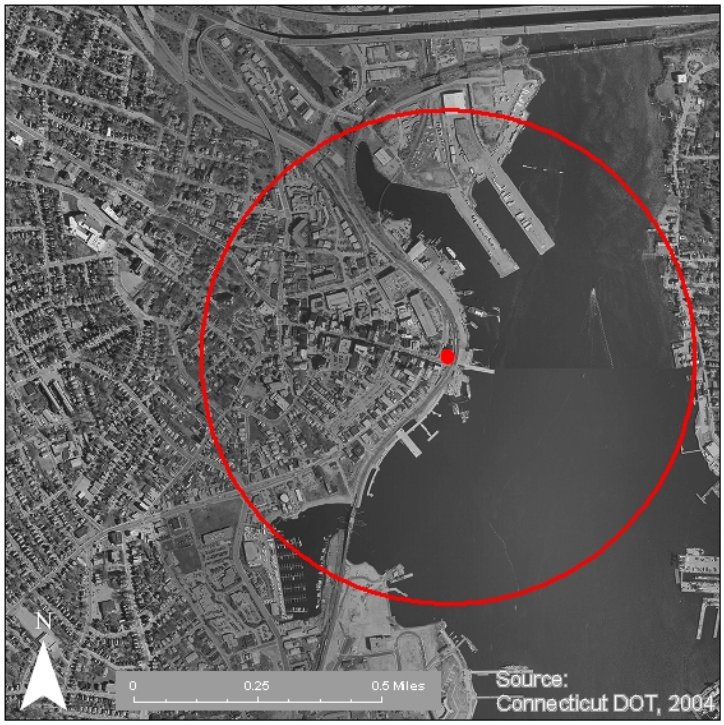
Figure 4-6: Downtown New London

Source: Google Earth, The Day, BBPC 2008 (graphic image, not drawn to scale)

A demographic and economic profile of the half-mile walkshed surrounding Union Station in downtown New London is also included. The area encompasses all the land within an approximate ten minute walk of the station. Generally, for transit oriented development a half mile is considered to be the reasonable distance that most people would walk to a transit center. Figure 4-7 below shows Union Station (red dot) and the

half-mile walkshed (outlined in red). The City of New London and New London County are also examined in the demographic and economic section.

Figure 4-7: Half-Mile Radius from Union Station



4.2.3. Demographic & Economic Profile

Table 4-1 compares selected demographics of downtown New London, the half-mile walkshed from Union Station, the City of New London and New London County. Compared to the surrounding geographies, the downtown study area has:

- 34 percent of the households and 75 percent of the jobs in the half-mile walkshed, and 4 percent of the households and 20 percent of the jobs in the city
- Significantly lower median household income ($20,250) than the city ($39,534) and county ($64,622), and slightly lower than the half-mile walkshed ($21,787)
- Higher median home value ($210,000) compared to the half-mile walkshed ($168,085) and city ($191,004), but lower than the county ($264,400)
- A smaller average household size (1.22) and higher median age (44.5) compared to the half-mile walkshed (1.90, 32.3), city (2.22, 31.2) and county (2.43, 39.3)
- A higher median age (44.5) compared to the half-mile walkshed (32.3), city (31.2) and county (39.3)

Table 4-1: Selected Current Demographics, 2008

	Downtown New London	½ Mile Walkshed	City of New London	New London County	Downtown as % of City
Population	511	2,425	26,252	268,890	2%
Households	421	1,239	10,433	105,937	4%
Household Size	1.22	1.90	2.22	2.43	-
Labor Force (16+)	364	1,866	21,201	215,546	1.7%
At-Place Employment	3,059	4,053	15,468	112,560	20%
Median HH Income	$20,250	$21,787	$39,534	$64,622	-
Median Home Value	$210,000	$168,085	$191,004	$264,500	-
Median Age	44.5	32.3	31.2	39.5	-

Source: ESRI Business Information Solutions, Main Street New London BBPC 2008

The table above shows that the median household income in the downtown is lower than the surrounding geographies. This is reflected by the high number of publicly subsidized, rental housing units in the downtown. In contrast, the median home value is higher in the downtown than the half-mile walkshed and the City of New London. This is indicative of the recent surge in the rehabilitation of residential units in downtown for higher income households demanding market rate units.

As shown below in Table 4-2, downtown New London accounts for a larger portion of the at-place employment in surrounding geographies compared to the downtown's portion of population, households, and labor force in surrounding geographies. For example, although the downtown population only makes up 23% of the half-mile walkshed's population, downtown employees account for almost 80% of the walkshed's at-place employment. This indicates that a significant number of workers in the downtown area commute to work from outside downtown.

Table 4-2: Downtown Demographics as a Percentage of Surrounding Geographies

	Downtown as % of 1/2 Mile Walkshed	Downtown as % of City	Downtown as % of County
Population	22.9%	2.0%	0.2%
Households	32.8%	3.7%	0.4%
Labor Force (16+)	37.4%	2.8%	0.2%
At-Place Employment[11]	78.6%	19.8%	2.7%

Source: ESRI Business Information Solutions, BBPC 2008

The downtown's median household income is lower than that of surrounding geographic areas, potentially reflecting retirees with limited earned incomes and existing lower income downtown residential areas. Although still lower than the average household income in the county, the city's average household income is higher than in the downtown and expected to rise over the next five years. Table 4-3 shows the

[11] That is, workers at their workplace locations

projected changes in the city's household income between 2008 and 2013. By 2013, the percentage of the city's households with income under $40,000 is projected to decrease, while the share of households making over $75,000 is anticipated to increase faster than the share of lower income households. The downtown is also in a position to potentially attract higher income empty nesters.

Table 4-3: Projected Changes in City of New London Household Income

	2008	% Total	2013	% Total
<$10,000	1,183	11%	1,086	10%
$10,000 - $19,999	1,263	12%	1,145	11%
$20,000 - $29,999	1,454	14%	1,315	12%
$30,000 - $39,999	1,382	13%	1,117	11%
$40,000 - $49,999	1,094	10%	1,048	10%
$50,000 - $59,999	1,076	10%	934	9%
$60,000 - $74,999	920	9%	1,119	11%
$75,000 - $99,999	1,348	13%	1,778	17%
$100,000 - $149,999	422	4%	660	6%
$150,000 - $199,999	116	1%	162	2%
$200,000+	171	2%	222	2%
Total Households	10,433		10,590	
Average Household Income	$51,712		$59,399	

Source: ESRI Business Information Solutions, BBPC 2008

Table 4-4 shows the projected changes in the number of households in the downtown, half-mile walkshed, city and county between 2008 and 2013. Although the current number of households in the downtown area is small, the downtown is projected to experience a nearly 3 percent increase in its number of households over the next 5 years, reflecting current trends and planned projects. The number of households in the city and the county will also increase, but at a slower rate than the downtown (0.3 percent and 0.4 percent, respectively). All the new growth in the half-mile walkshed is projected to occur within the downtown[12]. A total of 58 units are expected to be added to the downtown area.

Table 4-4: Existing & Future Households

	Total		Net Increase	
	2008	2013	2008-2013	%
Downtown	421	479	58	2.76%
1/2 Mile Walkshed	1,239	1,297	58	0.94%
City	10,433	10,590	157	0.30%
County	105,937	108,794	5,826	0.38%

Source: ESRI Business Information Solutions, Main Street New London, City of New London Office of Development and Planning, BBPC 2008

Similar to surrounding geographies, the downtown is projected to experience growth of residents age 55 to 74 (and over 85) as the current population ages, while the number of residents between the ages of 10

[12] Discussions with the City of New London revealed 58 new residential units to be constructed over the next five years.

and19 is expected to decrease. In addition to growth of residents age 55 and over, the group aged 20 to 24 is anticipated to increase at a faster rate than the city or county. These age groups represent empty-nesters and young professionals who typically do not have young children. These changes in households by age group are detailed in Table 4-5.

Table 4-5: Change in Population by Age Group

	Downtown			5 Year Growth Rate (2008 to 2013)		
	2008	2013	5 Yr Growth Rate	½ Mile Walkshed	City	County
Total	511	546	-4.49%	6.85%	0.72%	1.88%
0-4	23	24	5.67%	4.35%	3.51%	1.98%
5-9	20	21	5.77%	5.00%	0.54%	-1.53%
10-14	22	20	-9.66%	-9.09%	-10.28%	-3.88%
15-19	20	23	-7.69%	15.00%	-7.02%	-3.95%
20-24	23	31	18.85%	34.78%	7.90%	5.54%
25-34	66	58	-1.16%	-12.12%	3.52%	6.63%
35-44	86	81	-6.30%	-5.81%	-11.08%	-12.79%
45-54	81	87	5.11%	7.41%	-4.10%	1.48%
55-64	69	79	16.02%	14.49%	20.95%	16.31%
65-74	46	63	18.18%	36.96%	12.98%	12.40%
75-84	38	38	0.00%	0.00%	-9.21%	-4.62%
85+	17	21	25.00%	23.53%	3.88%	12.77%

Source: ESRI Business Information Solutions, BBPC 2008

Table 4-6 categorizes households by families, persons living alone and households with persons 65 and over. In 2000, the households in the downtown included fewer families (20.8 percent) and more persons living alone (71.5 percent) than in the half-mile walkshed, city and county. The percentage of households in the downtown with persons 65 or older (27.1 percent) was also somewhat higher than in the half-mile walkshed, city and county. The percentage of households without children increases as the distance to the RITC decreases. Downtown residential units are apartments found above retail and office spaces, and as the distance from the RITC increases, the residential units change to single family attached and detached.

Table 4-6: Households by Type (2000)

	Families	Persons Living Alone	HH with persons > 65
Downtown	20.8%	71.5%	27.1%
½ Mile Walkshed	40.7%	50.5%	20.7%
City	52.9%	37.8%	21.7%
County	67.3%	26.4%	23.5%

Source: US Census, ESRI Business Information Solutions, BBPC 2008

According to the 2008 projections prepared by ESRI, shown below in Table 4-7, New London County is projected to add a total of 2,857 households from 2008 to 2013 for a total of 108,794 households in 2013 (a 0.54 percent annual growth rate)[13]. Assuming this rate of growth continues through 2018, New London

[13] ESRI Business Information Solutions, 2008

County would be expected to add roughly 5,826 households over the ten-year period, or approximately 580 households per year.

Table 4-7: Existing & Future Households

	Total			Net Increase	
	2008	2013	2018	2008-2018	Annual %
New London County	105,937	108,794	111,763	5,826	0.54%

Source: ESRI Business Information Solutions, BBPC 2008

As shown in Table 4-8, residents who live closer to the RITC use public transportation modes more often. In 2000, residents in the downtown were more likely to take public transportation than residents of any of the surrounding areas. Average commute times for the downtown were similar to that of the surrounding areas. The passenger surveys conducted as part of this study revealed that 50 percent of passengers at the Water Street SEAT bus stop walked to catch the bus. The passenger survey also indicated that 50 percent of the passengers waiting at the Water Street bus stop are using the bus to go to work. The work commuters are generally traveling to the Crystal Mall, Groton, casino resorts, and Norwich.

Table 4-8: Area Commuting Patterns by Location of Residence, 2000

	Downtown	½ Mile Walkshed	City	County
Means to Work				
Total	185	847	12,201	129,553
Drove Alone	47.6%	55.3%	66.8%	81.1%
Carpooled	11.4%	16.2%	12.2%	9.9%
Public Transportation	9.2%	7.0%	3.1%	1.6%
Walked	18.9%	13.8%	12.0%	3.8%
Other Means	7.6%	5.2%	2.3%	0.9%
Worked at Home	5.3%	2.6%	3.7%	2.6%
Travel Time to Work				
> 5 minutes	0.5%	1.5%	7.3%	3.6%
5 to 9 minutes	19.8%	23.2%	18.0%	12.7%
10 to 19 minutes	35.8%	36.0%	40.1%	34.0%
20 to 24 minutes	12.8%	14.0%	11.8%	15.5%
25 to 34 minutes	14.4%	11.8%	11.4%	16.5%
35 to 44 minutes	2.7%	1.8%	2.1%	5.0%
45 to 59 minutes	3.7%	3.3%	1.8%	4.5%
60 to 89 minutes	1.1%	3.3%	2.6%	3.6%
90+ minutes	3.7%	2.5%	1.2%	1.8%
Average Travel Time (minutes)	20.7	19.4	17.2	22.2

Source: US Census, ESRI Business Information Solutions, BBPC 2008

According to the US Census, and detailed below in Table 4-9, the average household in the downtown had 0.6 vehicles in 2000, similar to the average household in the half-mile walkshed (0.7 vehicles), but lower than the city (1.3 vehicles) and county (1.8 vehicles). Households living closer to the RITC are less likely to have access to a vehicle and are more likely to use public transportation to get to work.

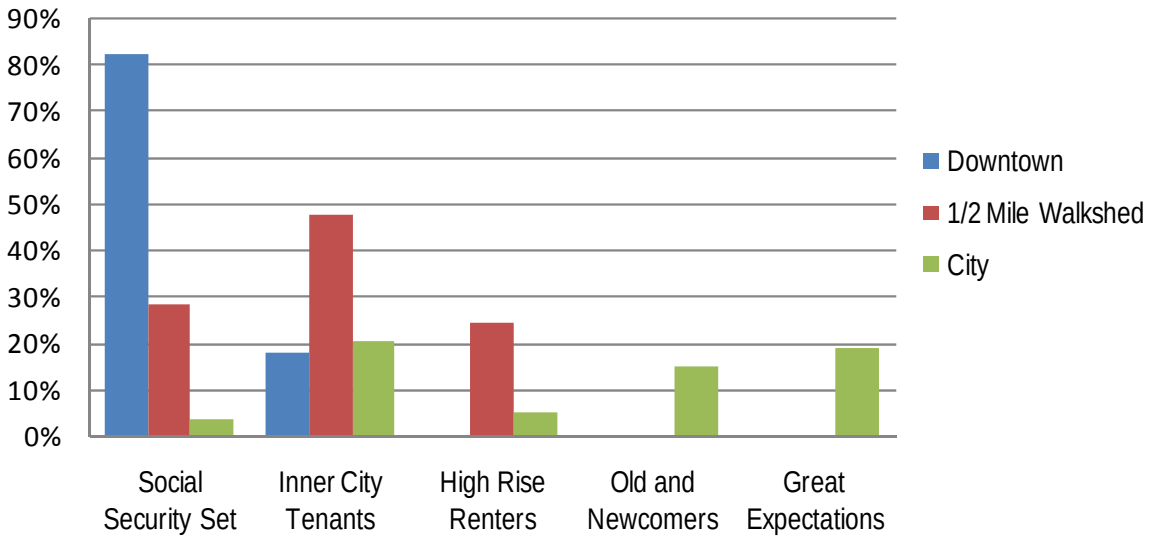
Table 4-9: Average Vehicle Availability, 2000

Downtown	½ Mile Walkshed	City	County
0.6	0.7	1.3	1.8

Source: US Census, ESRI Business Information Solutions, BBPC 2008

To identify the lifestyle characteristics and housing preferences of local residents, an evaluation of top household segments was performed using the trademarked 65-segment Community Tapestry system. This system classifies U.S. neighborhoods based on their socioeconomic and demographic compositions, using nation-wide demographic information such as labor force characteristics, median income, age, and spending habits to categorize neighborhoods according to the community tapestry classification system. Figure 4-8 identifies the top tapestry segments in the downtown, half-mile walkshed and the city.

Figure 4-8: Top Tapestry Segments for Downtown, ½ Mile Walkshed and City 2008



Source: ESRI Business Information Solutions, BBPC 2008

These segments share a number of common traits, including:

- Diversity – most segments are ethnically diverse
- Higher intensity housing – residents tend to live in mid- to high-rise, low rent buildings
- Single person families – many residents live alone or in shared, non-family housing
- Nearby and discount shopping – residents prefer to do grocery shopping close to home and tend to bargain hunt
- Split between young and old – residents are either at the beginning or end of the adult age spectrum

Though these segments share traits, they each have distinctive characteristics (based on nation-wide statistics), as described below:

- Social Security Set (82 percent of downtown area) – A somewhat older market with a median age of 45.6 years and 40 percent of households aged 65 or older. Individuals generally subsist on very low fixed incomes, but have accumulated some wealth over their lifetime. The median household income for this market is $16,632 and the median net worth is $35,073. Many residents do not own cars and therefore rely on easily accessible public transportation.

- Inner City Tenants (18 percent of downtown area) – This multicultural market is almost one-third Hispanic and younger than average, with a median age of 27.9. These neighborhoods are often a stepping-stone for recent immigrants, with an annual population growth of 0.7 percent. Household types are diverse with a high turnover rate because many individuals are enrolled in nearby colleges and work part-time. Accommodation/food services employment is high. One-fifth of housing is owner-occupied.

- High Rise Renters (24.4 percent of half-mile walkshed) – This group represents a diverse mix of race and ethnicity, with a large Hispanic population and a median age of 29.9 years. Household types are mainly single parent and single person; although a larger-than-average proportion of other families is also present. While there is a high unemployment rate, the majority of employed residents work in service, professional, and office/administrative support occupations. This segment ranks the highest among all Community Tapestry segments for number of renters (9 out of 10 households), commute to work (41.1 minutes), and population density (42,445 people per square mile).

- Old and Newcomers (14.9 percent of city) – These neighborhoods are in transition, populated by renters who are either starting their careers or retiring. The proportion of householders either in their 20s or aged 75 or older is higher than the proportion at the national level. These neighborhoods have more single person and shared households than families. Educational attainment is above average, as is college and graduate school enrollment. Slightly higher proportions of workers are in food preparation and office/administrative support positions.

- Great Expectations (18.6 percent of city) – Young singles who live alone and married-couple families dominate this segment, with many residents just beginning their careers or family lives. This segment has a higher proportion of residents in their 20s and a higher proportion of householders younger than 35 years old compared to the national proportions. There is a 68 percent labor force participation rate in this segment, with the primary employers in the manufacturing, retail, and service industry sectors. Half the households own their homes, the other half rent.

Tapestry Applicability to the Downtown

Site visits and stakeholder interviews verify many of the trends seen in the tapestry analysis. The ethnic restaurants and corner stores seen throughout the half-mile walkshed match the diversity apparent throughout the area. Also, low-income housing units exist in downtown New London (such as the Mohican Hotel) and many people who live in these households rely on public transportation. However, there is a growing segment of young professionals ("Great Expectations") who are just beginning their careers. This group seeks affordable rental units in urban centers with transit accessibility. People in this cohort do not yet have children and like to dine out, attend music and art events and are helping to cultivate a "culture class" in New London. The existence of a vibrant, historic, waterfront downtown connected via public transportation to cultural, job, and family opportunities creates a unique place and a competitive advantage

to attract residential development and further attract culture class residents which can support the new economy and job clusters that are emerging in New London.

4.2.4. Labor and Industry

The Southeastern Connecticut Enterprise Region has identified six industry clusters to build into a stronger presence in the southeastern portion of the state. These clusters are defense, maritime, tourism, creative arts and technology, bioscience and chemicals, and agriculture[14]. Five of the six are applicable to New London. Agriculture is not a large part of the New London economy; as shown in the preceding table, only 0.6 percent of the county labor force is employed in agriculture. These five clusters can be enhanced by a vibrant downtown with enhanced residential, retail and cultural opportunities with transit linkages to the New London area as well as opportunities in the larger northeast corridor from Boston to Washington. In New London the applicable clusters are:

- Defense Industry: The Naval Submarine Base in Groton and General Dynamics/Electric Boat contribute more than half of the 33,000 defense jobs in Connecticut, not including the jobs that result from medium and small size firms that provide subcontract support. Also, the Coast Guard Academy and the US Coast Guard Research and Development Center provide jobs to residents in the county.

- Maritime: The deep water port facility in New London, the cruise lines, the ferries and the world-class maritime research and education facility embodied in the Marine Sciences and Technology Center operated by the University of Connecticut at Avery Point all contribute to the growing strength in this industry.

- Tourism: The fastest growing industry in southeastern Connecticut is currently tourism[15]. Over 30,000 people are employed in the tourism industry and that number is expected to grow. Southeastern Connecticut's attractions revolve around shoreline and heritage sites and activities, and the region's two large Native American casino resorts located within 25 minutes of downtown New London. A total of 25 percent ($351.6 million dollars) of the total state tourism revenue ($1,405.0 million) in 2001 was generated in southeastern Connecticut; this is $168.7 million dollars higher than the next highest tourism region (Greater Hartford).

- Creative Arts and Technology: This category includes all individual artists in all media, a wide range of non-profit cultural institutions, and commercial enterprises. It is estimated that there are over 4,000 employees and self-employed residents involved directly in the Art and Creative Cluster in southeastern Connecticut, with several thousand more in supporting businesses. New London has the Hygienic Arts Co-Op which provides low cost housing to emerging artists.

- Bioscience and Healthcare: Pfizer is the region's core company in this cluster. Pfizer's Global Research and Development Headquarters are located in two facilities in Groton and New London. In both facilities, Pfizer employs approximately 5,200 people directly with an additional 1,000+ contract employees.[16] New London's Lawrence & Memorial Hospital and Norwich's William W. Backus Hospital also collectively employ close to 4,000 additional employees. The region's total employment in this sector exceeds 13,000.

[14] Southeastern Connecticut Enterprise Region, 2008
[15] Southeastern Connecticut Enterprise Region, Industry Cluster: Tourism, 2008
[16] Southeastern Connecticut Enterprise Region, Industry cluster: Bioscience and Healthcare, 2008

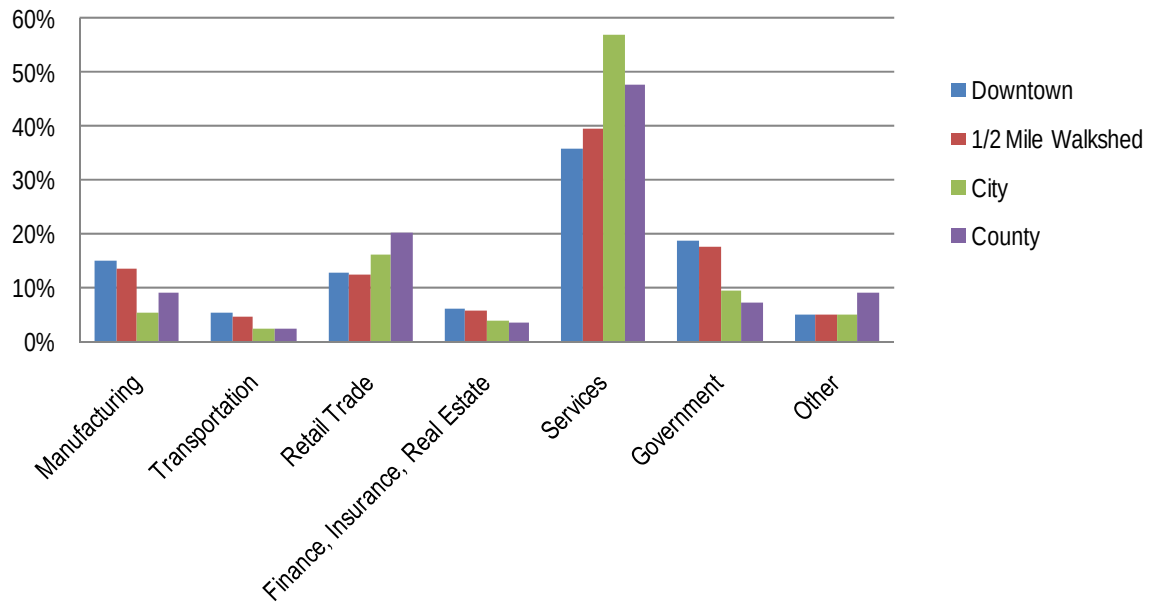
At-place employees are those that work within the study area. These employees can live and work in the study area or live outside the study area and commute into the study area for work. As shown below in Table 4-10, the downtown has 3,059 employees representing 20 percent of the total city at-place employees and 3 percent of the total county at-place employees. Figure 4-9 graphically shows the at-place employees by category. As shown, the highest number of people working in the downtown, half-mile walkshed, and county are in services.

Table 4-10: At-Place Employees by Category, 2008

	Downtown		1/2 Mile Walkshed		City		County	
	#	%	#	%	#	%	#	%
Manufacturing	468	15%	559	14%	866	6%	10,468	9%
Transportation	171	6%	203	5%	387	3%	2,927	3%
Retail Trade	392	13%	507	13%	2,506	16%	23,075	21%
Finance, Insurance, Real Estate	193	6%	243	6%	634	4%	4,052	4%
Services	1104	36%	1,605	40%	8,817	57%	53,579	48%
Government	575	19%	721	18%	1,469	10%	8,217	7%
Other	156	5%	215	5%	789	5%	10,243	9%
Total	3,059	100%	4,053	100%	15,468	100%	112,560	100%

Source: ESRI Business Information Solutions, BBPC 2008

Figure 4-9: At-Place Employees by Category, 2008



The labor force represents the number of people employed or seeking employment in a study area. As shown below in Table 4-11, the downtown labor force totals 245 employees representing 2 percent of overall city labor force (12,801 employees), a similar share to the percentage of city residents living in the downtown (2 percent). The service industry dominates the labor force in the downtown (over 65 percent of the labor force), followed by retail trade (6.9 percent), and then finance/insurance/real estate (6.1 percent).

Table 4-11: Labor Force Industry Mix by Employment, 2008

	Downtown		½ Mile Walkshed		City		County	
	#	%	#	%	#	%	#	%
Agriculture/Mining	0	0.0%	0	0.0%	26	0.2%	877	0.6%
Construction	11	4.5%	65	6.0%	665	5.2%	10,226	7.0%
Manufacturing	8	3.3%	89	8.3%	1,074	8.4%	15,193	10.4%
Wholesale Trade	1	0.4%	14	1.3%	243	1.9%	3,214	2.2%
Retail Trade	17	6.9%	119	11.1%	1,611	12.6%	17,238	11.8%
Transportation/Utilities	12	4.9%	44	4.1%	473	3.7%	6,866	4.7%
Information	6	2.4%	27	2.5%	320	2.5%	2,483	1.7%
Finance/Insurance/Real Estate	15	6.1%	46	4.3%	473	3.7%	6,574	4.5%
Services	164	66.9%	624	58.0%	7,187	56.1%	74,796	51.3%
Public Administration	11	4.5%	48	4.5%	729	5.7%	8,327	5.7%
Total	245	100%	1,075	100%	12,801	100%	145,794	100%

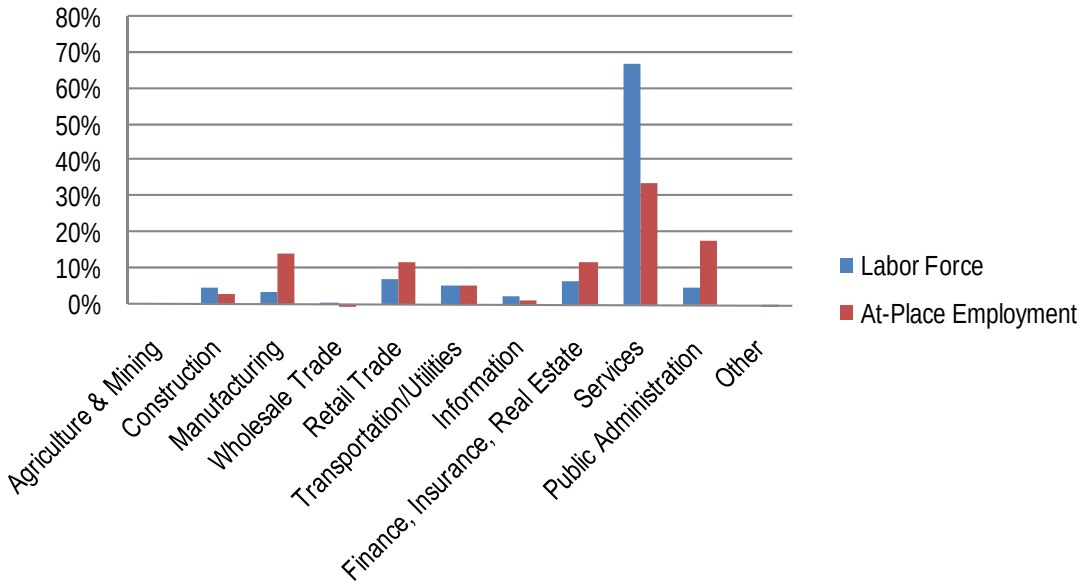
Source: ESRI Business Information Solutions, BBPC 2008

Figure 4-10 shows the differences between labor force and at-place employment in the downtown study area. Labor force refers to the occupations of an area's residents, while at-place employment refers to the occupations of people who work in the area, but do not necessarily live there. Although more than half of the labor force works in the service industry, public administration also has a larger percentage of the labor force in the downtown. Government jobs provide nearly 20 percent of the at-place employment in the downtown, but account for only 4.5 percent of the area's labor force. This mismatch reflects the large proportion of government workers that do not live within walking distance of work.

The share of at-place employees working in the service industry in the downtown is lower than in the city and county, while government-based employment is higher. The at-place employment distribution by category for the downtown is very similar to that of the half-mile walkshed's at-place employment.

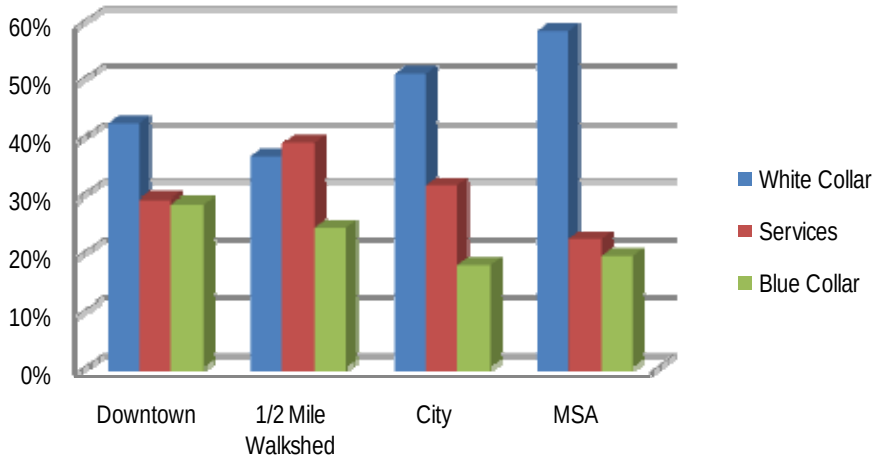
As shown in Figure 4-11, white collar jobs make up the majority of residents' occupations in the downtown study area, the city and the county. White collar jobs in the county are primarily found in the research and development facilities for bioscience and healthcare, the defense industry, the colleges in the area, and in information technology. As these clusters continue to grow in southeastern Connecticut, the growth in jobs will attract additional white collar workers to the region. However, the prevalence of service and retail trade employment in the downtown is reflected in its higher relative share of service-based employment and lower relative share of white-collar employment compared to the city and county. This can be attributed to the number of retail shops and restaurants in the downtown area as well as the larger downtown area's current role in the housing market – that is, providing more affordable housing versus its emerging role as a residential core appealing to white collar, higher income households.

Figure 4-10: Downtown Labor Force and At-Place Employment, 2008



Source: ESRI Business Information Solutions, BBPC 2008

Figure 4-11: Labor Force Mix by Occupational Category, 2008



Source: ESRI Business Information Solutions, BBPC 2008

Table 4-12 shows the "daytime-nighttime ratio" for the four study areas, which is a comparison of the at-place employment to residential population of an area. The comparison of daytime population to nighttime population is important because it describes the type and timing of activity in the downtown. For example, if the number of at-place employees is much higher than the residential population, then the downtown will have high activity from 7:00 AM to 7:00 PM during weekdays. If the residential population is higher, then the most activity will be in the evenings and on the weekends. A ratio higher than one represents an area with a higher number of employees during the day as compared to the number of residents. A ratio less than one indicates an area with a higher residential population as compared to at-place employment.

Table 4-12: Daytime-Nighttime Ratio

	Downtown	½ Mile Walkshed	City	County
At-Place Employment	3,059	4,053	15,468	112,560
Total Residential Population	511	2,452	26,252	268,890
Daytime-Nighttime Ratio	5.99	1.65	0.59	0.42

Source: ESRI Business Information Solutions, BBPC 2008

The number of jobs in downtown New London (3,059) is higher than the residential population (511). This higher employment base is demonstrated in the area's ratio of employees to residents (the "daytime/nighttime ratio"), which is significantly higher (6 times) than the ratio found in the half-mile walkshed (165 percent), city (59 percent) and county (42 percent). Therefore, the higher ratio represents the fact that downtown New London has its highest population during the workday.

In order to determine how New London's daytime-nighttime ratio compares to other cities, the ratios from a sample of seven cities in the region were examined. The daytime-nighttime ratio for the half-mile radius from the city hall of each city was compared to the daytime-nighttime ratio of the New London half-mile walkshed. As compared to the sample cities, New London's daytime-nighttime ratio was lower than average. This means that there is a more equal distribution of jobs and households in the half-mile walkshed of downtown New London than that of surrounding cities. The cities with their ratios are as follows: Bridgeport, CT 2.28, Hartford, CT 8.13, Newburyport, MA 0.78, New Haven, CT 1.18, Newport, RI 1.54, Springfield, MA 2.78, and Stamford, CT 1.86.

As shown in Table 4-13, six of the top twenty employers in New London County are located in the City of New London, including Pfizer Global Research & Development (6,200 employees in both the Groton and New London facilities[17]) and Lawrence & Memorial Hospital (2,200 employees). These employers serve as magnets to attract other businesses to New London and can help to strengthen the employment base. The U.S. Coast Guard Academy, Connecticut College, AT&T and The Day are also located in the City of New London.

As shown in the line graphs (Figures 4-12 and 4-13), which display historical employee and business growth, jobs and businesses in professional, scientific and technical services jumped between 2000 and 2003 when Pfizer came to New London County. The Pfizer Global Research and Development facility in New London is located at the beginning of Pequot Avenue. The facility sits on 20 acres and is 790,000 square feet.

Growth in professional, scientific and technical services has an increasing trend line from 2001 to 2006. These types of businesses currently occupy 66 percent of the occupied office units in downtown New London. Should these business types continue to grow, downtown could capture a percentage of the new growth. Also, the largest number of businesses located within the county is in this category. This suggests that there are a large number of firms with a small number of employees. These firms seek smaller spaces. Downtown New London's small office suites are appropriate for these types of establishments.

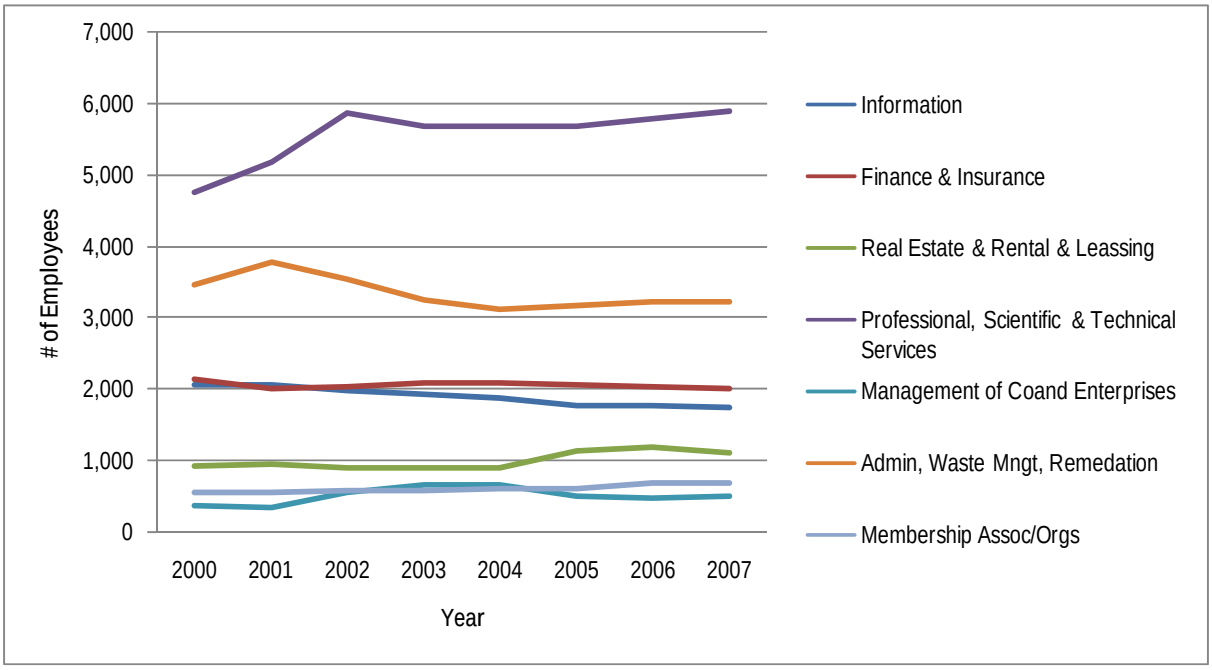
[17] As noted earlier in this study, Pfizer announced in late 2009 that it is moving out of its New London site and consolidating its operations in the region at its site in Groton. Recently, as a result of the current economic recession and lower revenues, Pfizer announced that they may downsize their research and development arm and may potentially lay off 400 employees. This may or may not affect New London's science and technology employees. As noted earlier in this study Pfizer announced in late 2009 that it is moving out of its New London site and consolidating its operations in the region at its site in Groton.

Table 4-13: New London County Top Non-Municipal Employers (2007)

	Company	Employees	Located in the City of New London
1	Foxwoods Casino Resort	13,789	
2	U.S. Naval Submarine Base	10,550	
3	Mohegan Sun Casino Resort	10,500	
4	General Dynamics/Electric Boat	8,000	
5	Pfizer Global Research & Development	6,200	✓
6	Lawrence & Memorial Hospital	2,200	✓
7	Milstone Station/Dominion Inc.	1,880	
8	W. Wm. Backus Hospital	1,600	
9	U.S. Coast Guard Academy	1,300	✓
10	Connecticut College	845	✓
11	Computer Sciences Corp.	678	
12	AT&T	623	✓
13	Waterford Hotel Group	531	
14	ShopRite Supermarkets	418	
15	Interim Health Care of Eastern CT	400	
16	The Day	395	✓
17	Cross Sound Ferry	385	
18	Davis Standard	365	
19	Three Rivers Community College	352	
20	Daticon	350	

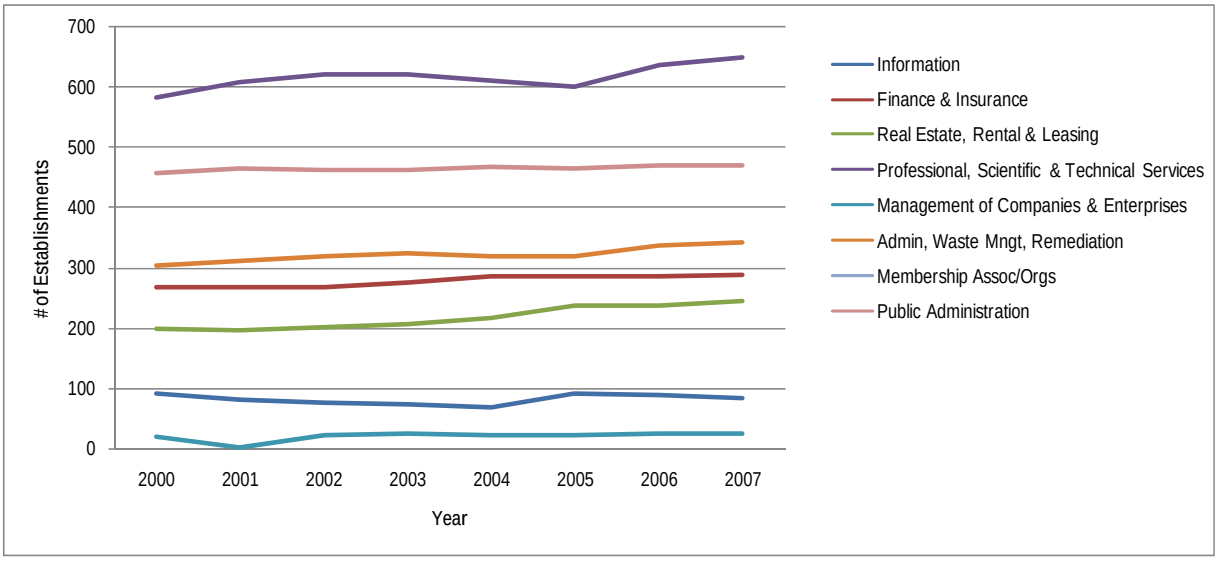
Source: SECTER Economy and Labor Force Statistics, BBPC 2008

Figure 4-12: New London County Employee Growth 2000-2007



Source: CT Dept of Labor, QCEW Program Data, BBPC 2009

Figure 4-13: New London County Establishment Growth 2000-2007



Source: CT Dept of Labor, QCEW Program Data, BBPC 2009

In the City of New London, outside the downtown, there are Class A office space buildings that are available to accommodate new demand for users looking for higher quality office space. As office space in downtown New London becomes more functionally obsolete, new tenants are finding that Class A office complexes like Shaw's Cove (6 buildings with over 300,000 square feet) and buildings like One Chelsea Street (60,000 +/- square feet, adjacent to Pfizer campus and Fort Trumbull) fit their needs more appropriately.

More than likely, development will continue around Fort Trumbull. Substantial state funded investment was made in this area, including an extensive environmental contamination remediation effort and the construction of new infrastructure including streets, sidewalks and underground utilities[18].

Employment growth projections are best understood initially at a subregional county level, since many new and expanding firms consider sites across municipalities within New London County. Based on this assumption, job growth forecasts were evaluated for New London County in order to assess office development opportunities in the downtown area.

Office-based employment in New London County, as projected by the Connecticut Department of Labor, is projected to grow by almost 10 percent over the ten-year period (2006-2016), or 1 percent annually[19]. The most rapid growth in office jobs is anticipated in the professional, scientific and technical services industry (1.67 percent compounded annual growth rate). A core company in this industry is Pfizer. Pfizer employs approximately 5,200 people plus 1,000 subcontract employees. Also the Lawrence Memorial Hospital in New London and Norwich's William W. Backus Hospital employ approximately 4,000 people, and in the City of New London, Sheffield Pharmaceuticals employs over 200 people[20]. This field is followed by administrative support, waste management, and remediation services which are projected to grow at a rate of 1.24 percent compounded annually. More traditional office-based industries, management,

[18] Plan of Conservation and Development, 2007 Supplement, City of New London, Connecticut
[19] The Department of Labor projections do not take into account the recent economic downturn.
[20] Southeastern Connecticut Enterprise Region, 2008

finance/insurance, and real estate rental and leasing, are each projected to grow more moderately, in the range of 0.75 percent to 0.84 percent per year.

As shown below in Table 4-14, New London County is projected to gain a total of 1,866 new employees for a total of 17,047 in 2016, based on 2006-2016 Connecticut Department of Labor projections. However, if current employment growth rates continue, and a linear growth model is used for the two year period (2016-2018), in New London County, the projection for 2018 employment (ten years in the future) is estimated at approximately 18,107. Projected growth for office employment by industry sector for 2008-2018 is shown in Table 4-15.

Comparing downtown New London's at-place employment data in 2008 to the 2008 New London County data shows the percentage of total county jobs located in the downtown. The highest percentage of overall county jobs in downtown is in the information industry (23 percent), followed by membership organizations (19 percent). The largest number of jobs in the downtown is also in the information industry (406 jobs) followed by professional, scientific & technical services (310 jobs). On average, downtown currently captures 7 percent of the jobs in the county. The highest percentage of downtown jobs are in information and professional, scientific and technical services. A breakdown of the county jobs located in downtown New London is shown in Table 4-16.

Table 4-14: Projected Growth in Office Employment by Industry Sector, New London County, 2006-2016

Industry Type	Employment 2006	Projected Employment 2016	Total Employment Change	10-Year % Growth	Annual Growth Rate
Information	1,786	1,829	43	2.41%	0.24%
Finance and Insurance	2,046	2,223	177	8.63%	0.83%
Real Estate and Rental and Leasing	1,181	1,284	103	8.71%	0.84%
Professional, Scientific, and Technical Services	5,792	6,820	1,028	17.75%	1.67%
Management of Companies and Enterprises	480	517	37	7.61%	0.75%
Administrative Support, Waste Management, Remediation Services	3,221	3,642	421	13.08%	1.24%
Religious, Grant making, Civic, Professional, and Similar Organizations	675	733	58	8.54%	0.83%
TOTAL	15,181	17,047	1,866	9.53%	1.17%

Source: Connecticut Department of Labor, BBPC 2008

Table 4-15: Projected Growth in Office Employment by Industry Sector
New London County, 2008-2018

Industry Type	Employment 2008	Projected Employment 2018	Total Employment Change	10-Year % Growth	Annual Growth Rate
Information	1,795	1,851	56	3.12%	0.24%
Finance and Insurance	2,080	2,316	236	11.35%	0.83%
Real Estate and Rental and Leasing	1,201	1,339	138	11.49%	0.84%
Professional, Scientific, and Technical Services	5,987	7,425	1,438	24.02%	1.67%
Management of Companies and Enterprises	487	537	50	10.27%	0.75%
Administrative Support, Waste Management, Remediation Services	3,301	3,875	574	17.39%	1.24%
Religious, Grant making, Civic, Professional, and Similar Organizations	686	764	78	11.37%	0.83%
TOTAL	15,537	18,107	2,570	12.71%	1.54%

Source: Connecticut Department of Labor, BBPC 2008

Table 4-16: Employment by Industry Sector, New London County
and Downtown New London, 2008

Industry Type	New London County	% Distribution	Downtown Jobs	% Distribution	% of County Jobs in Downtown
Information	1,795	12%	406	37%	23%
Finance & Insurance	2,080	13%	149	14%	7%
Real Estate, Rental & Leasing	1,201	8%	45	4%	4%
Professional, Scientific & Technical Services	5,987	39%	310	29%	5%
Management of Companies & Enterprises	487	3%	0	0%	0%
Administrative Support, Waste Management, Remediation Services	3,301	21%	43	4%	1%
Membership Associations & Organizations	686	4%	132	12%	19%
TOTAL	15,537	100%	1,085	100%	7%

Source: Connecticut Department of Labor, ESRI, BBPC 2008

4.2.5. Key Findings

The demographic and economic profile for the New London downtown area reveals important information to support the redevelopment of the RITC. Projected increases in population, household income and employment in the downtown create demand for residential units, office and retail space near the RITC. The demographic and economic profile showed that the downtown is unique compared to the surrounding analysis areas. Concentration of jobs, older population, more people living alone (less families), and higher priced home values create an identity for the downtown different from the broader geographic areas. At the same time, the downtown still struggles with low household incomes, families reliant on government support, low percentage of residential homeownership as well as a low numbers of at-place-employment. Key findings of relevance to the downtown include:

- New London already has a strong presence in five of the six key industry clusters for southeastern Connecticut (defense, maritime, bioscience and technology, creative arts and technology, and tourism)
- Households living closer to the RITC are more likely to use public transportation
- There is a growing population of people aged 20-35 and 55-74 in the downtown
- The downtown population will increase more rapidly than the half-mile walkshed, city or county as a whole
- The percentage of household earning more than $75,000 per year is expected to increase in the downtown over the next five years
- These economic and demographic trends bode well for future downtown development opportunities, which could be further enhanced by the presence of a myriad of transit opportunities.

4.3 Market Conditions

The market conditions section identifies the existing conditions, real estate trends, and regional projections for the market segments (residential, office and retail). The geographical areas discussed in this section are the ones that the downtown is located in. These include the Hartford regional market area for office and retail, the southeastern Connecticut tourism district, New London County, the New London submarket for office and retail, the city and the downtown.

As the existing conditions are the jumping off point for the future projections, the historical trends identify the momentum for future growth, and the greater regional growth projections are a basis for which downtown can generate demand for new supportable development. In all, this section is the body of data on which downtown's new supportable development projections are based.

4.3.1. Residential Market Conditions

Overview

Downtown New London is currently experiencing increased demand for housing units. The Day newspaper recently published an article called "…And the Rentals Downtown Don't Stay Vacant Long". This article said that, "the past five years alone produced about 200 new housing units"[21]. Compared to the downtown

[21] Kevin Dale, The Day Newspaper, "…And the Rentals Downtown Don't Stay Vacant Long" published 9/22/08

residential growth seen in the last 15 years, this represents a relatively large increase. In addition, new housing units are the result of successful rehabilitation of dilapidated, historic buildings.

In the broader context, the nation is experiencing a residential shift back into the urban fabric. This shift incorporates households ranging from low to high income. However, the highest demand is for housing that fits the budgets of middle income households. Rehabbing older product into housing in high demand locations offers a great investment option. Downtown New London offers middle income households affordable rents (averaging $925/month) and potentially higher income households access to urban lifestyles. Desirable urban areas include many of the amenities offered in New London's downtown, such as neighborhood retail shops, historic structures, variety of restaurants, schools, an emerging office presence, art/culture and access to alternative transportation with linkages throughout the Northeast Corridor.

The residential market analysis examines the ten year window for supportable new residential development in downtown New London. The recent national downturn in the economy plays a role in the regional and local residential market. In the near term (1-4 years), housing developments that offer for-sale units will experience significant slow-downs, but the rental market, particularly in moderate income urban areas, is projected to see higher activity. This analysis incorporates the national economic slow-down into the projected 2018 demand for downtown residential units.

The current slow-down represents an opportunity to plan for new residential development and better position the downtown to capture a higher percentage of the region's growth in an improved economy. With populations moving back to infill urban locations, apartment demand and development are intensifying. The growing trends towards infill neighborhoods and away from car-dependent lifestyles have increased the demand for transit oriented development. "Emerging Trends In Real Estate" by the Urban Land Institute reported that residential projects near mass transit stops are "no-brainers". New London can market its downtown in order to take advantage of this opportunity.

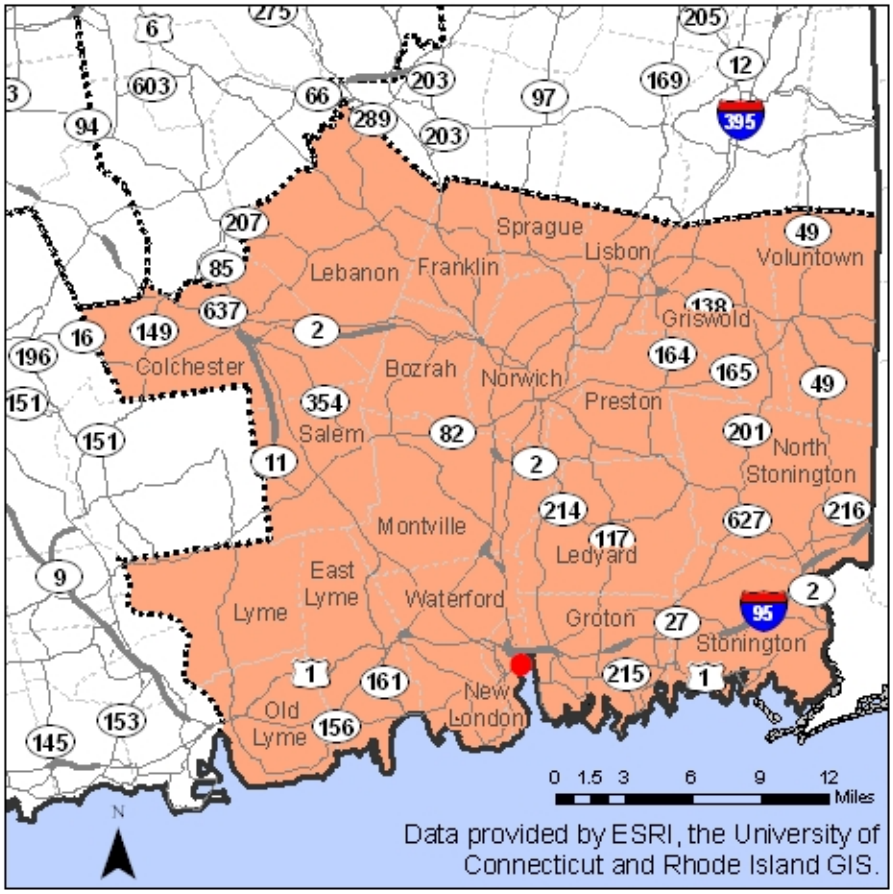
Residential Market Areas and Conditions

Broader residential markets in part impact the potential for housing development in specific local areas. To place the downtown New London residential trends in context, the residential market characteristics of the downtown area are evaluated against those of the City of New London, New London County and ongoing national trends. Figure 4-14 below shows the primary residential market for New London County.

In addition to assessing broad contextual residential real estate markets, a residential primary market area was identified. This market area is defined as the geographic area containing most demand for new housing in downtown New London. Generally speaking, the majority of demand for new housing emerges from residents of nearby jurisdictions. The Urban Land Institute suggests that roughly 75 percent of buyers and/or renters in new housing developments are local residents. To capture all the surrounding communities, the downtown area's residential primary market area is defined as New London County.

Additionally, the spin-off residential demand provided by potential future employees of new office developments in the downtown area have been evaluated as a secondary, non-geographic source of market demand. Similarly, demand is increased from larger regional markets, outside of the primary market area, to take advantage of the special attributes of the downtown. Outside the primary market area, demand is increased by the rail access opportunities along the Northeast Corridor.

Figure 4-14: New London County Primary Residential Market Area



Key Observations

Table 4-17 compares the downtown New London housing stock to the surrounding geographies. Figures 4-15 and 4-16 further categorize downtown's housing stock by unit type and ownership. Key characteristics of the downtown housing market include:

- Downtown New London's housing stock represents only 0.4 percent (442 units) of the county's housing stock (117,020 units) and 4% of the city's (11,838 units)
- The city's housing stock represents 10 percent of the county's housing stock
- A significant portion of the housing in downtown is rental; 88 percent (391 units) of the housing in downtown is renter occupied versus 55 percent (6,428 units) for the city and 30 percent (34,287) for the county
- Naturally, the percentage of single family homes is largest in the county and smallest in the downtown; the opposite is true for multifamily (largest percentage is in downtown)
- 98 percent of the structures in downtown were constructed pre-1970; most of the structures are historical
- The median rent for market rate units in the downtown is $925/month
- A notable increased interest in urban living and transit opportunities

Table 4-17: Residential Market Profile- New London County, City of New London and Downtown New London, 2008

	Downtown New London	City of New London	New London County
Total Housing Units	442	11,838	117,020
Owner-Occupied	30	4,013	71,616
Rental	391	6,428	34,287
Vacant Units	21	1,397	11,117
Vacancy %	5%	12%	10%
Median Home Value	$210,000	$191,004	$264,500
Median Rent (1/)	$925	$876	$895
Single-Family (attached/detached) % (2/)	1%	36%	67%
Multi-Family % (2/)	94%	64%	30%
Structure older than 1970 % (2/)	98%	74%	57%

1/ 2005-2007 U.S. Census American Community Survey Data was used for County and City median rents. For Downtown, 2008 The Day articles and stakeholder interviews revealed that market rate rental units ranged in size from 475 - 1,800 SF and ranged in rent from $750 - $1,100, yielding an average of $925. Downtown median rent estimation does not include subsidized housing.

2/ 2005-2007 U.S. Census American Community Survey Data was used for County and City, 2000 Census Data was used for Downtown

Source: ESRI Business Information Solutions, U.S. Census Bureau, The Day, Interviews with Bill Cornish, Peter Levine and Michael Joplin (contributed to rental information), Main Street New London, BBPC 2008

Residential Construction Activity

Between 1996 and 2007, nearly 14,137 single family residential building permits were issued in New London County, for an annual average of roughly 1,175 permits per year. As shown in Figure 4-17, the greatest permitting activity for the county was seen between 2003 and 2005.

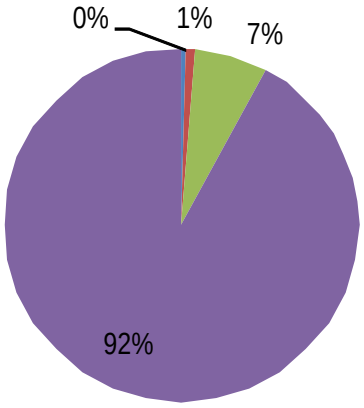
As shown in Figure 4-18, during that same 12 year period 270 permits were issued for residential housing with two or more units in New London County. Similar to single family, the greatest permit activity for multi-family units was between 2003 and 2005.

As displayed in the following Table 4-18, there are currently 1,255 residential units in the "pipeline" in the county. Projects that are in the "pipeline" are either under construction, planned or proposed. Ten of these projects are in the City of New London and will bring 325 new units into the city. A total of 152 units are under construction, planned or proposed in the downtown.

Figure 4-19 displays the location of the above referenced pipeline projects located within the City of New London and Figure 4-20 shows the location of the county's projects located outside the city limits.

Figure 4-15: Downtown Occupied Residential Units by Type

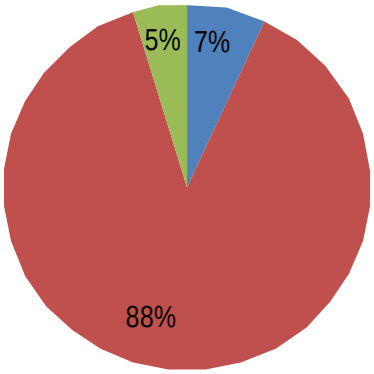
Source: Main Street New London, The Day, BBPC, 2008)



Downtown New London Residential Units by Type		
Housing Type	# of Units	% Total
Single Family	2	0.5%
2 Family	3	1%
Condo	28	7%
Apartment	388	92%
TOTAL Occupied	421	100%

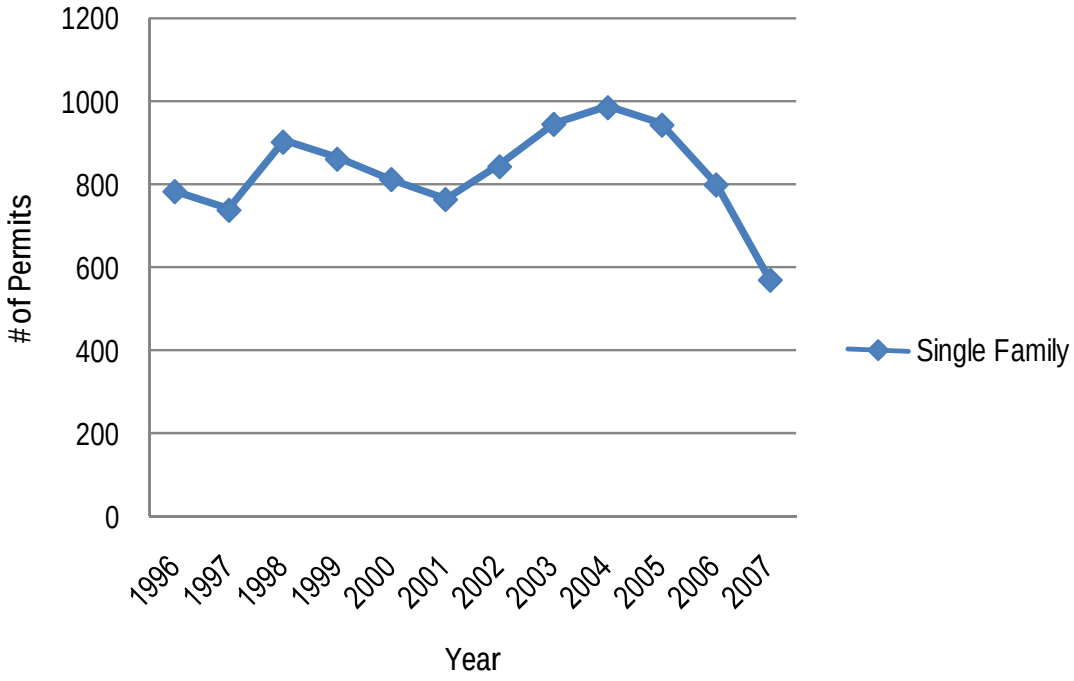
Figure 4-16: Downtown Residential Market by Ownership

(*Source: Main Street New London, The Day, BBPC, 2008)*



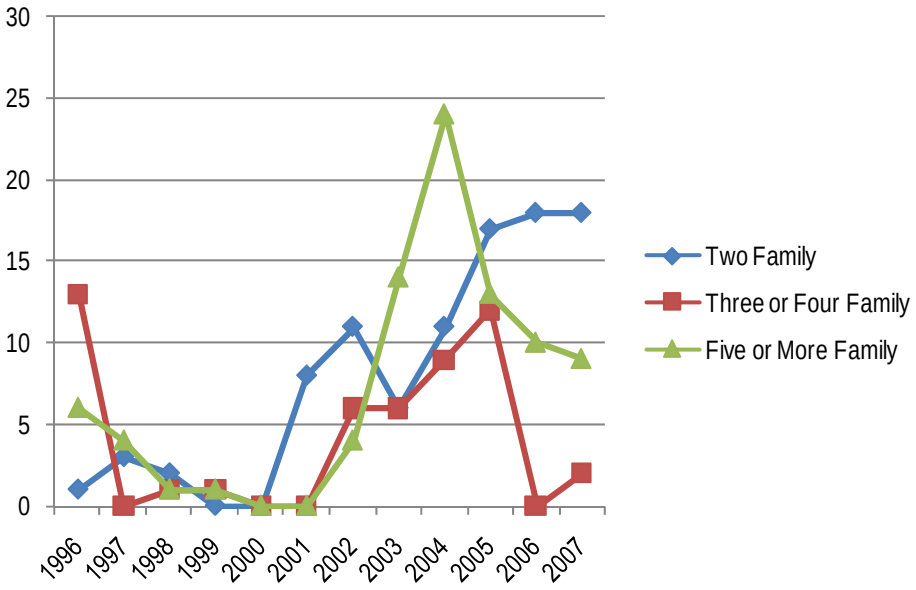
Downtown New London Residential by Ownership		
Housing Ownership	# of Units	% Total
Owner-Occupied	30	7%
Rental	391	88%
Sub-Total Occupied	421	95%
Vacant	21	5%
TOTAL	442	100%

Figure 4-17: Historical Single Family Building Permit Activity, New London County



Source: US Census, BBPC 2008

Figure 4-18: Historical Multi-Family Building Permit Activity, New London County



Source: US Census, BBPC 2008

Table 4-18: Residential Pipeline Development, Multi-Unit Structures

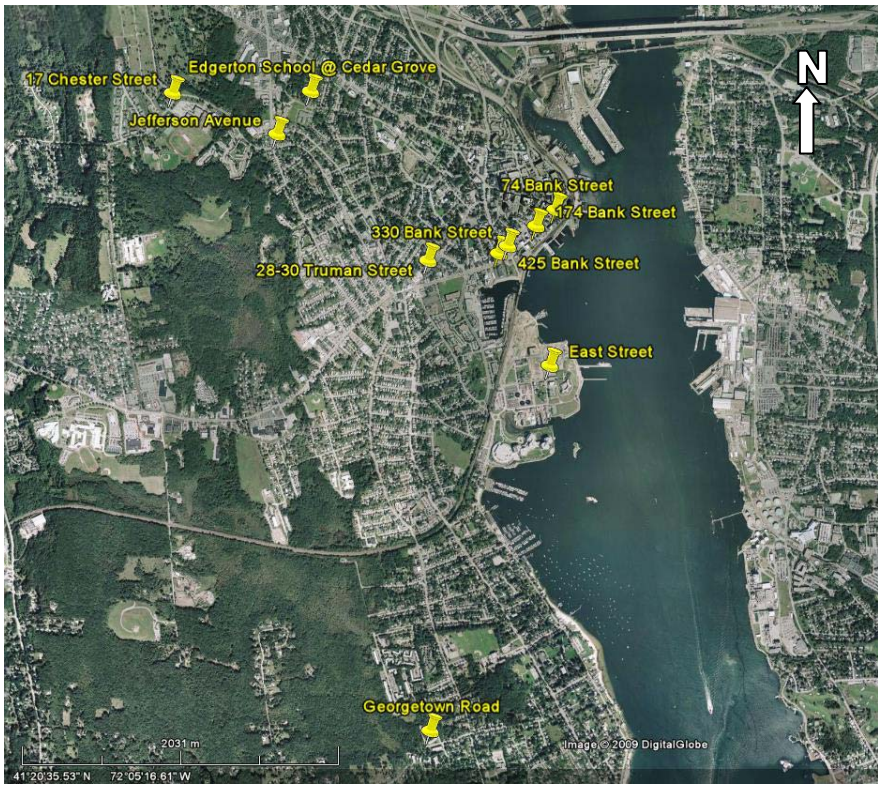
New London County 2008				
Address	City	# of Units	Type	Status
Georgetown Road	New London	31	Condos	Planned*
Jefferson Avenue	New London	19	Unknown	Planned*
East Street	New London	80	Apartments	Planned*
17 Chester Street	New London	6	Condos	Planned*
28-30 Truman Street	New London	5	Apartments	Proposed
330 Bank Street (downtown)	New London	92	Condos	Planned*
425 Bank Street (downtown)	New London	52	Condos	Under Construction
174 Bank Street (downtown)	New London	6	Condos	Under Construction
74 Bank Street (downtown)	New London	2	Condos	Under Construction
Edgerton School @ Cedar Grove	New London	32	Apartments	Proposed
Subtotal		*325*		
11 Ledgewood Road	Groton	200	Apartments	Proposed
Stillman Ave. @ Prospect Street	Pawcatuck	39	Condos	Planned
12 River Rd. @ Clark Street	Stonington	56	Apartments	Under Construction
River Road @ 8th Street	Norwich	154	Apartments	Proposed
River Road @ 8th Street	Norwich	96	Townhomes	Proposed
607 Norwich Avenue	Norwich	100	Apartments	Planned
607 Norwich Avenue	Norwich	100	Apartments	Planned
Hansen Road @ Scotland Road	Norwich	185	Senior Citizen Housing	Proposed
Subtotal		*930*		
TOTAL		1,255		

*Have zoning approval

Source: Reis, Inc., City of New London Office of Development and Planning, BBPC[22]

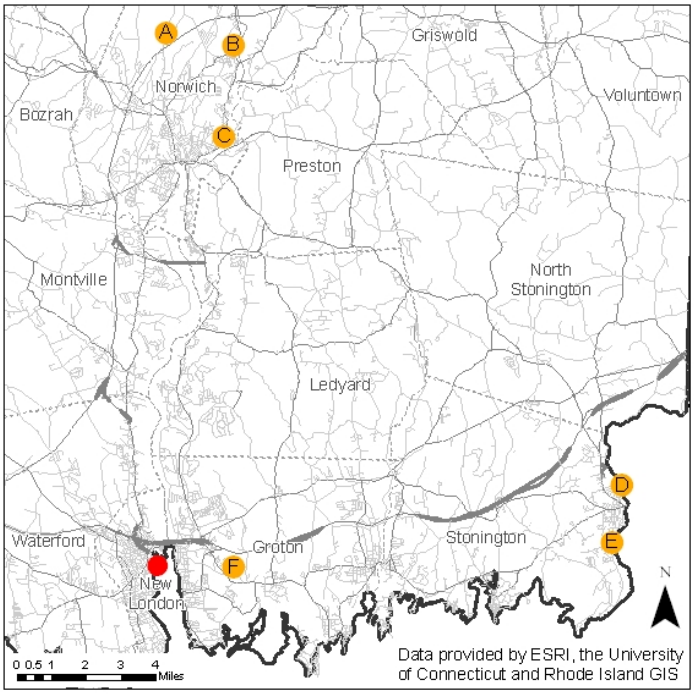
[22] Reis, Inc. is a provider of real estate performance information. Their information is updated on a quarterly basis, and the website is www.reis.com.

Figure 4-19: Residential Pipeline Projects, City of New London



Source: Office of Development and Planning, City of New London, REIS, Inc., BBPC 2008

Figure 4-20: Residential Pipeline Projects, New London Submarket



A - Hansen Rd. @ Scotland Rd.
Norwich, CT (85 units)

B - 607 Norwich Ave.
Norwich, CT (200 units)

C - River Road @ 8th St.
Norwich, CT (250 units)

D - Stillman Ave. @ Prospect St.
Pawcatuck, CT (39 units)

E - 12 River Road @ Clark St.
Stonington, CT (56 units)

F - Ledgewood Rd.
Groton, CT (200 units)

Residential Market Sources of Demand

Demand for housing derives from both existing and projected future households (including potential renters and homeowners) in New London County, spin-off demand from new office workers, as well as potential additional net new empty nesters and young professional relocations into the county. To determine the extent of potential demand, the consultant team analyzed household projections for the county, new office worker growth, and national economic and demographic trends.

As people across the nation turn to housing that reduces their household energy costs, residential spaces close to public transportation are seeing increasing demand. Urban areas close to public transportation offer reduced commuter costs, and urban living spaces are typically smaller and cost less to operate.

This has been evidenced in downtown New London. Interviews with developers who have renovated downtown's historical buildings into modern apartments revealed that their renovated buildings are experiencing 100 percent occupancy. Building owners indicated that most of the tenants are between 25 and 35 years of age without small children. Empty nesters have also showed an interest in living downtown, but are hesitant to live in units above the first floor without an elevator, as is the case in some of downtown's older structures. As downtown amenities expand and the benefits and public transportation is enhanced, the downtown residential price levels should be able to support added amenities such as elevators. Demand among empty-nesters should increase over time.

Preferences of Target Households

Households moving into downtown New London will range from low income to high income. The target households from within the region and downtown employees will be moderate income young professionals, higher income empty nesters, and emerging artists and young professionals. Emerging artists and young professionals having varying incomes will gravitate towards live/work units, trading amenities for lower rents. Empty nesters, which will also include new moves into the market area, will seek residences with more amenities such as views of the Thames River and elevators, higher prices and access to New York, New Haven and Boston.

The downtown's target households are interested in retail rich environments, the convenience of proximity to public transportation and downtown jobs. Such households prefer to be close to restaurants, shops, cultural and artistic venues, historic or architecturally distinctive buildings and smaller/compact lots.

New London offers a competitive edge which appeals to target households by being the host to a variety of public transportation options (train, ferry and bus). While the distance is too far for daily commuting to Boston or New York, the opportunity to use these modes for occasional business trips, weekend cultural, entertainment and family visits is unique as compared to other communities in New London County.

For higher income households there are certain attributes which will help to make residential units in downtown New London more competitive with the surrounding areas. According to the National Multi-Housing Council, amenities found in innovative new housing developments include:

- Architecturally distinctive features that pay tribute to the area's heritage
- Compact lots
- Private entries
- Direct entry garage parking
- Nine-foot ceilings

- Bay windows and skylights
- Two-level units
- Gourmet kitchens
- Deluxe master baths
- Full-sized laundry facilities
- Keyless entry systems
- Units wired for integrated telephone, cable and internet service
- In-wall speaker systems with theater-quality sound
- Business centers, conference facilities
- Media rooms
- Community gardens
- Car wash and detailing facilities
- Daycare and children's activities
- Pet daycare and dog walking services

Live/work units for emerging artists in downtown are available in conjunction with the Hygienic Art Gallery. Live/work units are often in older buildings and typically use loft style floor plans. Live/work units tend to be more successful when located in urban areas with other similar units around.

Recruitment of neighborhood-serving shops and restaurants should also be considered as key amenities to include with new housing developments to bolster the attractiveness to both future residents and employees in the downtown area.

4.3.2. Office Market Conditions

Overview

New London currently offers an attractive downtown for small specialized office based businesses. Businesses in bioscience, healthcare, technology, defense, and maritime industries are already located in and around the City of New London. These established businesses are a pull factor for new companies. Their presence will continue to attract companies that find a competitive advantage to locating near existing businesses in these industries. Companies new to downtown New London will range from established companies wishing to have a small satellite office in New London to locally based start-up firms seeking spaces with lower rents.

Proximity to the train station and ferry to Long Island provides an additional incentive for businesses to locate in downtown New London. High speed rail access to business centers such as Boston and New York City are attractive points for businesses looking to relocate or expand. Also, as the national residential trend towards downtown areas continues, employees will not only have the option to live within walking distance to work, but shops and restaurants will expand providing places for employees to shop and eat downtown during lunch breaks. Additionally, existing businesses, such as Pfizer, and other establishments, such as Connecticut College and Coast Guard Academy act as magnet that draw new businesses to New London.

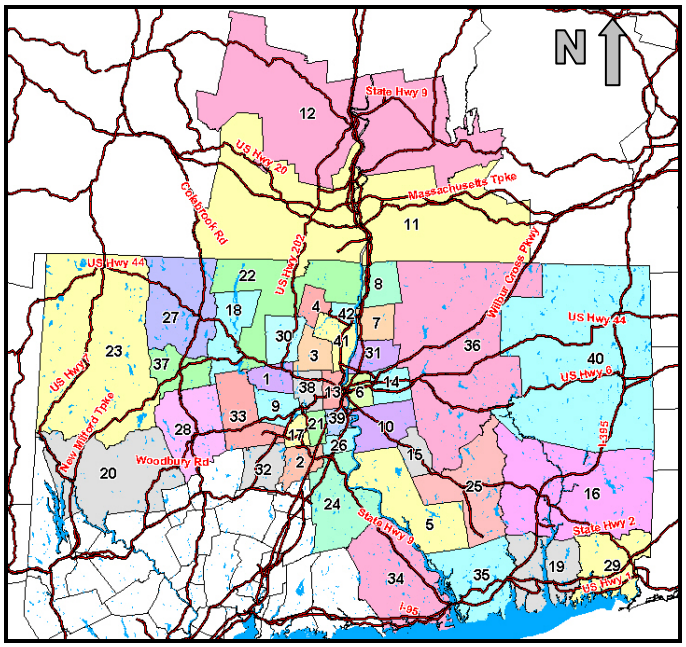
Office Market Areas and Conditions

Downtown New London is situated within the broader Hartford regional office market. The Hartford regional office market encompasses all the land in Connecticut except for the area within Fairfield and New Haven Counties and extends north into Massachusetts including Hampden and Hampshire Counties. Within the

Hartford regional market, there are a total of 16 markets (including New London County) and 42 submarkets including New London (the city and its environs). Figure 4-21 shows the entire Hartford regional market and each submarket.

Figure 4-21: Hartford Regional Office Market and Submarkets

Source: CoStar, BBPC 2008 (Graphic object, not shown to scale)



Submarket Name	#	Submarket Name	#
Avon	1	NW Outlying	22
Berlin Outlying	2	NW Litchfield County	23
Bloomfield	3	NW Middlesex/Middleton	24
E Granby	4	NW New London/Colchester	25
E Hampton/E Haddam	5	Rocky Hill	26
E Hartford	6	Rt 8/Winsted	27
E Windsor	7	SE Litchfield County	28
Enfield	8	SE New London	29
Farmington	9	Simsbury	30
Glastonbury	10	S Windsor	31
Hampden Co (MA)	11	Southington	32
Hampshire Co (MA)	12	SW Outlying	33
Hartford City	13	SW Midlsx/Old Saybrk/Rt 9	34
Manchester	14	SW New London/E Lyme	35
Marlborough Outlying	15	Tolland Co	36
NE New London/Norwich	16	Torrington	37
New Britain	17	W Hartford	38
New Hartford/NE Litchfield	18	Wethersfield	39
New London	19	Windham Co	40
New Milford/SW Litchfield	20	Windsor	41
Newington	21	Windsor Locks	42

The focus of the office market for downtown New London, however, is the New London County and New London submarket particularly as it relates to the five employment clusters (bioscience, healthcare, technology, defense, and maritime industries) within the New London submarket. New London County includes 5 submarkets: New London, NE New London/Norwich, NW New London/Colchester, SE New London and SW New London/ East Lyme. The New London submarket is number 19, located in the bottom right corner of the map.

A subset of New London County, the New London Submarket includes communities such as the City of New London, Groton, and Waterford. The New London submarket is shown below in Figure 4-22. The New London submarket extends beyond the city boundaries.

Figure 4-22: New London Office Submarket Boundaries

Source: CoStar, BBPC 2008 (Graphic object, not shown to scale.)

Trends in regional markets influence the potential for office development in the downtown area. Each of the surrounding markets and submarkets including the New London County Market and the New London Submarket have been analyzed to ascertain past trends and future outlook.

Key Observations

In 2008, conditions and trends in the New London submarket (city and environs), New London County market and the Hartford regional market were moderately favorable for office expansion in key industries. Trends indicate there may be near term opportunities for the provision of Class A space in the Hartford Market.[23] Due to the regional and local strength in professional jobs, particularly related to economic clusters found in New London, new Class A office space can be added to downtown New London. Key current conditions and near term trends in these office markets include:

- Office-based employment growth, particularly in the professional, scientific and technical services sector, information and services sector

[23] Class A buildings are generally extremely desirable investment grade properties that command the highest rents or sale prices compared to other buildings in the same market. Class B buildings generally qualify as more speculative investment, and as such, command lower rents or sale prices compared to Class A properties. Class C buildings are generally no-frills, older buildings that offer basic space and command lower rents or sale prices compared to other buildings in the same market.

- The Hartford regional market has consistently lower vacancy rates than the national average (during third quarter 2008 it had a 10.1 percent vacancy while the US average was nearly 12 percent)
- 76 percent of the office space in the Hartford regional market is designed for multiple tenants; only 24 percent of the rentable building space is for a single-tenant
- Hartford regional market office rental rates are consistently lower than the US average (during third quarter 2008 Hartford regional market rates averaged approximately $19 per SF/year while the US average was $24 per SF/year)
- The Class A regional office market recorded positive net absorption over the last four quarters, while Class B recorded negative in third quarter 2008 and fourth quarter 2007; Class C recorded negative for all four quarters
- New London County provides 8 percent (5.5 million square feet) of the office space in the Hartford regional office market (72.6 million square feet).

Inventory

The existing office inventory, detailed below in Table 4-19, examines the entire Hartford regional market, the New London County market, the New London submarket and downtown New London. With over 5 million square feet of rentable space, the county office market comprises 8 percent of the total Hartford regional market. The New London submarket comprises 4 percent of the total Hartford regional market, and the downtown area comprises 1 percent of the total Hartford regional market. The largest office markets in the region are Hartford City, West Hartford, and Hampden County (MA).

- A total of 27 percent of the entire Hartford regional market is located in the Hartford City market.
- Approximately half of the office space in New London County is located in the New London submarket. Downtown New London contains 8 percent of the county's total office inventory and 16 percent of the submarket's inventory.
- The vacancy rate for New London County decreased from third quarter 2006 (10.3 percent) to third quarter 2008 (7.5 percent).
- 42 percent of the Hartford regional office market is Class B office space, whereas in both the New London County market and New London submarket there is a significant portion of Class C space (54 percent for both). This indicates an older inventory with less updates and amenities as compared to the regional market.
- The Downtown New London office market has a vacancy rate (20.7 percent) that is higher than the surrounding geographies
- Building activity was slow as of the third quarter 2008 for both the New London Submarket and the Downtown New London; both had zero space under construction and/or delivered.
- Only 8.9 percent (41,000 square feet) of the development activity for the Hartford Regional Market was in New London County as of the third quarter of 2008.

Table 4-20 shows a comparison of the Hartford, New London County, New London and downtown office markets.

Table 4-19: Hartford Regional Office Market, Third Quarter 2008

Market	# of Buildings	Total Rentable Building Area (SF)	Total Vacant Square Feet	% Vacancy
Berlin Outlying	60	892,432	36,826	4.1%
East Hartford	428	5,400,524	399,027	7.4%
Hampden County (MA)	498	8,584,694	966,004	11.3%
Hampshire County (MA)	56	1,060,214	140,751	13.3%
Hartford City	349	19,763,283	2,560,113	13.0%
Litchfield County	213	1,270,464	83,178	6.5%
Marlborough County	15	83,179	0	0.0%
Middlesex County	347	4,019,936	289,669	7.2%
New London County	432	5,478,611	410,196	7.5%
New London Submarket	*162*	*2,622,289*	*241,825*	*9.2%*
Remaining New London County	*270*	*2,856,322*	*168,371*	*5.9%*
Downtown New London	*47*	426,109	*88,505*	*20.7%*
Remaining New London Submarket	*115*	*2,430,213*	*153,320*	*8.3%*
North	284	6,235,767	697,991	11.2%
Northwest Outlying	43	346,183	11,435	3.3%
South	314	5,953,784	655,294	11.0%
Southwest Outlying	209	2,292,357	32,352	1.4%
Tolland County	72	607,057	68,717	11.3%
West Hartford	527	9,337,233	922,880	9.9%
Windham County	66	1,236,966	47,057	3.8%
Total Hartford Market	3,913	72,562,684	7,321,490	10.1%

Source: CoStar, Main Street New London, BBPC 2008

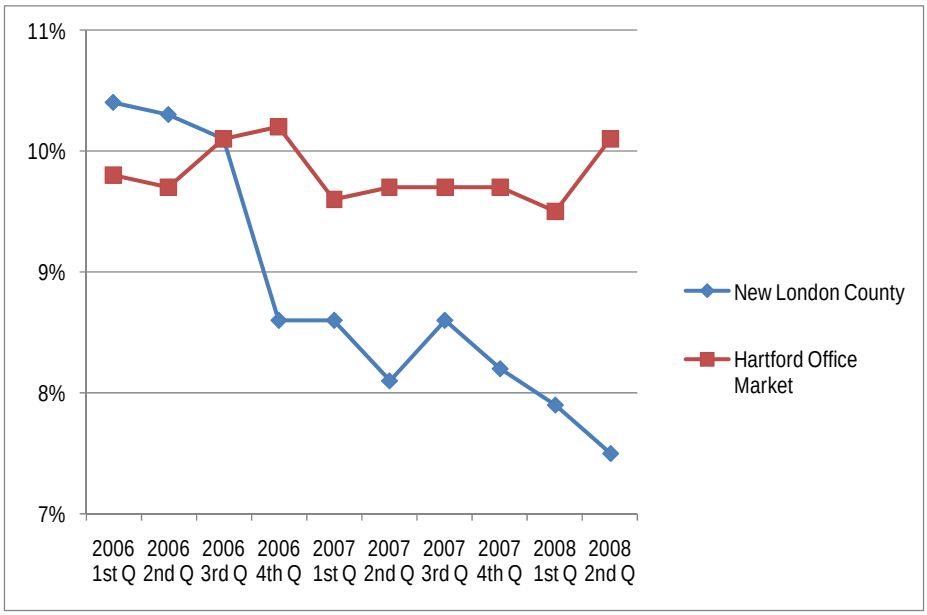
Table 4-20: Office Market Comparison Third Quarter 2008

Market	# of Buildings	Total Rentable Building Area (SF)	Average Building Size (SF)	SF % of Hartford Regional Market	SF % of New London County	SF % of New London Submarket
Hartford Regional Market	3,913	72,562,684	18,544	100%	-	-
New London County	432	5,478,611	12,682	8%	100%	-
New London Submarket	162	2,622,289	16,187	4%	48%	100%
Downtown New London	47	426,109	9,066	1%	8%	16%

Source: CoStar, Main Street New London, BBPC

As shown in Figure 4-23, the vacancy rate for office space in the Hartford Regional Market has been relatively flat since 2006, but rose to 10.1 percent at the end of the second quarter of 2008. In contrast, the New London County vacancy rate trend decreased from 10.3 percent at the end of the third quarter in 2006 to 7.5 percent by third quarter 2008.

Figure 4-23: Historical Vacancy Rate Trend



Source: CoStar, 2008

Absorption levels in the county were examined to determine whether new office spaces are constructed or if tenants are expanding (or decreasing) to occupy (or vacate) more office space in the market area. Absorption is the rate at which available space in the marketplace is leased during a period of time. As displayed in Table 4-21, New London County absorbed 20,780 square feet of space between 2006 and third quarter 2008[24] Over the last three years, from 2006 through 2008, the average annual absorption was 38,000 square feet. However, from 2006 to third quarter 2008, no new office buildings were added to the New London County inventory. During this 11 quarter period, office tenants moved into and out of existing office space. By the third quarter of 2008, vacancy rates were at their lowest point (7.5 percent) because businesses expanded or new tenants were added to the market but no new space was constructed.

Table 4-21: New London County Quarterly Absorption 2006-2008

Year	Quarter	# Bldgs.	Total RBA	Vacant SF	Vacancy %	Occupied SF	Net Absorption
2006	1	432	5,478,611	523,364	9.6%	4,955,247	0
	2	432	5,478,611	568,333	10.4%	4,910,278	-44,969
	3	432	5,478,611	562,537	10.3%	4,916,074	5,796
	4	432	5,478,611	551,906	10.1%	4,926,705	10,631
2007	1	432	5,478,611	470,708	8.6%	5,007,903	81,198
	2	432	5,478,611	469,453	8.6%	5,009,158	1,255
	3	432	5,478,611	446,408	8.1%	5,032,203	23,045
	4	432	5,478,611	470,660	8.6%	5,007,951	-24,252
2008	1	432	5,478,611	451,841	8.2%	5,026,770	18,819
	2	432	5,478,611	430,976	7.9%	5,047,635	20,865
	3	432	5,478,611	410,196	7.5%	5,068,415	20,780
2006-2008 Change		0	0	-113,168	2.1%	113,168	-

Source: CoStar, BBPC 2008

[24] CoStar Group, Inc.

With over half of the office space in the New London County market classified as Class C space, the county currently caters to a more cost conscious tenant who is less interested in higher amenities. However, for the entire Hartford regional market, Class C space has reported negative absorption over the last four quarters. This indicates a surplus of supply for Class C office space and a desire for higher quality space. In comparison, the Hartford regional office space is more evenly distributed between the classes. While Class C space makes up the largest percentage, it occupies only 6 percent more space than Class A. Of the three markets, the New London submarket has the largest percentage of Class A space (33 percent). Table 4-22 and Figure 4-24 detail the Hartford, New London County and New London office submarkets by building class.

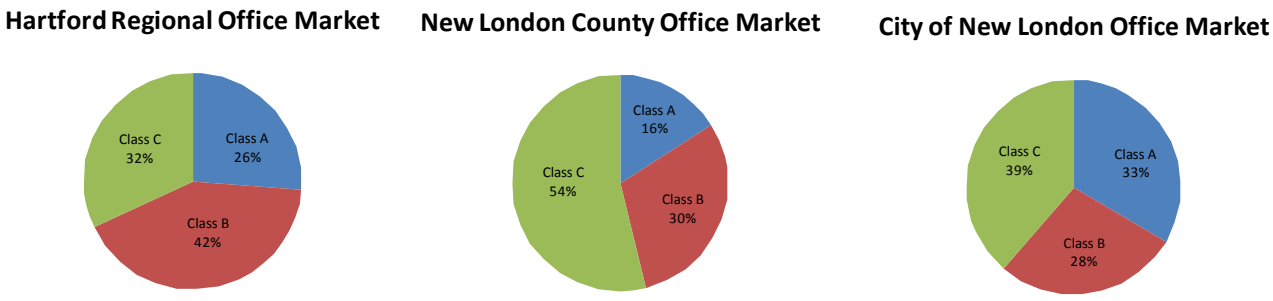
Table 4-22: Market Inventory by Office Building Class, Third Quarter 2008

Market	Class A		Class B		Class C		Total	
	# of Bldgs.	SF	# of Bldgs.	SF	# of Bldgs.	SF	# of Bldgs.	SF
Hartford Region	93	19,026,962	992	30,289,587	2,828	23,246,135	3,913	72,562,684
New London County	4	879,052	65	1,644,142	363	2,955,417	432	5,478,611
New London Submarket	4	879,052	26	728,233	132	1,015,004	162	2,622,289
Downtown New London (1/)	2	130,000	N/A	N/A	N/A	N/A	N/A	N/A
Total	101	20,785,066	1,083	32,661,962	3,323	27,216,556	4,507	80,663,584

1/ Only partial information is available for downtown office inventory by building class. Stakeholder interviews revealed that two buildings in downtown are considered Class A; these buildings are 1 Union Plaza (50,000 square feet) and Mariner's Square (80,000 square feet).

Source: CoStar, BBPC 2008

Figure 4-24: Office Inventory by Office Class, % of Total Square Footage



Source: CoStar, BBPC 2008

4.3.3. Downtown New London Office Market

Downtown New London office space inventory includes 426,109 square feet of rentable space. Rentable space is office space that is currently occupied by an office tenant, vacant, or actively on the market for rent. Rentable space in the downtown market does not include basement space or space that is currently used for storage.

As shown in Table 4-23, a total of 337,604 square feet is occupied by office tenants (79.2 percent of the total inventory); 88,505 square feet is vacant (20.7 percent of total inventory). Top office based businesses occupying office space in downtown are financial institutions (collectively occupy 78,046 square feet), The Day Newspaper (occupies 62,669 square feet) and AT&T (occupies 79,776 square feet). Also, due to the

Superior and General Court Houses in downtown, a large number of legal professionals have occupied space near these facilities (24,723 square feet of space).

Table 4-23: Downtown New London Composition of Office Tenant Base (2008)

	# of Units	% Distribution	Gross Sq. Feet (1/)	% Distribution
Transportation & Public Utilities				
Ferry, Cruise ships	3	3%	16,675	4%
Utilities	3	3%	34,516	8%
City Government (2/)	1	1%	4,341	1%
Sub-Total	7	7%	55,532	13%
Finance & Real Estate				
Depository Institutions	4	4%	56,797	13%
Financial Management & Consulting	8	8%	21,249	5%
Real Estate	4	4%	8,681	2%
Sub-Total	16	16%	86,727	20%
Services				
Business Services	12	12%	34,015	8%
Health Services	5	5%	21,958	5%
Legal Services	14	14%	24,723	6%
Social Services	5	5%	11,912	3%
Architects, Engineering & Construction	4	4%	11,476	3%
Publications & Broadcasting	5	5%	74,261	17%
Miscellaneous Services (3/)	7	7%	17,000	4%
Sub-Total	52	50%	195,345	46%
Total Occupied Space (4/)	75	73%	337,604	79%
Total Vacant Space	28	27%	88,505	21%

Source: Main Street New London, BBPC, 2008

1/ Assuming equal distribution of units
2/ Municipal buildings are not included in the commercial office space inventory except for one floor of 15 Masonic Street which is occupied by a city service
3/ Includes membership organizations, travel agencies, event planning, and cultural services
4/ Space currently occupied by office tenants, does not include office space which is currently occupied by retail, restaurant or residential use

Source: Main Street New London, BBPC 2008

Key Observations

- Business types that offer services, such as legal services, occupy the largest percentage of office space in downtown (50 percent) and consequently occupy the largest amount of square footage (195,345 SF)
    - Legal services are the most common within the downtown office market with 14 tenants. They are typically located in small office suites with an average size of 1,760 square feet of space each
    - Business services are second most common with 12 tenants, each averaging 2,800 square feet
- Publications and broadcasting occupies the most square feet of office space in downtown. Of this space, 62,669 square feet is occupied by The Day Newspaper on Eugene O'Neill Drive

Of the available downtown office space, 79 percent is occupied (337,604 square feet). A total of 88,505 square feet (21 percent) is vacant. The graphs below in Figure 4-25 categorize downtown office space by number of units and square footage.

Figure 4-25: Downtown Office Space Inventory by Industry Type
(Source: Main Street New London, BBPC 2008)

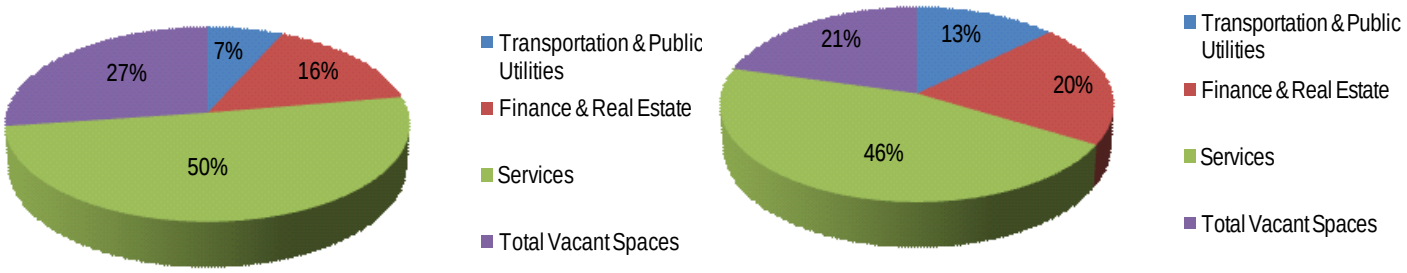


Table 4-24 shows eleven selected office properties in downtown New London. All vacant office space downtown is within the eleven properties shown. Together these properties make up over 30 percent of the total office space in downtown. The largest property is Mariner's Square (125 Eugene O'Neill Drive); this property is almost 80,000 square feet. In regard to vacancies, three buildings (224 Bank Street Bldg. C, 301 State Street and 125 Eugene O'Neill Drive) make up 80 percent of the total vacant space in downtown. Both buildings on Bank and State Streets are five stories tall. 301 State Street has four street level businesses and total vacancy on floors 2-5. 224 Bank Street Bldg. C has tenants in units on the first, second and fourth floors. 125 Eugene O'Neill Drive, a Class A office space, is three stories and has a total of three tenants.

Table 4-24: Select Downtown New London Office Vacancy Rate by Location (2008)

Location	Rentable Sq. Feet	Vacant Sq. Feet	% Vacant
11 Bank Street	1,804	450	25%
224 Bank Street (Bldg. B)	7,921	4,400	56%
224 Bank Street (Bldg. C)	37,588	22,832	61%
125 Eugene O'Neill Drive	79,020	13,170	17%
151 Eugene O'Neill Drive	6,478	3,239	50%
39 Green Street	8,784	5,856	67%
116 Huntington Street	5,492	2,034	37%
69 State Street	6,474	1,950	30%
224 State Street	25,848	7,643	30%
301 State Street	43,896	34,404	78%
310 State Street	21,404	5,697	27%
Total Space	244,709	88,505	36%

Source: Main Street New London, BBPC 2008

As shown earlier in Table 4-23, 28 units are vacant in the downtown. Table 4-25 demonstrates that all vacancies are located above the first floor.[25] Second floor office space has the highest office vacancy at 36 percent followed by the third, fourth and fifth floors each with 21 percent vacant. Understanding where the

[25] In the CBD-1 zone office uses are permitted only by special permit on the first/ground floor.

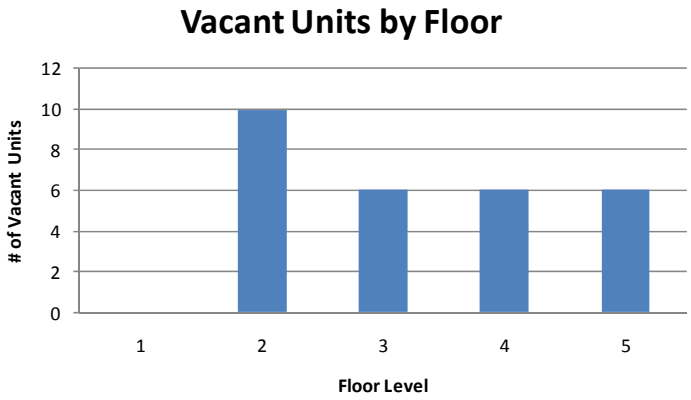
vacancies are by floor helps to identify why vacancies exist. For example, higher vacancies on the second floors beg the question of whether the asking rents are too high for second floor space as compared to the third and fourth floors, or are there first floor retail uses that are incompatible with second floor office uses?

Table 4-25: Downtown Office Vacancies by Floor*

Floor	# of Vacant Units	% of Total Office Vacancies
1	0	0%
2	10	36%
3	6	21%
4	6	21%
5	6	21%
Total Vacant Office Units	28	100%

**Assuming equal distribution of units*

Source: Main Street New London, BBPC 2008



Office Market Construction Activity

As shown in Table 4-26 and Figure 4-26, office development activity was relatively low at the regional level as of third quarter 2008, and modest in submarkets surrounding the City of New London. Key observations regarding regional office development include:

- Approximately 273,609 square feet was under construction in the Hartford regional office market
- Construction in New London County accounted for 15 percent (41,000 square feet) of the total regional office construction
- The 41,000 square feet under construction in New London County represents a 0.7 percent increase in the total inventory and a 0.8 percent increase in the occupied inventory for the county
- New London County market was the fourth most active market out of the 16 markets
- However, only nine of the office markets had active construction in the third quarter
- 87 percent of all projects under construction were Class B; the remaining 13 percent was Class A

As displayed below in Figure 4-27, construction activity in the Hartford regional office market has dropped significantly over the last 25 years. The highest activity was seen between 1984 and 1990 where the average annual square feet delivered was 2.2 million. The lowest point in delivered square feet was between 1994 and 1997 where the annual average was approximately 100,000 square feet. From 2000 to 2008 the average annual delivery of office space rose slightly to 480,000 square feet. The largest projects underway at the end of the third quarter 2008 were less than 50,000 square feet.

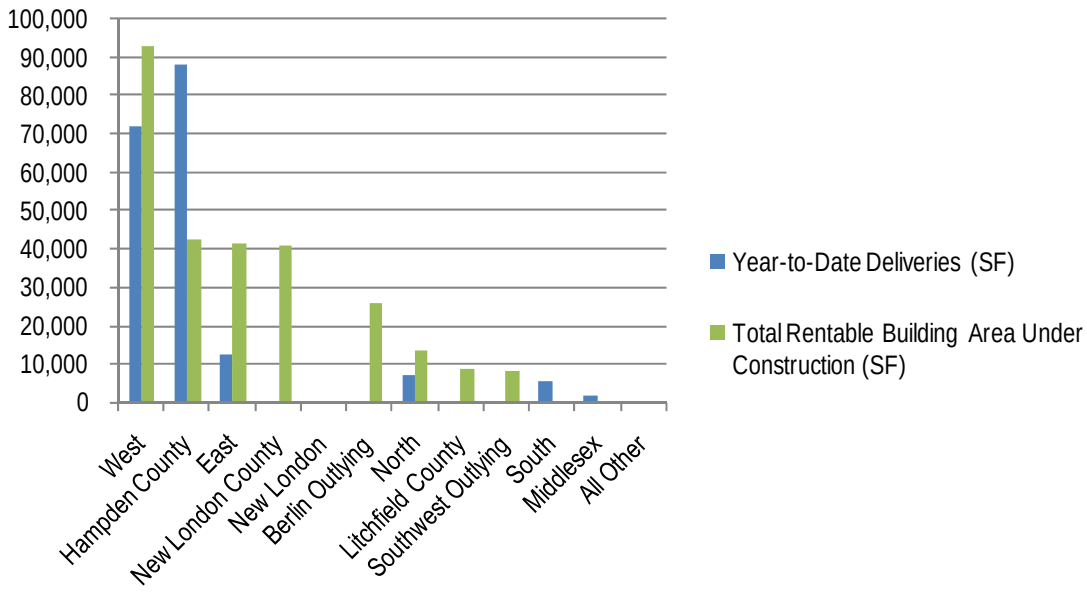
Table 4-26: Hartford Regional Office Markets Year-to-Date Developments, Third Quarter 2008

Market	Year-to-Date Deliveries (SF)	% Occupied	Total Rentable Building Area Under Construction (SF)	% Preleased	Delivered and Under Construction	% of Hartford Market
West Hartford	72,000	83%	93,256	49.6%	165,256	35.9%
Hampden County (MA)	88,000	50%	42,685	76.5%	130,685	28.4%
East Hartford	12,150	100%	41,383	100.0%	53,533	11.6%
New London County	0	-	41,000 (1/)	52.5%	41,000	8.9%
New London Submarket	*0*	-	*0*	-	*0*	*0.0%*
Downtown New London	*0*	-	*0*	-	*0*	*0.0%*
Berlin Outlying	0	-	25,680	48.0%	25,680	5.6%
North	7,000	60%	13,200	100.0%	20,200	4.4%
Litchfield County	0	-	8,500	29.0%	8,500	1.8%
Southwest Outlying	0	-	7,904	100.0%	7,904	1.7%
South	5,500	81%	0	-	5,500	1.2%
Middlesex	1,632	100%	0	-	1,632	0.4%
All Other	0	-	0	0.0%	0	0.0%
Total Hartford Regional Market	186,282		273,608		459,890	100.0%

Source: CoStar, Main Street New London, BBPC 2008

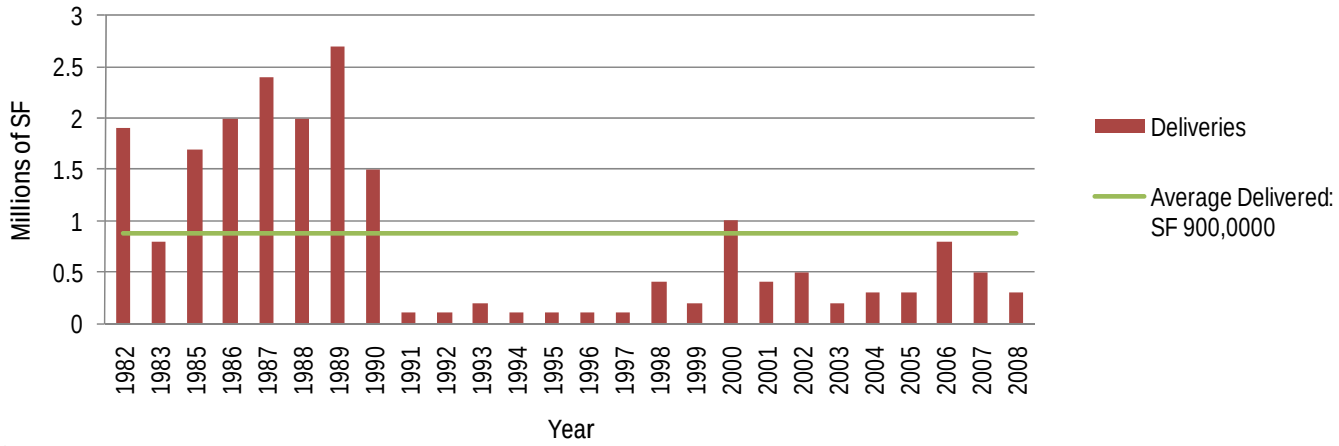
1/ Includes three Class B office developments: 80 Norwich New London Tpke, 26,000 SF, delivered fourth quarter 2008; 2 Huntley Road, 8,000 SF, delivered fourth quarter 2008; and 279 Boston Post Rd, 7,000 SF delivered second quarter 2009.

Figure 4-26: Hartford Regional Office Markets Year-to-Date Developments, Third Quarter 2008



Source: CoStar, BBPC 2008

Figure 4-27: Hartford Regional Office Market Historical Deliveries



Source: CoStar, BBPC 2008

Office Market Sources of Demand

Employment growth in office-based industries – through both recruitment of new firms as well as expansion of existing firms – generally drives opportunities for the development of new office space. Office demand was evaluated at the subregional job growth level (New London County).

The greatest source of new office growth is in the underlying regional strength in bioscience and healthcare, technology, defense, and maritime industries. The major employers in these industries are Pfizer's global research and development headquarters[26] (split between two facilities -- one in New London and the other in Groton), the Naval Submarine Base and General Dynamics Electric Boat (both in Groton), the Coast Guard Academy, cruise lines and deep water pier (all three in New London). These existing firms/industries attract smaller firms and start-up firms. These companies find that by locating near Pfizer and the other businesses listed above they can increase their chance of getting subcontracts and other types of spin-off business.

Office Space Preferences of Target Tenants

Potential tenants will be attracted to the business benefits derived from locating in a region with strength in bioscience, technology, defense and maritime industries and the emerging amenities (retail and residential choices, water views, and growing cultural class) in downtown New London.

As identified in the employee growth projections. The largest demand for office space is from the office based services. Typically, these types of businesses occupy smaller office suites and price and demanded amenities will vary with experience and firm size. For example, a start-up architectural firm with few employees may seek an office suite with no more than 950 square feet. However, this same architectural firm may trade $/SF to be in a renovated historical space with water views.

Of course, new and expanding employers will not come automatically to the downtown area. The downtown area must offer an environment attractive to new firms interested in relocating or existing firms ready to expand. Preferences in terms of property type, size, land area and other characteristics can vary

[26] As noted earlier, Pfizer recently announcing it is leaving its New London facility and consolidating its regional operations in Groton.

by industry. In New London, a variety of industries occupy office space, but key growth industries in the area include:

- Healthcare and pharmaceutical companies- both existing and start-up
- Information technology based businesses
- Defense industry firms
- Service firms- including finance, professional/technical services and law firms

These industries share many preferences, foremost of which are the desire to locate near a highly educated local workforce and to locate within clusters of industries offering similar products and services. Key building and environmental features demanded by these industries include:

- Green buildings (including LEED certified) – attractive for a variety of reasons, including enhancement of corporate image (in fact, many corporations are now requiring new buildings to be LEED certified), economic savings, healthy workplace, and environmental responsibility. Features may include:
    - Accessibility to alternative modes of transportation (bus, train, bikeways)
    - Green roofs
    - Passive heating and cooling
    - Pervious materials for parking lots
    - Efficient water systems
    - Enhanced indoor environmental quality
    - Non-toxic and sustainable materials
    - Reuse of materials (including historic properties)
- Location within mixed-use environments – offering workers the chance to walk to retail shops and restaurants and various housing options
- Location near cultural and recreational offerings
- Creative and inspiring architecture (including rehabilitated historic spaces as well as state-of-the-art new spaces)
- Access to regional transportation
- Residential offerings to accommodate executives seeking apartments close to the office
- For emerging pharmaceutical and information technology companies, flexible space configurations are popular (which allow initial occupancy of smaller spaces in the range of 2,500 to 5,000 square feet, with potential to expand into larger spaces if rapid company growth occurs)
- For start-up firms, affordable rents are important

The downtown area offers potential to build a more attractive environment to appeal to firms in these key growth industries. Individual developers can play an important role in this enhancement by renovating existing multistory buildings in the downtown. Renovating Class C space into Class B space will help to provide appropriate space for start-up firms that cannot afford high rents. Also building high-quality, green buildings that feature retail and even residential uses in addition to modern office space will help to encourage a mix of activities in the downtown. Public sector actions can also improve the area's appeal by codifying, as appropriate, building, parking and streetscape requirements that will optimize the area's aesthetic potential.

4.3.4. Retail Market Conditions

This analysis examines the existing level of retail market action in downtown New London and New London County and the various sources of market area sales and will project future expenditures of target market sources (e.g. downtown and local households within a defined market area, downtown employees, tourists, and "other" {passengers starting or ending their trips at the RITC and college students}).

Overview

Downtown New London has a variety of retail shops, many of which are locally owned. For example, Flavours of Life, commonly called the Fair Trade Store, is owned by former Pfizer employees. Downtown is characterized by locally-owned, niche retailers and restaurateurs. Regionally, southeastern Connecticut has a large tourist draw with a variety of local, regional and national retailers in the surrounding cities (e.g. Mystic, Niantic and Waterford as well as the casino resorts). Establishing New London as more of a regional retail destination is contingent on creating a cluster of shops which are unique to New London. However, in order to support downtown residential and office workers, convenience goods and restaurants must be available in downtown. These residents and employees will in turn support available retail.

Opportunities for retail development in downtown New London will primarily derive from the demand generated by downtown and local residents and tourists. Other retail opportunities are created by residents and employees, day-trippers arriving by car, train, ferry and bus, college students and potential retail activity occurring in regional markets.

State Street and Bank Street have the highest concentration of restaurant and entertainment uses in the downtown area. Popular restaurants like the Buckley House, Lucca's, Muddy Waters, and Zavala attract workers to happy hour from the commercial cluster near Fort Trumbull, college students, and downtown residents and workers. Annual events such as Sailfest and Fish Tales, Tugs and Sails bring activity to the downtown and draw attendance from the greater southeastern Connecticut region.

Retail Market Areas and Conditions

The retail market areas surrounding the downtown are defined by the same boundaries delineated for the surrounding office real estate market. The Hartford regional market contains the New London County market and the New London submarket. The market boundaries for each product type (retail and office) are the same because geographic retail clusters are often located near residential populations to minimize distance from customers and workers. These market boundaries are shown below in Figure 4-28.

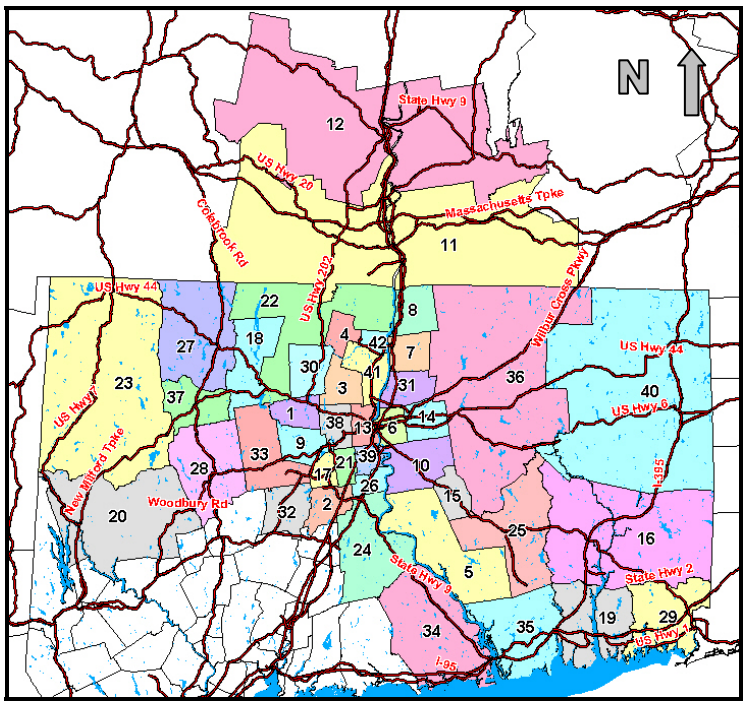
Current conditions and trends at the regional and submarket levels have been evaluated and compared to help assess downtown New London's market position for future retail growth. Retail space data is provided for the New London submarket (which includes the City of New London and the immediately surrounding cities). The New London Retail submarket is shown in Figure 4-29.

Key Observations

New London County is a major player in the regional retail market. One third of the regional retail inventory is located in the county. Table 4-27 is a snapshot of the retail market conditions. Retail markets surrounding and within the City of Hartford also carry large percentages of the total regional inventory. Historically, southeastern Connecticut has been a tourist destination and continues to be one today. Within the state, southeastern Connecticut has the greatest positive impact on state and local revenues generated

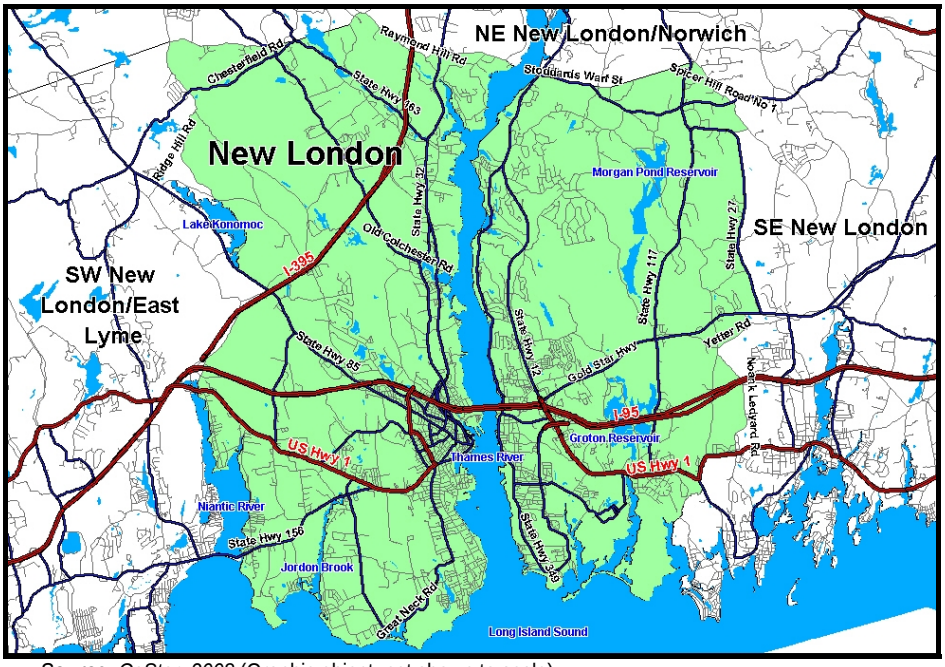
Figure 4-28: Hartford Regional Retail Market and Submarkets

Source: CoStar, 2008 (Graphic object, not shown to scale)



Submarket Name	#	Submarket Name	#
Avon	1	NW Outlying	22
Berlin Outlying	2	NW Litchfield County	23
Bloomfield	3	NW Middlesex/Middleton	24
E Granby	4	NW New London/Colchester	25
E Hampton/E Haddam	5	Rocky Hill	26
E Hartford	6	Rt 8/Winsted	27
E Windsor	7	SE Litchfield County	28
Enfield	8	SE New London	29
Farmington	9	Simsbury	30
Glastonbury	10	S Windsor	31
Hampden Co (MA)	11	Southington	32
Hampshire Co (MA)	12	SW Outlying	33
Hartford City	13	SW Midlsx/Old Saybrk/Rt 9	34
Manchester	14	SW New London/E Lyme	35
Marlborough Outlying	15	Tolland Co	36
NE New London/Norwich	16	Torrington	37
New Britain	17	W Hartford	38
New Hartford/NE Litchfield	18	Wethersfield	39
New London	19	Windham Co	40
New Milford/SW Litchfield	20	Windsor	41
Newington	21	Windsor Locks	42

Figure 4-29: New London Retail Submarket



Source: CoStar, 2008 (Graphic object, not shown to scale)

from tourism. For this reason and others, New London County has a considerable number of retail establishments.

- 13 percent (1,422 square feet) of the total Hartford regional market inventory is in New London County
- The New London County market and the New London submarket have vacancy rates slightly higher than the regional average (7.2 percent and 7 percent respectively)
- Downtown New London's vacancy rate (37%) is 5 times higher than the surrounding geographies
- After the Hampden County, MA market, New London County has the largest inventory of retail space
- Approximately 40 percent of the total 2008 delivered space and projects under-construction in the Hartford regional market is in New London County; downtown New London has 8,235 square feet under construction
- Markets with vacancy rates under 6 percent surround the City of Hartford (Hampden Co. (MA), Hampshire Co. (MA), Hartford City, Marlborough Co., North, Northwest Outlying, Southwest Outlying, and West)
- 25 percent ($351.6 million) of the total State tourism revenue ($1.4 billion) in 2001 was generated in southeastern Connecticut; this is $168.7 million higher than the next highest tourism region (Greater Hartford)
- Within the New London County submarket, there are many destinations for travelers seeking art, theater, historical sites and museums

Table 4-27: Retail Market Snapshot, Third Quarter 2008

Market	Existing Inventory		Vacancy		YTD Delivered Inventory	Under Construction (SF)	Rate
	# of Buildings	Total Rentable Area (SF)	Vacant SF	Vacancy %			
Downtown New London	156	387,610	141,750	37%	0	8,235 (1/)	$4.50-$12 (2/)
New London Submarket	796	7,176,558	505,466	7%	20,850 (3/)	72,135 (4/)	$12.31
New London County	1,422	15,553,606	1,118,957	7.2%	20,850	1,297,401 (5/)	$12.85
Hartford Region	10,808	127,440,013	8,157,529	6.4	474,418	2,729,612	$13.76

1/ 174 Bank Street 5,235 SF and 74 Bank Street 3,000 SF retail space under construction
2/ Rate depends on lease structure and payment of utilities and other expenses
3/ 698 Bank Street 14,550 SF and 989 Poquonock Road 6,300 SF delivered in the second quarter of 2008
4/ Includes downtown construction plus projects in the City of New London area
5/ Includes all construction projects above plus projects in New London County

Source: CoStar, 2008, Main Street Downtown Inventory, 2008 and U.S. Properties, 2008

Inventory

The Hartford regional retail market has approximately 127.5 million square feet of retail space. Of this, 12.5 percent is located in New London County, 5.6 percent is in the New London submarket, and 0.3 percent is in downtown New London. New London County is the second largest player in the Hartford regional market (Hampden County, MA, is first with 18.8 percent of the total square footage).

The Hartford region hosts a broad mix of retail development product types, as shown in Table 4-28, ranging from traditional malls to more recently constructed general retail centers, but recently delivered space is focused primarily on development of power centers and shopping centers.

As these development types gain in popularity, the traditional shopping mall format is losing popularity. Power centers typically consist of several freestanding (unconnected) anchors and only a minimum amount of small specialty tenants. Shopping center is the combined retail type of community center (generally has 2-3 anchor tenants, but not department stores; the typical anchor is a grocery or large drug store), neighborhood center (provides for the sale of convenience goods and personal services for the day-to-day living needs of the immediate neighborhood) and strip center (attached row of stores or service outlets managed as a coherent entity with on-site parking usually located in front of the stores).

Currently, the largest percentage (55 percent) of the Hartford regional inventory is occupied by general retail. General retail examples are typically single tenant, general purpose commercial buildings with parking. The second most frequent type of retail structure is the shopping center with 32 percent of the total regional inventory. In New London County, 1.3 million square feet of retail space was either recently delivered or under-construction (product types include general retail, power center, and shopping center). As of third quarter 2008, the New London submarket has 92,985 square feet of recently delivered or under-construction retail space (product types include general retail and shopping center). The distribution is presented in Table 4-28.

Table 4-28: Retail Inventory by Product Type, Third Quarter 2008

	Hartford Regional Market				New London County				New London Submarket			
	# of Ctrs	Total RBA	Distribut-ion	Vacancy %	# of Ctrs	Total RBA	Distribut-ion	Vacancy %	# of Ctrs	Total RBA	Distribut-ion	Vacancy%
General Retail	9,312	70,067,803	55%	6%	1,286	9,154,820	59%	7%	434	3,821,646	53%	23%
Mall	12	9,654,819	8%	2%	1	770,000	5%	40%	1	770,000	11%	40%
Power Center	14	4,730,872	4%	4%	2	784,800	5%	4%	1	284,800	4%	3%
Shopping Center	940	41,390,654	32%	8%	100	4,696,210	30%	10%	39	2,275,219	32%	7%
Specialty Center	11	1,595,865	1%	11%	2	147,776	1%	0%	1	24,893	0%	0%
Total	10,808	127,440,013	100%	6%	1,422	15,553,606	100%	7%	476	7,176,558	100%	7%

Source: CoStar, BBPC

4.3.5. Analysis of the Existing Downtown Retail Mix

Downtown Boundaries

As shown in the demographic section, New London downtown's northern boundary runs along Federal Street and up approximately to the corner of Hallum and Water Streets. The eastern and southern downtown perimeters follow the edge of the waterfront. Union Station is situated in the center of the downtown's eastern boundary on the waterfront. The downtown's western boundary is Huntington and Reed Streets, not including the primarily residential blocks between Reed and Starr Streets northwest of Blinman Street.

Downtown Businesses by Type

Based on visual inspection, interviews with downtown business owners and a survey completed by Main Street New London, downtown New London has a total of 89 different occupied retail businesses. Retail trade has the highest number of establishments with 75 businesses, or 48 percent of the total establishments. This is followed by services (personal, business, amusement and recreation) with 14 establishments, or 9 percent of the total number of establishments. In addition there are 67 vacant stores in the downtown constituting 43 percent of the total retail establishments in downtown New London. Table 4-29 summarizes the retail space by type of business and number of establishments for downtown New London as of November 2008 and Figure 4-30 shows them by type in a pie chart.

Eating and drinking places/clubs constitutes the most numerous type of business in downtown New London with 28 establishments. Nightlife is growing in downtown[27]. Also, increasing numbers of ethnic restaurants are opening[28]. Eating and drinking places are followed by miscellaneous retail (liquor stores, gifts, florists and newsstands) with 14 establishments. Art galleries/studios are close behind miscellaneous retail with

[27] Interview with Susan Howard, U.S. Properties, Inc. on October 7, 2008.
[28] Karin Crompton and Kevin Dale, The Day Newspaper, "No Shortage of Ideas to Fill the Vacancies", published on 9/2/2008.

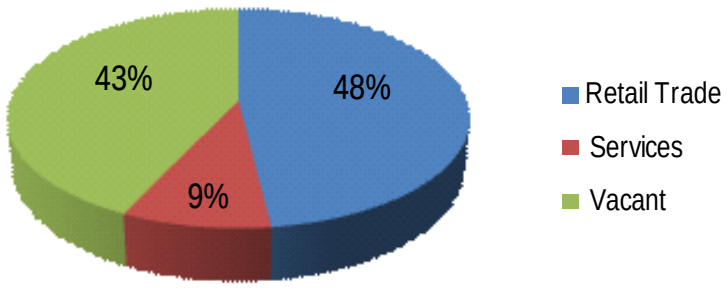
Table 4-29: Downtown New London Retail Space by Store Type and Square Footage November 2008

	# of Establishments	% Distribution	Gross (SF)*	% Distribution	Avg. (SF)	Range/Size
Retail Trade						
Eating & Drinking Places/Clubs	28	18%	60,188	16%	2,150	462-7,023
Apparel & Accessory Stores	9	6%	20,651	5%	2,295	950-6,720
Art Galleries/Studios	13	8%	47,892	12%	3,684	810-17,701
Home Furnishing/Electronics	7	4%	39,603	10%	5,658	1,540-16,642
Food & Drink Stores	4	3%	6,759	2%	1,690	1,278-2,381
Miscellaneous Retail	14	9%	43,449	11%	3,104	705-9,454
Sub-total	75	48%	218,542	56%	2,914	462-17,701
Services						
Personal Services	8	5%	13,377	3%	1,672	680-3,540
Business Services	3	2%	8,020	2%	2,673	1,108-5,092
Amusement & Recreation Services	3	2%	5,921	2%	1,974	950-3,521
Sub-Total	14	9%	27,318	7%	1,951	680-5,092
TOTAL OCCUPIED SPACE	89	57%	245,860	63%	2,763	462-17,701
TOTAL VACANT SPACE	67	43%	141,750	37%	2,116	264-10,767
TOTAL	156	100%	387,610	100%	2,485	264-17,701

**Assuming equal distribution of units*

Source: Main Street New London, BBPC, 2008

Figure 4-30: Downtown Retail Space by Type (Based on Number of Units)



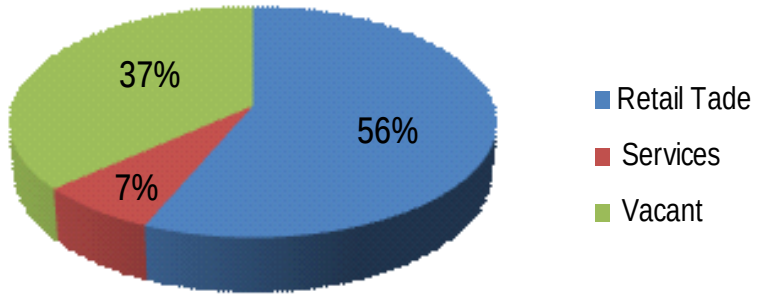
Source: Main Street New London, BBPC, 2008

13 establishments. New London has created an art niche. Weekend art events draw large crowds to downtown New London and galleries such as the Hygienic Art Gallery showcases regional, national and international art.

Downtown Business by Type by Square Feet

Downtown New London has approximately 387,610 square feet of retail space, with a vacancy rate of 37 percent as of November 2008. The total occupied space is 245,860 square feet. The mix is comprised of primary uses – retail trade and services. As with the number of establishments, eating and drinking places/clubs occupy the most space, a total of 60,188 square feet. This is followed by art galleries/studios with 47,892 square feet and then miscellaneous retail with 43,449 square feet. Furnishing and electronics occupy 10 percent of the total (39,603 square feet). All together, services (personal, business, amusement and recreation) occupy 7 percent of the total space at 27,318 square feet. This is shown in Figure 4-31.

Figure 4-31: Downtown Retail Space by Type (Based on Occupied Square Feet)



Source: Main Street New London, BBPC, 2008

Downtown Vacancy

Vacant store fronts are pervasive in downtown. Approximately 43 percent of the total downtown retail units are vacant (67 units) and 37 percent of the total square footage (141,750 square feet) is vacant. People cited in a recent newspaper article reasons as to why downtown has a persistent problem with vacancies. The reasons include: [29]

- Perceived lack of parking
- Bureaucratic red tape
- Aging, odd shaped buildings
- Low pedestrian and vehicular traffic

However, beyond the perceived problems within downtown looms a large source of competition. The suburban malls in surrounding communities have millions of square feet and lots of parking to lure retailers. For example, "after the one million square foot Crystal Mall opened three miles from downtown in 1984, downtown vacancies skyrocketed to nearly 500,000 square feet."[30]

[29] Karin Crompton and Kevin Dale, The Day Newspaper, "No Shortage of Ideas to Fill the Vacancies", published on 9/2/2008.
[30] Karin Crompton and Kevin Dale, The Day Newspaper, "Chain Retail for New London Just a Pipe Dream, Brokers Say", published on 9/1/2008.

An analysis of the downtown New London market by floor level finds that the vast majority of vacancies exist on the first floor, most likely because most of the downtown retail space is on the first floor. First floor retail vacancies account for 50 percent of all downtown vacancies. The distribution is presented in Table 4-30.

Table 4-30: Downtown New London Retail Vacancies by Floor

Floor	No. of Vacant Units	% of Total Retail Vacancies	% of Total Downtown Vacancies
Floor 1	60	90%	50%
Floor 2	5	7%	4%
Floor 3	2	3%	2%
Floor 4	0	0%	0%
Floor 5	0	0%	0%
Sub-Total	67	100%	56%

Source: Main Street New London, BBPC, 2008

Out of the 60 vacant first floor units, there are ten properties which have over 4,000 square feet vacant. These properties are listed in Table 4-31. Together the selected properties are 13 percent of the total retail space and 36 percent of the total vacant retail space.

Table 4-31: Selected Downtown Retail Vacant Space

Address	Square Feet Vacant on First Floor
18 Bank Street	10,704
224A Bank Street	6,510
224D Bank Street	4,836
239 Bank Street	5,584
29 Golden Street	4,862
118B State Street	4,370
128-138A State Street	4,184
253 State Street	4,040
281B State Street	5,888
Total	50,978

Source: Main Street New London, BBPC, 2008

Downtown New London's retail inventory is characterized by locally owned retailers with the highest percentage of businesses in food services. At the same time, downtown has a vacancy rate of 37 percent and local real estate professionals indicated a high turnover rate in retail businesses. The vacancies are distributed among many buildings, and site visits and research revealed that many of the vacant spaces are along Bank and State Streets, where the largest number of retail sites are located. The suburban malls and other retail centers in surrounding communities serve as competition for existing retailers and for attracting new retailers. At the same time, there is a growing population in the downtown and as this population increases, the existing retail stores will increase their sales and new stores will open.

Retail Market Construction Activity

Construction and delivery data for third quarter 2008 showed that almost half (41 percent) of the projects in the Hartford regional market are in New London County. A total of 69 percent of the total 1,336,701 square feet in New London County is pre-leased; this leaves 31 percent (or 414,377 square feet) yet to be leased. Year-to-date developments are presented in tabular form in Table 4-32 and in a bar chart in Figure 4-32.

Downtown New London offers retail businesses unique, historic spaces at lower rents than the larger geographies. Downtown New London is not a large player in the regional market (less than 1 percent of the regional market) or county market (2.5 percent of the total county market). However, the retail market is strong in New London County and this strength can boost retail opportunities in downtown New London.

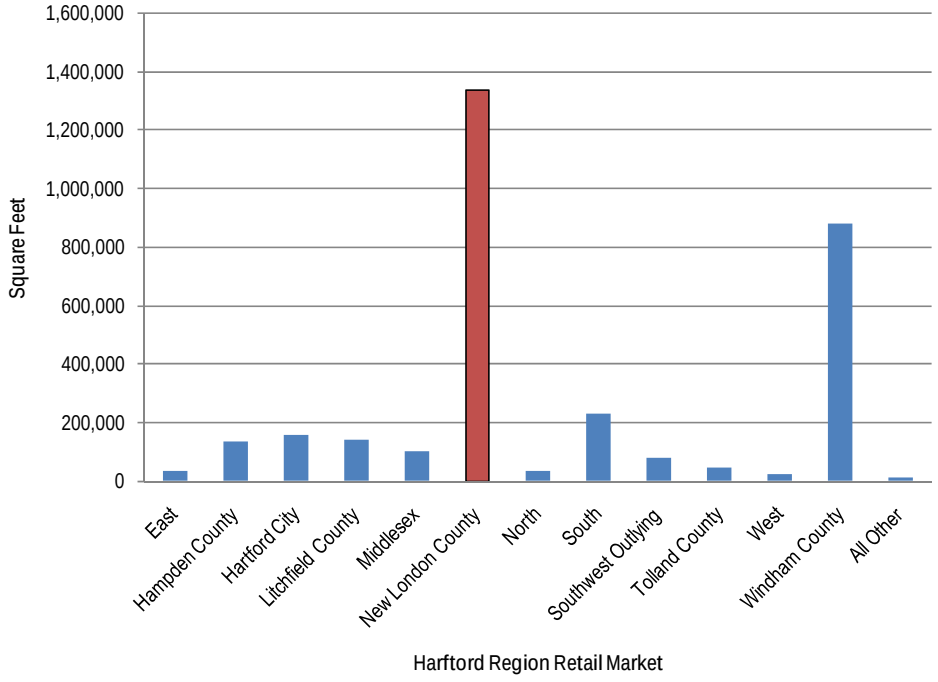
Table 4-32: Hartford Regional Retail Markets Year-to-Date Developments Third Quarter 2008

Market	Year-to-Date Deliveries (SF)	Total Rentable Building Area Under Construction (SF)	Pre-leased %	Delivered and Under Construction	% of Hartford Market
East	15,983	16,731	100%	32,714	1%
Hampden County (MA)	131,840	5,500	100%	137,340	4%
Hartford City	0	158,000	51%	158,000	5%
Litchfield County	65,080	73,044	32%	138,124	4%
Middlesex	29,820	73,704	47%	103,524	3%
New London County (1/)	26,218	1,310,483	69%	1,336,701	41%
New London Submarket	*20,850*	*63,900*	-	*84,750*	*3%*
North	0	32,510	78%	32,510	1%
South	95,802	134,276	14%	230,078	7%
Southwest Outlying	0	78,372	95%	78,372	2%
Tolland County	45,000	0	-	45,000	1%
West	23,147	0	-	23,147	1%
Windham County	41,528	838,024	75%	879,552	27%
All Other	-	8,968	100%	8,968	1%
Total Hartford Market	495,268	2,784,544		3,279,812	100.0%

1/ Includes two retail developments delivered and four under construction: 698 Bank Street , 14,550 square feet delivered second quarter 2008; 989 Poquonock Road, 6,300 square feet, delivered second quarter 2008; Liberty Crossing Shopping Center, 880,000 square feet; Crossing at Lisbon, 319,166 square feet; Waterford Crossing Bldg. 2, 55,000 square feet; and Keystone Shoppes, 35,000 square feet

Source: CoStar and BBPC 2008

Figure 4-32: Hartford Regional Market Retail Space Delivered and/or Under-Construction, Third Quarter 2008



Source: CoStar and BBPC 2008

Retail Market Sources of Demand

In order to project new retail expenditures in downtown New London, sources of potential sales and the amount of potential sales must be determined. Retail sales in New London are derived from both demand within the community and outside the community. Sources that drive retail demand range from office workers needing a place to eat on their lunch break to tourists looking for gifts to bring home. The major sources of retail demand for the downtown New London market are households residing in the downtown and a defined subregional market area, downtown employees, tourists and others. Others consist of households residing outside the subregional trade area, and specialized market sectors such as: public transportation users, college students, business to business sales, and internet sales.

These market sources spend a percentage of their household income on retail purchases. Downtown New London currently captures a share of their expenditures. Expansion of selected market sources such as downtown residents and employees and increased capture rates of sectors would enhance retail sales. In order to determine ten year potential future demand (expenditures by market sources) and the future square footage needed to support this demand, the current (2008) sales made by these market sources in the downtown must be determined. Downtown's future ability to capture this potential will be applied to future (2018) retail expenditures and downtown's capture of expenditures by market source are in turn converted to supportable square feet by using sales per square foot data for the retail businesses in downtown New London.

Downtown New London Sources of Market Demand

Interviews with downtown merchants, field visits to the downtown, and retail industry research suggest that downtown retailers as a whole derive their sales from five segments:

- Households in the downtown
- Households in a defined subregion
- Employees in the downtown
- Tourists
- Other
    - College Students
    - Public transportation passengers
    - Internet sales
    - Business to business

Downtown Residential Household Retail Expenditures

Based on data from ESRI, site visits and interviews, it has been determined that there are a total of 421 households in downtown. In 2008, these downtown households spent $21.6 million annually on retail goods and services. These sales represent purchases made within and outside the downtown. Table 4-33 shows the expenditure by retail good for the downtown households. Downtown New London has the potential to capture a portion of this household demand.

Table 4-33: Existing Downtown New London Household Retail Expenditures, 2008

Retail Industry	Total Retail Expenditures
Food & beverage stores	$1,221,930
Health & personal care stores	$1,856,900
Food services & drinking places	$10,579,415
Furniture, home furnishings & electronics	$289,346
Art galleries	$1,811,460
Clothing & shoes	$1,950,770
Sporting goods, hobby & music stores	$2,448,249
Misc. store retailers	$1,523,258
Total	$21,681,328

Source: BBPC , ESRI

Downtown Office Workers Retail Expenditures

The International Council of Shopping Centers (ICSC) developed a study called *Office Worker Retail Spending* Patterns that found 59 percent of downtown office workers make purchases in retail stores near the workplace. The highest percentage (44 percent) of workers made grocery purchases. The total distribution is presented in Table 4-34. The ICSC also found the average amount spent on downtown retail purchases and the distribution by merchandise category.

Table 4-34: Typical Downtown Retail Purchases Made By Downtown Office Workers

Merchandise Category	% of Workers
Groceries	44%
Snacks/Incidentals	35%
Personal Care/Drug	31%
Apparel/Accessories	25%
Home Items	24%
Gifts/Cards	22%
Sports/Toys/Electronics	20%
Newspapers/Magazines	14%
Cosmetics/Perfume	8%
Total % Made a Purchase	59%

Source: International Council of Shopping Centers, Office Worker Retail Spending Patterns, 2004

To determine total retail expenditures made by workers in downtown New London, the average annual expenditures per employee on retail goods from the ICSC study were distributed across four retail categories: food and beverage stores, health and personal care stores, food services and drinking places, and mall type purchases. This was multiplied by the actual number of office employees (1,085 in the downtown) and the percent actually making a purchase (59 percent in the downtown). Table 4-35 shows the total downtown employee retail expenditures. Downtown New London captures a portion of the $4.5 million in retail expenditures.

Table 4-35: Downtown New London Employee Total Retail Expenditures, 2008

Downtown Employees 1,085	Annual Employee Expenditures	Total Retail Expenditures
Food & beverage stores	$1,534	$972,388
Health & personal care stores	$742	$470,510
Food services & drinking places	$2,029	$1,286,061
Mall-type merchandise	$2,821	$1,787,939
Total/Average	$7,126	$4,561,709

Mall-type merchandise includes furniture and home furnishings, electronics, clothing and shoes, sporting goods, hobby and music stores, art galleries, and misc. store retailers
Annual expenditures per employee were derived by multiplying weekly expenditures by 49 to adjust for holiday and vacation days

Source: ESRI, BBPC

Subregional Household Retail Expenditures

Subregional households are included as a market source because they make expenditures within the downtown. The households included in the subregion are located in the city and within a defined trade area. Within the subregion there were 61,419 households in 2008.

A trade area is the geographic area from which the preponderance of a retail establishment's residential customer base originates. Trade areas differ based on the type of products offered at the retail establishment. For example, the trade area for a good such as milk is typically smaller than the trade area for furniture or apparel. The distance a consumer will travel to buy a gallon of milk is significantly shorter than the travel distance tolerated to buy a new sofa. Another factor affecting the trade areas for goods is comparison shopping. To purchase a gallon of milk, one does not need to compare brands or stores. To purchase a piece of furniture, consumers are willing to travel further distances to compare various merchandise.

Trade areas are also impacted by competitive retail destinations. A shopping district with little nearby competition will have a much larger trade area than a shopping district with significant regional goods competition.

These factors, as well as several others, impact the designation of trade areas for downtown New London. These factors include:

- Types of retail and services offered/retail niche
- Travel times to and from the downtown
- Location of competitive facilities
- Merchants' and shoppers' input (ascertained through interviews and surveys)

The subregional residential market trade area is generally a 20-minute drive time extending from Union Station. The market area is based on the location of competitive retail businesses and the average time people are willing to drive to a retail center such as downtown New London. The region excludes the major retail center in Norwich. As shown in Figure 4-33, this market area extends north on I-395 just past the intersections with State Highway 82 south of Norwich, CT; goes east on I-95 just past the Rhode Island Border; is bordered by the Long Island Sound to the south; and extends west on I-95 to Old Saybrook.

Within the subregion there are 61,419 households, and these households spend an annual $1.3 billion on retail goods and services. Table 4-36 shows the total retail expenditures in the subregion and the retail expenditures by retail industry.

Tourists[31]

The tourist retail market is defined as visitors to the southeastern Connecticut region. Within Connecticut, the southeastern region generates the highest revenues for both the state and local economies. A large percentage of tourists going to the casino resorts and area leisure activities, both in and around New London, pass through New London either by way of car, ferry, bus or train. In 2001, tourists to southeastern Connecticut spent $595.4 million. While much of the tourism expenditures are made in the casino resorts

[31] The tourism data in this report may be updated as new data on tourists in southeastern Connecticut becomes available.

Figure 4-33: Subregional Market Trade Area

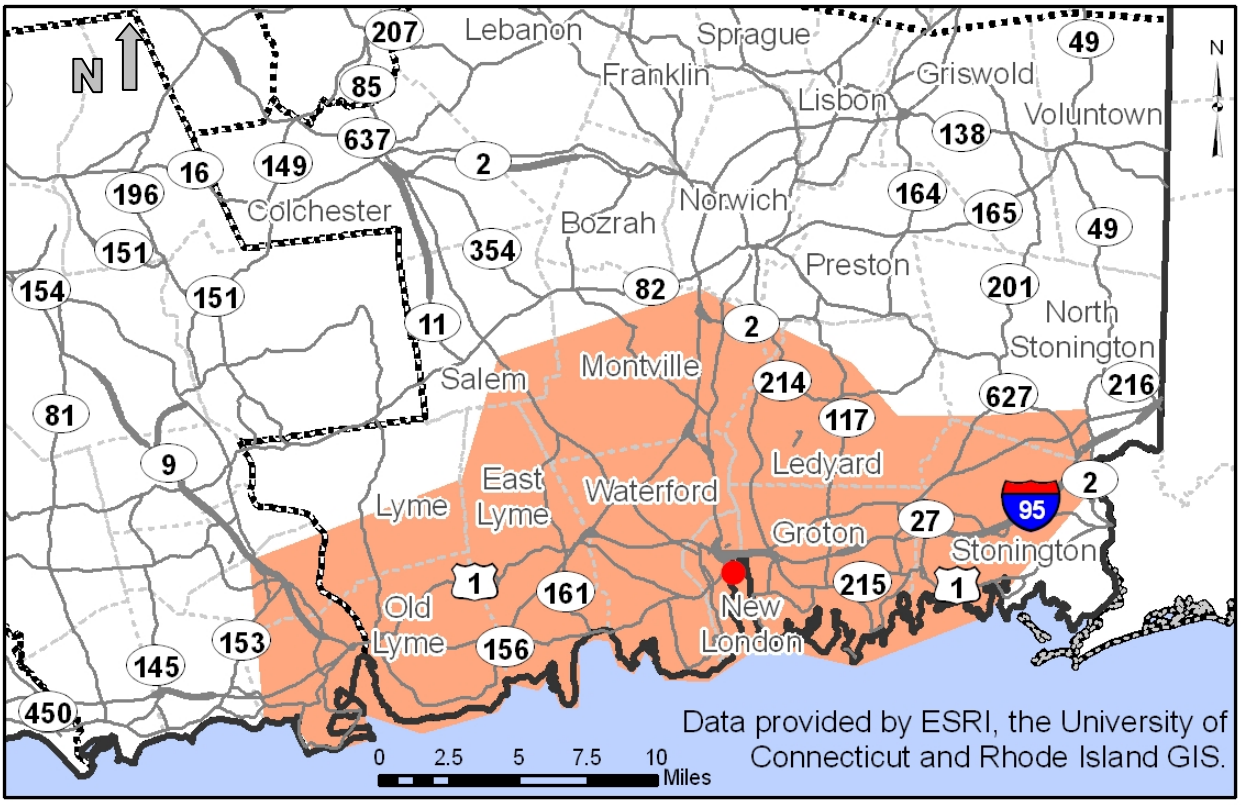


Table 4-36: Existing Subregional Household Retail Expenditures, 2008

Retail Industry	Total Retail Expenditures
Food & beverage stores	$302,364,501
Health & personal care stores	$78,355,138
Food services & drinking places	$277,203,776
Furniture, home furnishings & electronics	$111,132,787
Art galleries	$185,383,333
Clothing & shoes	$118,378,379
Sporting goods, hobby & music stores	$51,681,098
Misc. store retailers	$190,055,021
Total	$1,314,554,033

Source: BBPC , ESRI

(44 percent of total expenditures in 2001 were for casino gambling expenditures), downtown has the potential to capture a share of the remaining expenditures.

The fastest growing industry in southeastern Connecticut is currently tourism. [32] Over 30,000 people are employed in the tourism industry and that number is expected to grow. [33] A total of 25 percent ($351.6 million) of the total state tourism revenue ($1,405.0 million) in 2001 was generated in southeastern Connecticut; this is $168.7 million higher than the next highest tourism region (Greater Hartford).

Daytrip Market and Overnight Market[34]

The visitors to the southeastern Connecticut area, and therefore New London, are divided into two markets: the daytrip market and the overnight market. The daytrip market is typically comprised of travelers from a two-hour drive of the destination. An identifying characteristic of this market is the propensity of repeat trips to destinations. The daytrip market for New London County was extended slightly beyond the two hour radius due to the unique draw of the casino resorts for visitors from New York City and Long Island. The daytrip market is subdivided into three submarkets:

- Primary Daytrip Market – local area residents who reside in New London County
  - Average household income in 2005: $69,036
- Secondary Daytrip Market – residents who live beyond New London County, but within a 2-hour drive of New London
  - Average household income in 2005: $83,317 with 39% earning more and $75,000 annually
- Tertiary Daytrip Market – residents of New York City and Long Island
  - Average household income in 2005: $71,083 with 30% earning less than $25,000 annually

The total daytrip market includes 20.5 million people. The 2005 Southeastern Connecticut Council of Governments (SCCOG) Intermodal Connections Study Southeast projected the daytrip market to increase by 594,641 to a total of 21,062,070 annual daytrip visitors in 2008.

The overnight market is made up of people traveling to or through the region. The 2005 SCCOG study found the following information regarding overnight visitors:

- Travelers staying overnight in commercial establishment (hotels and motels) in the southeastern region are estimated at approximately 2.5 million annually
- Travelers staying at the homes of friends and relatives within the primary and secondary daytrip markets are estimated at approximately 5.8 million annually.
- Travelers passing through the Mystic region en route to:
  - Cape Cod: 1.1 million annually
  - Rhode Island: 1 million annually

The total overnight traveler market is estimated at roughly 11.4 million annually in 2005. The 2005 SCCOG study projected the overnight traveler market to increase to 12.4 million by 2008. As shown in Table 4-37, together, the daytrip and overnight markets were projected to bring 33,500,386 tourists to southeastern Connecticut in 2008.

[32] Southeastern Connecticut Enterprise Region, Industry cluster: Tourism, 2008
[33] ibid.
[34] Much of the information presented in this section is from the 2005 Southeastern Connecticut Council of Governments "Intermodal Connections Study Southeast".

Table 4-37: Southeastern Connecticut Tourists 2003-2008

SE Connecticut Tourists	2003	2008
Daytrip	20,467,429	21,062,070
Overnight	11,395,735	12,438,316
Total	31,865,167	33,500,386
Source: SCCOG 2005 Study		

Proving further evidence to the strength of tourism in southeastern Connecticut is that in 2001, overall state tourism expenditures were highest in the southeast[35]. The region generated $3.4 billion in travel and tourism expenditures; this amount represents 34 percent of the total statewide. Table 4-38 shows the expenditures by tourism district for the state of Connecticut.

Table 4-38: Total Tourism Expenditures by District (million 2001$)

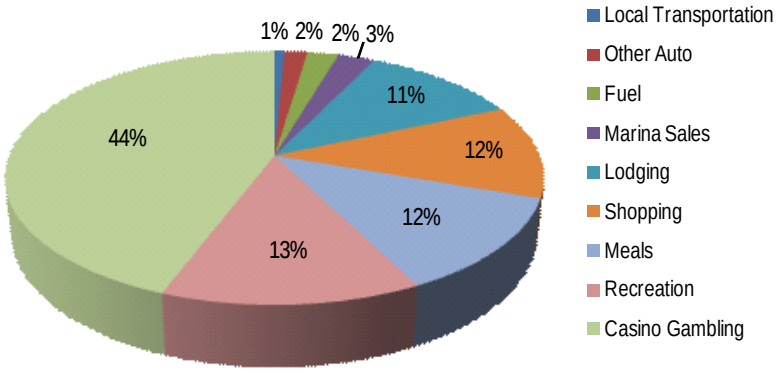
Tourism District	Total Expenditures
Central CT	$256.6
Coastal Fairfield	$743.8
CT River Valley	$1,307.9
Greater Hartford	$1,113.3
Greater New Haven	$1,337.9
Housatonic Valley	$164.3
Litchfield Hills	$334.4
North Central	$310.6
Northeast CT	$362.5
Southeastern CT	$3,398.0
Waterbury Region	$563.1
State Total	$9,892.4
Source: Connecticut Center for Economic Analysis, 2003	

A breakdown of the expenditure by category was completed in the 2005 SCCOG study. The largest percentage of expenditures in southeastern Connecticut went towards casino gambling expenditures. A total of 44 percent ($1.5 billion) of the total expenditures in southeastern Connecticut was allocated to casino gambling expenditures in 2001. Total tourism expenditures in southeastern Connecticut minus casino gambling expenditures in 2001 were $1.9 billion. The distribution of expenditures by category is shown in Figure 4-34.

[35] Connecticut Center for Economic Analysis, University of Connecticut "The 2001 Economic Impact of Connecticut's Travel and Tourism Industry", 2003

Figure 4-34: Southeastern Connecticut Travel & Tourism Expenditures by Category, 2001

(Source: Connecticut Center for Economic Analysis, Southeastern Connecticut Council of Governments)



Tourism Expenditures in SE Connecticut (2001)		
Expenditure Category	2001	Percent
Recreation	$450,300,000	13%
Meals	$413,300,000	12%
Shopping	$406,900,000	12%
Fuel	$75,200,000	2%
Other Auto	$56,000,000	2%
Local Transportation	$23,800,000	1%
Lodging	$379,300,000	11%
Casino Gambling	$1,503,300,000	44%
Marina Sales	$89,800,000	3%
Total	$3,397,900,000	100%

In order to understand the potential meals and shopping retail expenditures made by tourists in southeastern Connecticut during 2001 the total sales on meals and shopping must be adjusted for the impact of casino resorts. In the southeastern Connecticut area casino gambling expenditures represent 44 percent of tourist expenditures. In the state as a whole it represents 21 percent, but in the areas outside of southeastern Connecticut it is only 9.5 percent. In the southeastern Connecticut area, meals and shopping as a percent of total expenditures are both 12 percent; meals and shopping each represent $0.27 for each dollar spent on casino gambling.

Outside of southeastern Connecticut, $0.19 and $0.22 are spent for meals and shopping, respectively, for each dollar spent on casino gambling expenditures. Casino resorts are bringing more people into the area and they are spending proportionately more as whole on meals and shopping than tourists in other districts.

Based on the amount of casino gambling expenditures spent in southeastern Connecticut versus other districts, it is estimated that 78 percent of total tourist expenditures are associated with the casino resorts. Therefore, of the total $3.398 billion of expenditures, $747.5 million were the expenditures made in southeastern Connecticut excluding the casino resorts in 2001. However, of this amount, the amount spent on meals and shopping from the districts outside of southeastern Connecticut should be applied to the expenditures without the casino resorts. Therefore, 19 percent of the $747.5 million is spent on meals ($142 million) and 22 percent is spent on shopping ($165 million). The total tourist retail expenditures for the southeastern region in 2001 were $307 million. This is shown in Table 4-39.

However, to determine the 2008 total expenditures made by tourists in southeastern Connecticut on meals and shopping, the 2001 expenditures need to be increased to reflect the tourism growth in southeastern Connecticut. State revenues collected from slots in southeastern Connecticut increased by 23 percent during the 2001 to 2008 period. This reflects both inflation and real growth in tourism. In order to determine the growth in expenditures on meals and shopping, the 2001 expenditures were increase by 23 percent to reflect the 2008 total expenditures. Based on the adjustment it is estimated that tourists spent approximately $380 million on meals and shopping in 2008.

Table 4-39: Tourist Market Potential

Expenditure Category	Southeastern Connecticut Tourist Expenditures (in millions $2001)	
	Actual	Adjusted to Exclude the Casino Resorts
Total Expenditures	$3,397.90	$747.5
Meals	$413.3	$142
Shopping	$406.9	$165
Total Meals and Shopping	$820.2	$307

Source: Connecticut Center for Economic Analysis, BBPC

Downtown New London has an existing tourism base that can be built upon to capture a larger portion of tourist expenditures. For example, downtown New London has a strong presence in the provision of arts and culture for the region. The Garde Arts Center hosts performances that attract residents living within a 30 minute drive-time from the Center[36]. Performances at the Garde include Broadway series, ballets, musicians, and opera to name just a few. The 2008 season features 81 performances of 48 different events. Another example of downtown's strength in arts and culture is the Hygienic Gallery. The Hygienic Gallery is a long-standing (30 plus years) fine arts venue in downtown that features local, regional, national and international work. More than just a gallery, the Hygienic Arts Cooperative is a six-member Co-op that helps to operate the building and provide affordable residential studios for emerging artists.

New London has a strong presence, but other areas such as Norwich, Stonington, Waterford and Mystic have encouraged arts and tourism as well. Supporting the regional presence in arts and tourism will help to attract tourists from outside the southeastern Connecticut region and by increasing the popularity of the region. Top leisure attractions in New London and the surrounding area are:

- Mystic Aquarium & Institute for Exploration
- Lyman Allyn Museum of Art
- U.S. Coast Guard Museum
- Mystic Seaport
- U.S.S. Nautilus and Submarine Force Museum
- Monte Cristo Cottage (boyhood home of Eugene O'Neill)
- Fort Trumbull
- Garde Arts Center

Other Sources of Market Demand

Other sources of market demand include college students, tourists, public transportation users, the internet and business to business.

[36] Interview with Steve Segal, November 2008

Public Transportation Users

The public transportation market does not have a specific geographic area. However, the market users are defined as the ferry, train and bus passengers either arriving or leaving the RITC in downtown New London. As determined in the survey conducted as a part of this study, 94 percent ferry users, 67 percent of Greyhound bus users, and 69 percent of Amtrak users reported the purpose of their trip was for recreation. Table 4-40 shows the number of passengers by mode in 2008 (a total of 1.8 million).

Table 4-40: Public Transportation Market, 2008

Mode	Mode Description	# of Passengers
Rail	Amtrak (1/)	169,112
	Shoreline East (2/)	3,500
Bus (3/)	Greyhound (4/)	68,000
Maritime	Cross Sound Ferry (5/)	1,400,000
	Fishers Island (6/)	160,000
Total		1,800,612

1/ Amtrak passenger data is FY 2008
2/ Shoreline East is based on 14 riders/weekday
3/ SEAT Bus was not included in the tourists projections because over 50% used the bus to commute to work (New London Intermodal Survey, 2008)
4/ Chamber of Commerce of Eastern Connecticut, Inc. Meeting (9/6/06)
5/ 2008 interviews with Cross Sound Ferry
6/ Chamber of Commerce of Eastern Connecticut, Inc. Meeting (9/6/06)

The survey of RITC users that was conducted as a part of this study asked the passenger participants to indicate their likelihood of visiting downtown if improvements were made. The survey revealed that the public transportation passengers (who generally do not visit downtown businesses now) would be inclined to visit downtown New London if improvements were made (see Table 4-41). Such improvements may include pedestrian friendly linkages in to downtown from the RTIC, more restaurants and retail shops, enhancement of the cultural and entertainment venues and a more walkable streetscape.

Table 4-41: Selected Responses to Intermodal Passenger Survey

Public Transportation Type	Purpose of trip - % Recreation	Ranking of Places of Interest Near RITC (1/)	Visit Downtown New London businesses on this trip	Likelihood of Visiting Downtown if Improved	Most Important Element to Add to Make Downtown New London a Destination
Block Island Ferry	94%	3	82% said none	likely	cultural/entertainment
Greyhound Bus	67%	5	41% said restaurant	very likely	cultural/entertainment
Amtrak Train	69%	4	62% said none	likely	cultural/entertainment
SEAT (2/)	18%	4	-	-	-

1/ Nearby places of interest were ranked on a 1-5 scale; 1 was lowest and 5 was highest
2/ 50.6% of SEAT passengers were commuting to work

Source: New London Intermodal Passenger Survey, TranSystems/FHI, 2008

The results from the survey indicate that the downtown retailers can capture a larger percentage of the potential visitor retail expenditures if improvements are made to the downtown area, particularly in family and cultural/entertainment facilities. A successful branding campaign and public investments to create a more enticing transition between the RTIC and the downtown will also add to the capture of a larger percentage of public transportation passenger retail expenditures.

College Students

A total of three colleges are located in New London. The students at these colleges are a source of demand of retail for in the city. The potential for the downtown to increase its capture of students' retail expenditures is growing as the downtown increases the amount of student oriented stores such as, chic restaurants, clubs, coffee houses and shops. As of fall 2008, there were a total of 3,713 students attending classes in New London. Each college had the following student enrollment numbers:

- Connecticut College: 1,900 students
- Coast Guard Academy: 963 cadets
- Mitchell College: 850 full and part-time students.

College students are generally cost-conscious and therefore will not spend the same amount per capita as young adults or empty nesters living downtown. This is particularly true when applied to restaurants, as many of these students will eat meals on campus. However, visits by their parents, relatives and friends during the course of the academic year provide additional potential demand for downtown businesses.

Internet Sales and Business to Business

Technology has enabled many retailers to trade goods and services over the internet. A portion of the retail sales in downtown are inevitably captured by the internet market. Also, business to business sales capture an intrinsic percentage of the total downtown retail sales. For example, a downtown law firm might purchase copy paper from a downtown office supply shop or cater a business luncheon through a downtown restaurant.

Existing Downtown Retail Sales

In order to project future sales in downtown, the present (2008) amount of sales in the downtown must be determined. Separate methods were used to estimate 2008 retail sales in downtown New London. Sales per square foot data from the Urban Land Institute (ULI) for the community shopping centers in the northeast were examined. ESRI sales by North American Industry Classification System (NAICS) codes for the downtown were examined, and a "rule-of-thumb" total sale to lease levels of 10 to 1 was used. Field surveys, interviews, comparable community data, and BBPC's experience were utilized to estimate a most likely sales level by retail store type.

The retail business inventory database created by New London Main Street tallied up all the retail businesses in downtown by location and occupied square footage. BBPC distributed the retail businesses by retail industry type in order to determine how many businesses and how many square feet they occupy. In downtown New London, retail businesses occupied 245,860 square feet. The industry with the highest number of businesses is food services and drinking places (28), and it is also the industry which occupies the highest total square footage (60,188 square feet). Table 4-42 shows the number of establishments and square footage by industry type.

In 2008, an estimated $22.7 million of retail sales were made in downtown. The total square footage of each retail industry is divided into the estimate of sales per industry type for 2008 to determine the sales per square foot and provided a "test of reasonableness" for the sales estimates based on BBPC's understanding of downtown New London. Full-service restaurants have the highest total sales for 2008 ($8.4 million). The industry with the highest estimated sales per square foot is food services and drinking places ($139/SF) followed by food and beverage stores ($123/SF). The industry with the lowest estimated

sales per square foot is miscellaneous retailers ($46/SF) and furniture and home furnishings ($81/SF). The average sales per square foot for retailers in all industry sectors in downtown New London is $92/SF. Table 4-42 shows the total square footage, sales and sales per square foot for each retail industry sector.

Table 4-42: Downtown Retail Establishments, Occupied Space, Sales & Sales Per Square Foot by Industry Group, 2008

Industry Group	# of Establishments	Downtown SF	Downtown Supply (sales)	Sales Per SF
Food & beverage stores	4	8,090	$998,884	$123
Health & personal care stores	10	18,569	$1,856,900	$100
Food services & drinking places	28	60,188	$8,390,561	$139
Furniture, home furnishings & electronics	6	38,493	$3,118,417	$81
Art galleries	12	30,191	$3,019,100	$100
Clothing and shoes	9	22,493	$1,885,012	$84
Sporting goods, hobby, and music stores	8	22,364	$2,301,060	$106
Misc. store retailers (1/)	12	45,472	$2,092,772	$46
Total/Average	89	245,860	$22,701,048	$92

1/ Misc. store retailers include florists, office supplies, and used merchandise

Source: BBPC, Main Street New London, ESRI Business Solutions

Existing Sales and Capture Rates by Market Source

Each market source has a 2008 total expenditure amount of which downtown captures a portion. Understanding 2008 total retail expenditures enables the projection of 2018 household expenditures based on an estimate capture of expenditure growth. This section provides the existing total retail expenditures by market source and the capture of total expenditures used for purchases in the downtown which will later be used to development projection scenarios for 2018 expenditures in the downtown.

In order to determine the distribution of existing downtown retail sales by market source, each source (downtown residents, downtown employees, subregional households, tourists, and others) was assigned a percentage of total 2008 sales. Percentages of total sales were determined through interviews with local business owners, stakeholders, the consultant team's market knowledge of downtown New London and national retail expenditure trends.

As shown in Table 4-43, subregional households (50 percent), downtown households (16 percent) and downtown employees (14 percent) make up the largest percentage of total retail sales in downtown New London; together they make up 80 percent of total sales. Tourist expenditures make up 8 percent of total retail sales and "other" makes up 12 percent.

Downtown expenditures by each market source are a percentage of the market source's total retail expenditures. By dividing the downtown expenditures into the total expenditures, downtown's 2008 capture of total retail expenditures is determined. This capture rate is important because its fluctuation causes increases or decreases in downtown sales.

In 2008, downtown retailers captured 50 percent of the subregional household expenditures, 17 percent of downtown household expenditures, 14 percent of downtown employee retail expenditures, 8 percent of tourists retail (meals and shopping) expenditures, and 12 of "other" retail expenditures. This is shown in Table 4-43.

The bottom row of Table 4-43 shows the total retail expenditures made by each market source and the percent of the total expenditures captured by downtown. As the table shows, the downtown captures the largest percent of downtown employee expenditures (68 percent), but downtown employees do not constitute the largest percentage of total downtown sales. The largest percentage of downtown sales is generated by subregional households ($11 million). However, of the total retail expenditures made by subregional households, downtown only captures 0.87 percent. A similar situation is present for tourist expenditures. Downtown only captures 0.58 percent of their total expenditures ($307 million).

Key Findings

The following summarizes the key findings for the residential, office and retail markets in downtown New London.

There are currently 442 residential units in downtown New London, 5 percent of which are vacant. An additional 58 units are planned, proposed or under construction in the downtown. Since 2003, there has been a relative surge in residential population in downtown New London. Demand for downtown housing is derived from both existing and future county households, spin-off demand from new office workers, as well as households relocating into the county to take advantage of transit and downtown amenities. Target households for new residences downtown include empty-nesters and young professionals.

There is a total of 426,109 square feet of office space in the downtown contained in approximately 50 buildings. Of the total office space, 21 percent is vacant. Approximately 80% of this vacant space is contained in 3 buildings. Downtown, the city and the county are all characterized by older office space. The largest users of downtown office space are "office services" businesses; examples of which include legal firms, social service agencies, and architectural/engineering firms. Demand for downtown office space is derived from the region's strength in bioscience and healthcare, technology, defense and maritime industries. New companies are attracted downtown in order to serve existing businesses; create local satellite offices for existing businesses located elsewhere; and establish new locally-based start-up firms.

There are 156 retail entities downtown, of which 89 are occupied by retail businesses. These 156 retail entities occupy a total of 387,610 square feet, of which 37% is vacant. The major constraints for retailers considering locating downtown are a perceived lack of parking, aging/odd-shaped buildings, low pedestrian and vehicular traffic, and competition from suburban malls. Demand for downtown retail is derived from the following sources: downtown residents and employees, residents of the subregion, and tourists, as well as "other". The retail sales downtown in 2008 totaled $22.7 million. The largest generator of downtown sales was the subregional households ($11 million), followed by downtown households ($3.6 million), downtown employees ($3.1 million), "other" ($2.6 million) and tourists ($1.8 million). Of the total expenditures by each market source, the downtown office workers spent the largest percentage of their total expenditures in downtown (68 percent), followed by downtown households (17 percent), subregional households (0.87 percent) and tourists (0.58 percent).

Table 4-43: Downtown Retail Sales Volume by Source, 2008

	Total Sales Downtown	Downtown Households		Downtown Employees		Subregional Households		Tourists		Other	
Retail Industry	-	%	Sales	%	Sales	%	Sales	%	Sales	%	Sales
Food & beverage stores	$998,884	10%	$99,888	35%	$349,609	45%	$449,498	5%	$49,944	5%	$49,944
Health & personal care stores	$895,242	20%	$179,048	30%	$268,573	32%	$286,477	4%	$35,810	14%	$125,334
Food services & drinking places	$8,390,561	15%	$1,258,584	10%	$839,056	55%	$4,614,809	10%	$839,056	10%	$839,056
Furniture, home furnishings & electronics	$3,118,417	6%	$187,105	15%	$467,763	60%	$1,871,050	5%	$155,921	14%	$436,578
Art galleries	$3,019,100	15%	$452,865	11%	$332,101	50%	$1,509,550	12%	$362,292	12%	$362,292
Clothing & shoes	$1,885,012	10%	$188,501	11%	$207,351	59%	$1,112,157	8%	$150,801	12%	$226,201
Sporting goods, hobby & music stores	$2,301,060	20%	$460,212	14%	$322,148	45%	$1,035,477	5%	$115,053	16%	$368,170
Misc. store retailers	$2,092,772	40%	$837,109	16%	$334,844	26%	$544,121	5%	$104,639	13%	$272,060
Total Downtown Sales by Source	$22,701,048	16%	$3,663,313	14%	$3,121,445	50%	$11,423,139	8%	$1,813,515	12%	$2,679,636
% Caputred in Downtown & Total Retail Expenditures:		17%	$21,681,328	68.43%	$4,561,709	0.87%	$1,314,554,033	0.58%	$307,000,000		-

Source: BBPC, ESRI, Main Street New London

4.4 Development Assumptions

In order to project future demand for downtown space, the market conditions must be synthesized with the strengths, constraints and opportunities. This combination enables the formulation of a continuum of assumptions about the downtown capture of future growth.

4.4.1. Development Strengths, Constraints and Opportunities

Interviews with stakeholders, research and site visits helped to build a qualitative case for new development opportunities in downtown New London. This section highlights the strengths, constraints and opportunities in downtown identified through the interviews, visits and research. These strengths, constraints and opportunities are then combined with quantitative regional growth projections to construct the scenarios for new supportable development in the following section.

Strengths, Constraints and Opportunities

Downtown New London has a growing character that sets it apart from the surrounding communities. Business owners, residents, shoppers and diners will be attracted to the new "sense of place" in downtown. Historic buildings, mixed-uses, water views, and an amenity-rich central business district which includes a variety of restaurants, retail shops, and residences make New London's downtown an attractive place to live, work and play. The proximity to the train station, bus terminal and ferry docks also puts New London at an advantage for attracting office tenants downtown. "Increasingly, people (employees and employers) want to drive less and seek subway, commuter rail or light rail alternatives. Developers can't miss securing project sites near rail stops and train stations".[37] Due to these appealing characteristics, New London may be able to capture an even greater percentage of the regional office growth in key industries. However, currently the commuter rail service offered by Shore Line East in New London is very limited and there is no subway or light rail service; Shore Line East is expected to be expanded to have all existing trains serve New London in 2010 and eventually will allow for bi-directional commuting, that is, into New London as well as out of New London.

Also, as residential, retail and office growth occurs in the downtown it becomes more of an activity center that feeds itself. Start-up business owners are attracted to the older, cheaper spaces and established businesses looking to expand find newly renovated Class A space in downtown. Vibrant retail and restaurant businesses are attracted to downtown because of new employees, tourists and downtown residents. Employees find that living near their downtown workplaces is a viable option because a range of residential units are available.

Despite the above advantages, demand for office space in downtown New London continues to remain modest and demand for retail space continues to remain low. While the office vacancy rate in downtown hovers around 11 percent, absorption of existing vacant space is extremely slow, and in some cases, some vacant space takes years to be occupied. The same is true for retail space; the 2008 vacancy rate was 37 percent. Commercial real estate property professionals listing property in downtown report the ongoing difficulty in attracting new tenants. They cite the following reasons for difficulties in attracting tenants: older, outdated spaces which are not competitive in the regional markets, rehabilitation of older structures is

[37] Urban Land Institute, Emerging Trends in Real Estate, 2009

costly and time consuming, downtown parking is difficult, and there is a perceived negative image of New London.

The following tables summarize key conclusions regarding the strengths, constraints, and opportunities related to the potential for newly occupied space in the downtown area of New London. Tables 4-44, 4-45, and 4-46 show the strengths, constraints and opportunities for each market segment in tabular form.

4.4.2. Key Market Determinants

Residential

Target users for new residential units are empty-nesters looking for higher amenity units and young professionals seeking proximity to urban amenities and lower rents in urban areas. The plethora of historic buildings in downtown makes New London an attractive place for both target user groups to live. As retail and entertainment businesses continue to expand, residential units will have higher demand and make projects more feasible from a private development perspective.

Future residents will be attracted to downtown New London because of its proximity to the RITC. New London's unique location and public transportation connection to larger metropolitan areas such as Boston and New York City make it an ideal place to live for households wishing to visit these places on the weekend or for a special occasion or event. Implementing strategies aimed at improving the connections to the RITC from the downtown, providing a range of housing choices and enhancing the retail downtown will increase downtown's capture of new residents.

New units can be integrated in mixed-use developments to take advantage of the potential synergies between housing, employment and retail uses. Such co-location of uses will afford residents the opportunity to walk rather than drive to work and retail venues.

As was revealed in a recent article in The Day newspaper, over the last five years demand for downtown residential units has grown substantially.[38]The article states that, "the past five years alone have produced about 200 new housing units." Owners of downtown residential units have reported full occupancies and in some cases waiting lists for the new apartments which are reported to net at or above $1,000 per month.

On the national trend line, mixed use and infill projects in metropolitan areas are gaining in popularity. The Urban Land Institute's "Emerging Trends in Real Estate" for 2009 says that people crave greater convenience in their lives as energy prices and road congestion accelerates. "They want to live closer to work and shopping without the hassle of car dependence".[39]

[38] Kevin Dale, The Day, "…And the Rentals Downtown Don't Stay Vacant Long", Published 9/22/08
[39] Urban Land Institute and Price Waterhouse Coopers, October 2008. *Emerging Trends in Real Estate 2009*

Table 4-44: Key Conclusions Regarding Downtown New London

Residential Market		
Strengths	Constraints	Opportunities
• City offers historic appeal and has strong niche in cultural and arts establishments • Existing trend towards downtown living in New London in both supply and demand • Projected household growth in New London County can contribute to modest growth in downtown • Proximity to public transportation as people seek for housing with access to rail, bus and ferry • New London's location in the Northeast Corridor provides access to larger metropolitan areas	• Perception that area is unsafe/poor market image • Desirable residential developments in other parts of New London County are major source of competition • Older buildings represent obstacles for affordable and timely renovations • Lack of existing retail and amenities and strong linkages to the RITC to support residents	• Growing nightlife and restaurants in downtown • Establish weekly farmers market and community garden • Enhance pedestrian safety/environment around the RITC • Provide housing to meet a range of incomes • New office growth can stimulate spin-off demand for housing • Expand Shoreline East service • Marketing of RITC and regional access as key selling point to new households

Source: BBPC, 2008

Table 4-45: Key Conclusions Regarding Downtown New London

Office Market		
Strengths	Constraints	Opportunities
• Growing young professional population downtown • Emerging amenity rich mixed-use downtown environment • Projected growth in key office based industries: service firms- including finance, professional/technical services and law firms, information technology based businesses, and healthcare and pharmaceutical companies • Funds available for historic preservation as part of building renovations • Public sector – including city and state- are supportive of transit oriented office development • Unique player in regional office market due to access to regional/intercity transportation modes	• Development policies are perceived as cumbersome • Older buildings are difficult and expensive to renovate • Current market conditions are not strong enough to support speculative development (build to suit opportunities are best) • High vacancy rates • Lack of existing retail and residential to serve office employees • Competitive Class A office space available in the City of New London	• More efficient permitting process "one-stop shop" • Increasing the availability of new shops and restaurants to downtown workers • Marketing campaign to attract office users • Live where you work incentives for downtown employees • Providing affordable office spaces for start-up companies • Encourage office development adjacent to Union Station to take advantage of high speed access to larger cities

Source: BBPC, 2008

Table 4-46: Key Conclusions Regarding Downtown New London

Retail Market		
Strengths	Constraints	Opportunities
• Projected tourism growth in New London County can contribute to modest tourism growth in downtown • Offers historic appeal and has strong niche in cultural and arts establishments • Existing trend towards downtown living in New London to support retail establishments • Downtown office and residential growth can stimulate spin-off demand for retail • Proximity to public transportation for tourists and travelers arriving in New London • 1.8 million passengers going through New London downtown per year	• Perception that area is unsafe/poor market image • Desirable retail developments in other parts of New London County are major source of competition (suburban malls and other tourist destinations such as Mystic) • Older building represent obstacles for retail shop layouts (length to width ratio of rentable space) • Lack of existing residential to support retail • Retail space vacancy rates are high • Downtown improvement tax for businesses • Existing low traffic counts is a deterrent to chain retailers • Tourists are currently bypassing New London to a large extent and going to Mystic, the casino resorts and other New England destinations	• New residential growth to attract retail • Growing nightlife and restaurants in downtown • Marketing of train station and regional access to employment as key selling point to new households • Enhance the unique niche created by existing specialty stores and ethic restaurants • Enhance pedestrian safety around train station • Expand Shoreline East service • Downtown grocery store to attract residents • Create an incentive program for downtown retailers • General marketing of downtown to tourists and public transportation users – branding and streetscaping

Source: BBPC, 2008

Office

The key determinant for office demand in New London is growth in key industries. These industries are bioscience and healthcare, technology, defense, and maritime. Creating a downtown environment which fosters the growth of start-up companies in these industries in New London will create demand for low rent office suites. Additionally, attracting satellite offices of established companies in the downtown will create a demand for higher rent office suites. The corridor between the RITC and the New London campus of Pfizer is a key growth area for office uses. Putting new office development around the RITC is the first step, and then encouraging new office growth along the corridor is the long-term vision.

However, New London will only be able to capture these new employees if it is able to create an environment attractive to new or expanding firms. Key building and environmental features demanded by industries likely to be attracted to a city like New London include flexible space, green buildings, mixed-use environments, access to regional networks, proximity to retail goods and services, and residential offerings.

To ensure that downtown New London can capture the employment growth projected for the county, strategies related to business cultivation and recruitment should be undertaken. These strategies are meant to increase the number of businesses and employees entering or expanding in the downtown New London market.

Retail

The downtown is recognized for a collection of small retail shops and arts and entertainment venues. New London has the momentum to continue this trend and develop as a niche destination for ethnic restaurants, art galleries and eclectic shops. Several stakeholders indicated that New London has the potential to become more of a regional destination for cultural and entertainment events. Annual events such as Sailfest, Fish Tales, Tugs and Sails, and Celts and Currachs are already popular events. Festivals such as these should increase in frequency to bring more day-trip and overnight visitors to New London. Increasing the frequency of these events will have the intrinsic benefit of branding the city as a regional destination for cultural events and vibrant nightlife.

The surveys that were completed as a part of this study, interviews with stakeholders, and newspaper articles found that more food options and expanded retail goods and services are what the public sees as the most needed enhancement to downtown. Specifically, the types of retail goods and services they would like to see enhanced (more of, new, or improved) in downtown New London include specialty gift stores, dance clubs/bars, antique stores, activities for 16+ crowd and young adults, farmer's market and a grocery store. In addition, they were interested in enhanced eating and drinking places such as more ethnic restaurants, and cafés with outdoor seating.

As revealed in the earlier section, the southeastern Connecticut tourist market has the potential to increase their amount of retail expenditures in New London. By implementing strategies targeted to attract more tourists into the downtown, more visitors will come into the downtown. For example, constructing a welcome center in the RTIC will educate visitors of the history, unique shops and cultural activities in the downtown.

Existing and future retailers throughout downtown New London will benefit from strategies aimed at expanding demand. These strategies are meant to increase the:

- Number of retail customers: residents, employees, public transportation passengers and tourists

- Frequency of retail patronage such that each customer makes more retail trips, and
- Length of stay for tourists and public transportation passengers such that visitors stay longer and spend more

4.4.3. Implementation Strategies

In order to develop quantitative projections for new supportable demand in downtown New London, development scenario assumptions for the low, mid and high scenarios must be made. The low scenario represents low investment needed to maintain downtown's existing capture of new residential growth, office based businesses, and retail sales. The mid scenario invests more than the low scenario in an increased effort to capture a larger share of the regional growth in residences, office based businesses and retail sales. The high scenario optimizes the capture rate and increases the level of investment to attract more residents, office based businesses and retail sales from outside the county and southeastern Connecticut region.

The overall strategy for downtown New London is to create a place for people to live, work and play. The downtown needs to appeal on multiple levels. First, the strongest driver for new growth is the demand for residential units. A variety of residential units should be pursued so as to be available for households of all income levels. Secondly, New London must attract spin-off businesses from the key office industries (bioscience, healthcare, technology, defense, and maritime) to the downtown. Office spaces should be directed to areas near the train station and along the corridor that connects the downtown to the Fort Trumbull commercial area (Eugene O'Neill Drive and Bank Street). Finally, as new residential units come in and office spaces are constructed and rented, retail growth will follow the demand created by these uses. At the same time, the largest untapped market for retail are the tourists who come to southeastern Connecticut, and in order to capture a larger share, downtown must grow into a larger destination for tourists. New retailers and restaurateurs, entertainment events and art venues, as well as an inviting streetscape, will attract tourists into the downtown.

Over the near term (1-3 years), the most important activity to undertake is a marketing program to emphasize the "live, work, play" aspects of downtown New London. Development activity will be slower over the near term as the national market begins to turn around. Placing a greater emphasis on cultural events, to attract people who otherwise would not come into New London, will help to expose the unique aspects of the downtown. Implementing a branding campaign to reach out to tourists will capture a larger share of the visitors traveling to southeastern Connecticut. By locating a visitor center in the RITC, tourists who come into New London will see that the downtown has unique retail shops and restaurants, entertainment activities and places to live and work. Exposing New London to tourists will expose it to potential residents and office and retail tenants.

Also a priority in the near term is infrastructure enhancements. Leveraging federal and state dollars or using other methods to fund improvements to the streetscape and pedestrian safety will make downtown New London more attractive for private sector investment. Specifically, infrastructure improvements are needed near the RITC and along Eugene O'Neill Drive as people enter New London by vehicle. The current Parade Project is a positive first step in opening up the downtown to the public transportation passengers. If Union Station is purchased or put under a long term lease to the City, federal money is available for historic renovations and enhancements to the station.

4.4.4. Development Scenario Assumptions

Tables 4-47 through 4-50 provide specific implementation strategies that are associated with a series of assumptions. These strategies are meant to enhance existing efforts, build upon the strengths, correct the constraints, and harness the opportunities in downtown New London. Table 4-47 discusses strategies for improving marketing, promotions and quality of life. Table 4-48 discusses strategies for enhancing the design, infrastructure and environment in the downtown. Table 4-49 presents strategies for enhancing land use, zoning, building and infrastructure, and Table 4-50 discusses strategies for enhancing transportation and organization.

4.5 Development Projections

In order to calculate the new supportable space for downtown New London for all market segments (residential, office, and retail), the development assumptions for the low, mid and high scenarios are applied to downtown's capture of future growth.

4.5.1. Residential Potential Market Capture 2008-2018

Based on the downtown's number of residential units in the pipeline and under construction (60 units under construction), approximately 1 percent of the county residential growth (5,826 units) will be captured in the downtown from 2008-2018. Further, the spin-off demand provided by new office buildings could support new units of housing in the downtown area and new units will be demanded by growth occurring from new households from outside the New London region. New office workers in the downtown used in the residential development projections are from the findings in the office development projections in this report.

ESRI's projections for the county do not take into account the influence of the most recent (July-December 2008) changes in the national economy. As a result, the consultant team adjusted downtown's capture of new growth to reflect recent changes in the national economy. Bringing national and local trends into projections helps to provide a more accurate portrayal of future conditions. To incorporate these trends into the projections for the downtown, a range of supportable residential units is provided. Projections for low, mid and high downtown household growth scenarios are shown below in Table 4-51.

- Low scenario: captures 1 percent of the county household growth plus 20 percent of the low scenario projection of new office workers and adds 10 percent to the total to account for growth resulting from relocations into downtown from outside the region
- Mid scenario: captures 2 percent of the county household growth plus 25 percent of the mid scenario projection of new office workers and adds 20 percent to the total to account for growth resulting from relocations into downtown from outside the region
- High scenario: captures 3 percent of the county household growth plus 30 percent of the high scenario projection of new office workers and adds 30 percent to the total to account for growth resulting from relocations into downtown from outside the region

Table 4-47: Strategies for Assumed Development Scenarios, Marketing Promotions and Quality of Life

Table 4.4: Strategies for Assumed Development Scenarios, Marketing Promotions and Quality of Life				
Strategy	Low	Mid	High	Further Explanation
Coordinated Marketing	Market downtown retailers on ferries and other forms of public transportation	Expand joint marketing of downtown as cohesive destination. Encourage retailers with similar goods to jointly advertise	Further broaden marketing effort to attract residents and businesses to downtown from outside the region	Continuing efforts to brand downtown New London as a unique place to live, work and play is instrumental for attracting visitors from within and outside the region.
Support Special Events & Tourism Efforts	Continue to support existing special events in downtown	Expand special events to occur throughout the year and on weekends. Encourage retailers to partner with other retailers, restaurants, and hoteliers to offer weekend and holiday specials	Further target day-trip and over-night tourists from outside the region to special events	Quality of life plays an important role in business recruitment, retention, and expansion in New London, as highlighted by numerous stakeholders. Efforts that expose regional visitors to New London's assets and amenities should be encouraged because they can plant seeds for future relocations of businesses and skilled employees. Special events like Fish Tales, Tugs and Sails, Sailfest and Celebration of Lights and Song by the Sea are important influences on business development, and should be encouraged to expand.
Live, Work, Play	Promote New London as a unique place to live, work, and play to existing downtown residents and office employees	Expand the effort to promote New London as a unique place to live, work, and play to regional residents, tourists and office workers	Further expand the promotion New London as a unique place to live, work, and play to downtown and regional residents and employees, tourists from within and outside the region, public transportation users, and college students in New London	New London has a strong historical and cultural base on which to build the concept of live, work and play. This concept is a mutually reinforcing strategy to attract residents, office based businesses, tourists, college students and public transportation users to downtown New London. Successfully attracting these groups will create a unique "sense of place" in downtown that will be unmatched by surrounding communities.

Source: BBPC, 2008

Table 4-48: Strategies for Assumed Development Scenarios, Design, Infrastructure and Environment

Strategy	Low	Mid	High	Further Explanation
Retailer Workshops	Help current and future retailers to improve their window displays	Expand the help to current and future retailers; coordinate with other retailers to offer weekend specials and improve their window displays	Further expand the help to current and future retailers to organize special weekends and holiday sales, improve coordination between retailers and improve their window displays	Many of the retailers in downtown are locally and independently owned. Retailer workshops can help to improve the viability of independent retailers by increasing their aesthetic appeal to shoppers, enhancing coordination of special holiday/event sales, and survive ebb of seasonal visitors
Way finding/Streetscaping Enhancement	Install signage	Install signage, improve walkability and enhance gateway features	Further enhance signage, pedestrian walkability, bikeability and redevelopment gateways into downtown	Improving navigation to and within downtown, particularly to parking resources will enhance the flow of traffic; improving walkability and bikeability between downtown streets and providing spaces for outdoor café tables will enhance the appeal of downtown shopping and create a "sense of place". Providing bikeracks and bikeways will encourage a more environmentally susutainable way of transportation. Gateway enhancements will draw in visitors to the downtown.
Grant and Loan Programs	Continue grant and loan programs for businesses and building owners	Increase the loan amounts for building rehabilitations	Further increase program funding for new businesses, facades, and rehabilitations to help businesses and building owners renovate along streets for a cohesive look	Grant and loan improvement programs have and will continue to enhance the aesthetic appearance of the architectural environment and create a destination for regional shoppers and diners.
Visitor's Center	Set up a visitor's information kiosk in the RITC	Locate a Welcome Center	Locate a Welcome Center with a mini-museum, audio/visual center and gift shop	A visitor's center will educate passengers arriving by public transportation and visitors arriving by car about the amenities in the downtown such as special events, restaurants and cultural activities.
Community Gardens	Provide workshops on growing container gardens	Provide tools and seeds to grow gardens to downtown residents	Provide a public space for a community garden	Providing green spaces for unit owners and renters will instill a sense of community and beautify the downtown area.
Continue to Retain/Recruit Retailers	Retain existing retailers	Expand programs to recruit neighborhood serving retail	Further expand programs to recruit neighborhood serving retail and independent, unique specialty retailers	To enhance downtown's attraction as a special destination, encourage retailers to target multiple customer segments (e.g. public transportation passengers and college students in addition to residents) to expand customer base.

Source: BBPC, 2008

Table 4-49: Strategies for Assumed Development Scenarios, Land Use, Zoning, Buildings and Infrastructure

Strategy	Low	Mid	High	Further Explanation
Market Downtown New London as Professional Employment Hub for Bioscience/Technology, Maritime and Defense Industries	Retain existing businesses	Expand strategies to retain existing businesses and target key industries: professional, scientific and technical services	Further expand strategies to retain existing businesses, target key industries and increase the advertising to include areas within and outside the region	Encourage downtown stakeholders, including the City Center District and the New London Development Corporation to continue marketing downtown New London as a hub for professional employment. Use newsletters, websites, press releases and other media outlets to draw attention to downtown's proximity to Pfizer, maritime businesses, and defense businesses. Convey the historic character, unique flavor, and inspiring spaces for working and living that are present in downtown New London.
Predictable/Transparent Development Review	Maintain a streamlined review system for developers and business owners	Enact flexible zoning provisions to facilitate transit oriented development	Examine surrounding communities' development review process and revise New London's development review to boost the competitive advantage of New London	Establishing and maintaining a streamlined, easy-to-navigate, and expedient review system can help boost the City's competitive edge against competing jurisdictions and encourage business owners as well as developers to choose the City of New London. Streamlined review can include pre-application conferences, permit coordinating processes, expedited permits for higher-intensity development, and clear standards for development. Further, increasing the user-friendliness of the City's permitting fee system can be accomplished through the introduction of online calculators to allow developers the chance to identify ballpark fee estimated in a simple, one-stop-source.
Market Product Preference to Developers	Continue to work with real estate industry professionals to identify the needs of potential tenants	Expand strategies to work with real estate industry professionals to identify the needs of potential tenants and actively target specific tenants	Expand to incorporate specialized space features into new and vacant space and set up targeted marketing programs to potential tenants	Encourage developers to add specialized space features to the New London inventory in demand by target tenants and reach these tenants through marketing materials (e.g. brochures, websites, etc.). Focus on harder to find research and development space, lab space, and green building features.
Green Building Incentives	Encourage green building by educating developers on the benefits of green buildings	Encourage green building by reducing building permit fees and provide assistance in obtaining LEED certification	Further encourage environmentally sustainable designs in all aspects of redevelopment from the construction materials used in sidewalks to the emissions level requirement of buildings	Encourage developers to build and rehabilitate green, which is attractive to business firms for a variety of reasons, including enhancement of corporate identity, economic savings, healthy workplace, and environmental responsibility. Features may include: accessibility to alternative modes of transportation; green roofs; passive heating and cooling; pervious materials for parking lots; efficient water systems; enhanced indoor environmental quality; non-toxic and sustainable materials; and reuse of materials (including historic properties).
Cluster Like Retail Businesses	Educate retailers on the benefits of clustering	Encourage like retailers to locate near each other to benefit from an agglomeration economy	Create a "restaurant row" that can be marketed as a place with a variety of dining choices for tourists and regional residents	New London has an existing mix of ethnic restaurants. Attracting more restaurants of these types will create a regional destination. Retailers will benefit from locating near each other; customers from one shop will "spill-over" into neighboring retail shops.

Source: BBPC, 2008

Table 4-50: Strategies for Assumed Development Scenarios, Location, Transportation and Organization

Table 4.7: Strategies for Assumed Development Scenarios, Location, Transportation and Organization

Strategy	Low	Mid	High	Further Explanation
Parking Demand Management	Install signage to parking facilities	Market public transportation options to downtown residents which includes a downtown circulator	Expand public transportation methods by implementing joint use parking for public transportation users and downtown business patrons, mixed-use developments and bolstering public transportation choices	Stakeholders suggested that parking is a constraint to commercial growth. Methods to reduce vehicular demand can include reductions in demand through design, such as mixed-use development that allows walking from work, shop and home rather than auto trips. Bolstering public transportation service and usage through activities such as promoting Amtrak and Shore Line East train service is another key strategy to lessen vehicular congestion. Signage to parking garages also helps to reduce confusion.
Enhance the Capabilities of Downtown Improvement Groups	Continue to support the efforts of downtown improvement groups	Provide additional funding for beautification/marketing efforts	Match funds received from taxes levied against downtown districts and create a land development corporation	Community groups are the stewards of downtown's image. Groups include but are not limited to the City Center District, New London Main Street and Downtown New London Association. Historically, these groups have been a reliable means of supporting downtown events and funding downtown improvement efforts.
Coordination with Regional Tourism Groups	Continue efforts to coordinate with regional tourism groups	Open a continuous channel of communication with tourism groups to inform and be informed of special events occurring in New London as well as in other parts of the region	Send representatives from New London to other regional events to advertise New London as a special place to visit	Groups include but are not limited to Mystic Coast and Country Travel Industry Association and the Eastern Connecticut Tourism District. These groups have done an excellent job of marketing the region and enhancing the coordination with these groups will build New London's reputation as a special place to live, work and play.

Source: BBPC, 2008

Table 4-51: Downtown Residential Demand Projections- 10 Year Term (2008-2018)

	Low		Mid		High	
Residential Units	58	62%	117	55%	175	46%
Downtown Worker Generated Residential Demand	26	28%	52	25%	92	24%
Relocations from Outside the Region	9	10%	42	20%	80	30%
Total	93	100%	211	100%	347	100%

Source: BBPC, 2008

4.5.2. Office Potential Market Capture 2008-2018

Job growth projections in the downtown use subregional (county) job growth as a base. Office-based employment in the county, as projected by the consultant team and the Connecticut Department of Labor, is projected to grow by almost 13 percent over the ten year period (2008-2018). Downtown will capture a portion of this growth.

The analysis of projected office demand in downtown uses employment growth to project future demand. This analysis includes low, mid, and high scenarios based in the assumptions provided in the earlier section for employment growth in downtown New London.

- Low scenario: This scenario holds the current percent of county jobs in downtown at the 2008 rate by industry.
- Mid scenario: This scenario holds the capture rate the same for all industries except for professional, scientific and technical services (which has been identified as target employment growth industry in downtown New London) and real estate, rental and leasing (which will grow with the new businesses and residents attracted by the emerging culture class and sense of place).
- High scenario: This scenario increases all capture rates of new county growth and adds 25 percent to the new employee number to represent growth in business establishments relocating from outside of the county to the downtown.

Based on this methodology, downtown is projected to capture 5 to 12 percent of the county's growth in jobs by 2018, as shown below in Table 4-52. Between 130 and 306 new jobs are projected for downtown New London, and these jobs will occupy a combination of existing and newly developed office space.

In 2008, the average office-based employee in New London County occupied 326 square feet[40] In downtown the average office-based employee occupied 311 square feet, as shown in Table 4-53 below. Using the same average square foot per employee for the 2018 job projection (a net new 130-306 jobs in the downtown from 2008-2018) will therefore result in demand for approximately 40,430 to 95,166 additional occupied square feet of office space by 2018.

[40] Average office-based employee is calculated by dividing the number of employees in 2008 by the total occupied square feet for 2008. New London County had 5,068,415 square feet of occupied office space and 15,537 employees in 2008.

Table 4-52: Employment Growth by Industry Sector New London County and Downtown New London, 2018

Industry Type	2018 New County Jobs	Low		Mid		High	
		Downtown Capture	Net New Downtown Jobs	Downtown Capture	Net New Downtown Jobs	Downtown Capture	Net New Downtown Jobs
Information	56	23%	13	23%	13	25%	14
Finance & Insurance	236	7%	17	7%	17	8%	19
Real Estate, Rental & Leasing	138	4%	5	10%	14	12%	17
Professional, Scientific & Technical Services	1,438	5%	74	10%	144	12%	173
Management of Companies & Enterprises	50	0%	0	0%	0	0%	0
Administrative Support, Waste Management, Remediation Services	574	1%	6	1%	6	1%	6
Membership Associations & Organizations	78	19%	15	19%	15	21%	16
TOTAL	2,570	5%	130	8%	208	12%	306

Source: Connecticut Department of Labor, ESRI, BBPC 2008

Table 4-53: Employees Per Square Foot Downtown New London, 2008-2018

	2008					2018	
	Total Rentable Building Area	Vacant SF	Occupied SF	Employees	Employee/SF	New Employees	New Office Space Demand
Low	775,579	88,505	337,604	1,085	311	130	40,430
Mid						209	65,000
High						306	95,166

Source: CoStar, Connecticut Department of Labor, ESRI, BBPC

4.5.3. 2018 Supportable Office Space

As noted earlier, several Class A office spaces exist outside of the downtown (Shaw's Cove and Fort Trumbull area). These buildings present competition to the downtown supply, and will continue to do so over the next 10 years. However, providing an amenity rich downtown to potential office tenants and gradually linking the downtown to the developing commercial center near Fort Trumbull will create a commercial corridor that will be highly desirable.

By maintaining its current capture of jobs and the same SF/employee (311), downtown New London can expect to see new office employee growth over the next ten years reach an addition of 130 to 306

employees and an increase in occupied square feet of 40,430 to 95,166; this represents a 5-12 percent capture of the County's growth. However, by pursuing the new culture class and linking the downtown to the commercial center at Fort Trumbull, downtown's capture of occupied office space may be further increased.

As mentioned earlier, the increase in occupied office space will be distributed between existing downtown office space and new office development. Due to the limited supply of Class A office space in downtown, a percentage of the newly demanded occupied space will be in newly constructed office space and a percentage will fill vacant existing space. For the low scenario, a 50/50 split was used, for the mid scenario a 60/40 split was used, and for the high scenario a 70/30 split was used. Table 4-54 below shows the low, mid and high projections for downtown office space demand for the next 10 years.

Table 4-54: Downtown New London Distribution of Office Demand 10 Year Term (2008-2018)

	Existing Office Supply (SF)		New Office Supply (SF)	
Low	50%	20,215	50%	20,215
Mid	40%	26,000	60%	39,000
High	30%	28,550	70%	66,616

Source: BBPC, 2008

It is unreasonable to assume that the demanded office space will be all new construction. Some of the potential new demand for office space over the ten year period can be absorbed by existing office space that is vacant. This vacant space can be existing vacant space or space vacated by an existing tenant downsizing or relocating out of the downtown. Between 20,215 and 28,550 square feet will be absorbed by existing space and 20,215 and 66,616 square feet will be newly constructed office space.

However, it is difficult to predict the needs of future tenants and whether the existing space will accommodate those needs, considerable renovations to existing structures will be made, or if new buildings must be constructed. If firms new to New London are local start-ups that are looking for lower rents, it may be that the existing space with minor renovations will be appropriate for the company's needs. However, when comparing the existing office inventory to the space preferences of established companies looking to expand into New London, much of the existing inventory does not match the trends identified by these types of users. These users are seeking high quality, low energy impact space that may not be available in downtown New London at this time.

4.5.4. Retail Sales Projections by Market Source

In order to determine projected 2018 retail sales for downtown New London, ten year projections for each market source (downtown residents and employees, subregional residents, tourists and "other") were undertaken. Ten year projections are based on increases in real retail expenditures, growth in households and employees, and changes in downtown's capture of total retail expenditures.

The following section determines the 2018 retail demand in downtown by market source then combines each market sources' 2018 projected expenditures to determine the total expenditures that downtown may

capture a portion of. 2018 retail sales projections are not broken out by retail industry. This is due to the high variation of merchandise and services for sale by retailers in downtown New London. For example, the retail business, "O! Brasil", sells art work, jewelry and furniture. These three items all belong to different North American Industry Classification System codes which are used to distribute the historical sales data presented in earlier sections.

Downtown Household 2018 Retail Demand

The projection of 2008-2018 retail expenditures in the downtown made by downtown households includes low, mid and high scenarios. The differences between the scenarios are derived from the assumption made in Section 4.5 of this chapter and are reflected in the changes in downtown's capture of total retail expenditures. An annual increase of 0.5 percent in expenditures per household is also included in all scenarios.

- Low scenario – represents the new retail sales generated from an additional 93 households in the downtown and holds the capture rate at the 2008 level (17 percent).
- Mid scenario - represents the new retail sales generated from an additional 211 households in the downtown and proportionately increases the capture rate by 5 percent to 17.85 percent.
- High scenario - represents the new retail sales generated from an additional 347 households in the downtown and proportionately increases the capture rate by 10 percent to 18.7 percent.

Contingent upon future market conditions, the downtown area can capture between $4 million to $6 million of 2018 retail expenditures, as shown in Table 4-55.

Table 4-55: 2018 Downtown Household Retail Sales (2008$)

Scenario	2008 Retail Expenditures by Households	2018 Retail Expenditures by 2008 Households (1/)	New Households (2/)	2018 Expenditures of New Households (3/)	Total Retail Expenditure Potential	2018 Downtown Retail Capture Rate	2018 Downtown Household Expenditures in Downtown
Low	$21,681,328	$22,765,394	93	$2,544,480	$25,309,874	17.0%	$4,302,679
Mid	$21,681,328	$22,765,394	211	$5,772,960	$28,538,354	17.9%	$5,094,096
High	$21,681,328	$22,765,394	347	$9,493,920	$32,259,314	18.7%	$6,032,492

1/ 2018 retail expenditures represent an annual increase of 0.5% in real retail expenditures
2/ Projections of new households are made in the residential analysis of this report
3/ Total 2018 Expenditures is based on the average HH income of new residents ($72,000) and the amount spent on retail (38%)

Source: BBPC, ESRI, New London Main Street

Subregional Household 2018 Retail Demand

The projection of 2008-2018 retail sales in the downtown made by subregional households includes low, mid and high scenarios. In order to develop the scenarios, the downtown 2008 capture rates of total retail expenditures were adjusted to reflect different market conditions.

- Low scenario –increases the capture rate from 0.87 percent in 2008 to 1 percent of total retail expenditures meaning that the downtown will attract 0.13 percent more subregional residents to downtown retail businesses than in 2008.
- Mid scenario - represents a proportional increase of 33 percent to the downtown's capture of subregional expenditures (bringing the capture rate to 1.16%). This scenario assumes moderate growth of desirable amenities to the subregional households in the downtown.
- High scenario - represents a 50 percent proportionate increase over the 2008 capture rate (bringing the new capture rate to 1.31 percent). This scenario assumes more intense growth of desirable amenities to the subregional households in the downtown.

Contingent upon future market conditions, the downtown area can capture between $13.8 million to $18 million of 2018 retail expenditures generated by subregional households, as shown in Table 4-56.

Table 4-56: 2018 Subregional Household Retail Sales (2008$)

Scenario	2008 Retail Expenditures by Subregional Households	2018 Retail Expenditures by 2008 Subregional Households (1/)	2018 Downtown Retail Capture Rate	2018 Subregional Household Expenditures in Downtown
Low	$1,314,554,033	$1,382,211,234	1.00%	$13,822,112
Mid	$1,314,554,033	$1,382,211,234	1.16%	$16,047,472
High	$1,314,554,033	$1,382,211,234	1.31%	$18,068,265

1/ Represents projected household growth by 2018 and an annual growth of 0.5%/year in expenditures per household

Source: BBPC, ESRI, New London Main Street

Downtown Employee 2018 Retail Demand

As shown in Table 4-57, the projection of 2008-2018 retail sales in the downtown made by downtown employees includes low, mid and high scenarios. The differences between the scenarios are derived from the projected new office employees in the downtown from office market analysis presented in an earlier section of this report and increases in the capture rate of total retail expenditures.

- Low scenario – represents the new retail sales generated from an addition 130 office employees in the downtown and maintains the capture rate from 2008 (68.43 percent).
- Mid scenario - represents the new retail sales generated from an additional 209 office employees in the downtown and proportionately increases the 2008 capture rate by 5 percent (bringing the capture rate to 72 percent).
- High scenario - represents the new retail sales generated from an additional 306 office employees in the downtown and proportionately increases the 2008 capture rate by 10 percent (bringing the capture rate to 75 percent).

Contingent upon future market conditions, the downtown area can capture between $3.9 million to $5.2 million of 2018 downtown office worker retail expenditures, as shown in Table 4-57.

Table 4-57: 2018 Downtown Employee (Office Worker) Retail Sales (2008$)

Scenario	2008 Retail Expenditures by Office Employees	2018 Retail Expenditures by 2008 Office Employees (1/)	New Office Employees (2/)	2018 Retail Expenditures from New Employees (3/)	Total Retail Expenditure Potential	2018 Downtown Retail Capture Rate	2018 Downtown Office Worker Expenditures in Downtown
Low	$4,561,709	$4,789,794	130	$917,280	$5,707,074	68%	$3,905,351
Mid	$4,561,709	$4,789,794	209	$1,474,704	$6,264,498	72%	$4,501,136
High	$4,561,709	$4,789,794	306	$2,159,136	$6,948,930	75%	$5,230,668

1/ 2018 retail expenditures assumes a 0.5%/year increase in real retail expenditures
2/ Projections of new office employees are made in the office analysis section of this report
3/ Average Retail Expenditures by Office Employee are estimated using the Internal Council of Shopping Centers' Office Worker Retail Spending data of $7,056/employee/year

Source: BBPC, ESRI, New London Main Street

Tourism 2018 Retail Demand

This section will examine southeastern Connecticut tourist expenditures on meals and shopping to determine downtown's potential capture of tourist retail expenditures. As noted in the previous section, $380 million were spent on non-casino related meals and shopping in southeastern Connecticut during 2008. Expenditures made by tourists on meals and shopping in southeastern Connecticut can potentially be captured in downtown New London. As shown in Table 4-58, $1.8 million was spent in downtown New London retail businesses by tourists. This represents a 2008 capture of 0.48 percent of the total retail expenditures made by tourists.

Similar to the other market sources, the projection of 2008-2018 retail sales in the downtown made by tourists includes low, mid and high scenarios. In order to develop the scenarios, the downtown 2008 capture rates of total retail expenditures were adjusted to reflect different market conditions.

- Low scenario – increases the 2008 capture rate by 5 percent (bringing the capture rate to 0.68 percent). This scenario only increases the capture rate to reflect an increase in household income. It assumes that the downtown will neither attract nor detract tourists to downtown retail businesses.
- Mid scenario - represents a 25 percent increase over the 2008 capture rate (bringing the rate to 0.85 percent). This scenario assumes moderate growth of desirable tourist activities in the downtown.
- High scenario - represents a 50 percent increase over the 2008 capture rate (bringing the rate to 1.02 percent). This scenario assumes more intense growth of desirable tourist amenities and activities in the downtown and in the region.

Contingent upon future market conditions, the downtown area can capture between $2.7 million to $4 million of 2018 retail expenditures generated by tourists in southeastern Connecticut.

Table 4-58: 2018 Tourist Retail Sales (2008$)

Scenario	2008 Total Expenditures by Tourists (1/)	2018 Total Expenditures by 2008 Tourists (2/)	2008 Total Downtown Expenditures	2008 Downtown Capture of Total Expenditures	2018 Downtown Retailer Capture of Tourist Expenditures	2018 Downtown Expenditures by Tourists
Low	$379,952,498	$398,950,123	$1,813,515	0.48%	0.68%	$2,712,861
Mid	$379,952,498	$398,950,123	$1,813,515	0.48%	0.85%	$3,391,076
High	$379,952,498	$398,950,123	$1,813,515	0.48%	1.02%	$4,069,291

1/ 2008 total tourist expenditures represent the 2001 amount spent on meals and shopping in southeastern Connecticut (adjusted for casino related expenditures) increased to reflect real growth in tourism in southeastern Connecticut and inflation for the period 2001-2008

2/ 2018 retail sales represent an increase of 0.5%/year in real retail expenditures

Source: BBPC, ESRI, New London Main Street

Other 2018 Retail Demand

The market sources contained within the "other" category include college students, public transportation passengers, internet sales and business to business sales. Individually these groups have a small impact on total downtown retail sales, but collectively they capture 12 percent of total 2008 downtown retail sales. Capture of potential retail development and expansion deriving from "other" retail expenditures is based on its relationship to the total downtown sales that will result from sales derived from households (downtown and subregional), downtown employees and tourists.

The projection of 2018 "other" expenditures is presented in three scenarios. The low scenario is adjusted for an increase in real tourist expenditures. However, the mid and high scenarios for other retail expenditures in downtown are derived from their relationship to the subtotal of other market sources.

- Low scenario – the low scenario represents a 0.5 percent annual increase to the 2008 downtown sales to account for real household income growth
- Mid scenario – the mid scenario builds off the mid scenarios from the other market source projections. The 2008 "other" capture rate of total 2008 downtown sales is maintained (12 percent), but due to increased capture rates in alternative market sources, the tourist expenditures are proportionately increased by 43 percent over the original 2008 downtown sales.
- High scenario – the high scenario also uses the projected 2018 sales from the alternative sources but proportionately increases the capture rate of total downtown retail sales for "other" by 10 percent which makes the capture of total downtown 2018 retail sales 13 percent.

Contingent upon future market conditions, the downtown area can capture between $2.8 million to $4.9 million in new retail sales downtown as a result of a combined growth within the markets sources in the "other" category. Table 4-59 shows the range of projected sales in downtown New London from the "other" category.

Total 2018 Downtown Retail Demand

The combined retail sales generated from all market sources in 2018 ranges from $27 million to $38 million. These sales include the existing expenditures from the market sources and new expenditures made as a result of increases in real household retail expenditures, new residential and office growth in downtown and downtown's ability to increase its capture of total retail expenditures. This is shown in Table 4-59.

Table 4-59: 2008-2018 Downtown Retail Sales by Market Source and Scenario (2008$)

Market Source	2008 Downtown Sales	2018 Downtown Sales					
		Low		Mid		High	
		$	%	$	%	$	%
Downtown Households	$3,663,313	$4,302,679	16%	$5,094,096	15%	$6,032,492	16%
Downtown Office Employees	$3,121,445	$3,905,351	14%	$4,501,136	14%	$5,230,668	14%
Subregional Households	$11,423,139	$13,822,112	50%	$16,047,472	49%	$18,068,265	47%
Tourists	$1,813,515	$2,712,861	10%	$3,391,076	10%	$4,069,291	11%
Subtotal	*$20,021,412*	*$24,743,003*	*90%*	*$29,033,781*	*88%*	*$33,400,717*	*87%*
Other	$2,679,636	$2,813,618	10%	$3,836,038	12%	$4,915,335	13%
Total	$22,701,048	$27,556,621	100%	$32,869,819	100%	$38,316,052	100%

Source: BBPC, ESRI, New London Main Street

The new downtown sales are determined by subtracting the 2008 sales from the 2018 sales. As is shown in Table 4-60, a range of $4.8 million to $15.6 of expenditures will be captured by the downtown.

Table 4-60: 2008-2018 Downtown Retail Sales by Market Source and Scenario (2008$)

Market Source	New Downtown Sales 2008-2018		
	Low	Mid	High
Downtown Households	$639,366	$1,430,783	$2,369,179
Downtown Office Employees	$783,906	$1,379,691	$2,109,223
Subregional Households	$2,398,974	$4,624,334	$6,645,126
Tourists	$899,345	$1,577,561	$2,255,776
Subtotal	*$4,721,591*	*$9,012,369*	*$13,379,305*
Other	$133,982	$1,156,402	$2,235,699
Total	$4,855,573	$10,168,771	$15,615,004

Source: BBPC, ESRI, New London Main Street

As Table 4-61 shows, the downtown retail sales by market source for each scenario showing the percentage increase over 2008. For all sources combined, the low scenario represents an increase of 21 percent over the 2008 sales, the mid scenario a 45 percent increase and the high scenario a 69 percent increase. Note that the market source with the largest dollar impact on downtown retail sales is

subregional households making up 49 percent of the sales in the low scenario, 45 percent in the mid scenario and 43 percent in the high scenario. The market source with widest range of growth rate (since 2008) is the "other" source, which has a total difference of 78 percent between the low and high scenarios. The second widest range in growth rate is the tourist market source which has a difference in growth of 75 percent between the low and high scenario.

Table 4-61: Change in Retail Sales by Market Source and Scenario 2008-2018 (2008$)

Market Source	Low		Mid		High	
	%	$	%	$	%	$
Downtown Households	17%	$639,366	39%	$1,430,783	65%	$2,369,179
Downtown Office Employees	25%	$783,906	44%	$1,379,691	68%	$2,109,223
Subregional Households	21%	$2,398,974	40%	$4,624,334	58%	$6,645,126
Tourists	50%	$899,345	87%	$1,577,561	124%	$2,255,776
Other	5%	$133,982	43%	$1,156,402	83%	$2,235,699
Total	21%	$4,855,573	45%	$10,168,771	69%	$15,615,004

Source: BBPC, ESRI, New London Main Street

4.5.5. 2018 Supportable Retail Space

In order to determine the 2018 supportable retail space, the 2018 new market source expenditures are converted into square feet using average sales per square foot of $200.

Projected 2018 downtown retail sales will be distributed between existing retail business and new retail businesses. Before determining supportable new retail space from the new retail sales, the percentage of retail sales going to existing businesses must be subtracted. Approximately 20 percent of newly demanded retail sales will be attributed to increases in sales productivity of the existing businesses. The residual 80 percent of newly demanded retail sales can be converted to new retail space or absorption of existing vacant retail space.

Table 4-62 shows that, by dividing the average sales per square foot amount ($200) into the residual newly demanded retail sales ($4.8 million to $15.6 million), the supported new retail space (19,422 square feet to 62,460 square feet) is projected.

Table 4-62: Supportable New Downtown Retail Space 2008-2018

Scenario	New 2018 Downtown Sales	Sales Capture by Existing 2008 Retail Businesses (20%)	Residual Sales Potential to Support New Retail (80%)	Average Sales/SF	Supportable New Retail Space 2008-2018
Low	$4,855,573	$971,115	$3,884,458	$200	19,422
Mid	$10,168,771	$2,033,754	$8,135,017	$200	40,675
High	$15,615,004	$3,123,001	$12,492,003	$200	62,460

Note: 80% of total new downtown sales will be available to support the development of new/renovated retail space; 20% of sales will be captured by existing retailers increasing sales productivity

Source: BBPC, ESRI, New London Main Street

However, as noted in the previous subsection of this report, 141,750 square feet of retail space is currently vacant in downtown. A percentage of new retail businesses and/or expansion of existing businesses will fill a portion of the vacant space. On the other hand, some tenants may find that newly renovated or newly constructed retail space fits their needs better than the existing space. The supportable retail space projections are projections for the increase in occupied space and may be in new space or infill of existing space, depending on tenant needs.

4.6 Conclusions Regarding Development Potential

It is projected that downtown New London can support additional retail, office and residential space over the next ten-year period. However, development will stall as the nation-wide economic downturn negatively influences market conditions that support growth. It is expected that the supportable square feet and units can be phased in throughout the ten year period, but the majority of the development will occur in years 5-10. The market analysis for office, residential and retail revealed the following projected development program (See Table 4-63 below):

Table 4-63: Downtown Development Program 2008-2018

	Low		Mid		High	
	SF	%	SF	%	SF	%
Office	20,215	15%	39,000	14%	66,616	14%
Retail	19,422	15%	40,675	14%	62,460	13%
Residential Units	93 units (93,000 SF)	71%	211 units (211,000 SF)	73%	347 units (347,000 SF)	73%
Total Square Feet	130,707		288,262		473,181	

Source: BBPC, 2008

The level of development in downtown New London depends on the market conditions, available space, micro and macro economic trends, public policy incentives and proactive marketing programs. Any combination of these factors will influence the development potential of downtown New London.

Taking in to consideration the current economic downturn, downtown New London is not projected to see rapid growth in the near term (1-4) years. As businesses and households begin to recover, they will look for new business, tourist, and retail opportunities. The City of New London, and other organizations aiming to make downtown a more attractive option for office locations, residential living and retail shopping and restaurants, have the near term to foster incentives and develop a marketing campaign to reach out to potential office and retail space users, tourists, residents and other groups potentially spending money in downtown.

4.6.1. Residential

Projected household growth in New London County, coupled with potential spin-off demand provided by future workers in new office buildings and growing national trends toward living in downtown and in locations near transit, can offer opportunities for modest residential expansion in the downtown (in the range of 93 to 347 units during the 10 year period). However, this residential growth will not come

automatically, and the provision of a higher-amenity environment is critical to attracting future residents. New units can be integrated into new mixed-use developments and upper floors of existing buildings and can be designed to take advantage of the potential synergies between housing, employment and retail uses.

4.6.2. Office

New London and its downtown area have potential to support new office users. A positive regional real estate environment (e.g. New London County and Hartford Regional office market), projected employment growth, recent expansion of key office-based industries (e.g. pharmaceutical companies, defense industry firms, service firms- including finance, professional/technical services and law firms, information technology based businesses, and healthcare) and a supportive public sector all increase the potential to attract office space users.

Additionally, the downtown area is beginning to cultivate an atmosphere that will help to ensure that new employers will locate in this area. The increasing numbers of downtown residential units, urban restaurants and shopping opportunities for employees combined with the accessibility to public transportation alternatives make downtown New London a unique player in the regional market.

New London County is expected to see growth in office space demand in the next ten years and downtown New London has the potential to capture a share of this growth. After examining office growth projections for the county, as well as factoring in national trends and the demand for office space near downtown transit centers, we believe it is reasonable to expect downtown New London to gain between 130 and 306 new office employees by 2018. This translates into a range of supportable office space of 20,215 – 66,616 square feet of new downtown office space.

While the current recession will limit opportunities in the near term, it offers an opportune time to plan for new office opportunities and better position the city to capture future growth in the office market. In the near term (1-4 years), office development will likely slow as the demand for office space responds to companies' (tenants') layoffs, inability to obtain financing, and other effects of the economic slowdown. However, while this analysis takes into account the current slowdown, it also looks beyond and projects potential office space demand in downtown New London over the longer term. Note however that a slower recovery could delay the projected development time frame beyond 2018 or shift the outcome to the lower end of the range reflected in the three scenarios (this is true for office, retail and residential development).

Overall, as more companies seek new office locations, urban places near existing industry, such as downtown New London, will be hotspots. Downtown will become an even more attractive option as the availability of residential units, retail stores and restaurants grows.

4.6.3. Retail

The ten year projected demand for retail in downtown New London is primarily generated by downtown households, subregional households, downtown employees and tourists. Secondarily, subregional employees, college students, public transportation users, business to business, and the internet are also generators of new retail demand. New 2018 supportable retail space will range from 19,422 to 62,460 square feet.

However, it is difficult to predict the needs of future tenants and whether the existing space will be able to accommodate those needs, considerable renovations to existing structures will need to be made, or if new buildings will need to be constructed. Interviews with retailers revealed that a difficulty with the existing retail space is the length to width ratio. Retailers rent the entire space, but only use the front half for merchandise and are left with empty space in the back which they have to pay for.

A portion of the potential new demand for retail space over the ten year period can be absorbed by existing retail space that is vacant. This vacant space can be existing vacant space or space vacated by an existing tenant downsizing or relocating out of the downtown.

Downtown New London is recognized for the collection of niche retail shops and arts and entertainment venues. However, this is also an area for improvement identified by the survey respondents as a way to attract more visitors (who pass through the RITC) into downtown. Interviews with local stakeholders revealed that New London has the momentum to become a niche destination for ethnic restaurants, art galleries and eclectic shops. At the same time, retailers must provide for the basic needs of residents and downtown employees, such as a grocery store and a pharmacy. To succeed in downtown New London, retailers need to be innovative with their product lines. For example, a shoe store might also sell chocolate or a flower shop might also have a coffee bar (such as the Thames River Greenery).

Several stakeholders have indicated that a grocery store is needed downtown. The average lease area for a grocery store is approximately 52,000 square feet. More importantly, grocery retailers have site selection criteria regarding population, median household income, and traffic counts. It was revealed that at this time, the traffic counts are not high enough to attract a major grocery store retailer. However, over the next 5 to 10 years, the office presence and the growth of residential units in downtown will increase the population and traffic counts to meet the needs of the grocery retailers. In addition, grocery retailers are responding to the national trends of households moving back into historic urban areas. Small-format grocery stores typically occupy half the lease area of a standard grocery store and may be better candidates for downtown New London. However, one block from the downtown boundary is a member owned market called Fiddleheads Cooperative. This market offers organic and locally grown foods as well as music and art events. At this time, the hours of operation are limited, but with a growing population downtown it is expected that the cooperative will expand its hours to attract additional customers.

4.6.4. Transit Oriented/Smart Growth Opportunities

Redevelopment of the RITC and surrounding area in downtown New London would make it an appropriate location for the projected demand of retail, office and residential space. For example, renovating historic Union Station and redeveloping the Water Street Garage adjacent to the train station can capture a portion of the new growth. However, infill of vacant lots and renovations of properties in the downtown are also potential projects which will meet the proximity criteria to be considered “transit-oriented” development (TOD). As defined by the American Public Transportation Association, “TOD is compact, mixed-use development near new or existing public transportation infrastructure that serves housing, transportation and neighborhood goals”. It has a pedestrian-oriented design that encourages residents and workers to drive their cars less and ride mass transit more.[41]

[41] American Public Transportation Association, Transit Resource Guide. http://www.apta.com/research/info/briefings/briefing_8.cfm

The market sector that will derive the most benefits from locating near the RITC is residential. As daily commuting to work in New York City and Boston are not realistic drivers for residents, the most logical users of the public transportation modes in New London are weekend travelers. The largest group is the residents of New London interested in taking day or weekend trips into the larger cities. Providing housing choices near the RITC will attract these users.

The realization of transit-oriented development potential will require a combination of private and public sector support. Implementing policies and programs which encourage private sector investments will bring positive change. Encouraging development which enhances the connections between the RITC and the downtown will help to turn the surrounding area into a vibrant, walkable self-supporting area. For example, currently 1.8 million passengers pass through the RITC each year, and only 22.7% of these passengers are actually going to or coming from New London. Building a marketing program to attract more passengers into New London will help to add to a sustainable base for the retail and restaurant shops.

The next chapter identifies specific types, combinations and locations of developments for downtown to become a vibrant development area.

The next section of this chapter examines the economic impacts of TOD development.

4.7 Economic Impacts of TOD Over the Long Term

Based on the mid-level forecasts described in the prior section, the following long-term economic and fiscal impacts resulting from the net new office, retail and residential development were estimated:

- Residential
  - New Residential Units/Households
  - New Residential Property Tax (City Revenue)
  - New Residents' Income Tax (State Revenue)

- Office
  - New Office Employees
  - New Office Employee Income Tax (State Revenue)
  - New Office Space Property Tax (City Revenue)

- Retail
  - New Retail Employees
  - New Retail Employee Income Tax (State Revenue)
  - New Retail Space Property Tax (City Revenue)
  - New Retail Sales Tax (State Revenue)

These impacts are described by sector below.

4.7.1. Residential Impacts

The estimated impacts resulting from 211 new residential units in downtown New London are approximately $1.2 million in annual property taxes. This is shown in Table 4-64.

Table 4-64: Residential Space Annual Property Tax to the City

Number of Units	211
Total SF Residential	211,000
Value Per SF	$228
Assessed Value/SF	$48,108,000
Mill Rate	25.49
Total Annual Tax	$1,226,273

Note: Assessed Value was determined using average sales price of downtown New London condos.
Source: Basile Baumann Prost Cole & Associates, City of New London, 2009

The 211 new residential households will generate more than $522,000 in income tax. This may or may not be new revenue since residents may be moving to New London from other parts of Connecticut. The total income tax revenue (from both new and relocating residents) is shown in Table 4-65.

Table 4-65: Resident Income Tax to the State

Number of Units/Households[1]	211
Residents of CT [2]	169
Not Included in Office & Retail Employee Income Tax [3]	152
Average Annual Wage [4]	$72,800
Income Tax Per Unit [5,6]	$3,440
Income Tax to CT	$522,605

1: It is assumed that 1.5 working individuals are in each household.
2: It is assumed that 90% claim CT as their residence. Note that these may not all be new residents to the state.
3: It is assumed that 20% of new downtown office and retail employees live downtown.
4: It is assumed that the mortgage payment is 25% of the annual wage. The mortgage payment is assumed to be based on a loan value of $228,000 with a 30 year payment schedule, and an interest rate of 7%.
5: Connecticut personal income tax is calculated based on a sliding scale.
6: Assumes a taxpayer filing status of "single". In Connecticut, the first $10,000 has a 3% tax and excess over the first $10,000 is taxed at 5%. The tax credit is determined and then subtracted from the income tax to determine the estimated individual income taxes.
Source: Basile Baumann Prost Cole & Associates, State of Connecticut, 2009

4.7.2. Office Impacts

It is assumed that the projected office space will be net new, not replacement space, to downtown New London. If there are any transfers from existing office space to new office space, it is assumed that the vacated space will be re-tenanted. The estimated income tax impacts resulting from the 209 new office employees in downtown are over $20,000 per year. This is shown by industry type in Table 4-66.

The new supportable square footage for office space downtown is 39,000 SF. Using an income approach to the valuation of the office space, the total property tax impacts are above $246,000 per year. This is shown in Table 4-67.

Table 4-66: Downtown Office Employees Income Tax to the State

Industry Type	Number of Jobs	Average Annual Wage [1]	Income Tax [2,3]	Total Income Tax CT [4]
Information	13	$86,087	$4,104.00	$50,684
Finance & Insurance	17	$64,834	$3,042.00	$49,128
Real Estate, Rental & Leasing	14	$56,390	$2,593.00	$34,487
Professional, Scientific & Technical Services	144	$73,420	$3,471.00	$474,833
Management of Companies & Enterprises	0	$100,288	$4,814.00	$0
Administrative Support, Waste Management, Remediation Services	6	$35,842	$1,298.00	$7,399
Membership Associations & Organizations	15	$51,614	$2,143.00	$30,538
Total	209	$468,476	$21,465	$647,069

1: May 2008 Bureau of Labor Statistics Occupational Wage Estimates for Norwich-New London, CT-RI, adjusted to 2012 dollars (assume inflation of 1.5% per year).
2: Connecticut personal income tax is calculated based on a sliding scale.
3: Assumes a taxpayer filing status of "single". In Connecticut, the first $10,000 has a 3% tax and excess over the first $10,000 is taxed at 5%. The tax credit is determined and then subtracted from the income tax to determine the estimated individual income taxes.
4: Assumes 95% of workers live in the State.
Source: Task 5 Analysis of Development Potential for Site and Area, Part 1, Basile Baumann Prost Cole & Associates, Bureau of Labor Statistics, 2009

Table 4-67: Office Space Annual Property Tax to the City

New Office SF	39,000
Assessed Value [1]	$9,660,000
Mill Rate	25.49
Annual Tax	$246,233

1: Assessed value is determined using an income approach. It is assumed that the rental rate is $23/SF, operating costs are 30% of the gross income and the capitalized rate is 6.5%
Source: BBPC, City of New London, Susan Howard (US Properties), 2009

4.7.3. Retail Impacts

In the market analysis, the team projected the changes in retail sales as a result of the induced effects of the transit improvements. Since the current retail is underperforming, we allocated 20% of new retails sales to existing stores and 80% to new retail stores. The estimated income tax impacts resulting from the 156 new retail employees in new stores in the downtown are over $66,000 per year. This is shown in Table 4-68.

Table 4-68: Downtown Retail Employees Income Tax to the State

Industry Type	Number of Jobs [1]	Average Annual Wage [2]	Income Tax [3.4]	Total Income Tax CT [5]
Retail Sales Persons	156	$26,545	$448.00	$66,394

1: Number of retail jobs is based on a calculation of 1 full time equivalent job per 250 SF.
2: May 2008 Bureau of Labor Statistics Occupational Wage Estimates for Norwich-New London, CT-RI, adjusted to 2012 dollars (assume inflation of 1.5% per year)
3: Connecticut personal income tax is calculated based on a sliding scale.
4: Assumes a taxpayer filing status of "single". In Connecticut, the first $10,000 has a 3% tax and excess over the first $10,000 is taxed at 5%. The tax credit is determined and then subtracted from the income tax to determine the estimated individual income taxes.
5: Assumes 95% of workers live in the State
Source: Basile Baumann Prost Cole & Associates, Bureau of Labor Statistics, 2009

The new supportable square footage for new retail space downtown is 40,675 SF. Using an income approach to the valuation of the office space, the total property tax impacts are slightly below $134,000 per year. Property tax impacts are shown in Table 4-69.

Table 4-69: Retail Space Annual Property Tax to the City

New Retail SF	39,000
Assessed Value [1]	$5,256,462
Mill Rate	25.49
Annual Tax	$133,987

1: Assessed Value is determined using an income approach. It is assumed that the rental rate is $12/SF, operating costs are 30% of the gross income and the cap rate is 6.5%
Source: Basile Baumann Prost Cole & Associates, City of New London, Susan Howard (US Properties), 2009

The total new retail sales in 2018 resulting from new downtown retail shops and additional sales in existing shops is approximately $10 million. The sales tax generated by these sales is over $610,000 per year as shown in Table 4-70.

Table 4-70: Retail Sales Tax to the State

New 2018 Downtown Sales	$10,168,771
Sales Tax Rate	6%
Sales Tax to State of CT	$610,126

Source: Basile Baumann Prost Cole & Associates

4.7.4. Order of Magnitude Estimates of Impacts Summary

The total estimated fiscal impacts from the RITC induced development are over $1.6 million in property tax, 1.2 million in income tax and $600,000 in sales tax. The induced economic impacts are 317 new downtown residents and 356 new employees (209 office employees and 156 retail employees). However, a percentage of the downtown residents will also work in the downtown in retail and in office professions. The City will collect over $1.6 million in property taxes and the State will collect nearly $2 million in income and sales tax. Table 4-71 shows the order of magnitude impact estimates.

Table 4-71: Order of Magnitude Impact Estimates

Fiscal Impacts	
Property Tax (City Revenue)	$1,606,494
Income Tax (State Revenue)	$1,225,981
Sales Tax (State Revenue)	$610,126
Economic Impacts	
New Residents	317
New Office Employees	209
New Retail Employees	156

4.7.5. Additional Qualitative Impacts/Benefits

In addition to the economic and fiscal benefits quantified above, the improved RITC should provide additional impacts/benefits in terms of enhancing the area's vitality and its economic competitiveness, including:

- Enhanced position of the City, in that the improvements will support downtown revitalization and improve employment recruitment efforts
- Enhanced opportunities for transit oriented development over time including in the historic Union Station building
- Enhanced transit service convenience (regional/local bus, inter-city bus, rail, and ferry)
- Induced transit ridership
- Impacts on transit operating costs
- Enhanced transit user benefits
- Enhanced pedestrian access

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5. Transit Oriented Development/Downtown Development Opportunities

5.1 Introduction

This chapter identifies transit oriented development (TOD) opportunities in downtown New London, building on the market analysis described in Chapter 4. In addition, a potential long range TOD opportunity is explored in the latter part of the chapter.

As defined by the American Public Transportation Association, "TOD is compact, mixed-use development near new or existing public transportation infrastructure that serves housing, transportation and neighborhood goals." It has a pedestrian-oriented design that encourages residents and workers to drive their cars less and ride mass transit more. Sites that are proximate to and within a comfortable walk (generally defined as a five-to-ten minute walk, or a quarter-mile to half-mile, respectively) of the RITC are appropriate locations for the retail, office and residential space demands identified in the market analysis. Renovating Union Station, redeveloping the Water Street Garage parcel in combination with adjacent sites, rehabbing existing buildings, and redeveloping vacant lots, among other development strategies, will help capture projected growth.

The residential market sector will derive the most benefit from locating near the RITC. As daily work commuting to New York City and Boston is not realistic for residents, the most logical users of the public transportation modes in New London are weekend travelers. The largest group is the residents of New London interested in taking day or weekend trips into larger cities. Providing housing choices near the RITC will attract these users.

The realization of TOD potential will require a combination of private and public sector support. Implementing policies and programs that encourage private sector investments will help bring positive change. Encouraging development that enhances connections between the RITC and the downtown will help transform the surrounding area into a vibrant, walkable and self-supporting area. Currently, 1.8 million passengers pass through the RITC each year, and only 22.7% of these passengers are actually going to or coming from New London. Building a marketing program to attract more passengers into New London will help in creating a sustainable base for downtown retail and restaurant development.

5.2 Assumptions and Guiding Principles

The determination of TOD capacity is based on the findings from the market analysis and a physical site analysis, including an evaluation of the dimensional characteristics, location (sites considered are at most a quarter-mile from the RITC and generally in and around the downtown), and adjacent land uses. A form-based approach was employed when determining long range TOD opportunities (described in Section 5.6). TOD in the RITC area could catalyze downtown economic development, contribute to the local tax base, and create an active street life and pedestrian-friendly environment.

The sites with the most promise in terms of TOD potential are identified and discussed further in the next section. The following are general assumptions considered during the TOD analysis:

- New development should be compressed into an area proximate to Union Station and the RITC; it should reinforce and support existing land use patterns, particularly the retail concentrations on Bank and State Streets.
- The development of a "higher-amenity" environment is critical to attracting future residents and visitors who pass through the RITC. Emphasis should be placed on creating both an active, lively street life and a beautiful pedestrian environment, leveraging the amenity value of Union Station and the Parade.
- TOD opportunities should include a range of potential sites – rehabilitation of older buildings, small infill parcels, larger undeveloped parcels and large potential redevelopment sites. Short-range opportunities should not preclude more ambitious long-term (20-30 year) opportunities.
- The "face" of downtown as seen by the thousands of people passing through the RITC daily is the blank wall of the Water Street Garage, and this should be substantially altered in any redevelopment plan.
- The creation of a large "event" space should be incorporated into one or more redevelopment options. Events (outdoor antique automobile shows, craft fairs, etc.) are a proven way to attract tourists and should be able to lure RITC travelers into spending time in the downtown New London.

5.3 Potential Development Sites

A list of potential development candidates was developed to establish a range of typologies for discussion with the Stakeholder Steering Committee, City Officials, members of the real estate community, property owners and others as appropriate. This enabled a discussion regarding the following questions: Should the focus be on rehabilitation candidates, infill parcels or large potential redevelopment parcels, or a combination of all of the above? Should the focus be on Water, State and Bank Streets or should new districts evolve? Should an outdoor "events space" be integrated into the TOD opportunities plan?

Sites that could potentially accommodate TOD range from small infill parcels to large potential redevelopment sites. The identified sites were organized into several site typologies, as described below (See Figure 5-1 for a map that shows site locations).

5.3.1. Small Infill Parcels (Type A)

There are a few scattered infill parcels within a quarter mile radius of Union Station in the 3,500 sq. ft. to 14,500 sq ft. range (see Figure 5-1). A 14,500 sq. ft. parcel could accommodate up to 12 - 14 dwelling units per floor (60 - 70 units in a five story building), depending on residential building type, parcel geometry and dimensional characteristics.

Pros

- Infill development will quickly fill in "gaps" in the streetwall and, in some instances, provide continuous retail frontage.
- Sites are within a quarter-mile of Union Station.
- Helps ensure a variety of building types.

Cons

- Sites are small and existing zoning/bulk and area regulations may provide insurmountable development obstacles; achievable densities as-of-right may not be great enough to make it worth the investment for developers.

- Awkward parcel geometries and lack of visibility.
- Piecemeal approach takes time to make transformative changes.
- Insufficient number of parcels to fulfill a significant portion of the future land use program.

5.3.2. Large Undeveloped Parcels (Type B)

The two large parking lots on Eugene O'Neill Drive, between Golden Street and Tilley Street, could accommodate approximately 20 dwelling units per level (depending on residential building type) or 100 structured parking spaces per level with some surface parking. The two sites are about a five-minute walk from the RITC and are some of the largest undeveloped sites within a quarter-mile of the RITC (see Figure 5-1).

Figure 5-1: Development Site Typologies

Pros

- Opportunity to create development that serves as a visual gateway to downtown.
- Significant frontage (about 700 linear feet) on the south side of Eugene O'Neill Drive provides the opportunity to make a transformative change in the downtown streetscape.
- Opportunity to enhance the city's land use mix.
- Parking lots are large enough to accommodate contemporary retail, office, and residential floor plates.
- Sites are within a quarter-mile of Union Station and adjacent to the entertainment/retail district.
- Sites are relatively flat, publicly-owned and adjacent to one another.

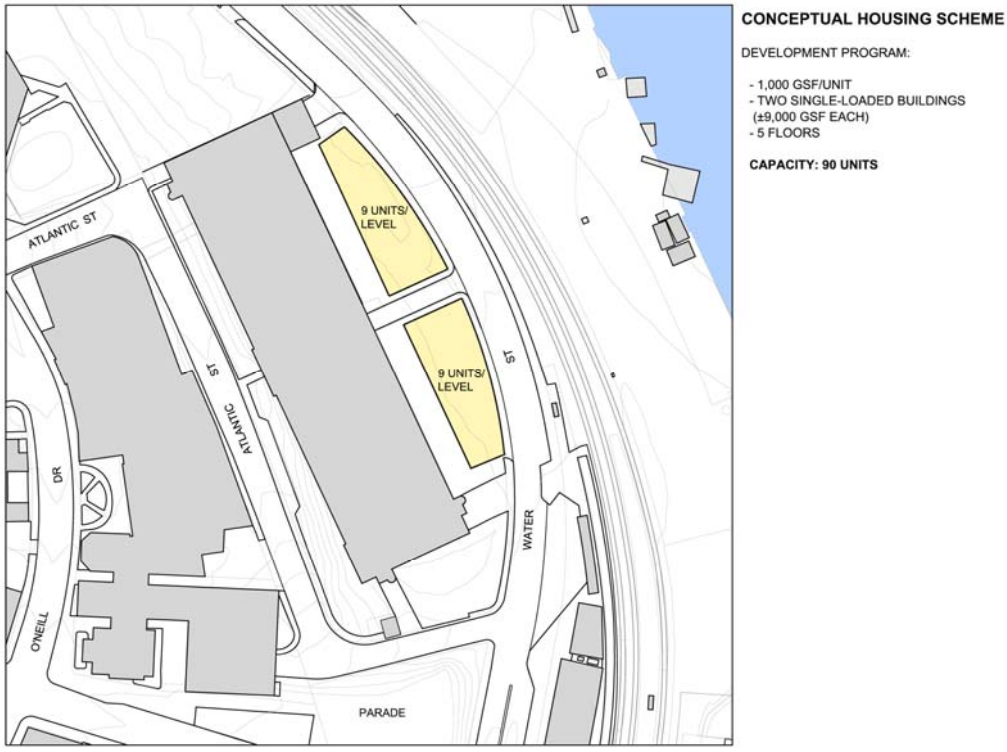
Cons

- Over most of their lengths, the sites' widths fall just short of 120 feet, the full width of a two-bay parking garage.
- Need to replace existing parking spaces, which puts a significant constraint on the potential development program.

Another undeveloped site that could potentially support development is the area in front of the Water Street Parking Garage on Water Street (see Figure 5-2). Composed of two individual parcels, this site is the largest undeveloped property within sight of Union Station and is a total of about three-quarters of an acre. Assuming the site's current zoning regulations remain, the site could be developed with approximately 90 dwelling units. See Figure 5-3 for a diagram that shows one potential housing arrangement. Although the site can technically accommodate development, a set of physical constraints may create considerable difficulty. For instance, the Water Street Garage has two access points on Water Street – one at the north corner of the garage and the other is at the center of the garage. Both of these points, particularly the central access point, significantly impact the two undeveloped parcels and would need to remain open to serve the garage. Another constraint is that the garage is sited very close to the north and south parcel's rear lot line, which would make filling out the sites impracticable. Adjacent bus facilities, daily operation of the public parking garage and noise related to railroad operations are discordant with certain land uses (for example, housing) and may limit desirability. These constraints, among others, make higher density development difficult if the Water Street Garage operations are to remain intact. The parcels in front of the Water Street Garage have greater value for development if the Water Street Garage were a part of the redevelopment scheme.

Figure 5-2: Bird's Eye View of Water Street Parking Garage

Figure 5-3: Plan View of Water Street Parking Garage



Alternatively, the two parcels, in conjunction with the Parade (see Figure 5-4), the Water Street frontage at Union Station and, possibly, the short term closing of a portion of Water Street, could be designed as part of a 3.5 acre "events plaza" (see Figure 5-5). Large banners representing the summer's events can be hung in front of the garage, creating a festive environment and attracting tourists using the RITC into downtown New London. It should be noted that transportation uses – including pick up /drop off and short term parking - are envisioned for the two parcels as part of the Preferred Short Term Alternative, as described in the Master Plan Chapter of this Final Report.

The area identified as "Union Station Property" in Figure 5-4 may continue in its current use for intercity buses or could become commercial property or public open space if bus operations were relocated.

Pros

- The parcel fronting the parking garage is large enough for housing development.
- Potential water views.
- Proximate to and highly visible from Union Station and the Parade.
- Attractive redevelopment in this area could significantly change the "face" of downtown, especially for visitors arriving by rail.
- Parcels are large enough for potential events space; a potential events space would attract visitors and would inevitably lead to more economic activity in downtown.

Cons

- Parcel dimensions only allow for single loaded housing and are generally not large enough for other land uses that require larger floor plates.
- Potential achievable density is limited.

Figure 5-4: Overall Site Plan for the Parade

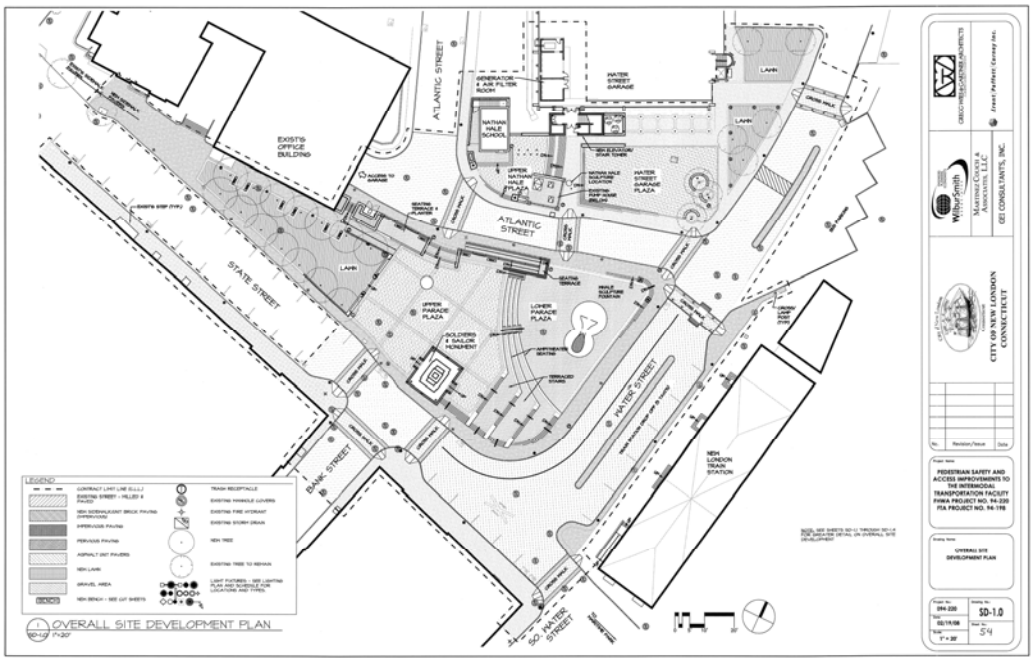
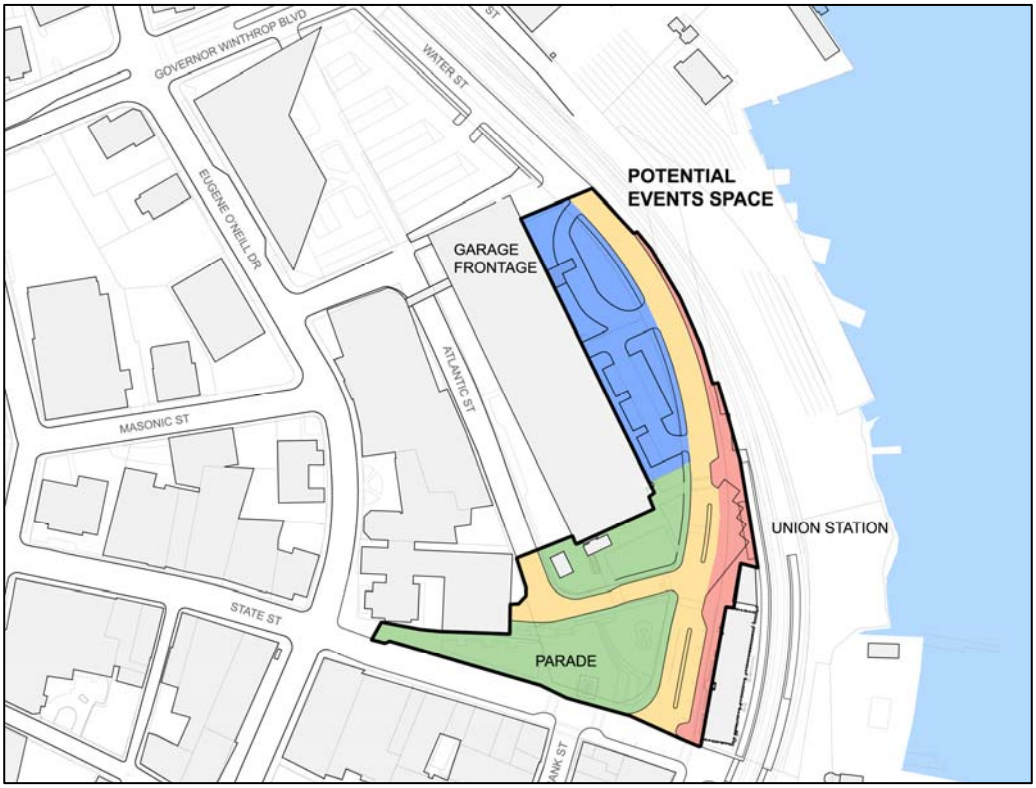


Figure 5-5: Potential Events Space



- Adjacent bus operations, daily operation of the public parking garage and rail noise are discordant with housing and may limit desirability.
- A potential events space would occupy a desirable development site and would require an event management structure.

5.3.3. Large Potential Redevelopment Parcels (Type C)

Multiple sites currently in use, including the Mariner Square, Radisson Hotel, Winthrop Parking Garage and Police Station sites, might be positioned for redevelopment. These sites are within a quarter-mile of the RITC and have the highest capacity for transformative redevelopment within the RITC area (see Figure 5-1).

Pros

- High visibility.
- Several of the sites are relatively flat.
- Present significant opportunity to restore the streetwall.
- Potential water views.
- Sites are clustered.

Cons

- Relatively long, indirect walks from Union Station and entertainment/retail district.
- Significant grade change between Water Street and Governor Winthrop Boulevard/Union Street intersection contributes to a lack of site visibility for visitors entering the RITC.
- Sites not related to the existing Bank and State Streets activity corridors.
- Would require a proactive public redevelopment policy and strategy including, potentially, land assembly.

5.3.4. Rehabilitation Candidates (Type D)

There are many fine buildings on State and Bank Streets which offer both ground floor retail and upper floor commercial and housing rehabilitation opportunities. The emphasis should be placed on sites close to the RITC. The difficulty will be retrofitting older building floor plates for contemporary uses. For example, many of the ground floor retail spaces are very narrow and very deep. Other rehabilitation opportunities include historic Union Station and the adjacent Greyhound building. See Figure 5-6 for a map that shows locations of vacancies in downtown New London.

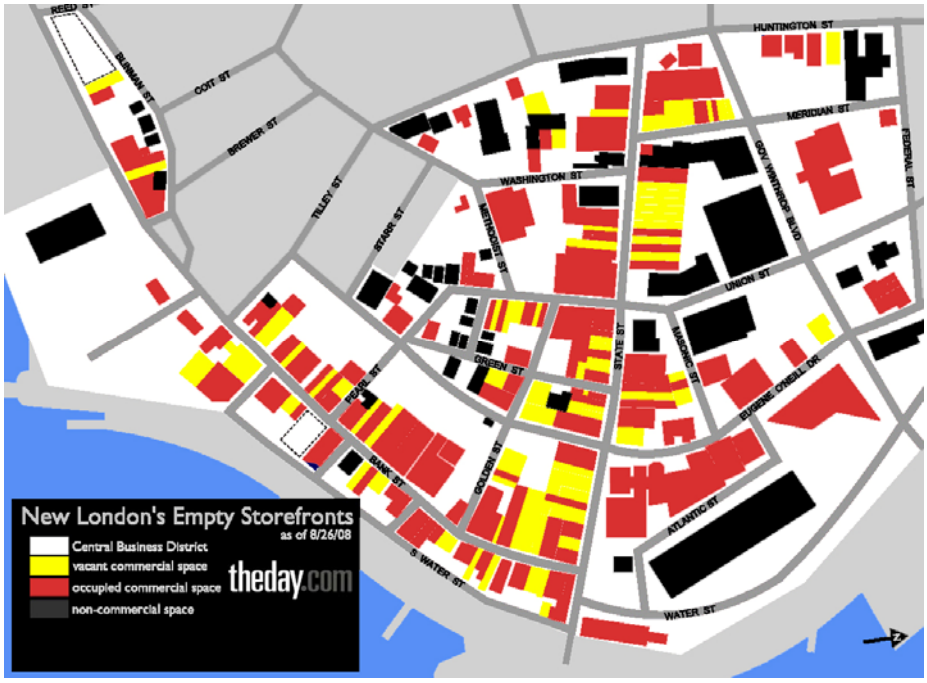
Pros

- Most rehab candidates on Bank and State Streets would reinforce the existing entertainment/retail presence and would help create an active “destination.”
- Rehab candidates are plentiful in the downtown.
- Would help stabilize historically and architecturally significant buildings; blocks on Bank and State Streets are virtually intact.

Cons

- In many cases, the configuration of the floor plates and square footage per floor are not adequate for and/or inefficient for many uses.
- Structural requirements, building code compliance and utility upgrades, among other potentially necessary improvements, create significant financial obstacles.
- Rehabs will put additional constraint on on-street parking supply.

Figure 5-6: Diagram of Existing Commercial Occupancy
(graphic provided by The Day)



5.3.5. Other Sites Considered: Waterfront Parcels

There may be opportunities for some reconfiguration of Cross Sound Ferry parking and staging areas by the owner, which would create an opportunity for modest development sites (see Figure 5-1). The Connecticut Coastal Management Ordinance limits waterfront property to water dependent uses with some exceptions. There are many examples in other New England states of waterfront mixed-use development with generous public access at the water's edge. Public access, in these instances, has been deemed a "water dependent use." These were explored with the landowners and it was determined that transportation uses would preclude other land uses in these areas.

Pros

- Opportunity for waterfront housing with beautiful views.
- Proximate to Union Station.
- Redevelopment would activate the waterfront and potentially provide additional public access and passive recreation.
- Sites are relatively flat.
- Could contribute to the "visual gateway" image for arriving ferry passengers.

Cons

- Would require parcel reconfiguration and the reorganization of the parking and vehicle staging areas.
- Limited vehicular and pedestrian access to sites from Water Street.
- Noise impacts.
- Internal vehicular circulation may be difficult due in part to the sites' narrow widths.
- Conflicts with transportation needs at these sites

5.4 Downtown Development Programs Derived from Market Analysis

As illustrated in Figure 5-7, significant rehabilitation of existing buildings along Bank and State Streets as well as the development of several small infill sites within the downtown would accommodate the low downtown development program of 20,215 SF of office space, 19,422 SF of retail space, and 93,000 SF of housing (93 units).

As illustrated in Figure 5-8, in combination with the rehab/development under the low scenario, the development of larger development parcels, including the Eugene O'Neill Drive parking lots and Water Street parking garage frontage would accommodate the mid downtown development program of 39,000 SF of office space, 40,675 SF of retail space, and 211,000 SF of housing (211 units).

Lastly, in combination with all of the above, the redevelopment of large potential redevelopment sites on Atlantic Street, Eugene O'Neill Drive and Union Street, as indicated in Figure 5-9, would accommodate the high downtown development program of 66,616 SF of office space, 62,460 SF of retail space, and 347,000 SF of housing (347 units).

Figure 5-7: Low Scenario

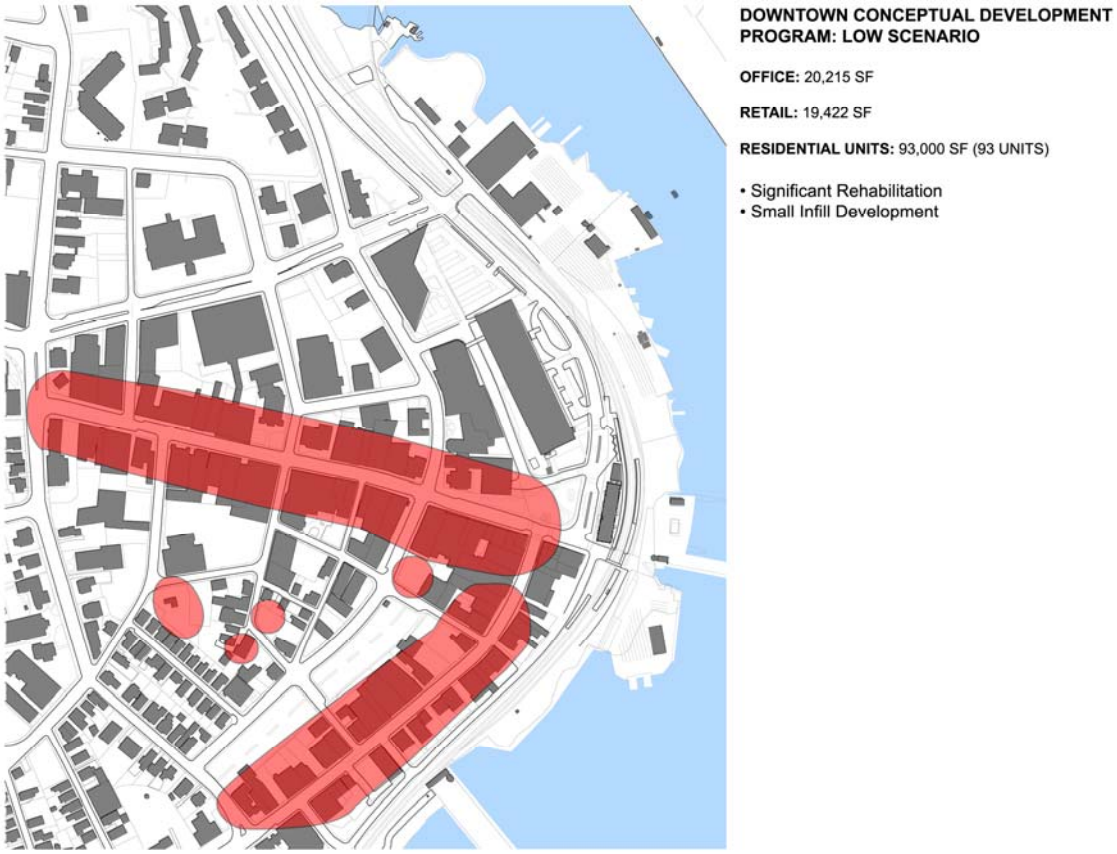
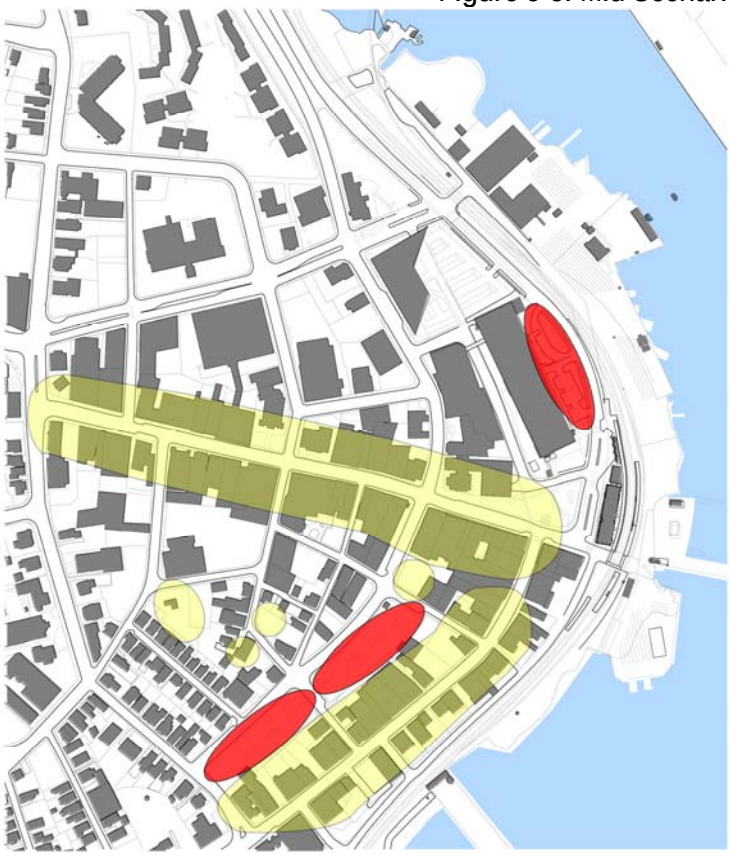


Figure 5-8: Mid Scenario



DOWNTOWN CONCEPTUAL DEVELOPMENT PROGRAM: MID SCENARIO

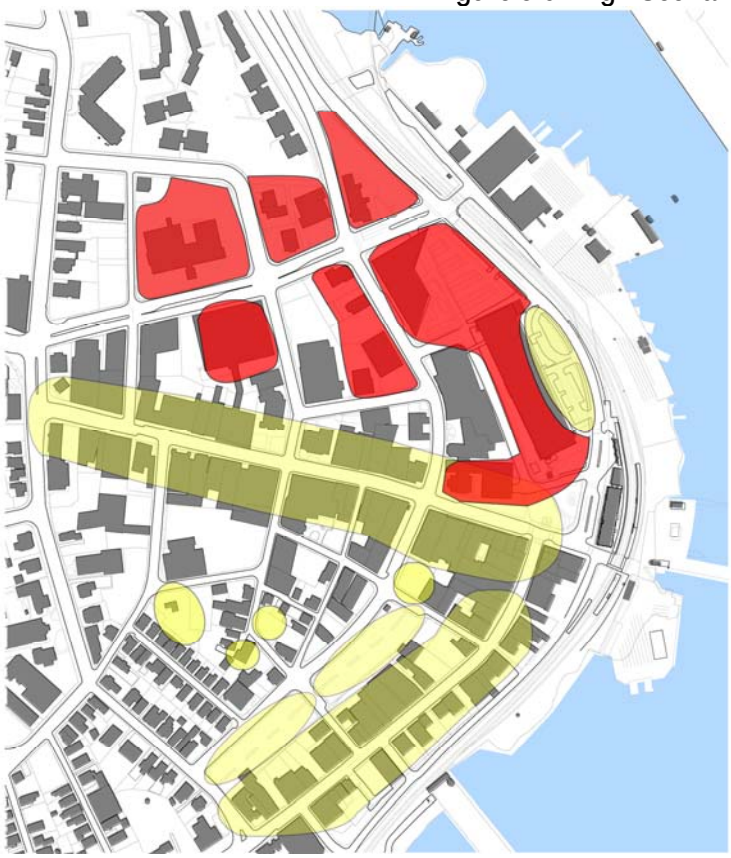
OFFICE: 39,000 SF

RETAIL: 40,675 SF

RESIDENTIAL UNITS: 211,000 SF (211 UNITS)

- Additional Rehabilitation
- Additional Small Infill Development
- Area Redevelopment

Figure 5-9: High Scenario



DOWNTOWN CONCEPTUAL DEVELOPMENT PROGRAM: HIGH SCENARIO

OFFICE: 66,616 SF

RETAIL: 62,460 SF

RESIDENTIAL UNITS: 347,000 SF (347 UNITS)

- Additional Rehabilitation
- Additional Small Infill Development
- Expanded Area Redevelopment

5.5 Conclusions Regarding TOD Sites

Most of the sites under the various type classifications are promising in terms of TOD potential. Parcels along the waterfront were initially considered for potential TOD. However, it was learned that they are better used as part of a fully operating RITC and can substantially benefit from pedestrian and vehicular circulation improvements and aesthetic enhancements.

Presently, there are very few undeveloped sites and, consequently, most of the major opportunities for TOD around the RITC are long term (20 or 30 years). The most immediate opportunities lie in the vacant storefronts on Bank and State Streets, and small infill parcels identified above. Although it is conceivable that these sites could be rehabilitated / developed within the short range, they are too small to achieve a significant portion of the future land use program identified in the market analysis. In addition, achievable as-of-right development densities may not be great enough to make it worth the investment for developers. Developing the identified sites with well-designed, higher density, mixed-use development (with an emphasis on residential development) could potentially improve connections between the RITC and the downtown, increase transit ridership, and help transform the RITC and downtown New London into a vibrant, pedestrian-friendly, self-supporting district. The realization of this TOD potential will require public/private partnerships and community support.

The following section explores a long range TOD opportunity for the undeveloped and large potential redevelopment sites identified in the above analysis.

5.6 A Long Range TOD Opportunity

5.6.1. Historic Context

New London's urban form and pattern is unique. Resembling a bow and arrow – State Street is the arrow and Water Street the bow – downtown New London's winding street pattern was formed by topography, by the shoreline and by the many small individually-owned parcels of land. It was a network of small winding streets with a pleasing sense of enclosure and intimacy, fronted by handsome buildings – many with active ground floor uses. In sum: a lively pedestrian environment with a dramatic and beautiful urban square, the Parade, at the point where the arrow meets the bow (see Figures 5-10 through 5-14).

Figure 5-10: Downtown New London

Figure 5-11: Bird's Eye View of New London, 1911

Figure 5-12: Bird's Eye View of the Parade, 1911

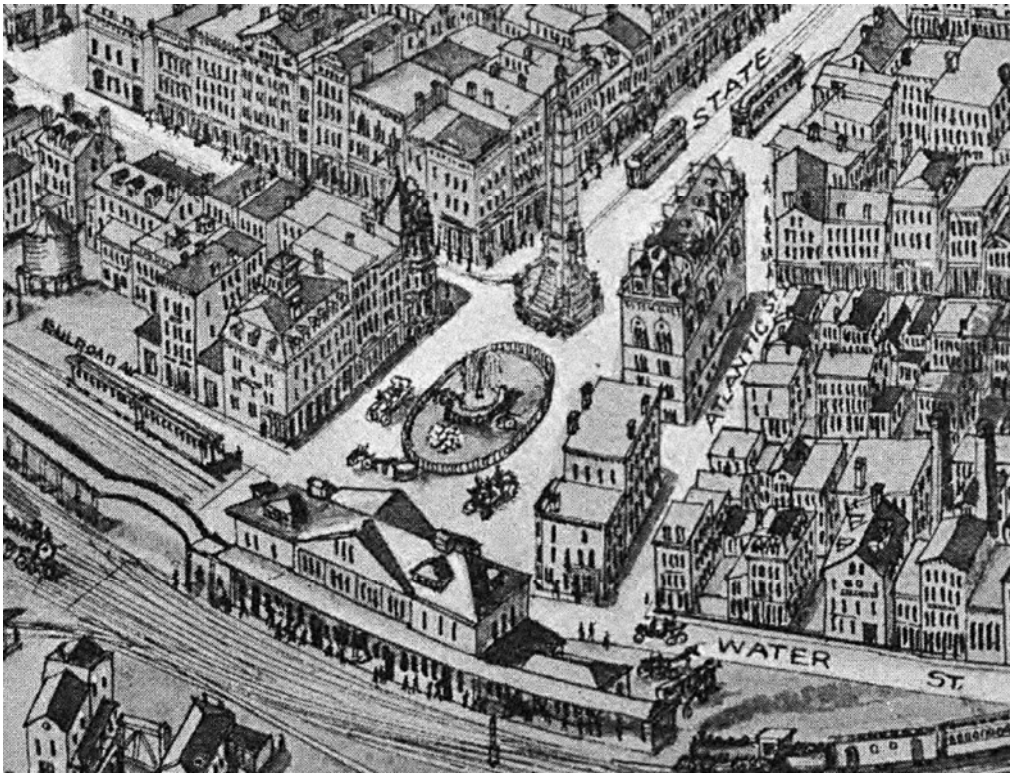


Figure 5-13: The Parade Looking West

Figure 5-14: The Parade Looking Towards Union Station

5.6.2. The Urban Renewal Era and Potential Redevelopment Sites

The character and parcelization of downtown New London changed dramatically during the Urban Renewal era. Smaller parcels were combined to form larger redevelopment sites and smaller, secondary streets were altered or demolished. The result is large superblocks, wider roads and large single use buildings. Many of the redevelopment sites identified in Figure 5-15 were assembled and redeveloped during the Urban Renewal era, and currently represent an opportunity to reestablish a finer grain street and block system and to provide new development that is compatible with existing historic buildings.

Characteristics common to all of the highlighted sites are the use of surface parking lots, single-story buildings, large setbacks, little-to-no recognition or reinforcement of the street edge, multi-storied office buildings with little regard to architectural and streetscape context, and large, blank-faced parking garages. The streets that serve the sites are very wide and designed to move automobiles as quickly as possible with minimal disruption. These physical characteristics are vestiges of the urban renewal era and create a pedestrian-unfriendly and aesthetically dull streetscape.

Figure 5-16 shows a commercial property in downtown New London that is underutilized and displays some of the characteristics outlined above. Figures 5-17 through 5-19 show current photographs of existing Urban Renewal era development in downtown New London juxtaposed with views of its historic streetscape and architecture.

Figure 5-15: Aerial View of Potential Redevelopment Sites

Figure 5-16: Underutilized Property in Downtown New London

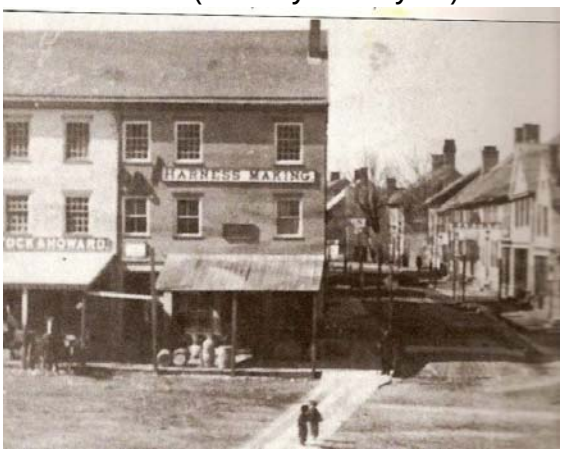
Figure 5-17: Water Street (Before and After)

Circa 1960

2009

Figure 5-18: Atlantic Street (Before and After)

1860 (formerly Bradley St.)



2009

Figure 5-19: State Street at the Parade (Before and After)

Circa 1900

2009

5.6.3. Conceptual Framework Plan

Figure 5-20 is a conceptual framework plan that outlines the important corridors (in blue) that provide pedestrian and vehicular access to the redevelopment sites highlighted in Figure 5-15 and Figure 5-21, and identifies potential future corridors (in yellow). Together, the corridors serve as the "skeleton" of the conceptual TOD master plan (see Figure 5-22) and are critical to the functioning of a pedestrian-friendly, mixed-use district.

Figure 5-20: Conceptual Framework Plan

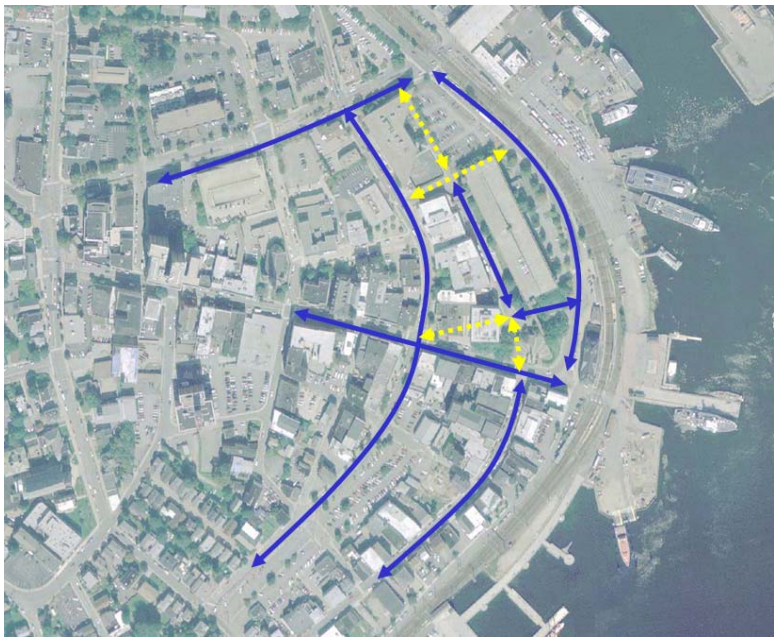


Figure 5-21: Potential Redevelopment Sites

5.6.4. Conceptual TOD Master Plan

There are a number of events that could trigger the realization of a long range TOD master plan, which could include a new bus facility, new waterfront garage and associated mixed-use development:

- The Water Street parking garage may reach the end of its useful life and need to be replaced.
- A private developer could approach the City with a proposal for a public/private partnership mixed-use development on the Water Street Garage site.
- One or more of the other large redevelopment sites north of State Street may become available for redevelopment.

Whatever the trigger, this conceptual TOD master plan posits a future that restores the character and vitality of downtown New London to the long period of history prior to the Urban Renewal era. The plan is flexible and development can proceed incrementally over time in varying sequences.

The conceptual development program, shown in Figure 5-22 and outlined below, was derived from a form-based analysis of development opportunities on the key redevelopment sites. Envisioned for the sites is a mix of housing, retail, hotel and office development.

Conceptual Development Program:

- Total Development Area: 13.5 acres
- Housing: 430 – 520 units (1,000 SF. – 1,200 SF per unit)
- Retail: 35,000 SF
- Hotel: 250 rooms
- Office: 240,000 SF
- Parking: On-street and rear surface lots, six structured parking facilities (two below grade, four above grade)
- Transit: New Greyhound and SEAT bus terminal on ground level of rebuilt Water Street parking garage

Figure 5-22: Conceptual TOD Master Plan

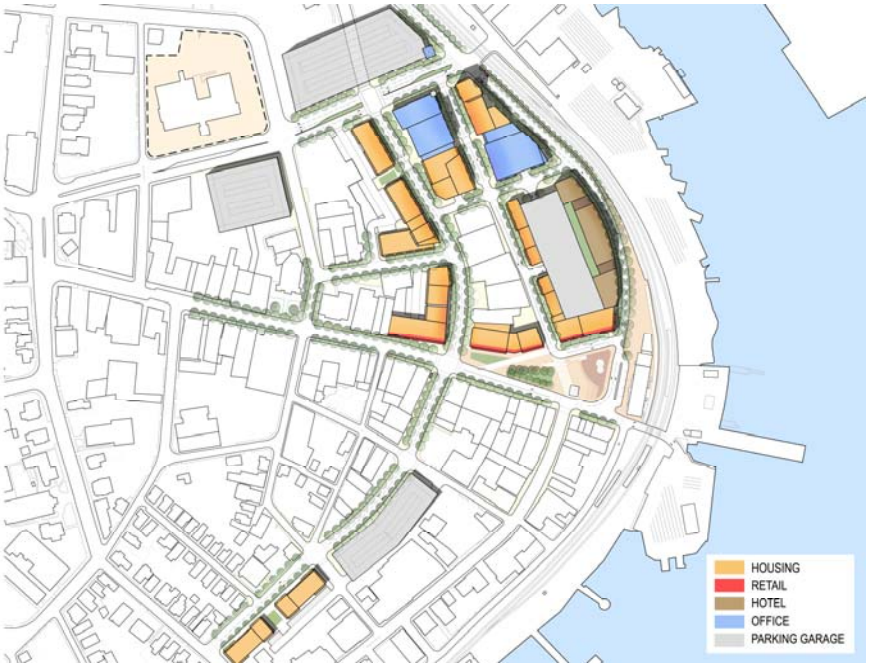
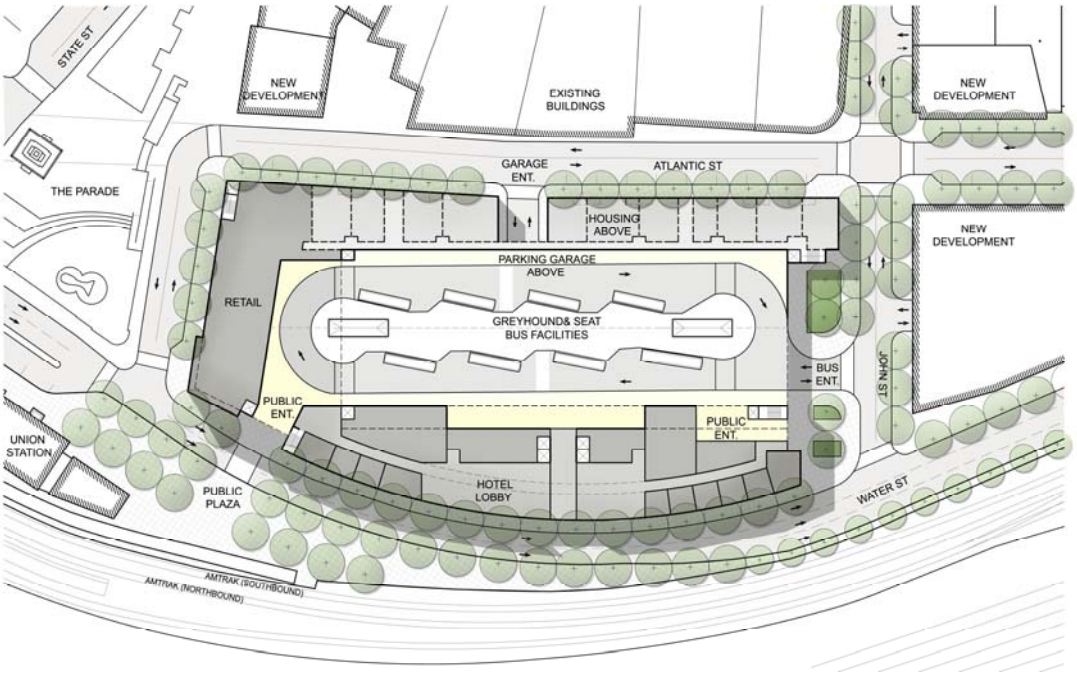


Figure 5-23: Conceptual Ground Level Plan



The plans shown in Figure 5-23 and Figure 5-24 illustrate a new Greyhound and SEAT bus terminal and parking garage wrapped with ground floor retail, housing and a hotel. The terminal features a center island to facilitate passenger transfers, pedestrian access from Water Street adjacent to Union Station and bus access from John Street. Other surrounding development includes mid-to-high rise housing, office buildings and above and below grade parking structures.

Figure 5-24: Conceptual Roof Plan, TOD Master Plan

Figure 5-25: Illustrative Cross-Sections of the Water Street Garage

Figure 5-25 shows an existing cross-section of the Water Street parking garage and a potential cross-section of the new Greyhound and SEAT bus terminal / rebuilt parking garage wrapped with housing (fronting Atlantic Street) and a hotel (fronting Water Street) at the location shown in Figure 5-26.

Figure 5-26: Cross-Section Key

Figure 5-27: Existing Development Conditions

Figure 5-27 is an aerial photograph of downtown New London and Figure 5-28 is a 3D model of downtown New London viewed approximately from the same vantage point. The images that follow illustrate potential building massing of the conceptual TOD master plan shown in Figure 5-22.

Figure 5-28: 3D Model of Existing Development Conditions

Figure 5-29: Potential Redevelopment Sites

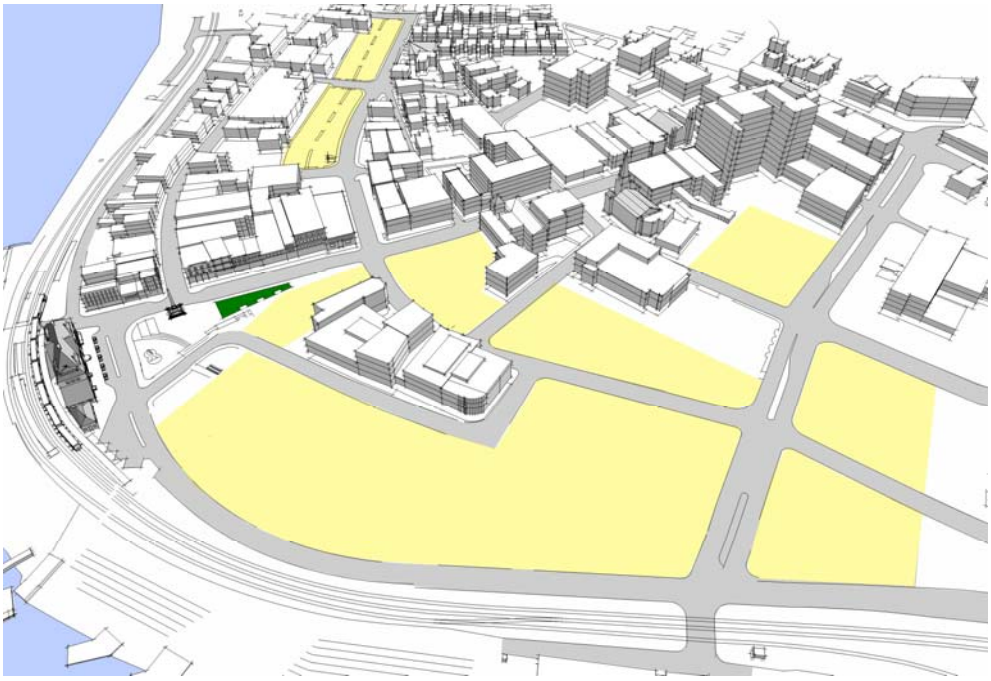


Figure 5-29 shows the redevelopment sites cleared of existing development. Figure 5-30 shows the potential arrangement of new buildings and massing based on the conceptual TOD master plan shown in Figure 5-22. Building heights shown generally reflect average prevailing height of proximate existing buildings. In some cases, taller buildings were used to concentrate land uses near major future parking facilities (e.g. office and residential development) and to punctuate street corners and create visual interest. The taller buildings are setback from the historic areas flanking State and Bank Streets.

Figure 5-30: TOD Master Plan Build-Out

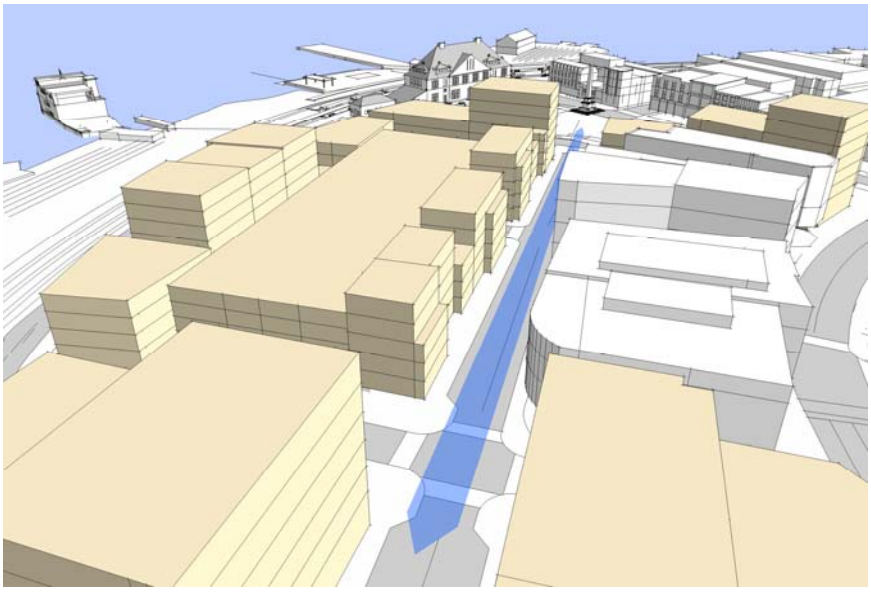
Figure 5-31: New Development on the Eugene O'Neill Dr. Parking Lots

Figure 5-31 shows residential development on the southern Eugene O'Neill Drive parking lot, and a multi-level parking garage on the northern Eugene O'Neill Drive parking lot. Development on the parking lots will fill in the gaps in the street wall and improve the visual quality of the streetscape.

Figure 5-32: New Development on Eugene O'Neill Drive and Atlantic Street

As illustrated in Figure 5-32, siting mid-to-high rise residential and office development at the back of sidewalk along Eugene O'Neill Drive and Atlantic Street will create legible street corridors and façade planes.

Figure 5-33: Sightline to Parade Monument from Atlantic Street



Sightlines to major downtown landmarks should be reinforced by new development. Physical landmarks that visually terminate street corridors will create visual interest, strengthen the sense of place and improve pedestrian wayfinding. Figure 5-33 illustrates the visual connection between the potential new development and an important landmark in the Parade.

Figure 5-34: Reestablished John Street

The redevelopment of the Water Street garage site together with the adjacent Mariner Square property would provide the opportunity to reestablish John Street, a former east-west street that was removed during Urban Renewal. This new street (shown in Figure 5-34), along with the extension of Atlantic Street north to Governor Winthrop Boulevard, would create a finer grain block system and provide pedestrians and vehicles much needed east-west and north-south connections through the site.

Figure 5-35: Existing View to Union Station

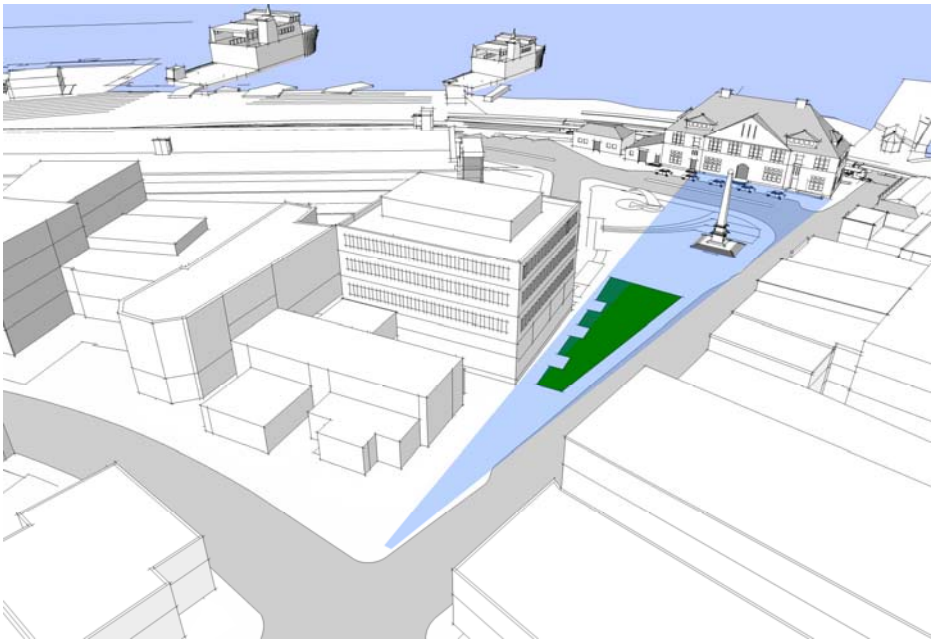


Figure 5-35 shows the existing field of view to the Union Station façade from the northeastern corner of the intersection of State Street and Eugene O'Neill Drive. Sightlines to the northern quarter of Union Station are blocked by existing buildings. Siting new development behind the existing façade plane will allow views to the entire west wall of Union Station, as illustrated below.

Figure 5-36: Potential Expanded View to Union Station

Figure 5-37: Addison, TX

New multi-story buildings developed at edges of large public spaces should define the open space and have active ground floor uses, as shown in Figure 5-37. As shown in Figure 5-38, siting new mixed-use development along the edge of the Parade will establish a stronger north edge, create the pleasing sense of enclosure for pedestrians and help activate the public space. In addition, providing visual connection to Bank Street from Atlantic Street via the Parade, through the use of paving materials and lighting, will strengthen the new development's ties to the entertainment district.

Figure 5-38: New Development on the North Side of the Parade

Figure 5-39: Orenco Station, Hillsboro, Oregon

As shown in Figure 5-39, a well-designed pedestrian zone has wide sidewalks, shade trees, planting strips, pedestrian-scale lighting and awnings. Other desirable streetscape elements include on-street parking, active retail uses on the ground floor of adjacent buildings and high-quality building materials.

Figure 5-40: Bank Street looking towards the Parade

New buildings should be designed to be visually compatible with existing 18th, 19th and 20th century downtown buildings, such as with those shown in Figure 5-40. The mixed-use development shown in Figure 5-41 is a highly successful and award-winning example of the integration of modern design into an historic 19th century neighborhood.

Figure 5-41: Rollins Square Mixed-Use Development, Boston, Massachusetts

Figure 5-42: TOD Master Plan Build-Out

The redevelopment sites represent an opportunity to create a new “face” for downtown New London, a new and dramatic visual gateway to downtown from the waterfront and the RITC, and to establish a lively, mixed-use and pedestrian-friendly district with strong pedestrian connections to Union Station, bus and ferry facilities, as shown in Figure 5-42.

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6. Development of Potential Improvement Options

6.1 Introduction

This chapter describes the improvement options developed by the consulting team to address deficiencies in transportation center functionality (facilities and operations) and opportunities for related transit-oriented development that were identified in earlier tasks of the study. The purpose of this chapter is to describe these options, their development and a qualitative evaluation of the options with respect to screening evaluation criteria. Based on a review of these options and the consultant evaluation, SCCOG, the City of New London and the Stakeholder Steering Committee members reached consensus on which options were to be refined and advanced into the Master Plan.

Candidate improvements to the RITC included both short term and long term options. The following describes each and the relationship between them.

The short term improvements were designed to:

- be specific
- involve low costs
- potentially include temporary actions
- be feasible for City and/or the transportation providers to take action
- be able to obtain consensus

The long term improvements, on the other hand, were meant to reflect a general vision of the future and meet future transportation needs while capturing major development opportunities. It is important to recognize that full consensus on the long term vision was not necessary at this time, unless a recommended short term option would preclude one of the desirable long term concepts. The short term recommendations should instead serve to lead to desirable long term future visions.

The remainder of this chapter is organized as follows:

- Process Used to Develop and Refine Options
- Summary of Needs and Opportunities Identified
- Options for Short Term Improvements
- Options for Long Term Improvements
- Screening Evaluation of Options

6.2 Process Used to Develop and Refine Options

The development of improvement options followed a six step process as described below:

6.2.1. Identification of Transportation Needs and Development Opportunities

The first step of the improvement development process was to summarize the findings of the earlier tasks into a list of transportation needs and development opportunities that the improvements would be designed to addressed. The major issues identified are shown in Table 6-1; these issues are grouped as follows:

- parking needs
- ferry space needs
- bus operation needs
- intermodal linkages
- development opportunities
- potential phasing

The Master Plan for the RITC needed to consider transportation needs well into the future. However, the transportation providers were not able to provide estimates of future ridership or service levels. 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. Two future transportation scenarios, reflecting lower and higher growth rates, were developed for the years 2015 and 2030. In the higher demand scenario 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. Both the scenarios have been discussed in detail in Chapter 3 of this report.

The list of desired transportation improvements to address the needs is shown in Table 6-2.

6.2.2. Development of Guiding Principles and Goals/Screening Evaluation Criteria

Guiding Principles

To guide the development of options for the Master Plan and the screening evaluation of those options, the following guiding principles were developed to reflect our understanding of the goals of SCCOG, the City and the Stakeholder Steering Committee. These are shown in Table 6-3.

Screening Evaluation Criteria

A set of screening evaluation criteria, related to the guiding principles described above, was developed for use in evaluating the proposals. These are shown in Table 6-4.

Table 6-1: Major Issues Identified

1. Large Parking Demand
   a. The future high scenario envisions a large increase in parking demand
   b. In the near term, additional parking may not be required, however the future availability of some existing sites is uncertain
   c. Where can the future parking demand be accommodated?

2. Ferry Space Needs
   a. Future growth in the auto ferry requires expanded staging area, possibly affecting current on-site parking used for the Block Island Ferry
   b. Sea Jet dock area needs to accommodate 9 coach buses per boat
   c. Some reorganization of CSF facilities may be possible and is being contemplated by CSF

3. Bus Operations Needs
   a. SEAT and Greyhound need better facilities to accommodate current and future bus operations and to provide desirable passenger amenities
   b. The bus facilities may not need to be where they are and may be easy to relocate

4. Intermodal Linkages
   a. Rail services depend on adequate parking, pickup/dropoff and taxi access
   b. The two bus operations must be located near each other and preserve some key connections to other modes
   c. The Block Island and other passenger ferries originating in New London will need adequate and convenient parking
   d. Pedestrian convenience, safety, wayfinding and environment needs improvement

5. Development Opportunities
   a. The opportunities are highly influenced by the location scheme of the transportation facilities (e.g., concentration of all transportation facilities near Union Station limits development in the immediate area, assuming there are height limits and other urban design/historical constraints)
   b. Opportunities also vary over time with greater development possible in the long term
   c. The large number of travelers passing through the RITC represents an opportunity to attract visitors to downtown that has not been adequately exploited
   d. Moving bus facilities from the current location may enhance development opportunities for Union Station

6. Potential Phasing
   a. Any major development or substantial reorganization of uses will take time
   b. A long term vision could optimize the development potential and transportation functionality
   c. Short term needs must be met in a manner that doesn't preclude reaching the long term vision
   d. Short term improvements would likely need to be lower cost, particularly if they don't serve the long term vision

Table 6-2 Desirable Improvements

Buildings and Facilities

- Encourage full use of the Union Station building
- Provide more retail/food amenities in the Union Station area
- Provide permanent space for an updated, fully accessible Greyhound ticketing/waiting area
- Consolidate bus/rail ticket functions where possible (maintain Greyhound freight service)
- Provide an indoor waiting area for SEAT in or near the station and near SEAT buses
- Provide an indoor office area for SEAT operations
- Provide a sheltered or indoor ticketing/waiting area for the Block Island Ferry
- Provide more amenities for Block Island Ferry passengers
- Bring Water Street and Governor Winthrop parking garages to proper physical condition
- Repair elevators and bring Water Street and Gov. Winthrop parking garages into ADA compliance
- Provide accessible routes to/from the Eugene O'Neill Drive lots

Parking Capacity

- Ensure a sufficient number of weekday parking spaces for Shore Line East expansion
  - At least 100 in 2010
  - Up to 200-300 in the future
- Provide sufficient cost-effective parking for summer weekend demand
  - Replace on-site ferry parking if it needs to be converted to vehicle staging
  - Maintain or replace the Julian lot if it becomes unavailable for weekend RITC users
  - Increase weekend parking (sometime after 2015)
- Increase the number of handicapped-accessible parking spaces
  - Water Street and Governor Winthrop garages
  - Eugene O'Neill lots

Street Space and Bus Stops

- Provide at least nine bus bays (2-3 Greyhound; 6-7 SEAT) – with no buses backing out
- Provide a stop for the SEAT Foxwoods/Tourist Transit with a convenient pedestrian connection to downtown, the rail station and SEAT
- Provide a stop for the casino shuttles/Tourist Transit with a convenient connection to the SeaJet
- Provide an adequate pick-up/drop-off area for rail (Amtrak and SLE) and Greyhound passengers
- Provide a taxi stand (not necessarily at Union Station)
- Manage conflicts for curb space between the different uses
- Provide a pick-up/drop-off area(s) for Cross Sound Ferry (for both Long Island and Block Island)

Traffic

- Minimize delays to ferry traffic caused by railroad crossing closures
- Minimize interference with bus circulation caused by special events
- Minimize interference with auto access to ferries caused by special events
- Optimize signalization at Water Street/Governor Winthrop intersection to minimize vehicle delays and maintain vehicle access to ferries

Pedestrian Connections

- Maintain or enhance existing good connections
  - Union Station and southbound platform to taxis, rail pick-up/drop-off area, SEAT Foxwoods
  - Northbound rail platform to Fishers Island Ferry
  - Greyhound to/from SEAT, taxis and pick-up/drop-off area
  - SeaJet to/from casino shuttles and future Tourist Transit stops
  - Downtown to/from Union Station, southbound rail platform, Greyhound and SEAT
- Improve directness, attractiveness, safety, accessibility and physical condition of the pedestrian connections to the ferry terminals and improve wayfinding
  - Parking facilities and rail platforms to/from Block Island Ferry

Table 6-2: Desirable Improvements (Continued)
o Greyhound and Amtrak station to/from Long Island Ferry o Downtown to/from all ferries • Improve pedestrian crossing of tracks at Union Station/State Street o Improve wayfinding and safety o Minimize delays from gate closings o Using existing surface crossing or new grade-separated crossing • Provide pedestrian improvements at Water Street/Governor Winthrop intersection to ensure pedestrian safety and accessibility Information, Orientation and Aesthetics • Provide static route and schedule information for all modes at all locations including maps for making connections at the Intermodal Center • Provide standardized wayfinding signage for all connections • Provide standardized wayfinding signage to downtown from all RITC facilities • Provide standardized vehicle wayfinding signage to all parking facilities, pick-up/drop-off areas and ferry terminals • Provide real-time connection information for passengers connecting between bus/rail and ferries • Provide ferry and bus operators with real-time expected arrival information on rail and ferry • Enhance the appearance of the rail alignment, bus facilities and Water Street Garage to create a more pedestrian- and tourist-friendly environment

Table 6-3: Guiding Principles

1.	Emphasize short term improvements that:
	a. address identified deficiencies b. are specific c. are low cost d. are easy to implement e. work towards ,or at least are not incompatible with, the desired longer term vision(s)
2.	Identify one or more long term visions, which should be more general and allow for some flexibility so that the City can respond to private developer proposals
3.	Identify possible phasing of improvements that identifies where the big decisions occur
4.	Preserve and enhance the viability and growth of the transportation operators and local businesses
5.	Make transfers between modes safe and convenient
6.	Capitalize on the synergies of transportation services and development
7.	Balance the space needs of transportation services and development
8.	Maximize opportunities for those types of development that are likely given the character and advantages of New London
9.	Avoid schemes that would involve land takings / focus instead on opportunities for public-private cooperation
10.	Consider the goals of private businesses/property owners as well as public goals
11.	Create an attractive gateway for New London and the region and encourage travelers to visit New London

Table 6-4: Screening Evaluation Criteria

Common Criteria

- Low Cost
- Improves Safety and Convenience for Transfers
- Enhances Pedestrian Safety
- Enhances Wayfinding/Information
- Has Sufficient Capacity (Operations in Short Term, Demand and Growth for Public Transportation Modes and Parking in the Long Term)
- Enhances Attraction of Visitors
- Minimal Environmental Issues
- Minimal Property Issues
- Potential for Public Private or Grant Funding (for the Transportation Improvements in the Short Term)

Short Term Criteria

- Easy to Implement
- Adaptable to Future Changes in Operating Needs
- Flexible to Accommodate Long Term Commercial Development
- Compatibility with Bus Terminal Long Term Concepts
- Maintains or Enhances Traffic Operation/Safety

Long Term Criteria

- Ease of Project Development
- Ease of Phasing
- Improves Convenience for Parking Access
- Enhances Pedestrian Environment
- Promotes Likely Development/Local Economy
- Capitalized on Synergies between Transportation & Development
- Balances Need for Transportation & Development

6.2.3. Development of Preliminary Ideas

The consulting team held a charrette in early March of 2009 to develop some initial ideas in a brainstorming type of format. Transportation planners, economic development specialists and architects/urban designers on the consultant team participated. The consulting team members divided into three groups, each of which had a mix of specialists. Each team was asked to develop three concepts over the course of the one-day charrette. The three concepts were defined by the general approach to improving connections across the tracks, that is, surface pedestrian improvements at State Street, surface pedestrian improvements at Governor Winthrop Boulevard and a footbridge or tunnel.

Prior to the charrette, a number of possible options for the consultant team to consider were assembled, as shown in Table 6-5 below:

Table 6-5: Menu of Improvement Options Considered at the Charrette
Connection to Water Street Garage
A. New footbridge (pedestrian bridge)
B. Enhanced pedestrian routing through Parade, across at State Street and through City Pier
C. Enhanced pedestrian routing across at Governor Winthrop Boulevard (with CSF reconfiguration)
D. Pedestrian underpass/tunnel
Cross Sound Ferry Passenger Facility
A. New passenger ferry terminal/bus loading area at current Block Island Ferry site
B. New passenger ferry terminal/bus loading area on lot next to City Pier
C. Remove structures and create a new passenger ferry terminal/bus loading area opposite Governor Winthrop Boulevard
D. Relocate all non-vehicle ticketing new passenger ferry terminal (vehicles check in at gate)
Greyhound Terminal
A. Reconfigure existing bays and rehab terminal building
B. Relocate across the street to the south (Union Station) end of the lot in front of the garage
C. Relocate across the street to the north (bank) end of the lot in front of the garage (with pedestrian path to Gov. Winthrop crossing)
D. Relocate across the tracks at Governor Winthrop Boulevard (Yankee Gas/CSF site)
E. Relocate a to new terminal at the Governor Winthrop Garage site or Ramada site
SEAT Hub
A. Construct better shelters and an information center at the existing site
B. Relocate to the Greyhound site and use the Greyhound Terminal or space in Union Station for waiting, pass sales, information and office space
C. Relocate buses to directly in front of Union Station and have waiting, pass sales, information and office space in the station building
D. Relocate across the street to the lot in front of the garage
E. Relocate a to new terminal at the Governor Winthrop Garage site or Ramada site
Additional Parking
A. Remove CSF structures and/or expand onto Yankee Gas site
B. Reconstruct new larger Water Street Garage
C. Construct larger replacement for Governor Winthrop Garage (or Ramada site?)
D. Construct garage on Eugene O Neill Drive lot(s) with shuttle service to CSF
E. Identify existing remote surface lots with low weekend utilization (with shuttle service)
F. Construct new remote surface lots near I-95 (with shuttle service)

Table 6-5: Menu of Improvement Options Considered at the Charrette (continued)

Taxi Stand Location
A. At the Greyhound site
B. Along Water Street at current SEAT site
C. Park along Atlantic Street and pick up at the Greyhound site
D. Install direct phones at the station and move stand to Governor Winthrop Garage/Ramada site
E. Install direct phones at the station and move stand to the Eugene O Neill Drive lots
F. Along South Water Street (make 2-way and move Amtrak parking)
G. Across the street in the lot in front of the garage
H. In front of Union Station
Pick-up/Drop-off Area
A. In front of the station
B. Create an off-street area in the Greyhound site
Tourist Transit/ Shuttle Bus
A. Two stops - use SEAT terminal plus a stop at Cross Sound Ferry
B. One stop only - at a new passenger ferry terminal
C. One stop only on Water Street at the station (with improved pedestrian access to ferry terminal)
D. Additional downtown stops (at Eugene O'Neill & State and State and on Bank St.)
Development Options
A. Small Infill Parcels and Rehab
B. New residential development fronting Water Street
C. Residential development on E. O'Neill lots
D. Event Space on Water Street
E. Redevelop Greyhound site for commercial use
F. Major redevelopment of Water Street Garage and adjacent parcels
G. Major redevelopment of Governor Winthrop Garage
H. Waterfront development on CSF property

6.2.4. Consolidation of Ideas

A wide variety of ideas were developed at the charrette. Many of these focused on the larger picture for the long term. Many of the ideas involved significant redevelopment and relocation of existing facilities. Debrief meetings with the Council of Governments and City staff suggested that more attention be paid to short term and low cost solutions that could address the short term needs at lower costs. After the charrette, the consulting team undertook three activities:

1. Consolidate the many long term visions into a logical set of alternatives.
2. Develop short term options for consideration.
3. Conduct some discussions with some key stakeholders to get a reality check on some of the ideas and get some additional input to refine the ideas.

6.2.5. Stakeholder Discussions

Besides discussing the ideas with SCCOG Project Manager, meetings or conversations were held with key stakeholders. These included City staff (City Manager, Economic Development and Planning), Union Station, Cross Sound Ferry, SEAT, Greyhound, taxi operators and the Water Street Garage manager.

6.2.6. Preparation of Short and Long Term Options for Further Review

After the meetings with key stakeholders, the short and long term options were refined for presentation to the Steering Committee. Note that while certain stakeholders expressed some preferences for, or concerns about, certain options, the options were generally not dropped from presentation to the Stakeholder Steering Committee. Where options could be adjusted to address a concern or a new option could be identified, that was done. If an option was deemed completely unworkable, it was replaced by a more feasible option. However, since the purpose was to identify options and highlight the tradeoffs, options that were not favored by some key stakeholders due to particular drawbacks were still included for consideration by the larger group.

6.3 Summary of Needs and Opportunities Identified

While the above identified the key transportation needs and many possible improvement options to consider, before a set of short term alternatives and long term vision concepts could be developed for evaluation, the development opportunities and parking needs had to be clarified. These are briefly described below based on the analysis discussed in earlier chapters.

6.3.1. Development Opportunities

Potential development sites around the RITC were identified in Chapter 5. They fell into the following classifications:

- Small Infill Parcels
- Large Undeveloped Parcels
- Large Potential Redevelopment Parcels
- Rehab Candidates

Most of the sites that fall under these classifications remain promising in terms of development potential. It was learned that the waterfront parcels originally identified as candidates are better used as part of a fully operating RITC, and consequently were removed from the list of potential development sites. However, the sites can significantly benefit from pedestrian and vehicular circulation improvements and aesthetic enhancements.

In addition, the Radisson hotel site on Governor Winthrop Boulevard and the Police Station site (combined with adjacent parcels) at the intersection of Eugene O'Neill Drive and Governor Winthrop Boulevard were added to the list of Large Potential Redevelopment Parcels since these might become available over the

long term. Lastly, a preliminary analysis of the City-owned Eugene O'Neill Drive parking lots (which fall under "Large Undeveloped Parcels") revealed that the parcels' dimensional constraints and geometric characteristics create more development obstacles than previously thought, particularly for a potential parking structure. These obstacles will not preclude development, but will add complication and expense. However, they remain significant in terms of development potential.

Most of the major opportunities for development around the RITC are long term (20 or 30 years), as there is a very limited number of undeveloped sites. The most immediate opportunities lie in the vacant storefronts on Bank and State Streets, and small infill parcels identified in Chapter 5. Although it is conceivable that these sites could be rehabilitated/developed within the short term, they are too small to achieve a significant portion of the future land use program identified in the market analysis of Chapter 4. In addition, achievable as-of-right development densities may not be great enough to make it worth the investment for developers.

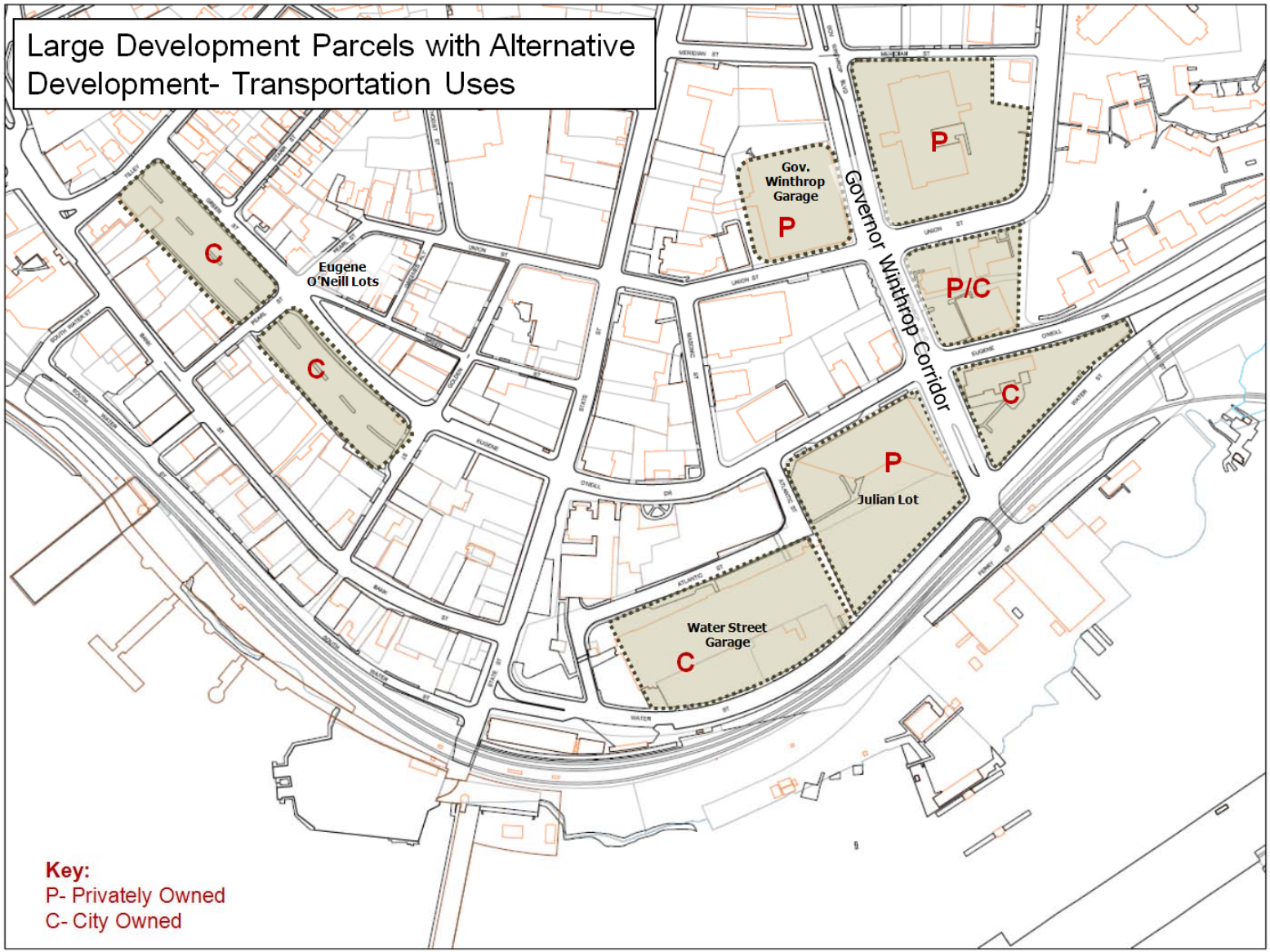
The two undeveloped parcels directly in front of the Water Street Parking Garage on Water Street (the north parcel was formerly a bank drive-through; the south parcel is currently used as a parking lot) are the largest undeveloped sites within sight of Union Station – a total of about three-quarters of an acre (see Figure 6-1). However, upon closer inspection, it is apparent that there is a set of physical constraints that create development difficulty. For instance, the Water Street Garage has two access/egress points on Water Street – one at the north corner of the garage and the other is at the center of the garage. Both of these points, particularly the center one, significantly impact the two undeveloped parcels and would need to remain open to serve the garage. Another constraint is that the garage is sited six feet west of the north and south parcel's rear lot line, which would make filling out the two sites impracticable. Adjacent bus operations, daily operation of the public parking garage and noise related to railroad operations are discordant with certain land uses (for example, housing) and may limit desirability. These constraints, among others, make higher density development difficult if the Water Street Garage operations are to remain intact. The parcels in front of the Water Street Garage have greater value for development if the Water Street Garage were part of the redevelopment scheme.

6.3.2. Summary of Parking Needs by Future Year Scenario

The amount of parking needed by the RITC in the future is a significant factor that will drive plans to ultimately replace the Water Street Garage as it nears the end of its expected lifespan around 2030. Peak summer Saturday parking counts at the two parking garages and four surface lots serving the RITC indicate that these facilities currently accommodate an estimated 1,341 parked vehicles, representing 69% of their total capacity. 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. Note that these figures represent a typical peak summer Saturday and currently some days may exceed these figures while others are below that level.

The study estimated future parking demand for high and low demand scenarios for the years 2015 and 2030. In 2015, demand on a typical peak summer Saturday is estimated to increase to 75%-80% of total capacity, with the Water Street Garage nearing its practical capacity only in the higher demand scenario. With the Cross Sound Ferry and Julian parking lots full and the Water Street Garage reaching capacity, RITC patrons will begin to overflow into the Eugene O'Neill surface lots and Governor Winthrop Garage. By 2030, demand is estimated to increase to a range of between 88% of capacity and 130% of capacity.

Figure 6-1: Large Development* Parcels with Alternative Development – Transportation Uses



*Note that included are some privately owned parcels that may or may not be available in the future for redevelopment.

The Water Street Garage
would fill even in the lowest demand scenario but the overflow could be accommodated by the Governor Winthrop Garage and O'Neill lots forcing some passengers to walk much farther. High scenario demand would exceed the capacity at every facility. Thus, current facilities, if all remain open, should be able to accommodate demand through 2015 and possibly much longer, although it can be expected that nearby facilities will fill and that some patrons will have to walk longer distances from the more distant facilities. Beyond 2015, whether there is a need for additional parking will depend on the growth in demand for RITC services, particularly the Block Island and any new passenger ferry services which typically require the most parking.

The need to increase parking could be triggered sooner by the closure or loss of any of the six parking facilities. If vehicle volumes on the Long Island Ferry increase, 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, Cross Sound's long term use of parking spaces leased from Yankee Gas for its employees is not a certainty which could have some further impacts on the parking available on Cross Sound property for passenger use. However it should be noted that Cross Sound has some plans to remove two structures to make more total surface area for staging and parking available in the event it needs more space. Also, the Julian lot may be developed and may no longer be available for ferry parking. However, any new development would likely provide parking (some replacement parking and some parking for additional demand created by the development, so the total number of spaces available on a weekend to meet ferry demand might not actually be reduced and could be increased provided the owner opened the garage on weekends to serve this demand. Finally, the condition of the Governor Winthrop Garage may force its closure or replacement before the Water Street Garage needs replacement. Any of these closures would severely constrain parking at least temporarily.

While parking in the near term in general appears to be sufficient, the master plan will need to address the need for expanded parking in the long term. The number of additional spaces needed on a peak summer Saturday could vary from only a few to several hundred and will not be able to be accurately estimated for many years. The plan will therefore need to identify possible options for expanding parking in the long term but be flexible in terms of the size of any new and replacement parking facilities.

6.4 Short Term Alternatives

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

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

noted that the Parade Project, which was under construction and nearing completion (at the time this task was underway), was assumed to need to remain in place without modification (or only very minor impacts)[1].

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

The most urgent needs to address are:

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

6.4.1. Improvements Common to All Alternatives

Among the components of the short term improvement are several which do not vary significantly among the short term alternatives, as follows:

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

The above improvements are illustrated in Figure 6-2 through Figure 6-7 and described below.

The most critical focus areas for short range pedestrian and aesthetic improvements in the RITC area are at the two intersections where streets cross the railroad and that provide pedestrian and vehicular access to the waterfront, ferry services, City Pier, and Union Station. Those two critical intersections, in many cases, need either new or wider sidewalks (new west sidewalk on Ferry Street, widened north and south sidewalks on State Street), more clearly marked pedestrian zones at both rail crossings, pedestrian-scale

[1] Later refinement of short term alternatives assumed that modifications north of Atlantic Street would be permissible.

Figure 6-2: Pedestrian and Aesthetic Improvements

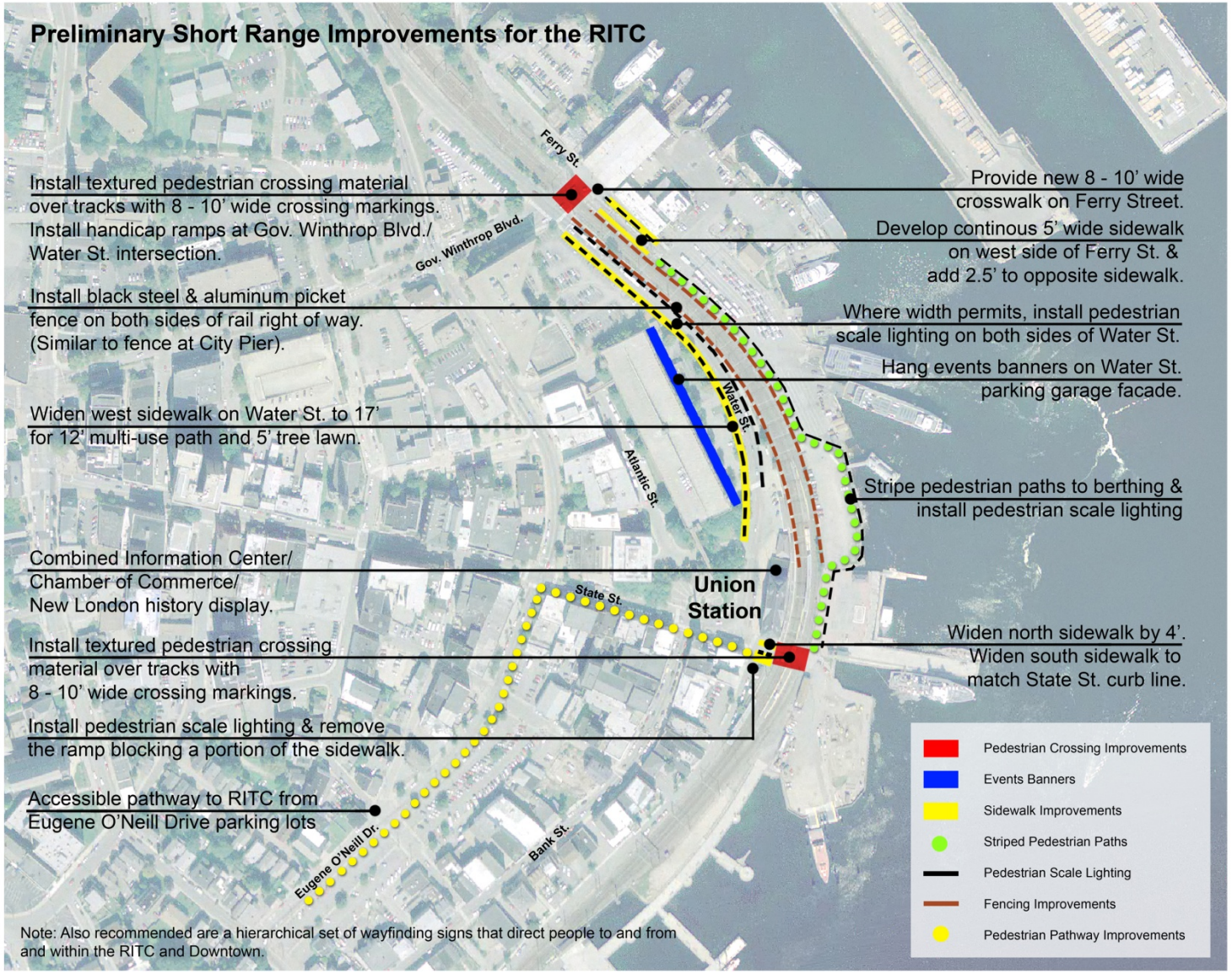


Figure 6-3: Rendering of Short Term Pedestrian and Aesthetic Improvements in the Context of One Possible Improvement Scheme

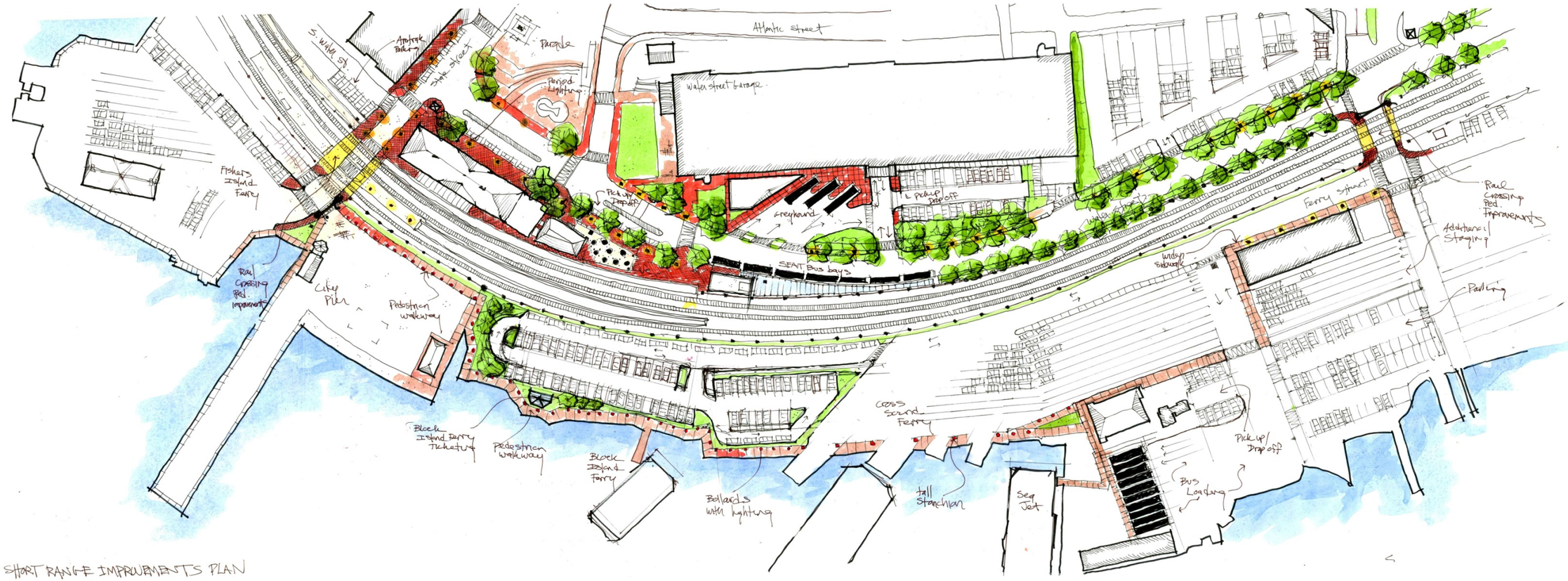


Figure 6-4: Specific Pedestrian Improvements – Location of Section Views

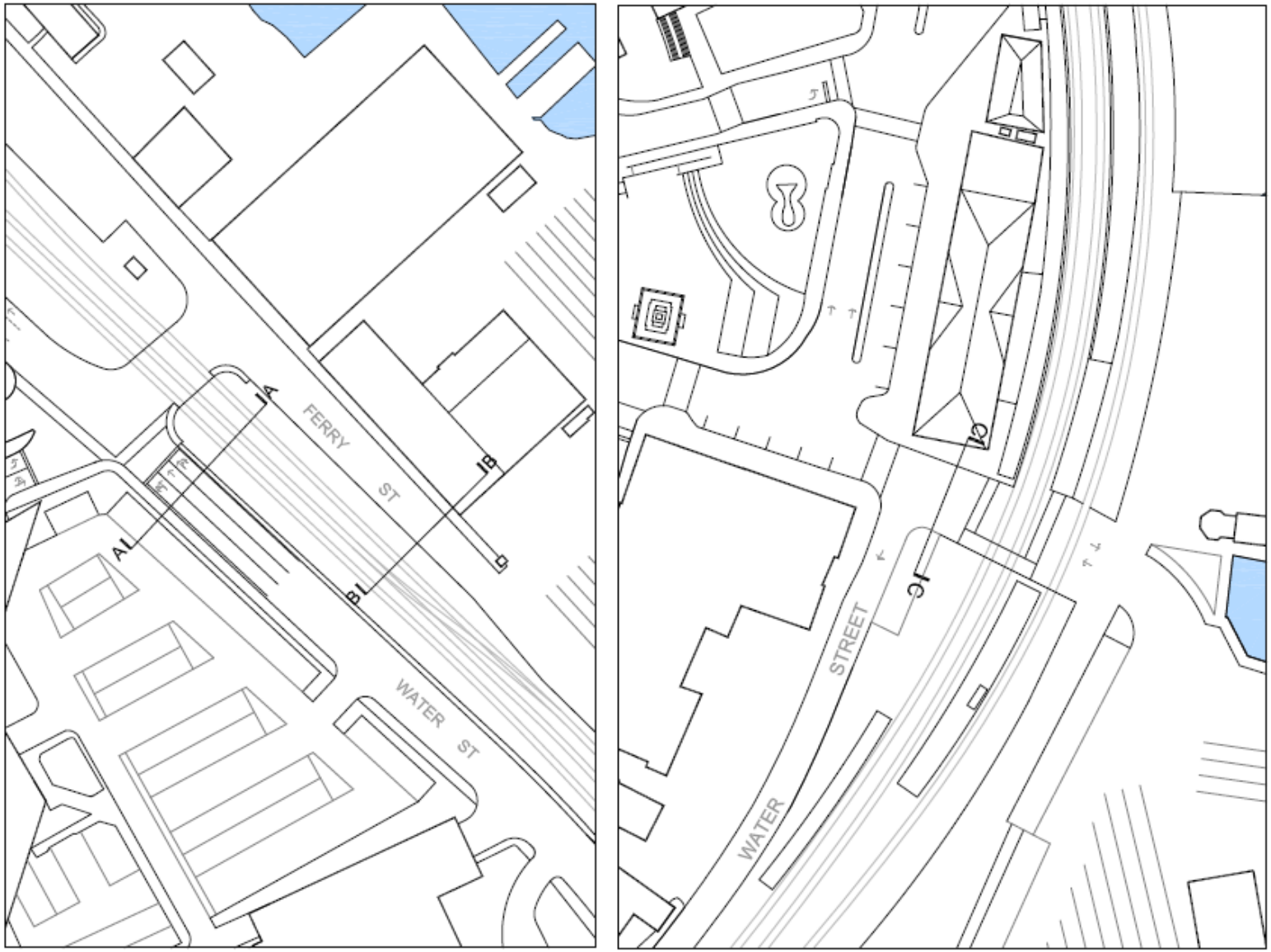


Figure 6-5: Specific Pedestrian Improvements – Section Views Along Water Street (Section A-A)

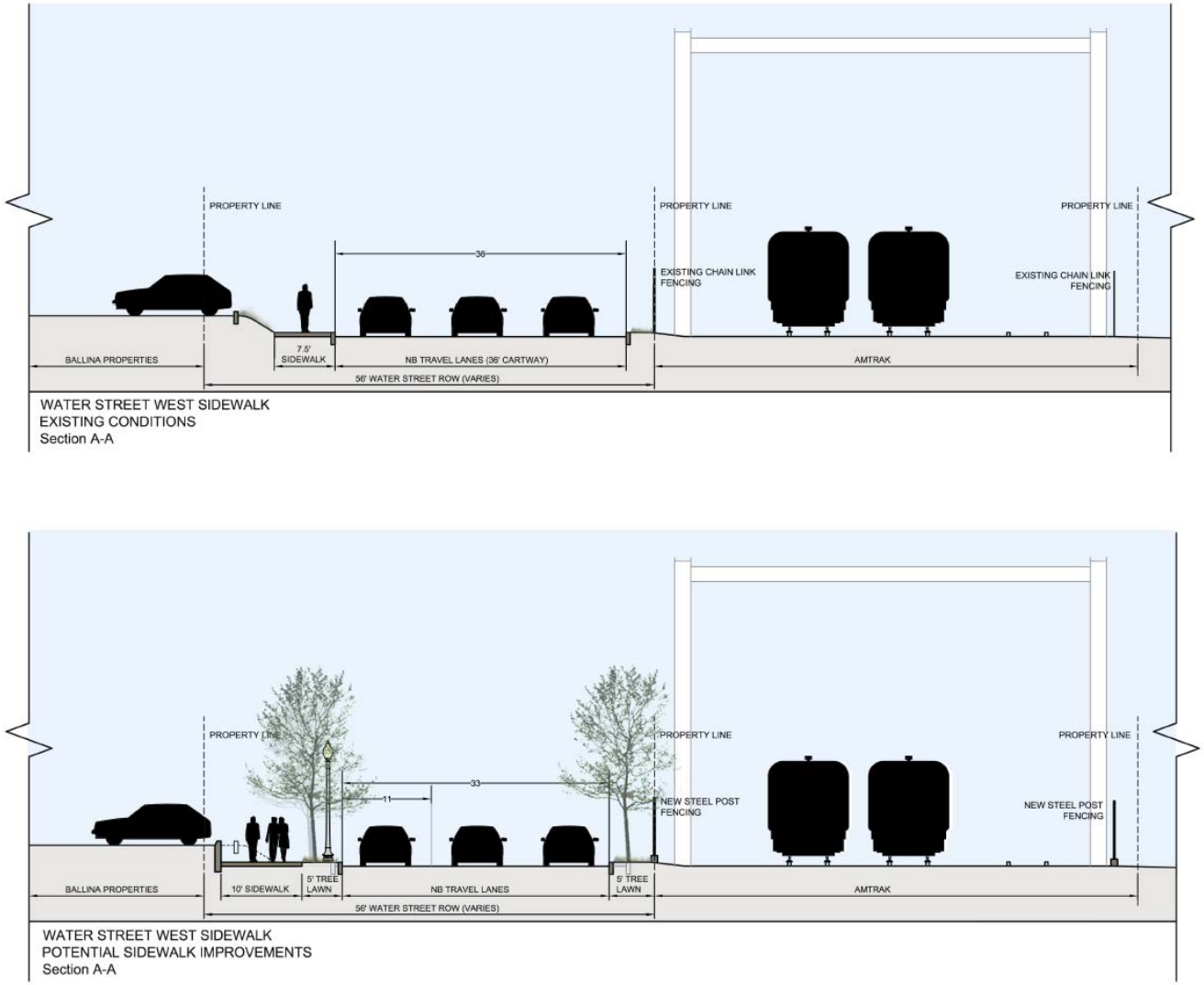


Figure 6-6: Specific Pedestrian Improvements – Section Views Along Ferry Street (Section B-B)

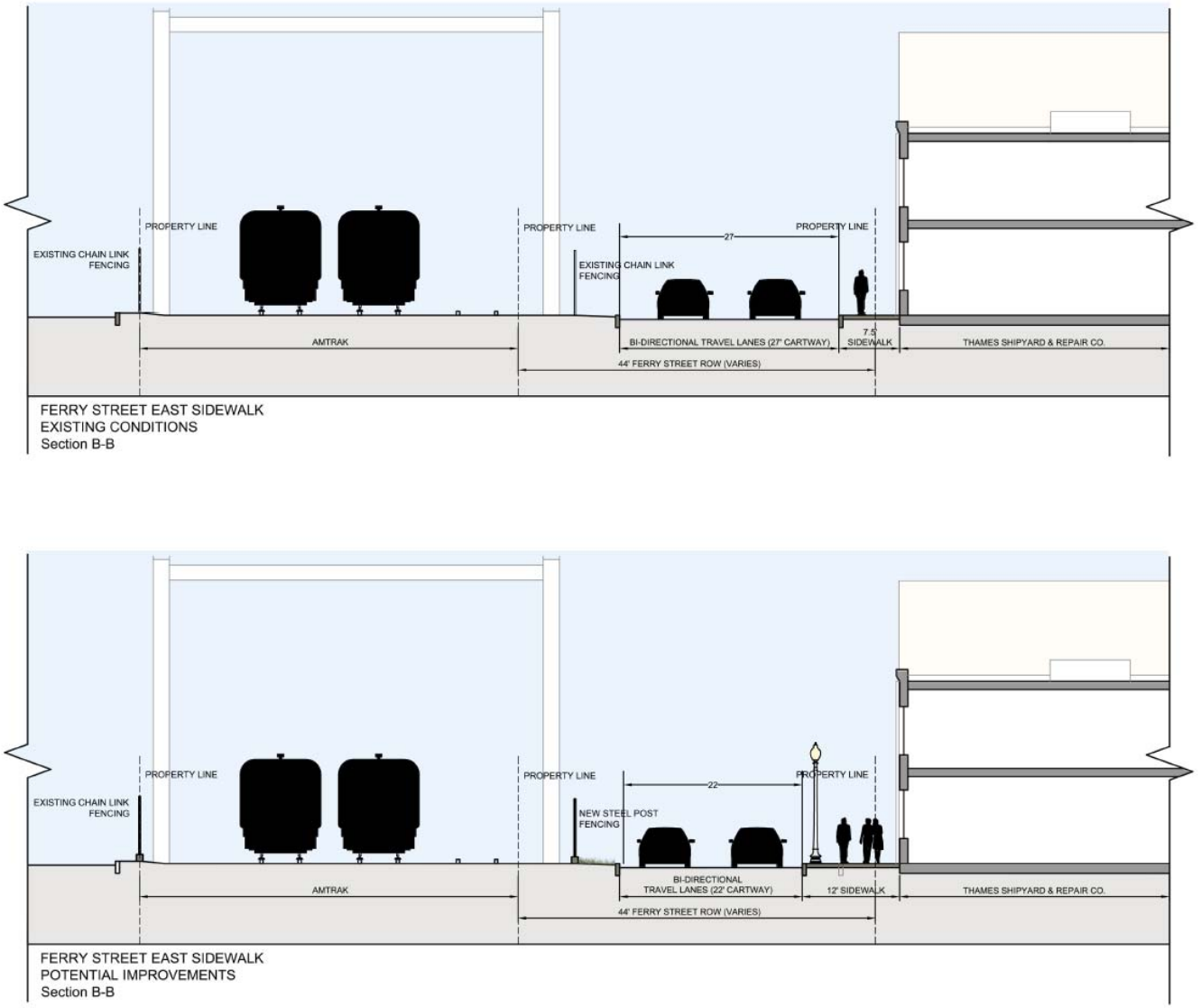
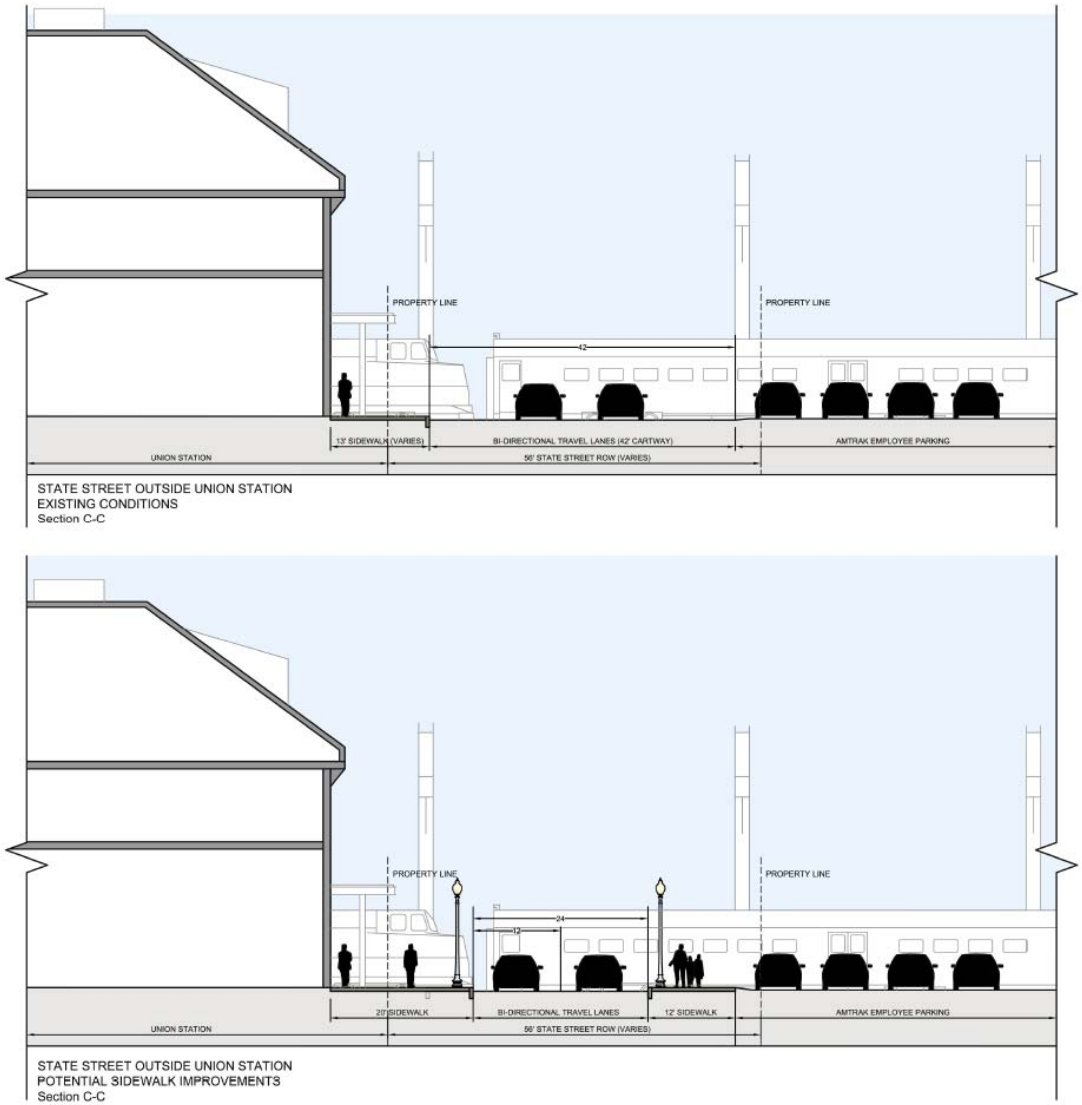


Figure 6-7: Specific Pedestrian Improvements – Section Views Along State Street (Section C-C)



lighting, new crosswalks, and a new wayfinding signage system. To strengthen connections between these two intersections and between the Water Street Garage and all of the transportation modes on the east side of Water Street, a set of short range pedestrian and aesthetic improvements are recommended for Water Street as well, including widening the west sidewalk (and, if feasible, creating an extended east sidewalk), and installing pedestrian scale lighting, tree lawns and street trees. Other improvements are the establishment of gateways at the entrances to the waterfront/ferry site.

Another focus for pedestrian improvements is along the waterfront. Recommendations include developing a striped or textured pedestrian path, with pedestrian-scale lighting and guiding bollards, starting at City Pier and following the water's edge to the Block Island Ferry boarding area, then turning west to a new pathway that follows the east side of the rail corridor ultimately connecting with Ferry Street. Other improvements include installing black steel post fencing along the east and west sides of the rail corridor within the RITC area. Another potential improvement is installing red brick pavers on the sidewalks directly outside of Union Station. These enhancements will provide a more uniform station area aesthetic.

These short term pedestrian and aesthetic improvements will create a higher-quality pedestrian environment and will tie together the transportation modes. Together, they will create a safer and more secure and attractive RITC area for residents, tourists, and transit and ferry patrons.

Besides a wayfinding signage program, the information and signage improvements could include static signage about transportation modes, orientation maps, information kiosks, etc. Dynamic message signs might ultimately play a role. These could display information about train, bus and ferry arrivals.

One possible element would be incorporating a visitor welcome center into Union Station, that is, a combined Information Center and Chamber of Commerce presence and a New London history display in Union Station. This may require a State role at Union Station.

6.4.2. Improvements Specific to Particular Alternatives

The short term alternatives differ primarily in what changes are assumed to occur in the location and configuration of certain transportation facilities. Specifically, the differences between alternatives are related to whether the two bus operations are retained in their current locations or relocated to the space now available in front of the Water Street Garage. In either case, there should be upgrades to the customer facilities for the bus services.

Similarly, there are options as to how the curb space along the east side of Water Street is used if the buses are moved and how the space in front of the Water Street Garage is used if the buses remain in their current location. Improved taxi stand and vehicle pick-up/drop-off areas at Union Station would be made in all options but somewhat differently.

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

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

4. Move only Greyhound to the space in front of the Water Street Garage and extend SEAT southward to include the former Greyhound site

Within these basic alternatives, there were some variants identified.

Besides the location of bus facilities, another potential major difference between alternatives could be how Cross Sound Ferry uses its space, specifically, whether Cross Sound Ferry removes some of its existing buildings (as they had discussed) to create more auto staging space, whether or not they add or remove on-site parking and whether or not they shift locations of the passenger ferries. Several options were examined and discussed with Cross Sound Ferry as noted below:

- Passenger Ferries Remain As Is
- Sea Jet and Block Island Both Located Near City Pier
    - Sea Jet moves next to existing dock location of Block Island Ferry
    - Block Island Ferry moves to dock adjacent to City Pier
- Only Sea Jet Near City Pier
    - Sea Jet moves to a dock adjacent to City Pier
    - Block Island Ferry moves to current Sea Jet dock location

After discussion with Cross Sound Ferry, however, it was concluded that the current configuration of the passenger ferries works best even if Cross Sound Ferry removes some buildings to expand and reconfigure its auto ferry staging area. As a result, the study did not distinguish short term alternatives based on options for reconfiguring the Cross Sound Ferry area.

The basic short term alternatives are summarized in Table 6-6 and illustrated in Figure 6-8 through Figure 6-14. The following describes these alternatives and sub-options.

Short Term Alternative 1 (See Figure 6-8)

This alternative maintains both SEAT and Greyhound on the east side of Water Street but reconfigures the area to bring SEAT closer to Union Station and expands and renovates the Greyhound Terminal Building to be a combined bus terminal for both operators. (Alternatively, a SEAT passenger waiting area could be included in Union Station or constructed in a separate building north of the Greyhound Terminal. Figure 6-9 shows the latter variant.) Canopies are provided for waiting bus passengers and a unified paving scheme ties the rail and bus facilities together. Auto pickup and dropoff are in front of Union Station and taxi queuing is on State Street extending beyond Bank Street as needed. Existing short-term and handicapped parking remains in the space in front of Water Street Garage, and would be expanded into the old bank site.

Short Term Alternative 2 (See Figure 6-10)

This alternative uses the space in front of the Water Street Garage on the west side of Water Street to create a new combined off-street bus terminal for SEAT and Greyhound. This would require relocating the center garage entrance and associated structural modifications to the garage. The curb space currently occupied by Greyhound buses becomes available for more auto pickup and dropoff and taxi use. The old Greyhound Terminal and surrounding expanded sidewalk is available for commercial reuse (although on-site parking remains a somewhat constraining factor for many potential uses even if City zoning allows reuse of existing buildings without meeting the parking requirements a new building would face).

Table 6-6: Primary Short Term Alternatives

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

Figure 6-8: Short Term Alternative 1

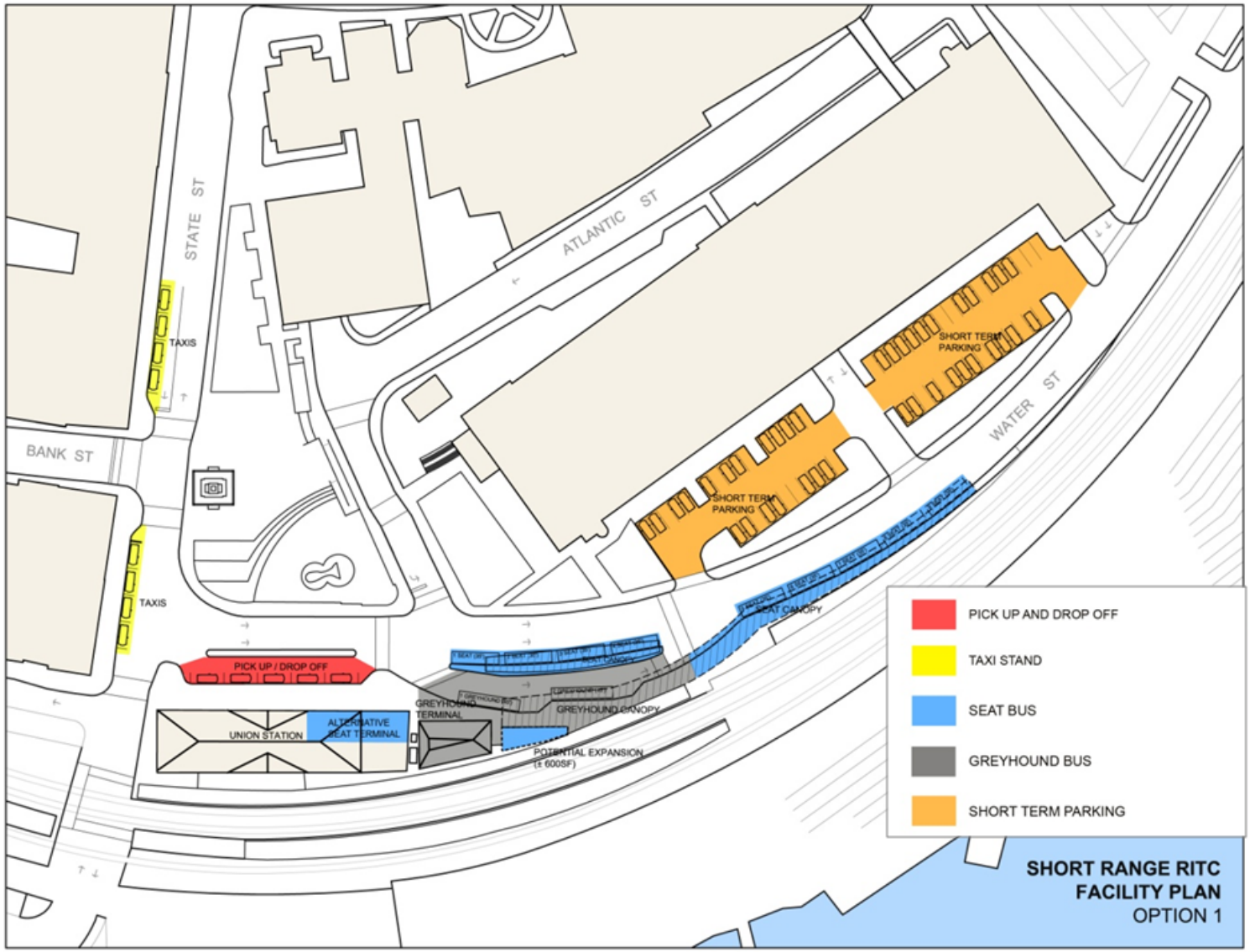


Figure 6-9: Short Term Alternative 1B Variation Showing Separate Passenger Terminal for SEAT

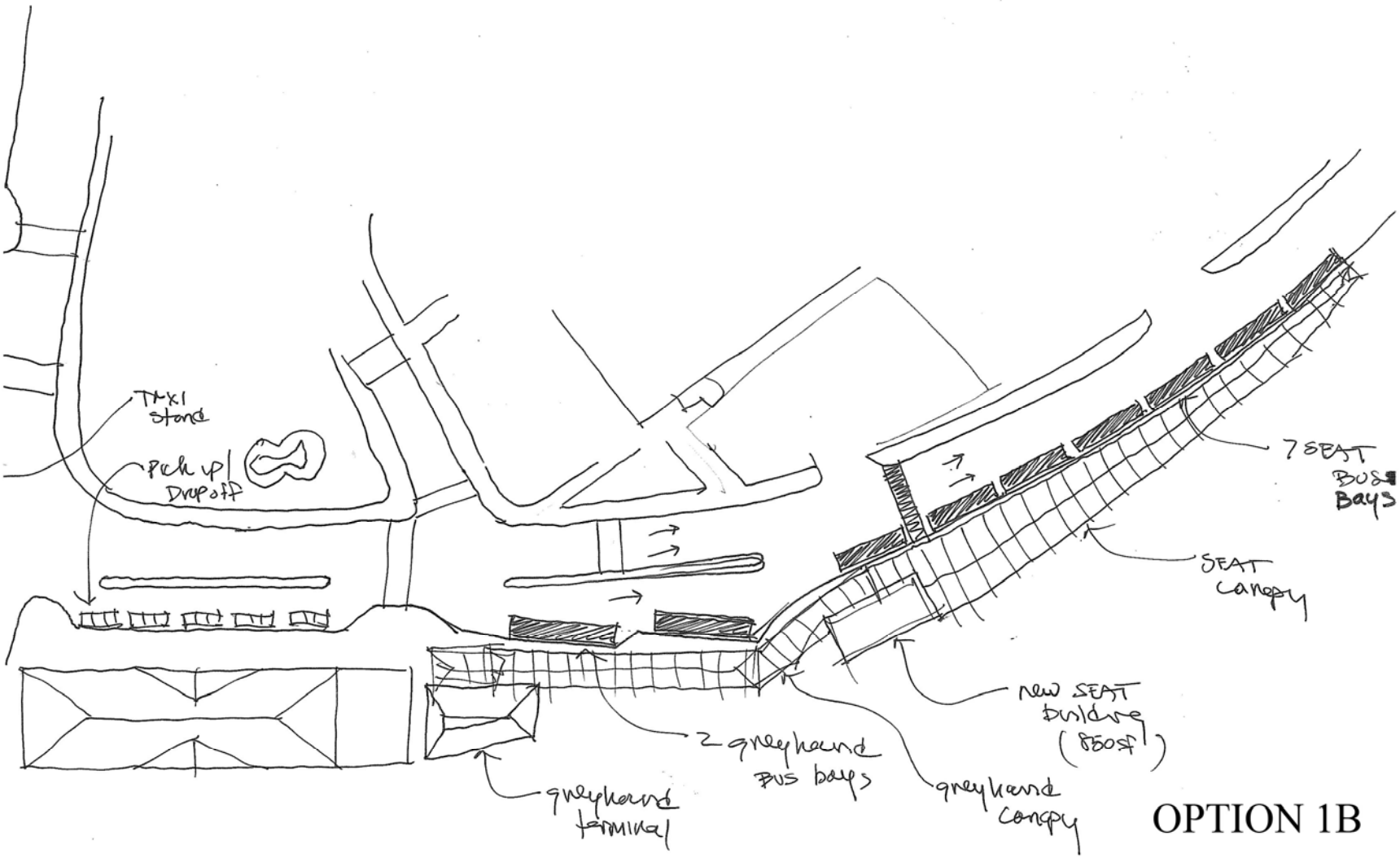


Figure 6-10: Short Term Alternative 2

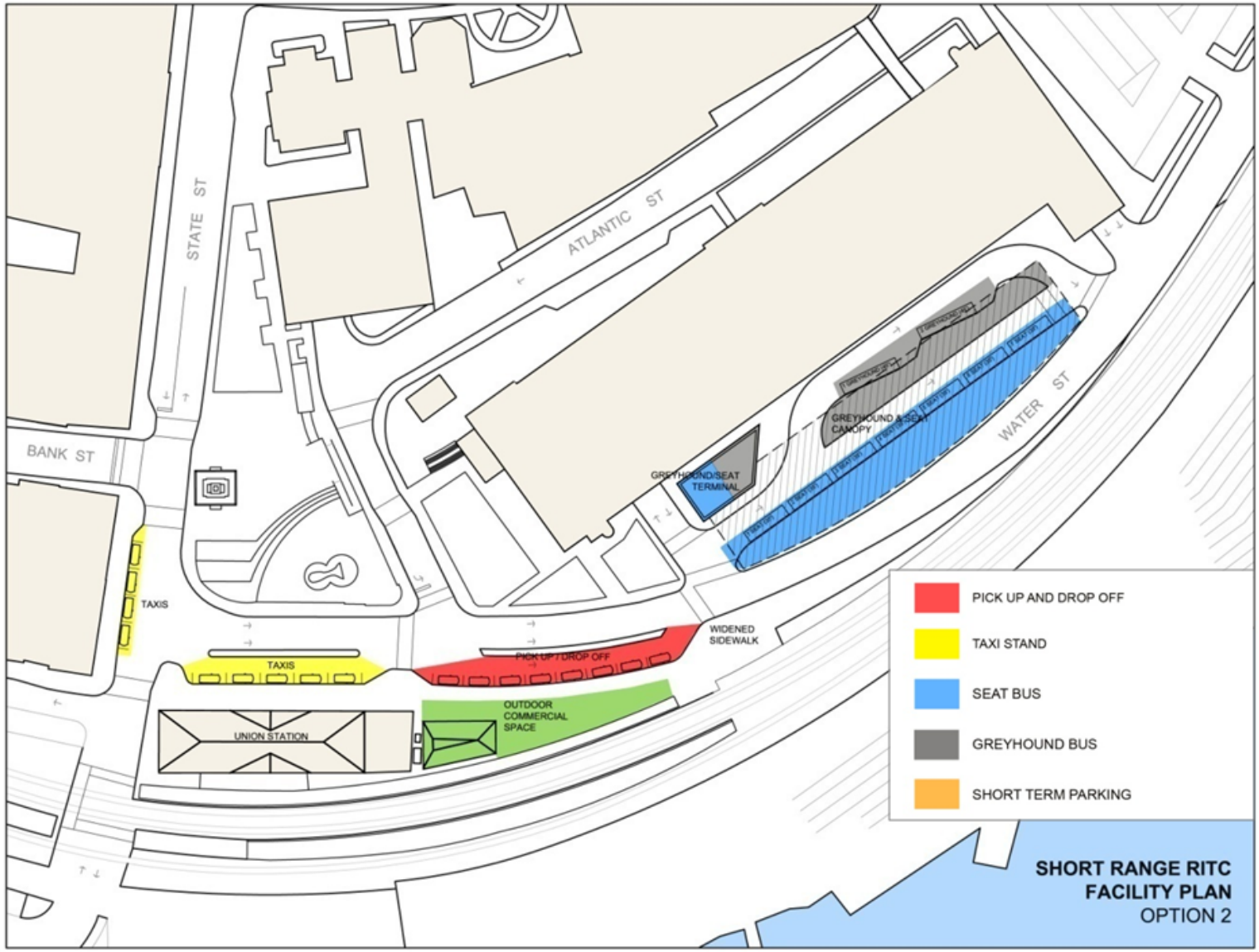


Figure 6-11: Short Term Alternative 2B Variation Showing Use of Garage Ground Level Space for Bus Passenger Terminal

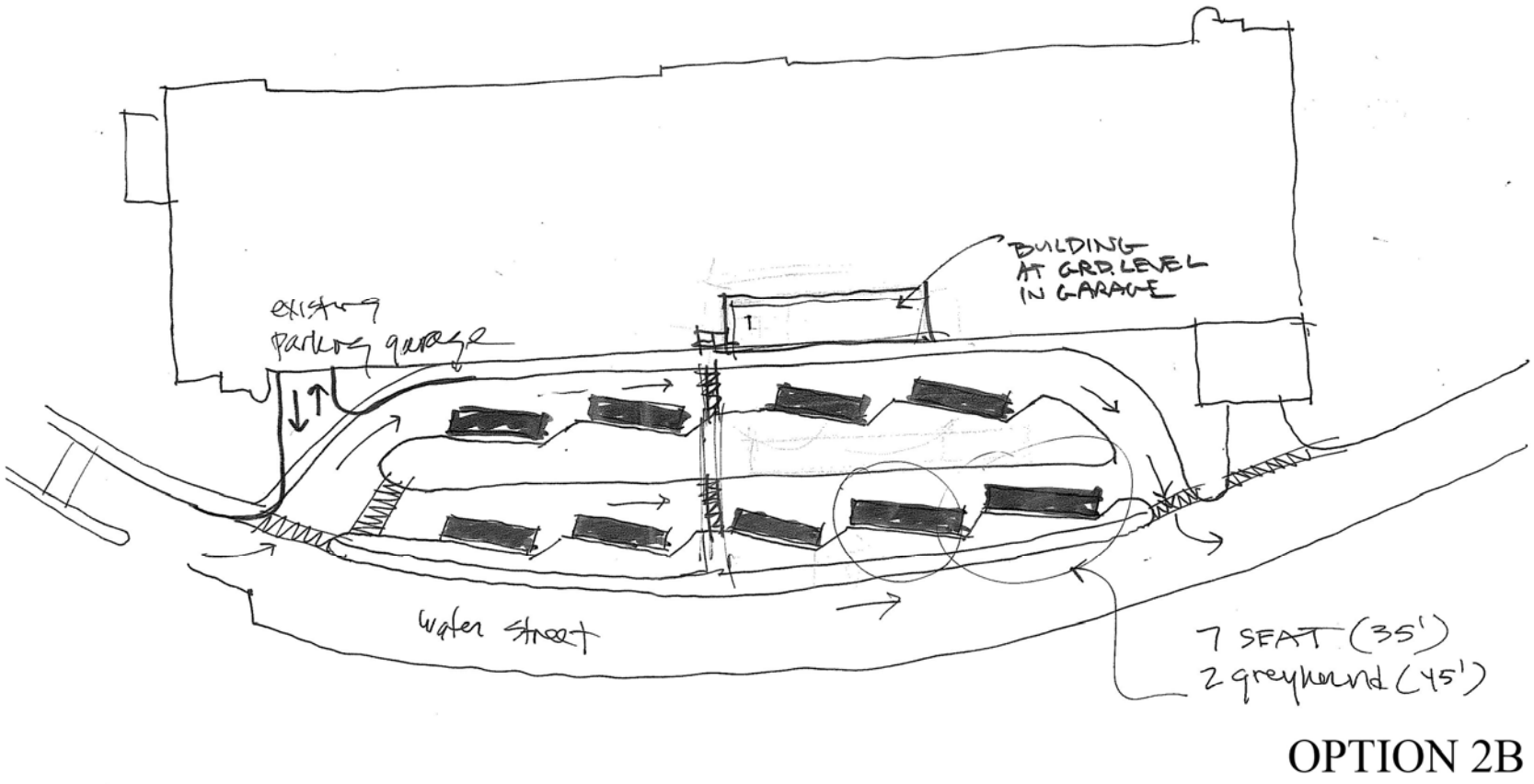


Figure 6-12: Short Term Alternative 3

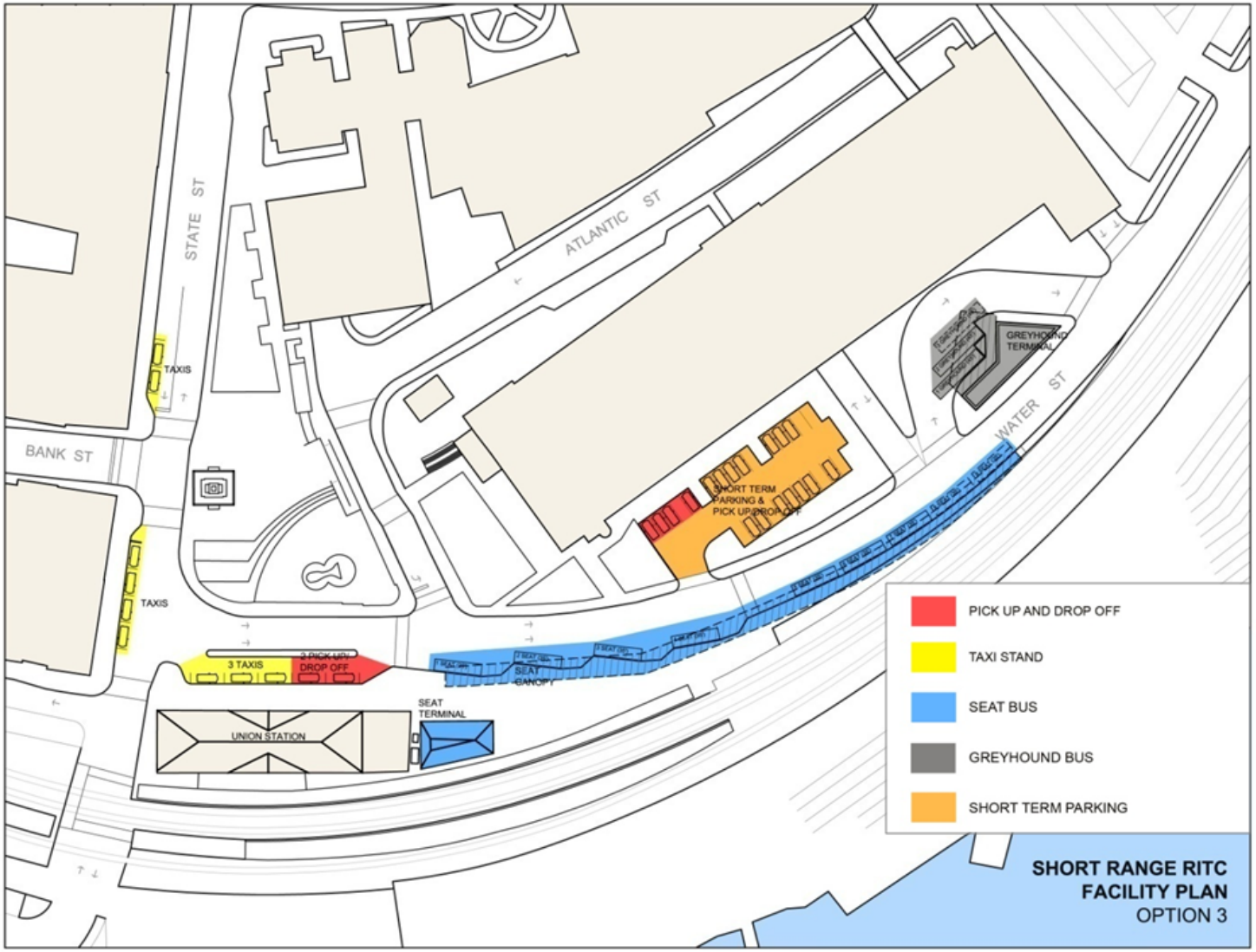


Figure 6-13: Short Term Alternative 3b Showing Greyhound Terminal on South Parcel

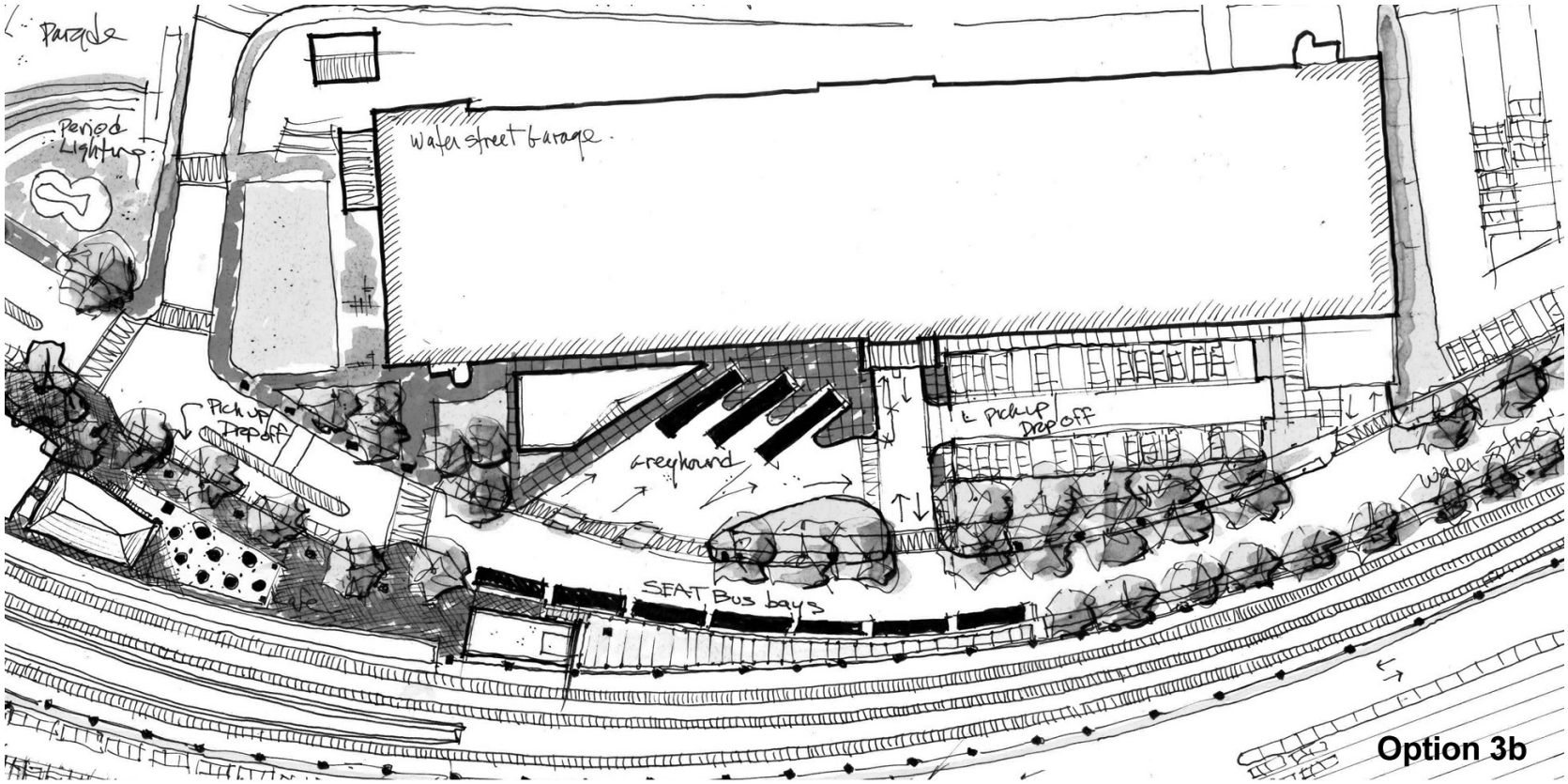
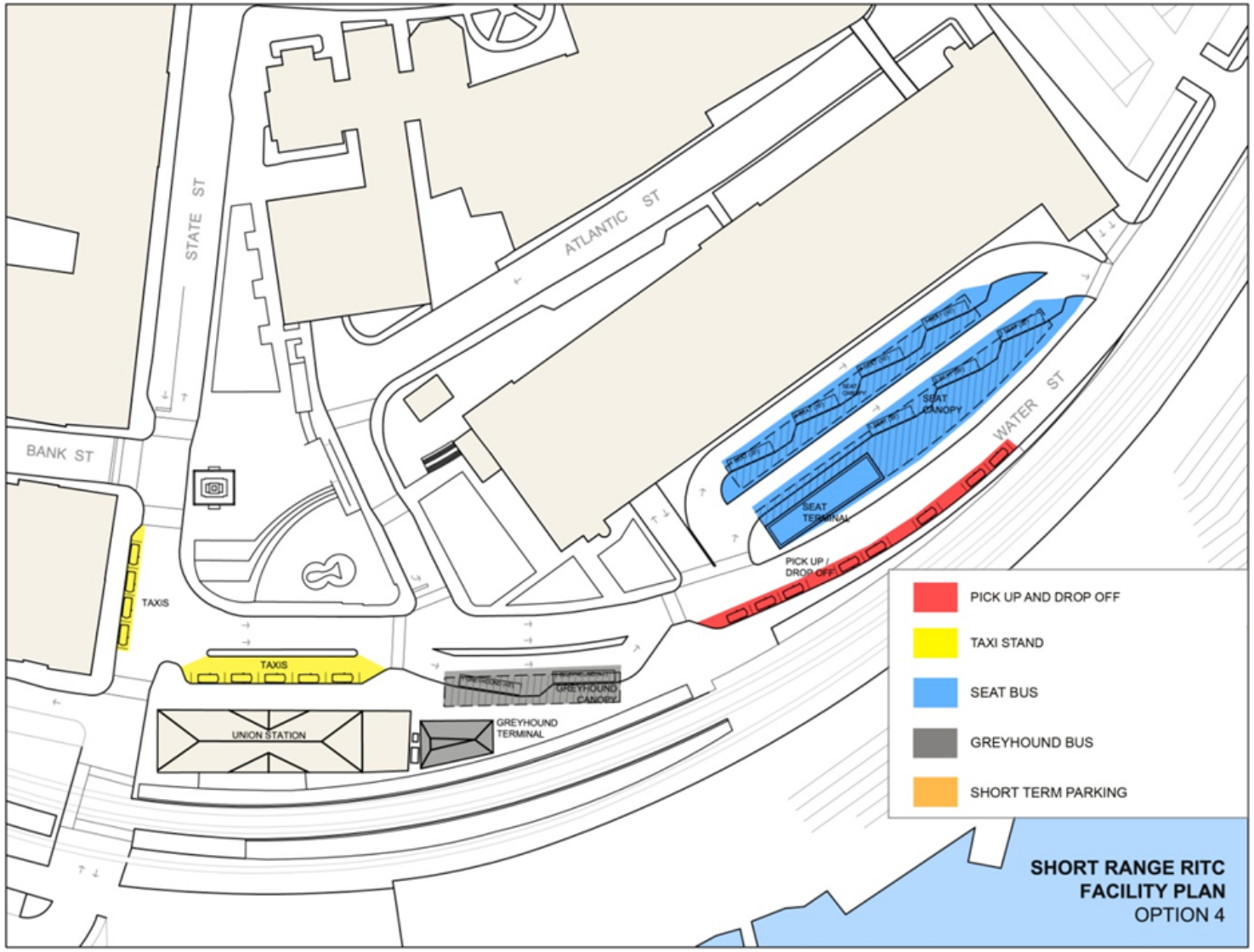


Figure 6-14: Short Term Alternative 4



(Figure 6-11 shows a variant where space on the ground floor of the parking garage is used to provide the passenger waiting area instead of constructing a building near the sidewalk.)

Short Term Alternative 3 (See Figure 6-12)

This alternative uses the north parcel in front of the Water Street Garage to create a new off-street, Greyhound bus terminal. SEAT moves closer to Union Station utilizing the existing Greyhound building and curb space. Canopies are provided for waiting bus passengers Taxis use the front of Union Station building and queue along the first block of State Street as needed. Pick-up/drop-off spaces and short term parking are provided in the south parcel in front of the garage. Figure 6-13 shows a variant of this scheme where Greyhound is located on the south parcel and where SEAT remains in its current space leaving the old Greyhound building for commercial re-use).

Short Term Alternative 4 (See Figure 6-14)

This alternative uses the parcels in front of the Water Street Garage to create a new off-street terminal for SEAT. This would require relocating the center garage entrance and associated structural modifications to the garage. Greyhound stays at its existing site but its terminal is enhanced. Pick-up/drop-off area moves to the current SEAT area on the east side of Water Street. Taxis utilize the curb space in front of Union Station and the first block of State Street for queuing. While Figure 6-14 shows that 7 sawtooth bays can be provided, a variant could be designed with 9 parallel bays which would not allow buses to have independent movement and fixed berths by route.

Options Considered But Not Included in the Short Term Alternatives

Several options were considered but not included in the proposed set of alternatives for consideration due to identified constraints. These are described briefly below:

Bringing SEAT into Union Station

SEAT had expressed a strong interest in both having a customer waiting/information area in Union Station and having its buses load in front of Union Station. The consulting team considered these options. While a customer area in the station is feasible, a variety of concerns led to an alternative with buses loading in front of Union Station not being included. These concerns are the following:

- There is insufficient curb space directly in front of Union Station to accommodate the number of SEAT required buses, meaning they would need to extend north of the building into the Greyhound area and beyond.
- Buses will have difficulty pulling into the southernmost end of the space due to the fact they are turning from State Street (the Parade project bulb-out at that location would have to be removed).
- The proposal would require the current users of this space, i.e., taxis and auto pickup/dropoff, to be relocated to another space and removed from this space.
- There are few viable options for alternative taxi and auto pickup/dropoff areas. Locating them farther north on Water Street would involve a long walk, across the street (off-street) would involve the need to cross Water Street and on South Water Street would involve the need to cross State Street and impact current uses such as Amtrak parking and driveway access. Taxis and waiting passengers need to be able to see each other and taxis need to be able to queue.

- Since SEAT buses currently pulse on the hour, most of the time the space would not be used by the buses. As a result, it would be very difficult to ensure that the bus stop would be clear and usable by buses and not be occupied by auto pickup/dropoff and taxis encroaching on the bus stop area. It would be particularly hard to enforce this given that taxis and auto drivers are individuals.
- Approximately 60% of the Amtrak rail users at Union Station were found in our surveys to use taxis or auto pickup and dropoff for access/egress, compared to between 0% and 3% (on the two survey days) using SEAT buses. With expansion of Shore Line East commuter service, additional demand is anticipated at the station for access modes including a significant share of auto pickup and dropoff, as well as parking and bus. Typically local bus has not been a major access mode for commuter rail. The connections between rail and taxi and rail and auto pickup/dropoff were identified as key connections that needed to be preserved.

SEAT's preference for a customer waiting/information area in Union Station was taken into account in alternatives that move SEAT closer to Union Station. One key disadvantage of a waiting area in Union Station is the limited visibility of the bus berths from the existing waiting room lobby. Therefore, alternatives that move SEAT closer to Union Station included a waiting area closer to the buses with greater visibility of the bus berths.

Note that after refinement of the Short Term Alternatives was completed in response to stakeholder comments, utilization of Union Station for bus terminal space requirements was included in the final Fallback Minimum Construction Alternative.

Moving the Greyhound Terminal Farther North on Water Street and SEAT Closer to Union Station

One option to give SEAT better access to Union Station is to swap locations between SEAT and Greyhound. This would enable SEAT to use the Greyhound Terminal Building as its waiting area. Greyhound had identified that it must have access to the left side luggage compartment of its coaches. Water Street is too narrow at the SEAT bus stop location to provide either sawtooth bays or parallel bays with safe left side access to the coach. For this reason, any concept that shifted Greyhound northward on the east side of State Street was dropped.

Removing a Travel Lane to Extend a Wider Sidewalk on the East Side of Water Street to Governor Winthrop Boulevard

Based on the existing conditions when this study was undertaken, the consulting team concluded the following:

The sidewalk along the east side of Water Street extends north to the SEAT bus stop and then ends. A very narrow, unpaved path continues alongside the poorly maintained, fenced railroad right-of-way from this point to Governor Winthrop Boulevard. Clearly, this well-worn path is along a desire line of some pedestrians, largely as a path to the Cross Sound Ferry site from the bus terminal area. The unpaved path is somewhat obstructed by unused utility poles, signposts and bent fencing as well as weeds. While better wayfinding could direct pedestrians along other paths, it would be desirable to have a paved sidewalk along the railroad right-of-way to accommodate pedestrians and to improve the attractiveness of the area. At the time of this report, the fencing was due to be replaced shortly by the City.

It appears that a four foot sidewalk would be feasible if the utility pole/unused lamppost can be removed or relocated. This is the minimum for a sidewalk. It would be desirable to widen the sidewalk by narrowing or reducing the number of travel lanes on Water Street. Currently, there are two 12-foot travel lanes alongside the bus loading area and three travel lanes at the approach to Governor Winthrop Boulevard beyond the bus stop. The lane width has been measured at 36 feet. Thus currently there are three 12-foot travel lanes. Two options emerged to reduce the street running way width and increase the sidewalk :1) to reduce lane width or 2) remove one lane.

A traffic analysis was conducted for the intersection of Governor Winthrop Boulevard at Water Street during the mid-day peak hour on a summer Saturday under current conditions and projected conditions in the year 2030 to evaluate the feasibility of reducing the number of travel lanes on Water Street. The mid-day peak hour was used for this analysis as the mid-day peak hour represents the peak hour of highest traffic volume. The analysis results, as shown in Table 6-7, indicate that operations will significantly decline on Water Street if capacity is reduced from three to two lanes.

Table 6-7: Water Street at Governor Winthrop Boulevard Traffic Evaluation
Midday Peak Hour Summer Saturday Conditions

Water Street Northbound Approach LOS(Delay in Seconds)		
	Existing Capacity on Water Street	Reduction in Capacity on Water Street to Two Lanes
Existing Condition (2008)	C (34.4)	D (39.4)
Future Build Condition (2030)	D (42.3)	F (117.0)

Water Street functions at Level of Service (LOS) C today, an acceptable level of service. Utilizing a three-lane configuration the LOS in 2030 is projected to be LOS D, which is also an acceptable LOS for an urban street of this type. However, should the number of lanes be reduced from three to two, the LOS today would change to LOS D and in 2030 to LOS F, an unacceptable LOS. A reduction in lanes would lead to a 30-car back up on Water Street (twice as many as projected in 2030 with three lanes) and potentially impact traffic operations on State Street.

For this reason, a narrowing to two approach lanes was deemed infeasible. It may be possible to narrow lanes somewhat to 11 or 11.5 feet to add 1.5 – 3 feet to the sidewalk.

Note that as the Short Term Alternatives were refined in the Master Plan, a wider sidewalk on Water Street was also included in the Preferred Alternative, but this was made possible by relocating Water Street rather than removing a travel lane.

Shifting Taxi, Bus or Auto Pickup/Dropoff to the East of the Railroad Right-of-Way

Some consideration was given to moving some functions to the east side of the railroad tracks along State Street, adjacent to City Pier, or on Cross Sound Ferry property. While a taxi and auto pickup/dropoff area for Cross Sound Ferry is feasible, such an area east of the tracks near Union Station could not be accommodated without infringing on the Fishers Island Ferry property or City Pier.

Shifting Greyhound to the east side of the tracks would improve the key connection between Greyhound and Cross Sound Ferry. However, delays at the railroad crossings caused by the 40 daily trains were

considered too much of a hindrance to Greyhound operations. Also, City Pier Park prevents the creation of a straight route passing through Cross Sound Ferry property and the amount of space required for Greyhound buses to turn around would likely impact Cross Sound Ferry operations.

Including a Pedestrian Bridge in Short Term Options

Although a pedestrian bridge was considered a viable long term option, it was not considered in the initial set of short term alternatives for the following reasons:

- A pedestrian bridge with the necessary 40-foot clearance, vertical circulation elements for the ferry and both rail platforms and capacity to accommodate large surges of passengers disembarking from ferry boats would be quite costly to construct. Cross Sound Ferry does not propose to fund a pedestrian bridge on its own. In the past, Cross Sound has identified the potential for high speed ferry terminal that would connect to a footbridge constructed by others.
- To obtain funding from Amtrak the pedestrian bridge must be located to serve Union Station and the potential impacts of a footbridge on the historic station suggest that it would not be easy to implement in a short time frame. The prior proposal for a pedestrian bridge was tabled for a variety of reasons including controversy over the design impacts on the historic structure, high costs, and inability to agree on a shared arrangement for handling maintenance costs. While most rail stations in Connecticut on the Northeast Corridor route have overpasses or underpasses to enable passengers to cross the tracks even while trains are in the station, these stations typically do not have adjacent grade crossings that inhibit train speed and provide easy pedestrian access between platforms. The New London circumstances are somewhat unique. Because of the State Street and Governor Winthrop Boulevard grade crossings and the curvature, speeds for the Acela are limited. Construction of an overpass would not offer significant operational benefits to Amtrak. The main benefit to Amtrak would be to allow a few passengers to access the northbound platform while a train is in the station. Before the train approaches and the gate closes off access, the northbound platform is easily accessed at surface level and passengers would clearly prefer this path to a bridge that is 40-feet high. The Parade Project was funded by a $10 million grant originally programmed for the footbridge project. As a result, we concluded that quick approval of funding would also be unlikely.
- The best scenario for a pedestrian bridge would be one in which a developer is building a major development project on the Water Street Garage site and could benefit from RITC patrons passing through. Such a developer could possibly assume some of the cost as well as maintenance of the structure. Such a project would undoubtedly be a long term project rather than a short term project.

Note that as the Short Term Alternatives were refined in the Master Plan, a pedestrian bridge was included in the Short Term Preferred Alternative to respond to ConnDOT's directive that an up and over or tunnel crossing of the tracks be included in any short term plan.

6.5 Long Term Vision Concepts

The long term vision concepts are necessarily less specific than the short term alternatives. They are designed to identify alternative visions for the RITC area beyond the year 2030 when the Water Street Garage and some other facilities and properties are due for reconstruction or redevelopment. It may not need to identify one single long term vision concept at this time; this final report includes more than one alternative long term vision that can be followed as the opportunity arises.

Four future RITC concepts were initially developed based on the two-by-two matrix below. The concepts reflect two primary decisions.

1. Will the RITC be concentrated at the immediate Union Station area near the intersection of State Street and Water Street, or will the RITC be extended to include the area from State to Governor Winthrop Boulevard in the Water Street corridor?

2. Will the parking facilities for the RITC be concentrated, thereby dispersing potential transit-oriented development (within walk distance of the RITC)? or will the parking be dispersed over a wider area (but within walk distance of the RITC) thereby allowing more concentrated transit-oriented development near the RITC, taking maximum advantage of the waterfront location as well as the proximity to the RITC? Note that given the scale of downtown New London and our understanding of the desire to protect the character of the city, it was deemed infeasible to concentrate both parking and development.

Future RITC Concepts

	Concentrated Parking / Dispersed Development	Dispersed Parking / Concentrated Development
Concentrated Transportation Center	A	C
Extended Transportation Center	B	D

After discussion with Cross Sound Ferry, it was determined that there was less flexibility to move passenger ferries to alternative locations on the Cross Sound Ferry property. As a result, Concept B evolved into a Concentrated Transportation Center concept. Table 6-8 summarizes the resulting concepts, followed by a text description. Figures 6-15 through 6-21 illustrate the concepts. Detailed descriptions are also provided after the figures. Note the concepts generally can include a footbridge or rely on surface connections; a footbridge version of three of the four concepts designated with double letters was included, thus bringing the total number of concept alternatives to seven.[2]

6.5.1. Four Long Term Concepts

Following the descriptions of the concepts is an explanation of the long term development opportunities they represent.

[2] Later in the study, an up and over pedestrian bridge or tunnel crossing the tracks was mandated by ConnDOT to be part of the short term alternatives. This is reflected in the Master Plan in Chapter 7.

Table 6-8: Four Long Term Concepts

A: Concentrated Transportation Center
(Concentrated Parking / Dispersed Development)
- Transportation facilities concentrated near Union Station
- Expanded parking as close to Union Station as possible
- Parking/transportation facilities limit development opportunities near the waterfront
- Large development opportunities are far from the Parade and Union Station

B: Concentrated Transportation Center with Parking Facilities along Water Street
(Concentrated Parking / Dispersed Development)
- Transportation facilities concentrated near Union Station
- Expanded parking on sites along Water Street closer to Governor Winthrop Blvd.
- Parking/transportation facilities limit development opportunities near the waterfront
- Large development opportunities are far from the Parade and Union Station

C: Concentrated Transportation Center with Relocated Parking Facilities and New Water Street Development
(Dispersed Parking / Concentrated Development)
- Transportation facilities concentrated near Union Station
- Some parking relocated from Water Street to sites along Governor Winthrop Blvd.
- Relocation of parking facilities increases development opportunities near the waterfront and Union Station

D: Extended Transportation Center with Relocated Parking Facilities and New Water Street Development
(Dispersed Parking / Concentrated Development)
- Some transportation facilities relocated along Governor Winthrop Blvd.
- Some parking relocated from Water Street to sites along Governor Winthrop Blvd.
- Relocation of parking/transportation facilities increases development opportunities near the waterfront and Union Station

Long Term Concept A/AA (See Figure 6-15 and Figure 6-16)

This concept limits the enhanced transportation facilities to the Water Street Garage site and the adjacent surface lots. Redevelopment of the Water Street Garage would consist of only a larger parking garage, possibly with a bus terminal for SEAT and Greyhound on the ground level. A passenger ferry terminal, with berths for Block Island Ferry and the SeaJet and loading space for casino buses, would be built adjacent to City Pier on the currently city-owned waterfront parcel with pedestrian access via the Parade, State Street and City Pier. Cross Sound Ferry would convert the existing standby staging area to parking and proceed with the planned removal of buildings and use of that space for staging. The concept could include a pedestrian bridge connecting directly from the new garage to the new passenger ferry terminal. (The concept with a footbridge is designated Concept AA).

Long Term Concept B (See Figure 6-17)

This concept incorporates redevelopment of the Mariner Square property into the redevelopment of the Water Street Garage site. The larger development would include a limited amount of new commercial space near the Parade as well as a larger parking garage and possible bus terminal for SEAT and Greyhound. Much of the parking would be located near the northern end of the site and Block Island Ferry passengers would use the Governor Winthrop Boulevard railroad crossing when walking from the new garage. The Block Island Ferry and SeaJet would swap locations. Casino buses would use the currently city-owned waterfront parcel. Cross Sound Ferry would retain the existing standby staging area and

Figure 6-15: Long Term Concept A

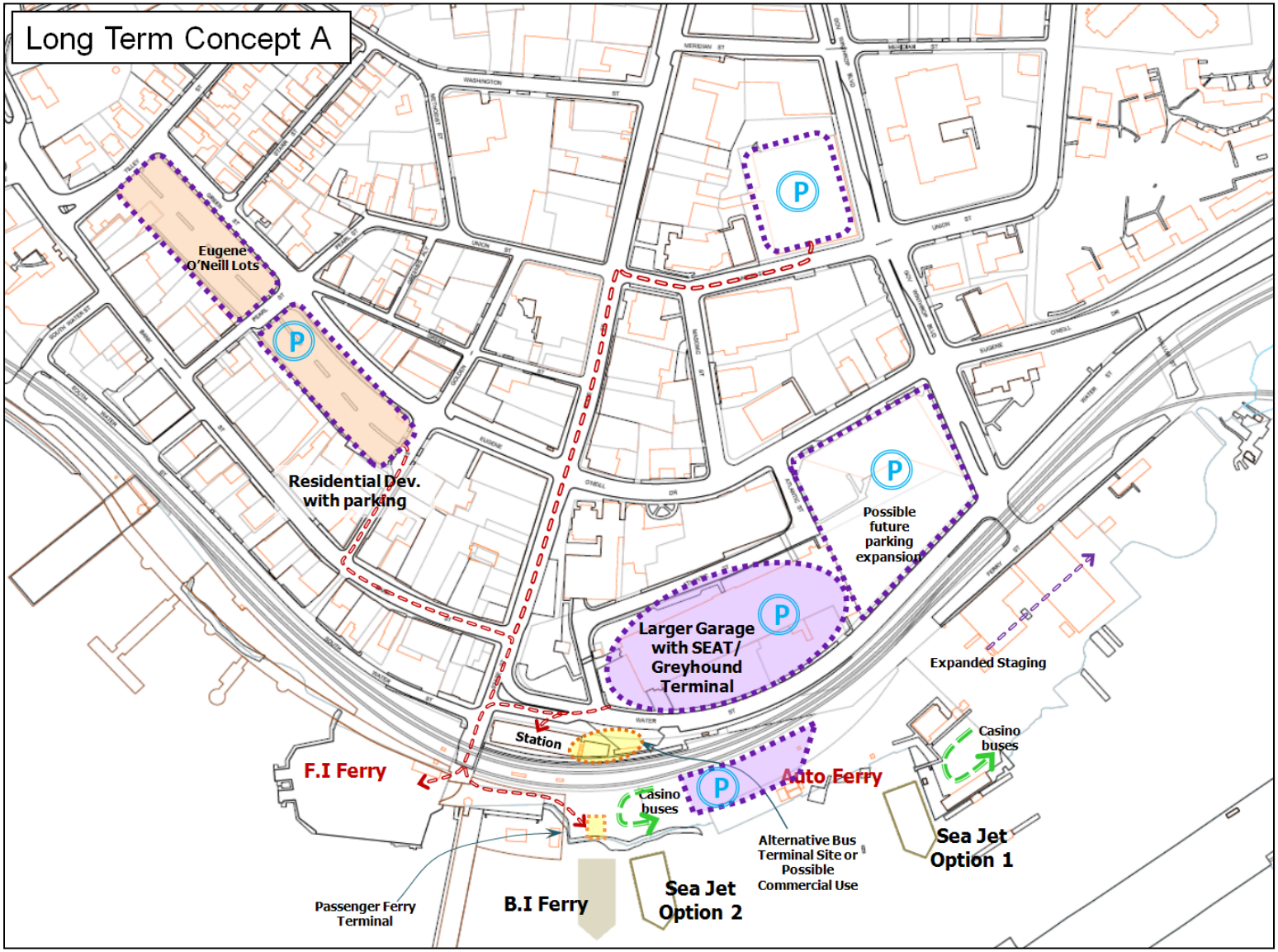


Figure 6-16: Long Term Concept AA (A with a Pedestrian Bridge)

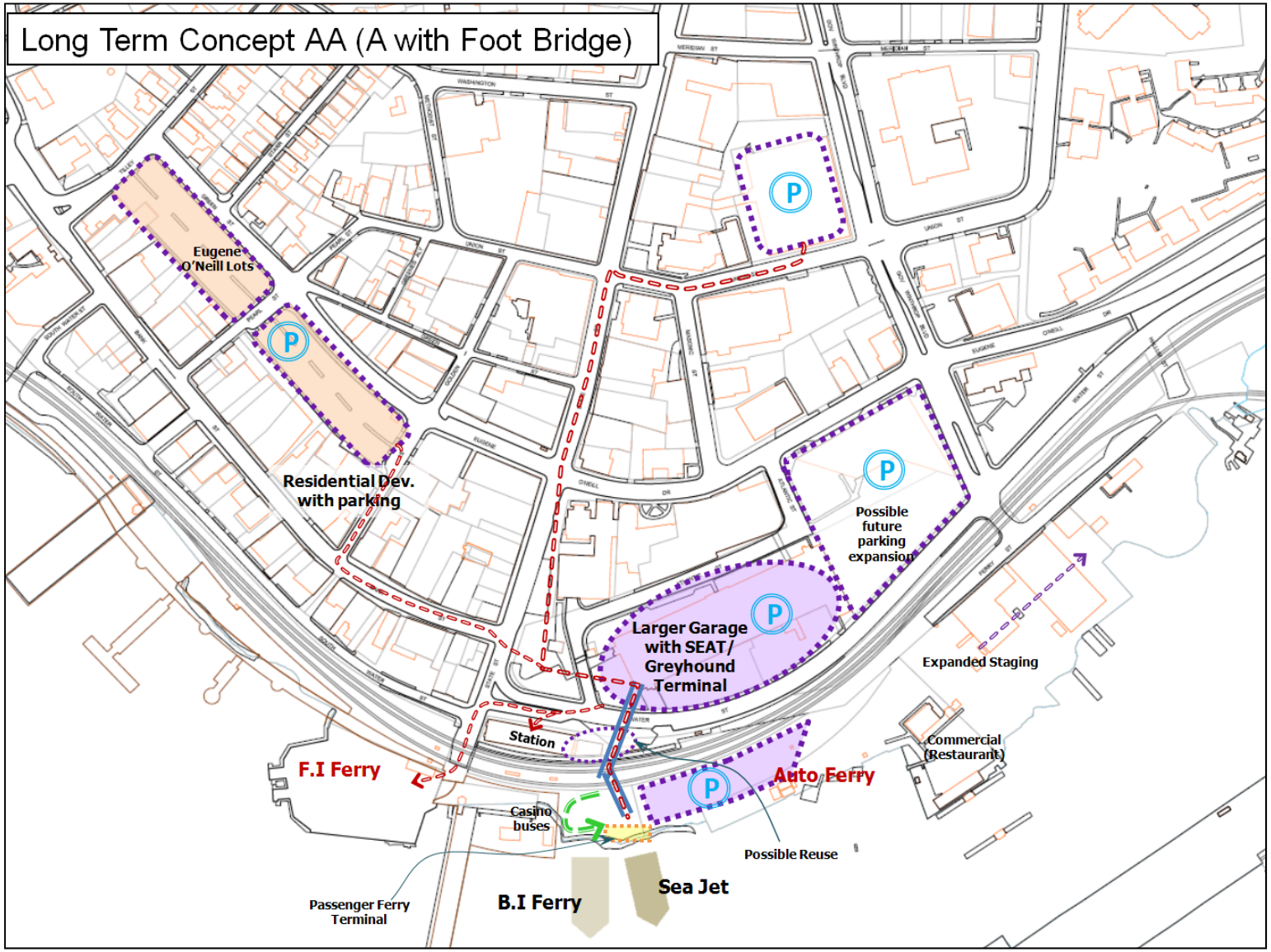


Figure 6-17: Long Term Concept B

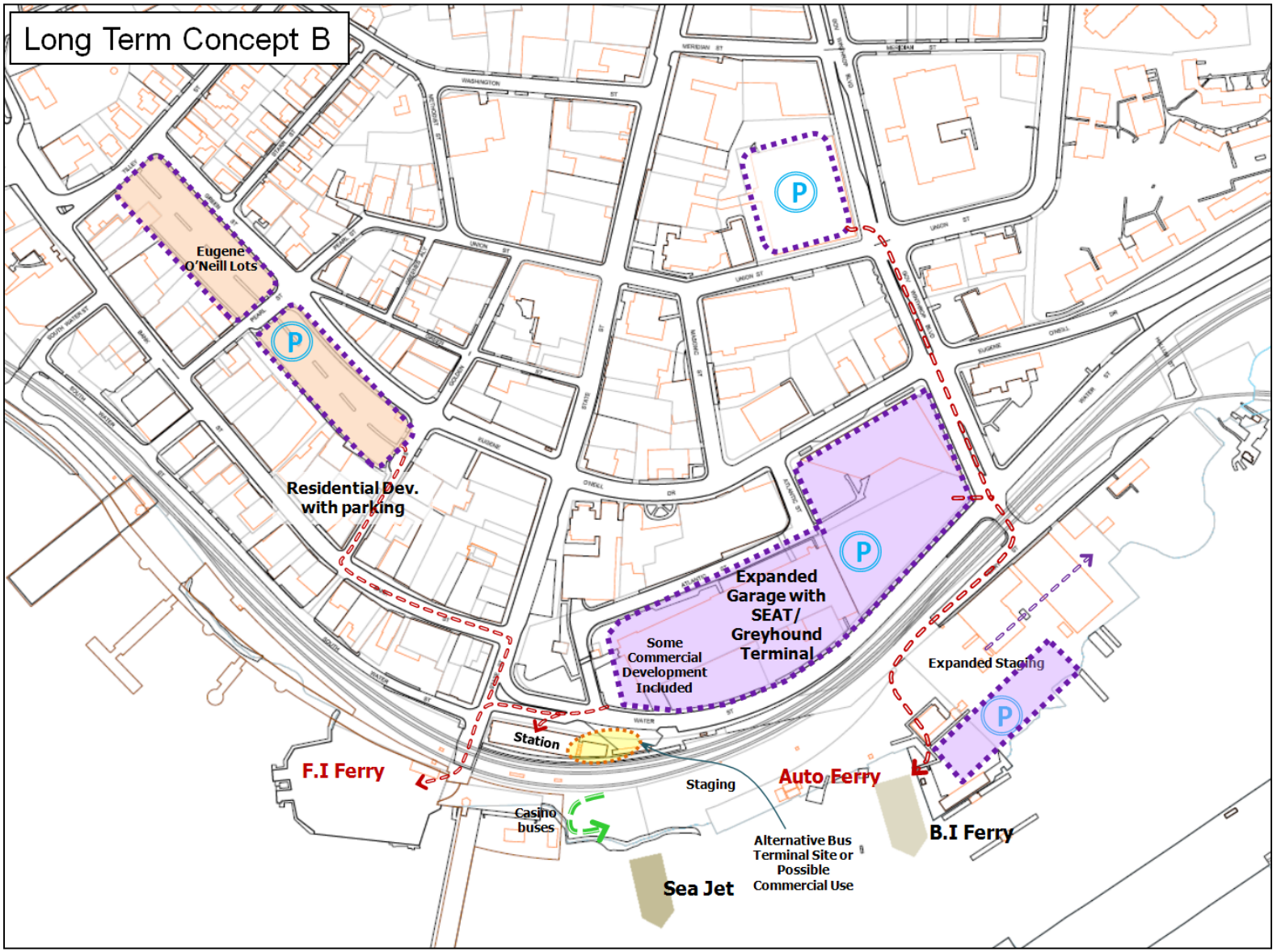


Figure 6-18: Long Term Concept C

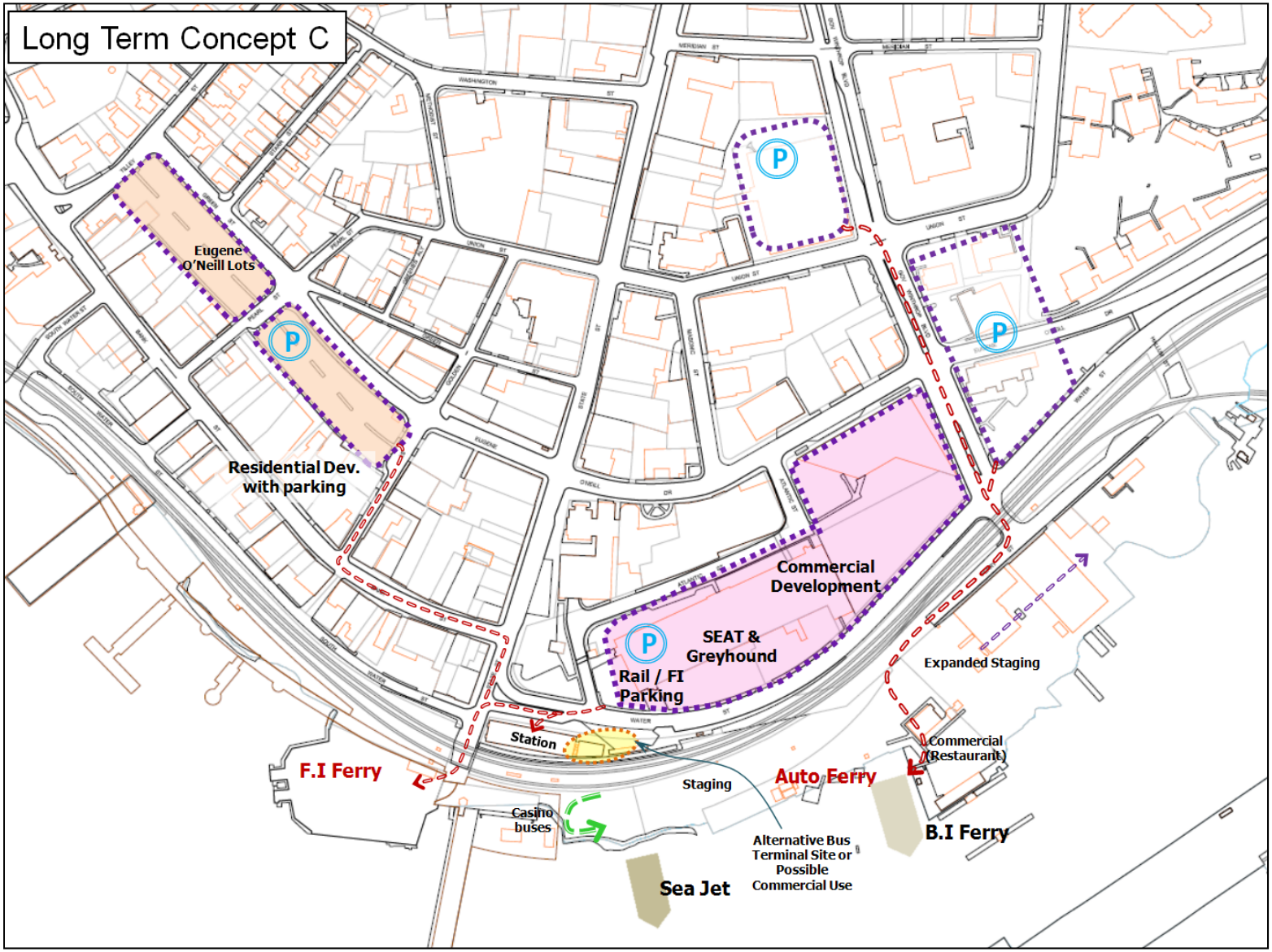


Figure 6-19: Long Term Concept CC (C with a Pedestrian Bridge)

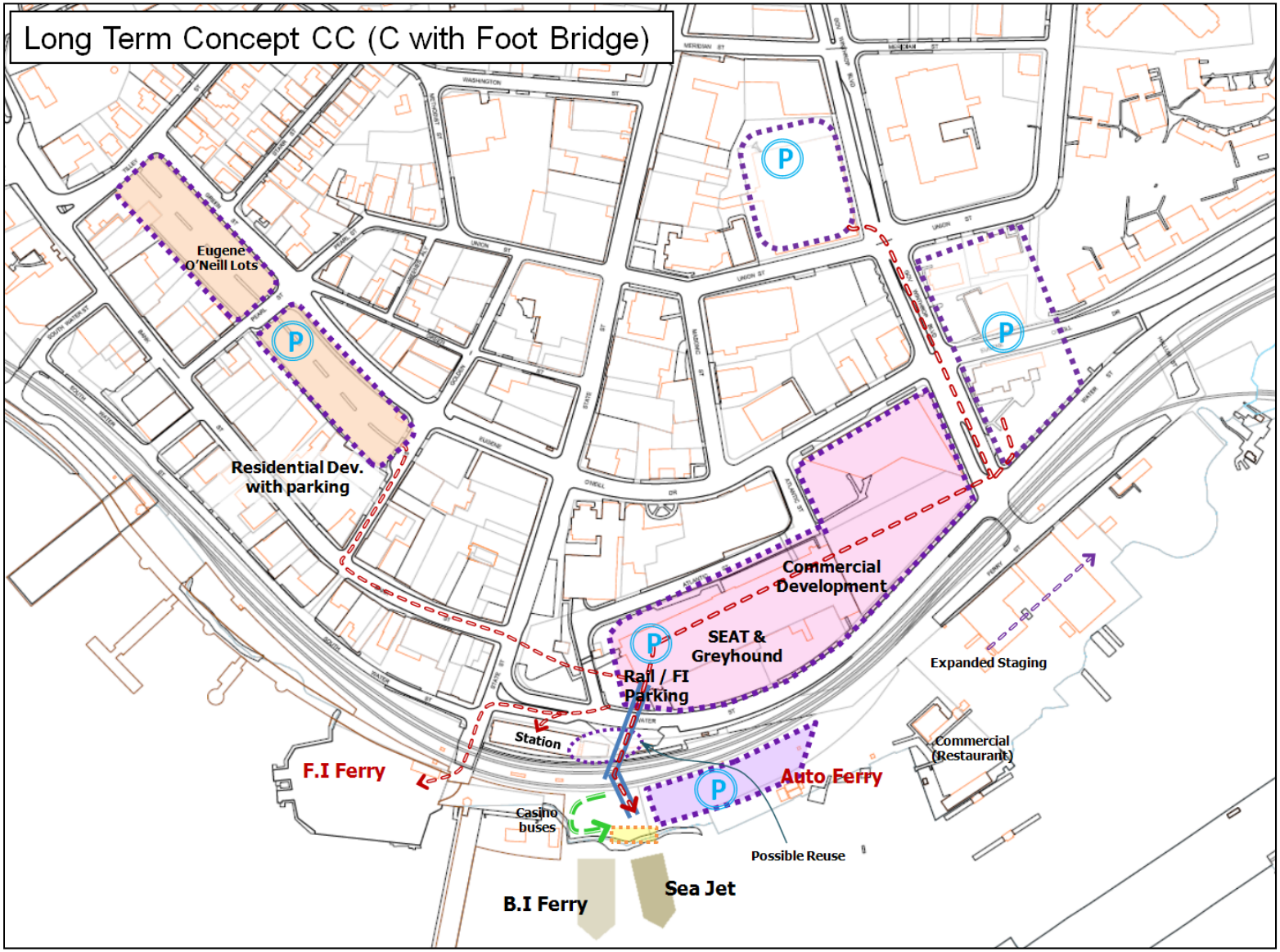


Figure 6-20: Long Term Concept D

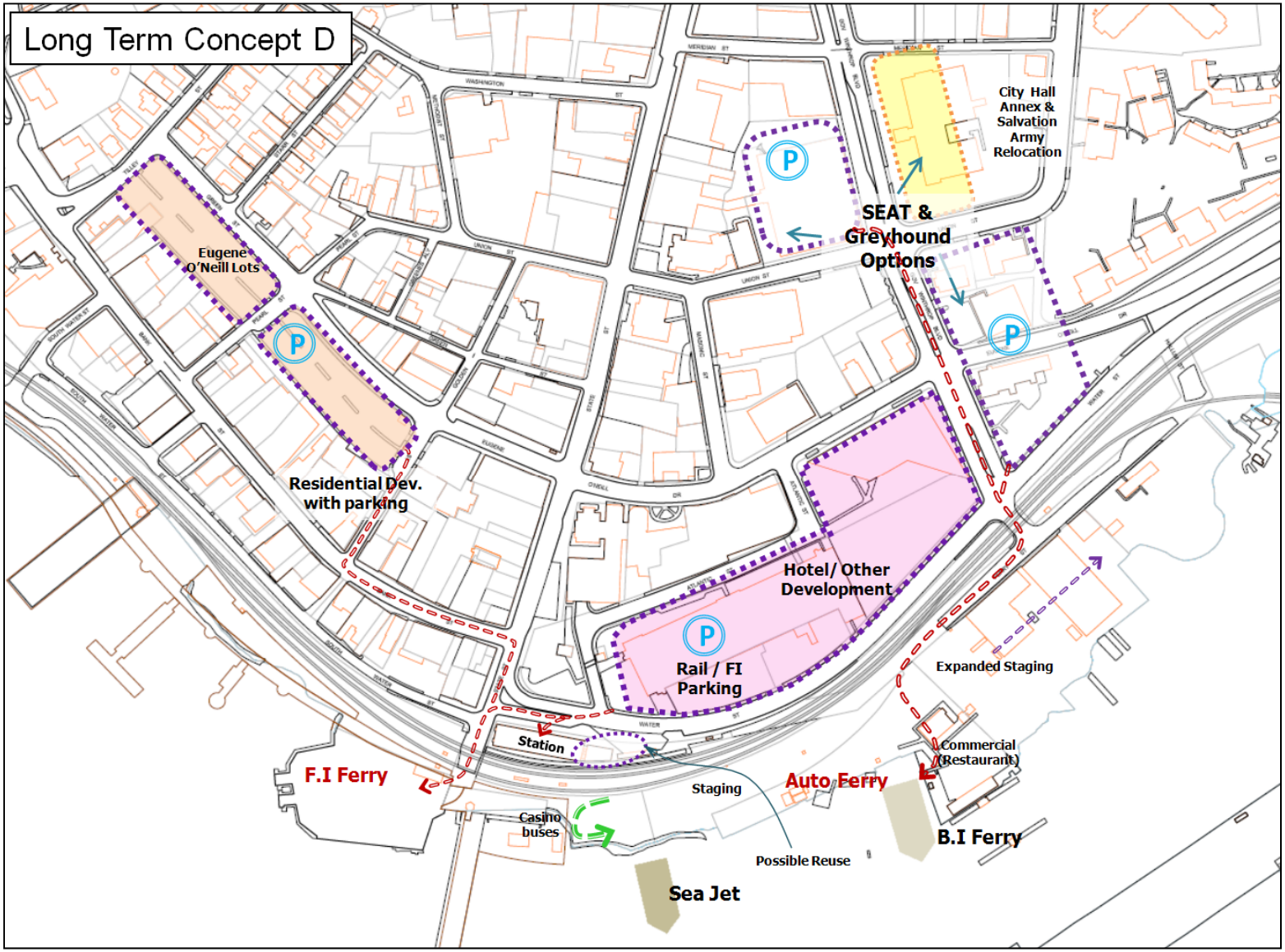
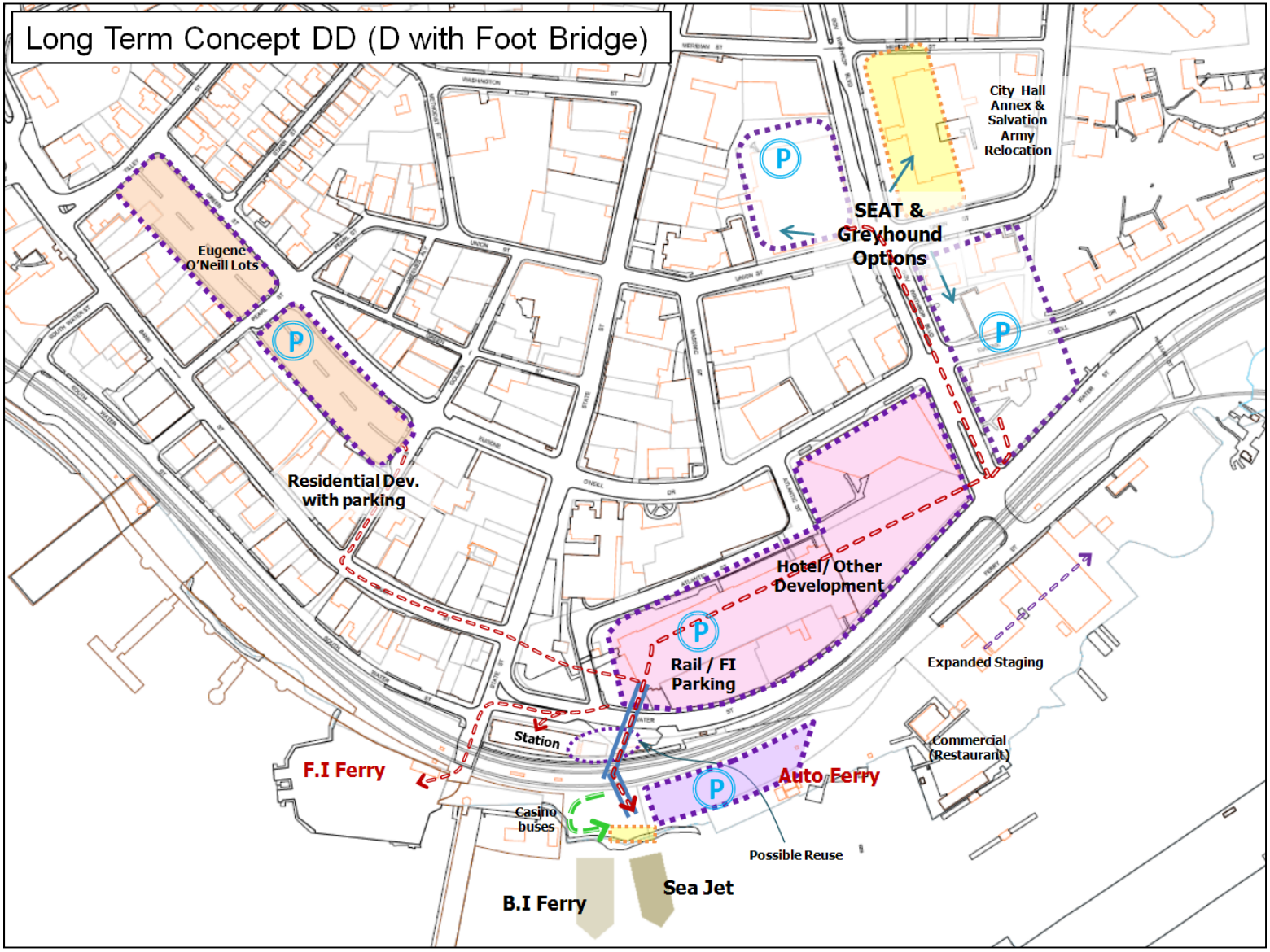


Figure 6-21: Long Term Concept DD (D with a Footbridge)



proceed with the planned removal of buildings using that space for additional staging and for parking for the Block Island Ferry. This concept does not include a pedestrian bridge.

Long Term Concept C/CC (See Figure 6-18 and Figure 6-19)

This concept involves replacing the Water Street Garage with a new garage located on the north side of Governor Winthrop Boulevard. The Water Street Garage site, including Mariner Square, would be redeveloped into a new commercial space connecting the new garage to the Parade and Union Station. The development would include a small parking garage primarily serving rail passengers and possibly a ground level bus terminal for SEAT and Greyhound. The SeaJet and casino buses would use the currently city-owned waterfront parcel. Without a footbridge (designated Concept C), the Block Island Ferry would use the current SeaJet location and Block Island Ferry passengers would use the Governor Winthrop Boulevard railroad crossing when traveling from the new garage. With a footbridge (designated Concept CC), a new passenger ferry terminal serving both the SeaJet and Block Island Ferry would be located near City Pier and connected to the footbridge ; passengers would pass through the new commercial development traveling from the new garage to the footbridge.

Long Term Concept D/DD (See Figure 6-20 and Figure 6-21)

This concept involves replacing the Water Street Garage with a new garage located on the north side of Governor Winthrop Boulevard. The Water Street Garage site, including Mariner Square, would be redeveloped into a new commercial space connecting the new garage to the Parade and Union Station. The development would include a small parking garage designed to serve rail passengers. A new bus terminal would be built along Governor Winthrop Boulevard either as part of the new garage or as a separate facility. The SeaJet and casino buses would use the currently city-owned waterfront parcel. Without a footbridge (designated Concept D), the Block Island Ferry would use the current SeaJet location and Block Island Ferry passengers would use the Governor Winthrop Boulevard railroad crossing when traveling from the new garage. With a footbridge (designated Concept DD), a new passenger ferry terminal serving both the SeaJet and Block Island Ferry would be located near City Pier and connected to the footbridge. Passengers would pass through the new commercial development traveling from the new garage to the footbridge.

Concept A: Concentrated Transportation Center with a New Water Street Garage

Transportation Elements

- Rail, Fishers Island and Long Island Auto Ferry unchanged
- New larger garage on existing Water Street Garage site
- SEAT/Greyhound/tourist bus terminal in the new Water Street Garage, or alternatively on the east side of Water Street
- New passenger ferry terminal for Block Island Ferry on current city-owned property adjacent to City Pier
- SeaJet either at the new passenger ferry terminal or remaining at the existing location
- New casino bus loop near the passenger ferry terminal (if SeaJet is relocated)
- Existing auto ferry standby staging area converted to parking
- Some Cross Sound Ferry buildings removed and replaced with an expanded staging area
- Principal access from parking to the Block Island Ferry is via the Parade, State Street and City Pier

Development Elements

- Residential development and parking garage on Eugene O'Neill lots (parking primarily to support new residences and area businesses with minimal additional capacity for the RITC)
- Infill development and rehabilitation of existing buildings
- Some development possible along Governor Winthrop Blvd. and Eugene O'Neill Dr. north of State

Concept AA: Concentrated Transportation Center with a New Water Street Garage and Footbridge

Same as Concept A except

- New footbridge connecting new Water Street Garage to rail platforms and ferry terminal
- SEAT/Greyhound/tourist bus terminal in the new Water Street Garage (a bus terminal on the east side of Water Street may not be compatible with the footbridge)
- New passenger ferry terminal for Block Island Ferry and SeaJet connected to the footbridge
- Possible restaurant or other development in current casino bus loading area
- Principal access from parking to the Block Island Ferry is via the footbridge from the Water Street Garage

Concept B: Concentrated Transportation Center with Commercial Development Including a New Water Street Garage

Transportation Elements

- Rail, Fishers Island and Long Island Auto Ferry unchanged
- New larger garage with some commercial development on a combination of the existing Water Street Garage site and the Julian site
- SEAT/Greyhound/tourist bus terminal in the new Water Street Garage, or alternatively on the east side of Water Street
- Block Island Ferry at current SeaJet location; current casino bus area converted to parking
- SeaJet near Union Station on current city-owned property adjacent to City Pier; new casino bus loop in current parking area
- Some Cross Sound Ferry buildings removed and replaced with an expanded staging area
- Principal access from parking to the Block Island Ferry is via Governor Winthrop Boulevard

Development Elements

- Limited new commercial development near the Parade as part of the new garage
- Residential development and parking garage on Eugene O'Neill lots (parking primarily to support new residences and area businesses with minimal additional capacity for the RITC)
- Infill development and rehabilitation of existing buildings
- Some development possible along Governor Winthrop Boulevard

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

Transportation Elements

- Rail, Fishers Island and Long Island Auto Ferry unchanged
- New garage spanning Eugene O'Neill Drive on north side of Governor Winthrop Boulevard (includes police station site)
- New development on Water Street Garage/Julian site with onsite parking plus parking for rail and Fishers Island Ferry passengers

- SEAT/Greyhound/tourist bus terminal in the new Water Street development, or alternatively on the east side of Water Street
- Block Island Ferry at current SeaJet location
- Possible restaurant or other development in current casino bus loading area
- SeaJet near Union Station on current city-owned property adjacent to City Pier; new casino bus loop in current parking area
- Some Cross Sound Ferry buildings removed and replaced with an expanded staging area
- Principal access from parking to the Block Island Ferry is via Governor Winthrop Boulevard

Development Elements

- Major new development on Water Street garage site with possible waterview hotel, bus terminal and less RITC parking
- Residential development and parking garage on Eugene O'Neill lots (parking primarily to support new residences and area businesses with minimal additional capacity for the RITC)
- Infill development and rehabilitation of existing buildings
- Office/commercial development on Governor Winthrop Boulevard (e.g. new City Hall Annex)

Concept CC: Concentrated Transportation Center with Relocated Parking Facilities, New Water Street Development and Footbridge

Same as Concept C except

- New footbridge connecting new Water Street development to rail platforms and ferry terminal
- SEAT/Greyhound/tourist bus terminal in the new Water Street development (a bus terminal on the east side of Water Street may not be compatible with the footbridge)
- New passenger ferry terminal for Block Island Ferry and SeaJet connected to the footbridge
- Existing auto ferry standby staging area converted to parking
- Principal access from parking to the Block Island Ferry is through the new Water Street development and over the footbridge

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

Transportation Elements

- Rail, Fishers Island and Long Island Auto Ferry unchanged
- New SEAT and Greyhound bus terminal on Governor Winthrop Boulevard (at the Radisson site or other site)
- New garage spanning Eugene O'Neill Drive on north side of Governor Winthrop Boulevard (includes police station site)
- New development on Water Street Garage/Julian site with onsite parking plus parking for rail and Fishers Island Ferry passengers
- Block Island Ferry at current SeaJet location
- Possible restaurant or other development in current casino bus loading area
- SeaJet near Union Station on current city-owned property adjacent to City Pier; new casino bus loop in current parking area
- Some Cross Sound Ferry buildings removed and replaced with an expanded staging area
- Principal access from parking to the Block Island Ferry is via Governor Winthrop Boulevard

Development Elements

- Major new development on Water Street garage site with possible waterview hotel etc. and less RITC parking
- Residential development and parking garage on Eugene O'Neill lots (parking primarily to support new residences and area businesses with minimal additional capacity for the RITC)
- Infill development and rehabilitation of existing buildings
- Office/commercial development with bus terminal on Governor Winthrop Boulevard (e.g. new City Hall Annex)

Concept DD: Extended Transportation Center with Relocated Parking Facilities, New Water Street Development and Footbridge

Same as Concept D except

- New footbridge connecting new Water Street development to rail platforms and ferry terminal
- New passenger ferry terminal for Block Island Ferry and SeaJet connected to the footbridge
- Existing auto ferry standby staging area converted to parking
- Principal access from parking to the Block Island Ferry is through the new Water Street development and over the footbridge

6.5.2. Long Term Development Opportunities

As discussed in the Chapter 4 and Chapter 5, the Water Street Garage parcel, coupled with the adjacent Mariner Square parcel, and Union Plaza parcel (which compose the downtown "superblock" bounded by Water Street, State Street, Eugene O'Neill Drive, and Governor Winthrop Boulevard) represents a long term opportunity for large-scale, transformative redevelopment. One vision for these parcels (as explored in Long Term Concept D) is a thriving mixed-use district that contains a mixture of mid- and high-rise housing with water views, attractive office buildings with water views, and an extension of the Bank Street entertainment and retail district. This redevelopment represents a unique opportunity to create a new "face" for downtown New London and would set up a lively, pedestrian-friendly interior street pattern that is in keeping with downtown New London's historic urban block pattern, but with better pedestrian and vehicular access to surrounding streets and downtown destinations.

The underutilized sites are some of the largest, most visible and accessible parcels in the downtown. In a potential long term scenario (referred to as Long Term Concept D in this chapter), with SEAT and Greyhound bus facilities and a replacement public parking structure developed together on one of the identified large potential redevelopment parcels along the nearby Governor Winthrop Boulevard corridor, the Water Street Garage parcel and its two smaller adjacent parcels are freed up for redevelopment, thereby allowing approximately three acres of prime downtown water view property to be developed as a combination of housing, office, and retail. If the Mariner Square and Union Plaza parcels are included, there would be over five contiguous acres available for redevelopment.

Two development density scenarios were developed to provide a general understanding of the level of long term development opportunity in Long Term Alternative D. The first assumes all potential new buildings (housing and office) are developed at three stories with some ground floor retail. This first study revealed that all of the "high" land use program identified in the Chapter 4 Market Analysis (62,460 sq. ft. of retail space (80 percent new or renovated retail space and 20 percent existing retailers increasing sales productivity); 347,000 sq. ft. of residential (347 units); and 66,616 sq. ft. of office space) is achievable on the downtown superblock described above, the City-owned Eugene O'Neill Drive parking lots, and the potential redevelopment parcels identified on the Post Office block on Atlantic Street. The second study assumes that all potential new buildings are developed at varying heights, including a potential 12-to-15-

story housing tower, a six-story office building, ground level retail, and four-story housing on the remaining parcels. This second study revealed that not only can the downtown superblock, City-owned Eugene O'Neill Drive parking lots, and Post Office block parcels accommodate the "high" land use program, but can considerably exceed it. It was found that the sites can accommodate 35 percent more retail, 50 percent more housing, and 36 percent more office development.

6.5.3. Preserving the Long Term Development Opportunity

If the majority of City-owned parking facilities are moved from the Water Street Garage parcel to a site along Governor Winthrop Boulevard, and SEAT and Greyhound bus facilities are developed in its place (as explored in Long Term Concept C), the opportunity for transformative redevelopment will be considerably diminished. Two reasons for this are:

1.) The bus berthing facilities would encumber a great percentage of the Water Street Garage parcel, which limits space available for ground floor retail, water view housing and office buildings.

2.) Air rights development over the new bus berthing and potential new smaller parking facility is be required to achieve the long term development vision explored in Long Term Concept C and to take full advantage of the site's unmatched and valuable water views. However, in addition to the construction cost premium associated with the site's significant grade change, the complication of air rights development over both a bus berthing facility and a new parking garage will likely make redevelopment of the site difficult, expensive and potentially cost prohibitive.

All long term development alternatives should be explored and evaluated, and it is vital to consider how the siting of bus berthing and other transportation-related facilities would affect future development patterns. Having a clear understanding of how these decisions can impact potential future development is vital in achieving long term development goals.

Options Considered But Not Included in the Long Term Concepts

Several options were considered but not included in the proposed set of concepts for consideration due to identified constraints. These are described briefly below:

Building a Deck over the Railroad Right-of-Way

While a pedestrian bridge has been considered in the past and is a long term option under consideration, members of the consulting team identified that a footbridge might not be well used for several reasons:

- The height would mean climbing many stairs which would discourage use compared to a longer but level path via State Street. Elevators might not be able to handle the peak loads particularly as a ferry unloads. Escalators would need to be enclosed and might be difficult for users with strollers.
- Few rail users would need to use the footbridge since prior to train arrival and after train departure, they can easily cross the tracks at grade at State Street.

As a result, and in support of the goal of creating a vibrant, visitor-friendly space, one concept considered was a wider deck promenade over the railroad right-of-way connecting a new Cross Sound Ferry high-speed passenger ferry terminal with the Parade area and redeveloped Water Street Garage. This idea was

perceived to have major visual impact and property/air-rights impacts and would be likely to be very high cost. The deck, and the necessary associated development, were viewed as out-of-scale with the character of downtown New London and were therefore dropped from further consideration.

Building a Tunnel Under the Railroad Right-of-Way

During the charrette phase of the design process the consulting team considered the feasibility of a short underpass/tunnel under the railroad tracks as one Long Term option. In evaluating the feasibility of the tunnel connecting the west side of the railroad/train station and the east side of the railroad and ferry terminal, the following items and elements were considered:

1. Constructability
2. Disruption to existing operations
3. Operational cost and maintenance
4. Capital cost of construction

Design and cost parameters have been used for similar tunnel projects constructed along the Northeast Corridor including jacked tunnel construction for a similar installation in Westport, CT.

The tunnel, if built, would be approximately 110-120' in length, 10' x 10' extending from the area north of the existing Greyhound Bus Terminal to a location just east of the three track rail line east of the station building. Vertical access would be provided to the southbound and northbound platforms via stairs and elevators and a pedestrian ramp east of and parallel to the tracks for ferry access. Dewatering, security cameras, lighting, vandal-proof finishes and graphics have all been anticipated along with canopies over the access points. Costs for escalators have been presented as options as well. During construction of tunnel, only one rail line would be operational as well as the freight spur.

Construction techniques would incorporate jacking of the tunnel section under the rail facilities with minimal clearance under the track bed. This construction technique was recently used in Westport, CT for an tunnel installation.

The tunnel (under the tracks) is somewhat less expensive than the full pedestrian bridge with extensions to the Water Street Garage and Cross Sound Ferry area. However, the disadvantages to the tunnel with respect to security, maintenance, disruption to rail traffic, de-watering and a connection to the Water Street Garage, make this a less desirable option than the pedestrian structure which has the ability to connect the garage, station, and ferry terminal less expensively with improved security and less maintenance requirements.

6.6 Screening Evaluation of Options

The identified options for the short term and long term were screened using the criteria identified earlier in Table 6-4. The following rating scale is used in the illustrative tables, Tables 6-9 and 6-10 for the Short Term Alternatives and Long Term Concepts, respectively.

Rating Scale:	1	2	3	4	5	
	low	low-med	med	med-high	high	NA

6.6.1. Key Advantages and Disadvantages of Each Short Term Alternative

The following describes the key advantages of each short term alternative. Table shows a summary level evaluation rating. A more detailed table supporting the rating is provided in Appendix D.

Short Term Alternative 1

Advantages

- Lowest cost - renovation/expansion of existing facilities on largely existing sites
- Would be compatible and easy to phase as an interim improvement leading to a long term concept with a relocated bus terminal across the street or at another site (with or without a footbridge).
- Maintains flexible space in front of Water Street garage for short term parking and/or redevelopment over time.
- Minimizes need to cross Water Street to transfer between buses and rail (or between buses, or to ferries)
- Provides more curbside berths for SEAT closer to Union Station.

Disadvantages

- Difficult to implement since construction would be at current site
- Reconfiguration of curb space and expansion of passenger building may face some physical challenges in a tight space
- Impact of passenger building expansion on historic building
- Building expansion is likely not compatible in the long term with a footbridge
- More constraints on space for taxi and auto pickup/dropoff; would require more use of State Steet for taxis and/or auto pickup/dropoff
- Some impact on crosswalk to Water Street Garage (may need to be relocated)
- SEAT berths would not allow independent movement, thereby preventing designating berths by route
- SEAT waiting area somewhat far from berths
- Greyhound lacks freight pickup/dropoff space (other than bus bays)

Short Term Alternative 2

Advantages

- Easy to implement since construction would be at available site which would not affect bus operations
- Frees up space at existing Greyhound Terminal for commercial use including outdoor space, which could attract visitors passing through the RITC
- Shorter connection between buses and Long Island ferries via Governor Winthrop Boulevard crossing.
- SEAT waiting area fairly close to berths

- Provides one long curb space in front of Union Station for taxi and auto pickup/dropoff

Disadvantages

- Higher cost – new construction of all facilities on new site and modification to garage entrance/structures
- Would impact parking garage operations
- Occupies space in front of Water Street Garage so that it is not available for parking and may not be perceived as available for longer term development
- Requires bus users to cross street to get to rail station or ferries
- Awkward configuration of lanes at entrance to Water Street Garage; pedestrian safety issue
- Would require subsequent temporary or permanent relocation of the bus terminal to reconstruct a larger Water Street Garage or development
- Number of SEAT berths limited to 7 and no independent movement is provided to allow designation of berths by route

Short Term Alternative 3

Advantages:

- Phasing is easy for both Greyhound and SEAT.
- SEAT is provided with some saw-tooth bays enabling independent movement. These bays can be assigned to specific routes.
- If SEAT and/or Greyhound expand operations, additional bus bays/ curb space are available.
- A shorter connection is provided between Greyhound and the LI ferries via the Governor Winthrop Boulevard crossing.

Disadvantages:

- SEAT terminal and waiting area at the existing Greyhound location is somewhat far from most bus berths.
- Awkward directionality of lanes at center entrance to garage, this may impact traffic operations and pedestrian safety issues
- One of the two parcels in front of the Water Street Garage is occupied and may reduce potential for redevelopment or alternative use.
- Crosswalk to Water Street Garage may need to be relocated
- May require subsequent temporary or permanent relocation of the Greyhound bus terminal to reconstruct a larger Water Street Garage or development
- No FTA funding would be available for the new Greyhound terminal

Short Term Alternative 4

Advantages:

- SEAT is provided with seven saw-tooth bus bays for independent movement, allowing designation of bays by route. A dedicated terminal building provides a SEAT waiting area closest to, and with a clear view of, all bus bays.
- Taxi operations and pick-up/drop-off space is less constrained
- Easy to phase implementation (construction of new SEAT terminal doesn't affect current SEAT operations).

Disadvantages:

- Higher cost – new construction of all facilities on new site and modification to garage entrance/structures
- Would impact parking garage operations
- Awkward travel lane configuration at relocated garage entrance which may impact pedestrian safety and traffic operations.
- Number of SEAT bays is limited to seven with the saw-tooth design used to allow independent movement. (However, more SEAT buses could be accommodated if parallel berths were used instead.)
- Short term parking is no longer available in front of the Water Street Garage
- Occupies space in front of Water Street Garage so that it is not available for parking and may not be perceived as available for longer term development
- Would require subsequent temporary or permanent relocation of the bus terminal to reconstruct a larger Water Street Garage or development

Table 6-9: Evaluation of Short Term Alternatives

Criterion	Short Term Alternative 1	2	3	4
Low Cost				
Easy to Implement				
Adaptable to Future Changes in Operational Needs				
Flexible to Accommodate Long Term Commercial Development				
Compatibility with Bus Terminal Long Term Concepts				
Improves Safety and Convenience for Transfers				
Enhances Pedestrian Environment and Safety				
Maintains or Enhances Traffic Operations/Safety				
Enhances Wayfinding/Information				
Capacity to Accommodate Short Term RITC Operations:				
Enhances Attraction of Visitors				
Minimal Environmental Issues				
Minimal Property Issues				
Potential for Public Private or Grant Funding				

Key: best worst

6.6.2. Key Advantages and Disadvantages of Each Long Term Vision Concept

The following describes the key advantages of each long term concept. Table 6-10 shows a summary level evaluation rating. A more detailed table supporting the ratings is provided in Appendix E.

Long Term Concept A/AA

Advantages:

- The Water Street Garage site is owned and available to the City.
- It is easy to build the new bus terminals at the new site and then shift the buses without disrupting bus service. (If buses stay on east side of Water Street, a temporary bus facility might be needed during construction.)
- Julian site could be added in a later phase.
- With all major transportation services concentrated wayfinding should be relatively easy.
- Transfers between public transportation modes would be short.
- Transfers between public transportation and parking would be short.
- FTA funding for a bus /intermodal center is feasible including parking provided it is for transit uses.

- WITHOUT FOOTBRIDGE (A)
  - Brings garage users through the Parade area.
- FOOTBRIDGE OPTION (AA)
  - Would facilitate transfers and wayfinding and enhance pedestrian safety crossing railroad tracks and Water Street
  - Also links NB and SB rail platforms when trains are in the station.
  - Would support development of a consolidated passenger ferry terminal near City Pier.
  - It also identifies the path to the ferries.

Disadvantages:

- Parking capacity may be insufficient at the existing site.
- It is hard to replace the parking in the Water Street Garage during construction.
- Bus terminal size is constrained by parking needs at the garage.
- Structure is likely to be much larger than the current garage
- There are aesthetic impacts of a large garage without any commercial development (much like exists today).
- Little opportunity for adjacent development. All immediate area is devoted to transportation.
- Fails to capitalize on waterfront development opportunity.
- Fails to capture visitors with attractions (retail, entertainment) in immediate area.

- FOOTBRIDGE OPTION (AA)
  - Introduces vertical element to transfer; large crowds couldn't use elevators.
  - Diverts garage users from traversing the Parade.
  - Has potential visual impacts, including impacts on the historic station building.
  - Involves multiple property owners.
  - Adds costs that would need to be funded without any potential funds from a private development of TOD.
  - Limits bus options on east side.

Long Term Concept B

Advantages:

- Includes small commercial development near the Parade in the expanded Water Street Garage; complements Parade improvements.
- Parking capacity may be limited by inclusion of commercial development.
- May be easier to phase by building additional parking on Julian site first.
- Provides fairly convenient surface access to relocated Block Island Ferry.
- Less need for footbridge with this alternative.
- FTA funding for a bus /intermodal center is feasible including parking provided it is for transit uses.

Disadvantages:

- Requires assembly of parcels including Julian property which contains active first class office building. There would likely be an interim loss of commercial space during construction.
- Bus terminal size would be constrained by the parking needs at the garage as well as the inclusion of commercial development.
- Doesn't encourage major economic development; devotes most of immediate area to transportation.
- Distinguishes separate parking areas oriented to Block Island Ferry from rail; could influence FTA funding.
- Wayfinding must orient Block Island Ferry passengers to Gov. Winthrop Blvd. intersection.
- Funnels more pedestrians across Governor Winthrop Blvd. /Water Street intersection which is vehicle access point for auto ferries.
- Funnels Block Island Ferry passengers away from the Parade
- Doesn't support Cross Sound Ferry plan for single passenger ferry terminal with footbridge.

Long Term Concept C/CC

Advantages:

- Allows for more commercial development at Water Street Garage site.
- Development complements Parade project.
- New parking garages on Governor Winthrop Boulevard could be phased in first.
- Police Station site is likely to be available to City; other sites will require some assembly including private and City-owned land.
- FTA funding for a bus /intermodal center is feasible including parking provided it is for transit uses.

  WITHOUT FOOTBRIDGE (C)
  - Provides fairly convenient surface access to relocated Block Island Ferry.
  - Provides maximum possible auto ferry staging capacity.
  - Could retain SEAT and/or Greyhound buses on east side of Water Street as an option.
- FOOTBRIDGE OPTION (CC)
  - Provides safer access from Water Street Garage to Block Island Ferry at current location and supports Cross Sound Ferry plan for single passenger ferry terminal with footbridge.
  - Identifies path to the ferries.

- Encourages pedestrian traffic through the new commercial development and therefore enhances development potential.
- Provides more on-site Block Island ferry parking.
- Developer could provide funding for footbridge.

Disadvantages:

- Possible interim loss of commercial space.
- May require relocation of Police Station and/or other properties.

- WITHOUT FOOTBRIDGE (C)
  - Funnels more pedestrians across Governor Winthrop Blvd. /Water Street intersection which is vehicle access point for auto ferries.
  - Diverts Block Island Ferry users of the garage from the State Street/Parade area.
- FOOTBRIDGEOPTION (CC)
  - Requires wayfinding for Block Island Ferry passengers from remote parking areas through new commercial development to footbridge.
  - Involves multiple property owners.
  - Has visual impacts including impacts on the historic station building.

Long Term Concept D/DD

Advantages:

- Maximizes development near the RITC, including potential waterview hotel.
- Development complements Parade project.
- Moves SEAT closer to geographical center downtown area.(possibly closer to more originating riders)
- Offers SEAT and Greyhound more space for development of bus terminal.
- New parking garages on Governor Winthrop Boulevard could be phased in first.
- Police Station site is likely to be available to City; other sites will require some assembly including private and City-owned land.
- FTA funding for a bus /intermodal center is feasible including parking provided it is for transit uses.

- WITHOUT FOOTBRIDGE (D)
  - Provides reasonably convenient surface walk from parking to relocated Block Island Ferry.
  - Provides maximum possible auto ferry staging capacity.
- FOOTBRIDGE OPTION (DD)
  - Provides safer access from Water Street Garage to Block Island Ferry at current location and supports Cross Sound Ferry plan for single passenger ferry terminal with footbridge.
  - Identifies path to the ferries.
  - Encourages pedestrian traffic through the new commercial development and therefore enhances development potential.
  - Provides more on-site Block Island Ferry parking.
  - Developer may provide funding for footbridge.

Disadvantages:

- Moves SEAT and Greyhound farther from rail station and ferries.

- Separates parking for Block Island Ferry from rail parking which could impact FTA funding (but does combine Block Island Ferry parking with intercity bus parking)
- Possible interim loss of commercial space.
- May require relocation of Police Station, hotel and/or other properties.

- WITHOUT FOOTBRIDGE (D)
    - Funnels Block Island Ferry pedestrians through Gov. Winthrop Blvd./Water Street intersection which is vehicle access to auto ferries.
    - Diverts Block Island Ferry users of the garage from the State Street/Parade area.
- FOOTBRIDGEOPTION (DD)
    - Requires wayfinding for BI Ferry passengers from remote parking areas through new commercial development to footbridge.
    - Involves multiple property owners.
    - Has visual impacts including impacts on the historic station building.

Table 6-10: Evaluation of Long Term Concepts

Criterion	Long Term Concept						
	A	AA	B	C	CC	D	DD
Footbridge?		✔			✔		✔
Low Cost							
Ease of Project Development							
Ease of Phasing							
Improves Safety and Convenience for Transfers							
Improves Convenience for Parking Access							
Enhances Pedestrian Environment							
Enhances Pedestrian Safety							
Enhances Wayfinding/Information							
Has Capacity to Accommodate RITC Demand/Growth (Public Transportation Modes)							
Has Capacity to Accommodate RITC Demand/Growth (Parking)							
Promotes Likely Development/Local Economy							
Capitalizes on Synergies between Transportation & Development							
Balances Need for Transportation & Development							
Enhances Attraction of Visitors (to New London)							
Minimal Environmental Issues							
Minimal Property Issues							
Potential for Public-Private or Grant Funding for transportation improvements							

Key: best worst

6.7 Stakeholder Input for the Development of a Master Plan Short Term Concept

There was ongoing stakeholder and public involvement and agency coordination throughout the study. This included two public meetings and six meetings of a Stakeholder Steering Committee including representatives of transportation providers, property owners, downtown business and other interest groups, and representatives of City and State agencies. (The public process is documented in Appendix F including meeting minutes.) Individual meetings were also held with key stakeholders.

The stakeholders had considerable comments on the identification and evaluation of the short and long term alternatives. As a result, the consultant team was redirected to respond to the consensus that emerged. The consultant team proceeded to examine the feasibility of some suggestions made at the Stakeholder Steering Committee meeting such as introducing another railroad crossing between the two current crossings, shifting rail platforms northward to allow surface crossing while trains were in the station, relocating or removing the freight siding, etc. SCCOG directed the consultant team to develop and revise new short term alternatives. The direction was to 1) develop alternatives for bus terminal facilities located on the east side of Water Street adjacent to Union Station, incorporating use of the building currently used by Greyhound, and shifting Water Street to the west, if needed, to provide adequate space to meet the bus operator needs, and 2) to include an up-and-over pedestrian bridge in the short term alternatives that would enable passengers to cross the tracks when trains are in the station (as mandated by ConnDOT) and which could include additional span to connect to the Water Street Garage and the waterfront. This is reflected in the Preferred Alternative of the Master Plan described in the next section.

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

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7. Proposed Master Plan Improvements

7.1 Introduction

As detailed in the previous chapter, the consultant team prepared potential improvement options for the Regional Intermodal Transportation Center located in New London's Historic Waterfront District including Union Station and nearby transportation facilities. These potential improvements were developed based on the earlier findings regarding needs. Improvements were outlined for two time frames, short term and longer term.

More specific improvements were developed for implementation in the short term. While some of these improvements could be implemented immediately, others would require some time to obtain funding, complete design, obtain necessary permits, complete construction, etc. The immediate actions were not distinguished at that time from other short term elements. The short term options addressed pedestrian safety and amenities, taxi and auto pick up and drop off, parking needs, bus terminal facilities for SEAT and Greyhound, and other issues. Wayfinding was not addressed at this early stage. Limited opportunities for transit-oriented development were identified in the short term schemes.

For the longer term, general vision concepts were prepared. The longer term was defined largely by the availability of the entire Water Street Garage site, that is, the time frame when the City would consider demolition of the Water Street Garage and its replacement with new structures that could contain parking, commercial or residential development and possibly public transportation facilities. The long term concepts examined trade-offs between providing more parking to meet low and high projected needs, bus terminal facilities to meet growing service needs and development opportunities. Each concept took a different approach on which use would be closest to Union Station and which would be farther away.

During the process, the consultant team conducted discussions with key stakeholders to better understand needs and preferences. Several options for both the short term and long term time frames were presented and evaluated in a Stakeholder Steering Committee meeting held on June 30, 2009. There was no single simple solution so rather than recommend one option the tradeoffs were displayed and discussed. The goal was to obtain input from the Committee and then to obtain direction from SCCOG on how to proceed to develop the Master Plan. As the Master Plan design process continued, cost estimates and economic impacts and environmental impacts were assessed. Public involvement continued with a public meeting.

The June 30th Stakeholder Steering Committee meeting was effective in stimulating discussion about the potential improvements. Various interests were represented at the meeting and there were strong comments about the alternatives presented. Many suggestions were made at the meeting and it was clear that the stakeholders wanted to redirect the study toward different alternatives. The consultant team, while awaiting additional comments, proceeded to examine the feasibility of some suggestions made at the meeting; i.e. introducing another railroad crossing between the two current crossings, shifting rail platforms northward to allow surface crossing while trains were in the station, relocating or removing the freight siding, etc. The results of these investigations are summarized in Appendix G.

Shortly after the meeting, a request was made that more review time should be provided and that stakeholders should reconvene to discuss options and then provide the input SCCOG was seeking.

SCCOG decided to host and facilitate such a meeting and to have the study stakeholder involvement coordinator present to record the input. A consensus on the short term plan emerged among the stakeholders present at the follow up meeting held on July 28th 2009 and SCCOG directed the consultant team to develop and revise new alternatives for the short term. The direction was to:

Develop alternatives that retain the passenger transportation facilities on the east side of Water Street adjacent to Union Station, incorporating use of the building currently used by Greyhound, and shifting Water Street to the west, if needed, to provide adequate space for planned improvements, and to include an up-and-over pedestrian bridge in the short term alternatives that would enable passengers to cross the tracks when trains are in the station and which could include an additional span to connect to the Water Street Garage. ConnDOT reiterated the latter direction in a letter to the Council of Governments dated September 28, 2009 which stated that it, as a matter of policy, could only support a short term alternative that includes either an up-and-over pedestrian bridge or tunnel across the tracks.

The consultant team followed up on stakeholder suggestions and reported back to SCCOG with its findings. It was determined that the freight track could not be relocated since ConnDOT and Amtrak anticipate using it for the expanded Shore Line East service to New London. It was also determined that a new at-grade rail crossing was not realistic and would not be allowed, and that the platforms could not be shifted far enough northward to allow the State Street crossing gate to remain open when trains are in the station (see Appendix G for more detail on these findings). Work progressed on developing the plan for a bus terminal on the east side of Water Street, incorporating a westward relocation of Water Street and a pedestrian bridge. To prepare for the design work, the consultant team conducted individual stakeholder discussions with key stakeholders, particularly the two bus operators, to address their needs at the bus terminal and to develop an architectural program based on bus operator needs (see Table 7-1).

The team worked through several iterations to develop feasible layouts of bus berths and terminal structures within the confined space on the east side of the street. At the same time, work progressed on examining governance at other intermodal centers with multiple providers and developing a recommendation on the organizational framework for the RITC. The master plan has been drafted based on the directions given by the Council of Governments.

7.2 Overview of the Short Term Master Plan Concept

The consultant team developed a package of short term improvements, designated the “Preferred Alternative,” based on the direction of SCCOG and input from the Stakeholder Steering Committee members and transportation providers, recognizing both fiscal and physical constraints posed by the area currently regarded as the RITC. While developing this package of improvements, the consultant team incorporated designs that reflect best professional judgment working within the parameters and constraints. This package of improvements includes a new combined bus terminal, pedestrian improvements to enhance safety and passenger amenities, wayfinding improvements to facilitate transfers between modes and to and from downtown areas of interest to visitors, and a pedestrian bridge over the tracks that could be extended to the Water Street Garage and/or the Cross Sound Ferry property. This plan also envisions a major State role in owning the RITC. These improvements represent what can be done in the short term, i.e., five years, provided the property owners and involved agencies collaborate to utilize a variety of funding sources to achieve their goals.

Table7-1: Architectural Program for Bus Facilities at RITC

6-Nov-09

DRAFT Greyhound Architectural Program (Building Space Requirements)				
Space	**Min. Square Footage (gsf)**	**Max. Square Footage (gsf)**	**Formula**	**Notes**
Passenger Areas				
25 Passenger Waiting Area		375 gsf	15 gsf/passenger	Includes circulation area
Passenger Restrooms:				***Shared with SEAT***
Men		*250gsf*		*1 std stall, 1 handicap stall, 2 urinals, 2 sinks*
Women		*300 gsf*		*3 std stalls, 1 handicap stall, 2 sinks*
Ticket Queuing		50gsf	1.5 gsf per passenger	Assumes existing space is adequate (5'X10')
Vending		60 gsf		Assumes three machines (current provision) - includes circulation area
Administration Areas				
Ticket Counter		60 gsf		6' deep X 10' wide
Office		48 gsf		6' deep X 8' wide
Maintenance/Storage Area		48 gsf		6' X 8' closet
Baggage and Freight Room		260 gsf	2/3 of existing space	
Subtotal		**1,451 gsf (MAX)**		

DRAFT SEAT Architectural Program (Building Space Requirements)				
Space	**Min. Gross Square Footage (gsf)**	**Max. Gross Square Footage (gsf)**	**Formula**	**Notes**
Passenger Areas				
50 - 100 Passenger Waiting Area	500 gsf	1,000gsf	10 gsf/passenger	Includes circulation area
Passenger Restrooms:				***Shared with Greyhound***
Men		*250gsf*		*1 std stall, 1 handicap stall, 2 urinals, 2 sinks*
Women		*300 gsf*		*3 std stalls, 1 handicap stall, 2 sinks*
Ticket Queuing	90 gsf	180 gsf	1.5 gsf per passenger	Assumes 6 passengers min., 12 passengers max.
Vending		60 gsf		Assumes three machines. Includes circulation area.
Public Pay Phones		9 gsf	4.5 gsf per phone	Assumes two pay phones. Includes circulation area.
Luggage Lockers	50 gsf	100 gsf	2 gsf per locker	Assumes 25 - 50 percent use. Does not include circulation.
Administration Areas				
Ticket Counter		60 gsf		6' deep X 10' wide
Office		100 gsf		10' deep X 10' wide
Maintenance/Storage Area		48 gsf		6' X 8' closet
Security Room		48 gsf		6'X8'. Desk, chair & computer monitor
Employee Areas				
Driver Break Room		169 gsf		13'X13'. Assumes 3'X3' table, chairs, refrigerator, microwave, sink, small counter. Includes circulation.
Driver Lockers (in breakroom)		18 gsf	1 Locker per driver	Assumes 1' wide X 2' deep. Does not include circulation (provided in break room calculation
Driver Restrooms:				
Men		64 gsf		8'X8'
Women		64 gsf		8'X8'
Subtotal:	**1,830 gsf (MIN)**	**2,470 gsf (MAX)**		

Grand Total (Greyhound & SEAT Building Space Requirements:	**2,731 gsf (MIN)**	**3,371 gsf (MAX)**

Elements of the Master Plan fall into the following categories:

- Physical Improvements
- Costs and Financing
- Environmental Considerations
- Management, Governance and Operations

Physical improvements are described in this chapter. Succeeding chapters discuss the other three elements of the plan.

The plan achieves a number of the study objectives but does have some drawbacks. A subsequent section discusses the consultant team's remaining concerns about the design and discusses alternatives.

Appendix G includes documentation of the investigations conducted concerning several suggestions that were presented at the June Stakeholder Steering Committee meeting.

7.3 Physical Improvements in the Preferred Alternative

The major physical elements of the Preferred Alternative for the short term include the following:

- Transportation Facilities on the East Side of Water Street
- Optional Pedestrian Bridge Extensions
- Taxi and Pick-up/Drop-off Areas
- Pedestrian Improvements
- Wayfinding
- Use of Union Station

The physical improvements achieve a number of the study objectives; however some drawbacks are identified in Section 7.4.

7.3.1. Transportation Facilities on the East Side of Water Street

Following the directions of SCCOG and the Stakeholder Steering Committee, the consultant team developed alternative hand-sketched schemes for keeping the bus facilities on the east side of Water Street in proximity to the other transportation modes; these schemes were designed to accommodate a pedestrian bridge that would cross the tracks and potentially link with the Water Street Garage and ferry terminal. Greyhound, SEAT, and SCCOG reviewed several options and selected one of the schemes which subsequently was further refined. To validate the scheme as workable, digitized maps were prepared, bus turning movements were checked using the AutoTurn software, and draft floor plans were prepared for the expanded terminal building. Note that the floor plans were not to develop a final building design but to make sure that it was feasible to address the architectural program. Refinements to the design were made as needed. A context diagram, site plan and conceptual floor plan for the preferred alternative are shown in Figure 7-1through Figure 7-3 and 3-D visualizations are shown in Figures 7-4 through Figure 7-7.

The site plan of the combined Greyhound and SEAT terminal focuses on several major elements of the RITC, including the bus terminal facilities and berths on the east side of a relocated Water Street and an up-and-over pedestrian bridge which would cross over the railroad tracks between the southbound and northbound platforms and, optionally, over Water Street to the Water Street Garage and over the freight

track and parking area to the Cross Sound Ferry property. The pedestrian improvement concepts are not shown on this site plan. Those elements of the plan are shown in separate drawings (Figure 7-10 through Figure 7-14). The following describes the major elements.

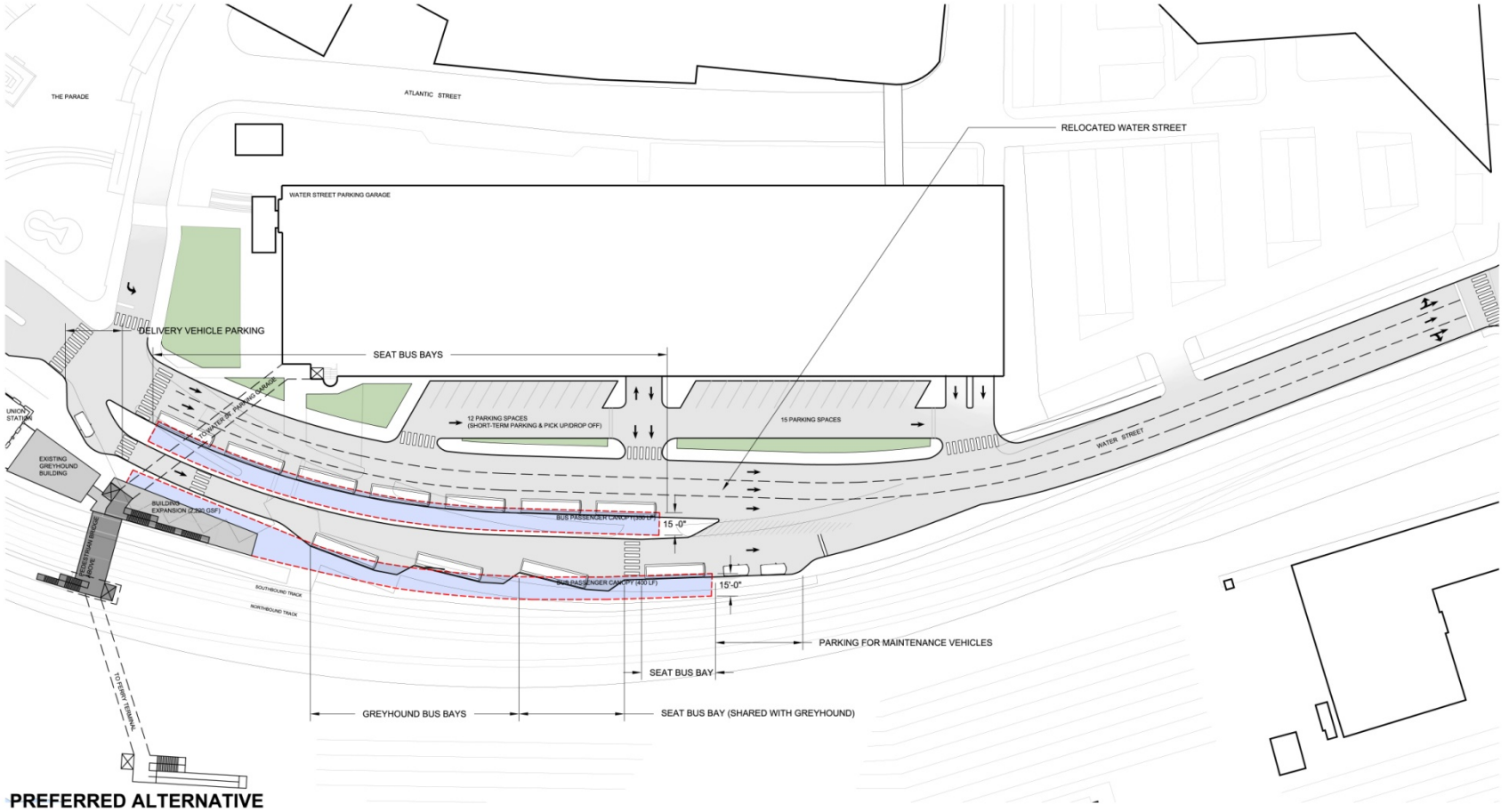
- Relocation of Water Street - Relocation of Water Street westward was necessary to accommodate the bus facilities. It should be noted that travel lanes would also be reduced to 11 feet in width although the design allows for an extra foot for the curbside lanes. The existing parking area and landscaping on the parcels in front of the Water Street Garage are affected but the relocation has been designed to have minimal impact on the Parade (modifying only the portion of the Parade project north of Atlantic Street), on the Julian property, and on the garage access and egress (preserving the center entrance/exit and the primary exits at the north end of the Garage). The circulation pattern to access the garage is somewhat affected as is the crosswalk from the southeastern exit from the garage (closest to Union Station). The site plan shows a potential new location for the impacted crosswalk. The relocation of Water Street and narrowing of Water Street travel lanes will allow a new eight foot wide sidewalk on the east side of Water Street to extend from Governor Winthrop Boulevard south to the current SEAT bus stop. The sidewalk width could expand to as much as 15 feet south of the existing bus stop. (The sidewalk and a proposed extension farther north are not shown on these drawings, but are discussed in the section on pedestrian improvements).

- Traffic and Parking Considerations - A 500-foot right lane on the Water Street approach to Governor Winthrop Boulevard was preserved to be used as a straight and right turn lane as it is now. About 27 parking spaces for short term parking and drop off on the west side of Water Street in front of the Water Street Garage where there are currently 24 spaces and an unused drive-thru bank.

- Expanded Shore Line East Service- ConnDOT is currently in discussions with Amtrak for expanded Shore Line East (SLE) service to New London. Besides access to parking and the existing waiting area, SLE will need access to a platform. Amtrak will require that SLE trains utilize Track 6 (i.e. the freight track) for passenger boarding and alighting. The ConnDOT Office of Rail is currently looking at short term modifications to the Track 2 (northbound) platform to access SLE trains on Track 6. While ConnDOT has stated that it is too early to investigate the possibility of building a future high-level platform on the water side of Track 6, it envisions a potential future platform in this location on the outside of the curved portion of Track 6 (to lessen train-to-platform gap issues) since it would be more functional for passenger service and SLE train positioning.

- Pedestrian Bridge - The up-and-over pedestrian bridge incorporated into the expanded bus facility is the minimum segment required to accommodate rail passengers. Extensions to connect to the Water Street Garage and ferry facilities are described in the next section. The minimum pedestrian bridge described here is a preliminary concept design that includes elevators and stairs on the “northbound platform” which would serve passengers using trains on Track 2 and the freight siding (which is to be used for Shore Line East once the platform is widened), and within the potential future building expansion north of the existing Greyhound building and adjacent to the “southbound platform”. The vertical element on the southbound platform is incorporated into the new bus terminal structure to be more space-efficient and to possibly allow for indoor connections.

Figure 7-1: Plan for Combined Bus Terminal in the Preferred Alternative



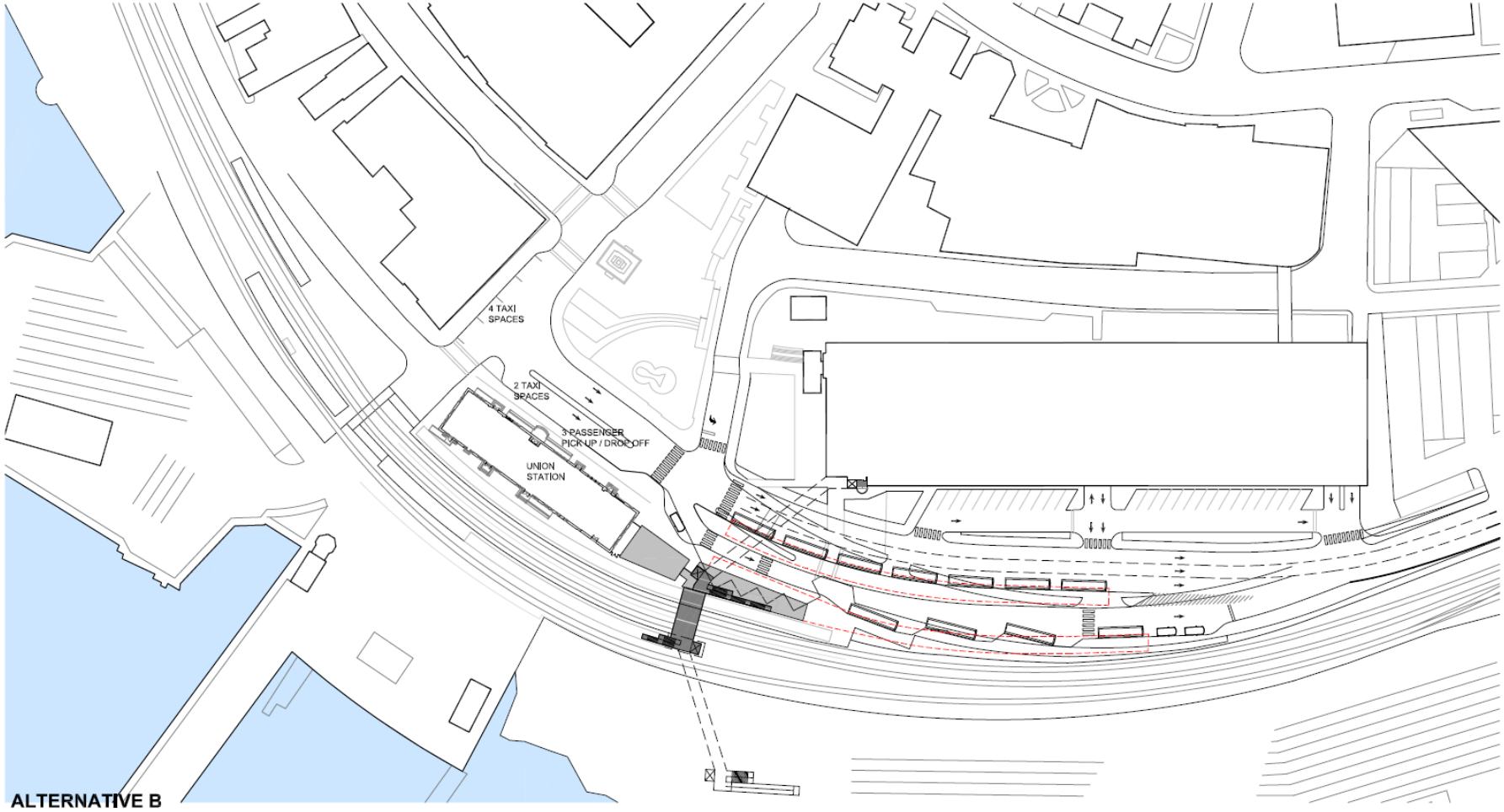
COMBINED GREYHOUND & SEAT TERMINAL SITE PLAN
REGIONAL INTERMODAL TRANSPORTATION CENTER (RITC)
NEW LONDON, CT

DATE: JANUARY 7, 2010

0' 60' 120'

LINEWORK AND CALCULATIONS ARE APPROXIMATE AND INTENDED FOR PLANNING PURPOSES ONLY

Figure 7-2: Context of Bus Terminal Plan in the Preferred Alternative



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

DATE: NOVEMBER 6, 2009

0' 15' 30'

LINEWORK AND CALCULATIONS ARE APPROXIMATE AND INTENDED FOR PLANNING PURPOSES ONLY

Figure 7-3: Example of Floor Plan for Combined Bus Terminal in the Preferred Alternative

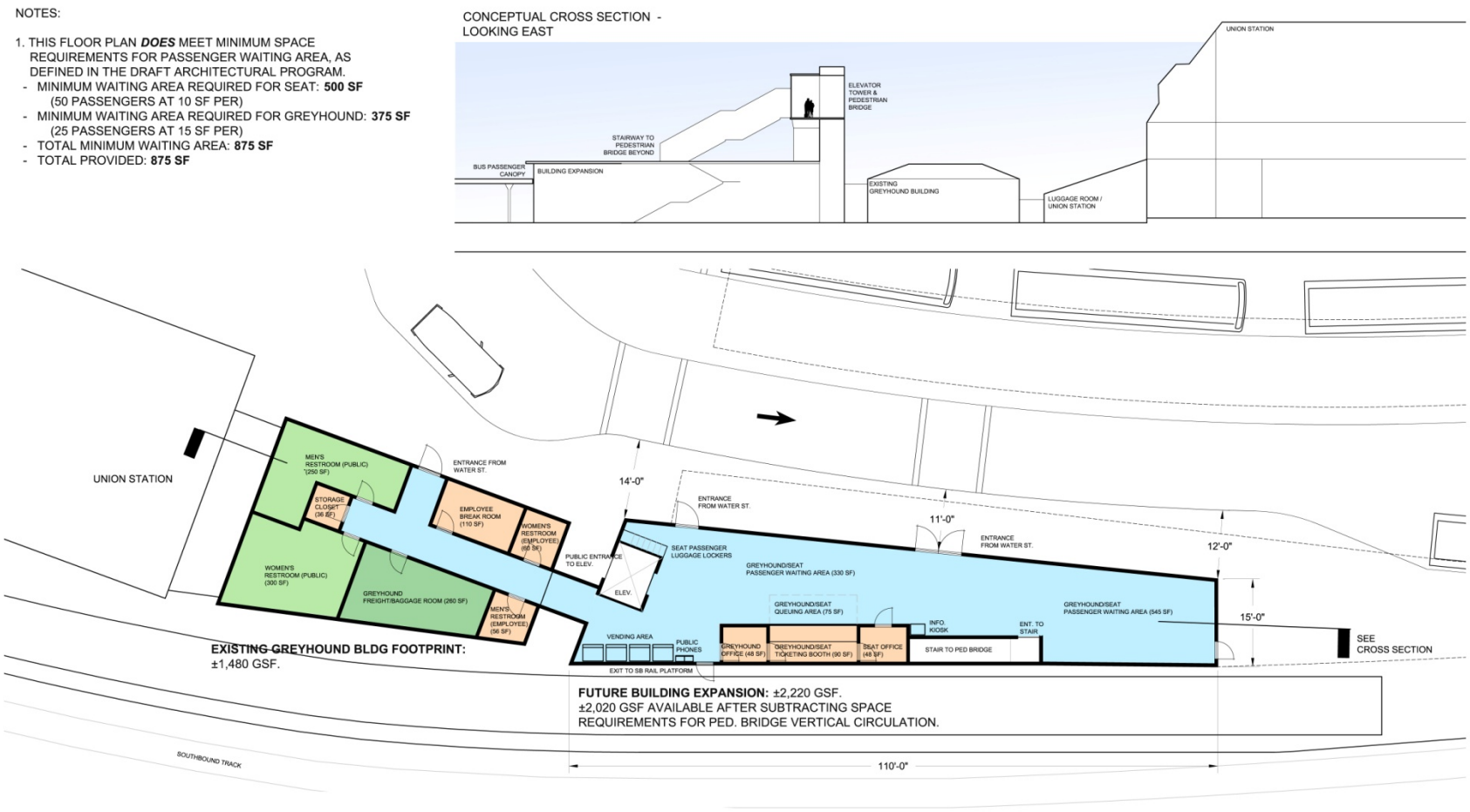


Figure 7-4: Preferred Alternative with Center Section of Pedestrian Bridge
View from the Parade

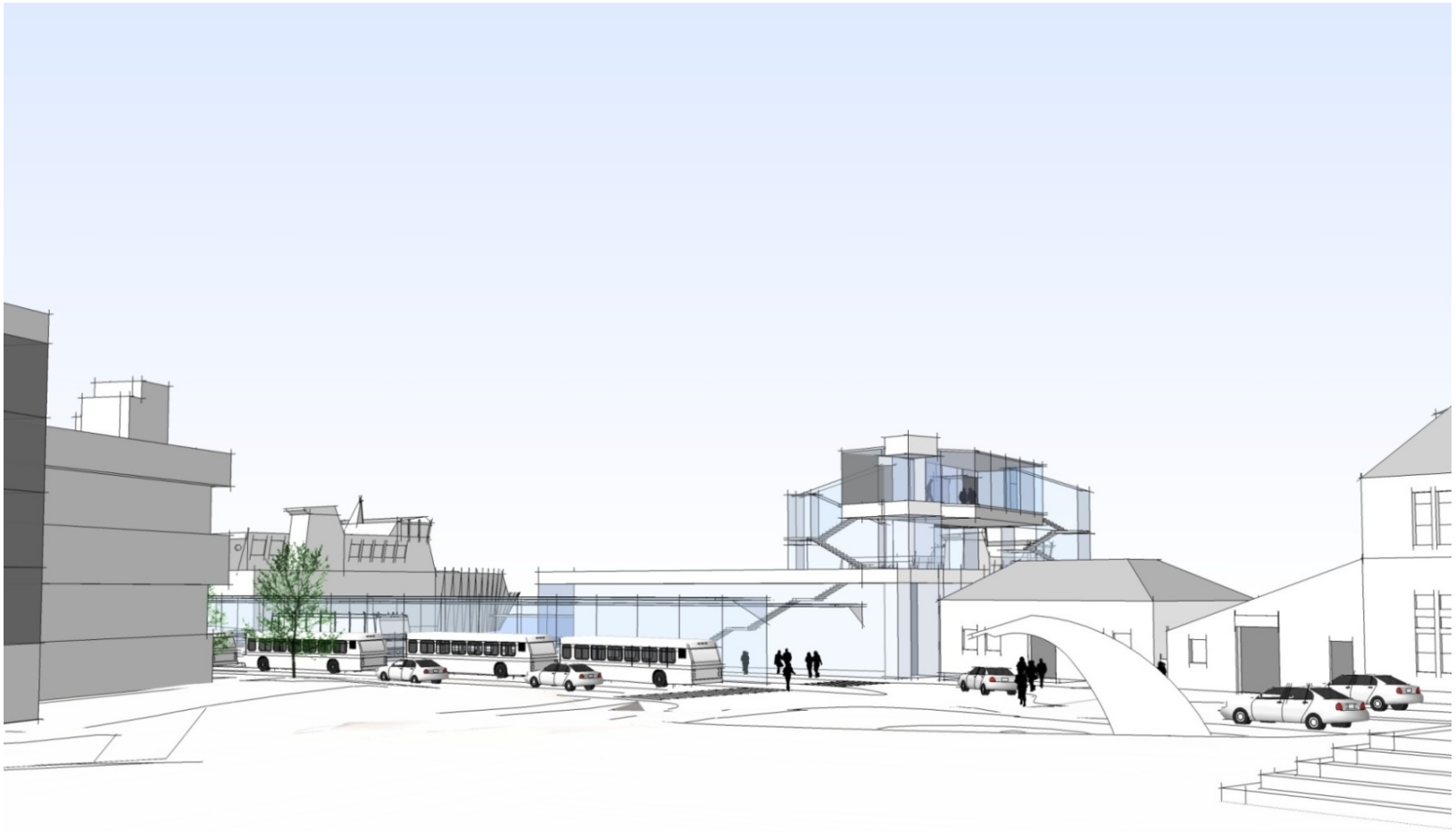


Figure 7-5: Preferred Alternative with Center Section of Pedestrian Bridge
View from Above Water Street

Figure 7-6: Preferred Alternative with Full Pedestrian Bridge Including Extensions
View from the Parade

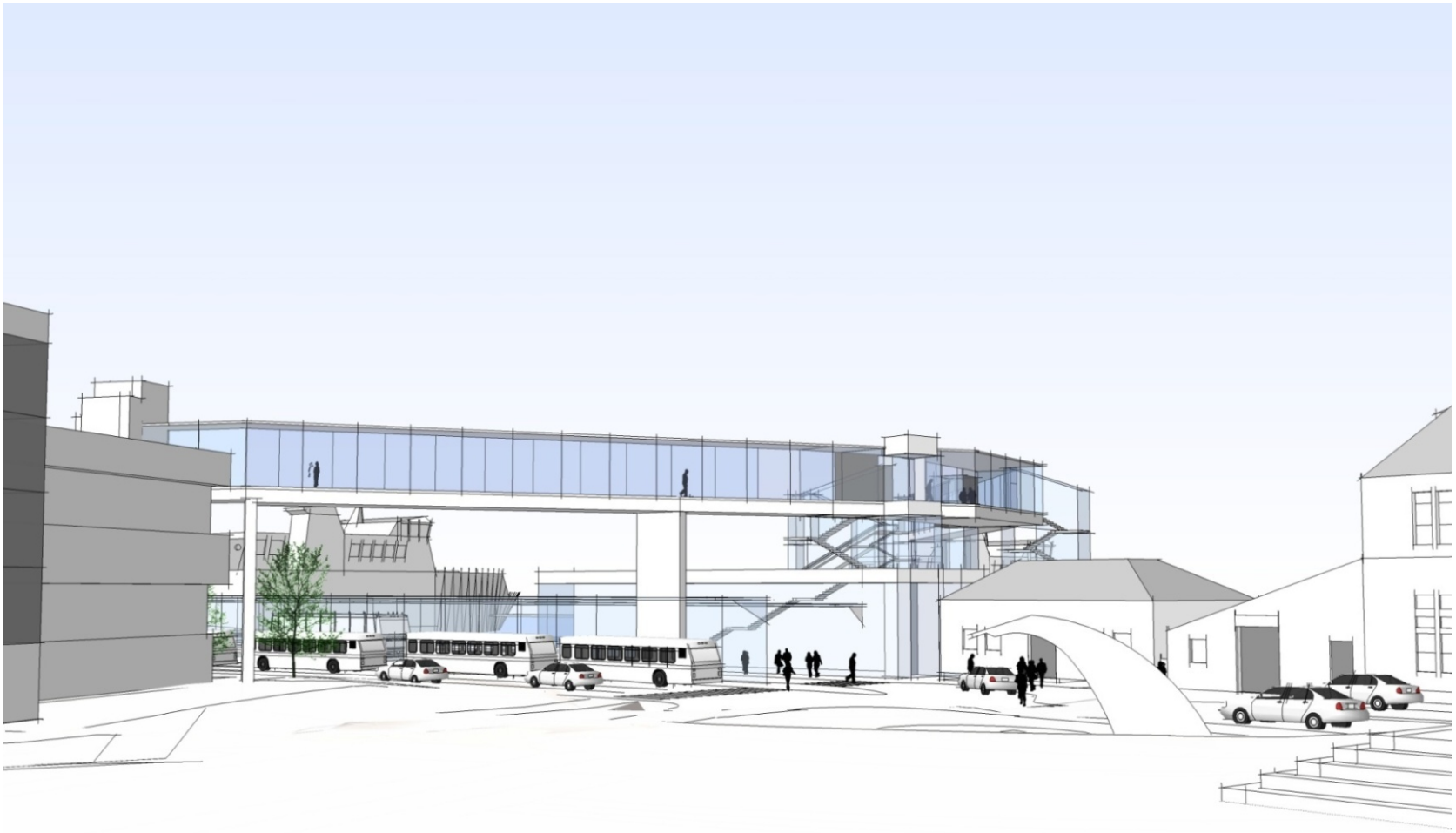
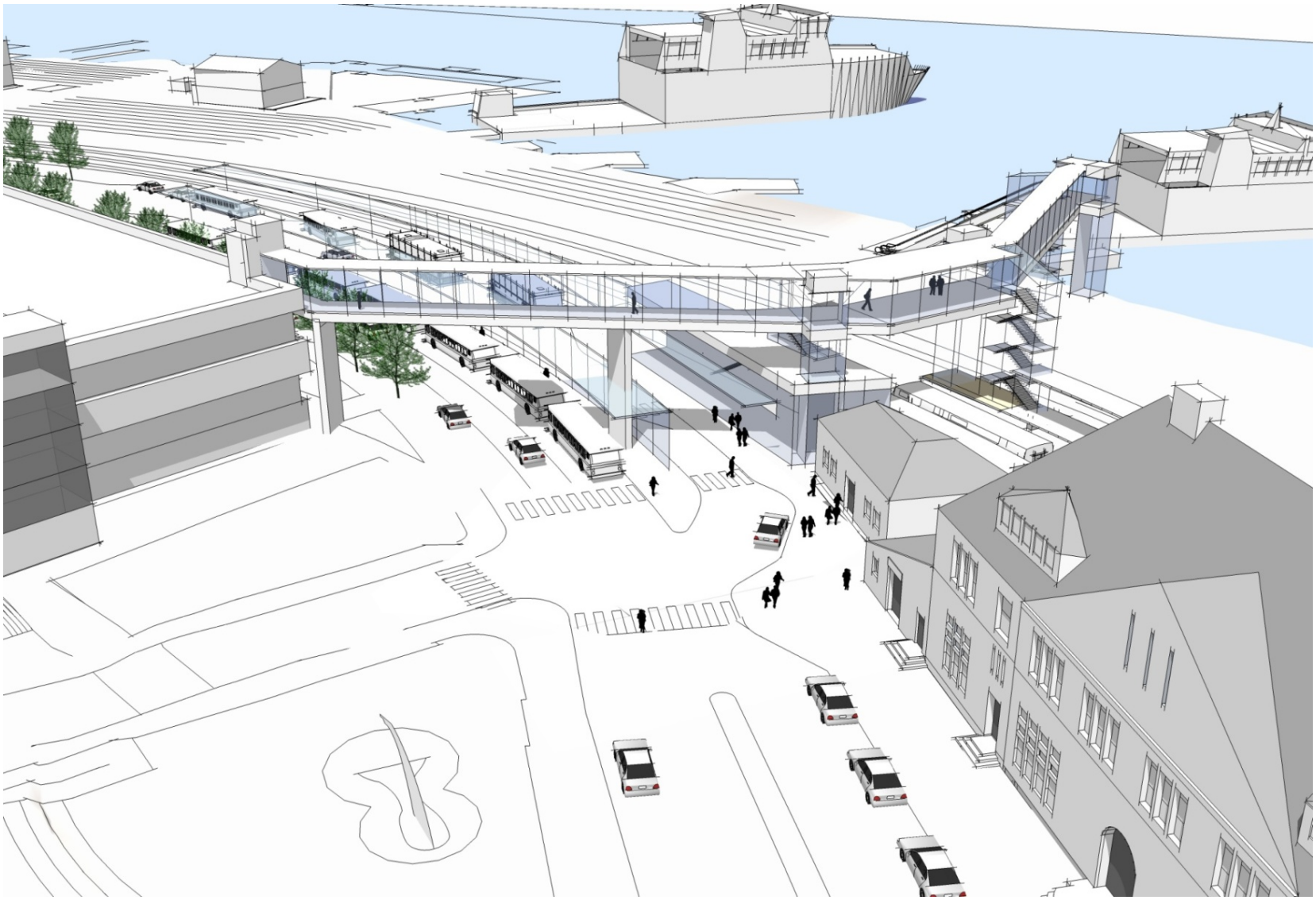


Figure 7-7: Preferred Alternative with Full Pedestrian Bridge Including Extensions
View from above Water Street



- Northbound Rail Platform Extension – The northbound high-level platform needs to be extended 30 - 40 feet to accommodate vertical circulation for the pedestrian bridge. The railing on the east side of this platform needs to be removed and the platform widened to serve Shore Line East trains using the third "freight" track.

- Bus Operations - Given the overall space constraints, the plan does not provide independent movement at most of the SEAT bays (just at the shared sawtooth bay); this was a desired but not required feature for SEAT. However 7 nose-to-tail bus berths for 40-foot transit buses can be provided on Water Street along a passenger waiting island which would be 15-feet wide and would include a canopy. SEAT could use additional bays along the rail platform sidewalk area including one dedicated SEAT bay and one sawtooth bay shared with Greyhound. Greyhound would have two dedicated sawtooth bays. The plan provides for one Greyhound freight pick-up/drop-off space near the existing Greyhound building as requested and some space at the north end of the bus aisle for SEAT bus maintenance vehicles.

- Bus Passenger Terminal Building - The space that can be allocated to a new addition to the Greyhound building to provide a passenger waiting area with views of the bus bays is limited by the need to provide for adequate pedestrian circulation in the area. Two alternatives for the addition were developed and considered. The alternative (originally called Alternative B and now referred to as the Preferred Alternative) that matches the architectural program better has been described below. Description of the other alternative considered is included in Appendix H.

  The Preferred Alternative proposes a building addition of 2,220 GSF which provides 2,020 GSF in usable space after subtracting space requirements for the pedestrian bridge vertical circulation. The result is a passenger waiting area of 875 SF which meets the minimum requirements of the architectural program, allowing for 25 Greyhound passengers and 50 SEAT passengers. The remainder of the interior houses a joint Greyhound/SEAT ticketing/information booth/counter and individual offices for each operator, space for the elevator and stairs to the pedestrian bridge, luggage lockers, vending area, public phones, a queuing area for the ticket counter and circulation space. The existing Greyhound building would be used to house passenger restrooms, a SEAT driver break room and restrooms, a SEAT storage closet and a Greyhound freight room, as well as circulation space. The two buildings would be connected by a corridor using the existing doorway on the north wall of the Greyhound building.

  To achieve greater curb space, this alternative shifts the bus bays along the sidewalk farther north. While this increases the distance Greyhound passengers have to walk by approximately 60 feet, it enables the straight curb line to extend farther north and the building addition to be extended and continue a straight line façade. The sidewalk provided in front of the building addition is 11 feet wide at its narrowest point but expands to 12 feet and 14 feet and the north and south ends of the building addition, due to the curvature of the busway.

  Compared to the other alternative, the Preferred Alternative allows for a larger building addition and thus provides the minimum waiting space required by to the architectural program. It also allows for a broader sidewalk and a façade that is straight rather than notched as in the other alternative; however the angle is even more askew from the Union Station façade. In addition, extending the building farther north adds another 30' to the barrier along the southbound train platform.

A possible interior floor plan is illustrated in Figure 7-3. The purpose of the floor plan is to document that the Master Plan concept is feasible; it is not intended to illustrate a final design for the terminal, which is beyond the scope of the master plan. The following caveats related to the floor plan should be noted:

- Final terminal design and floor plan should be developed subsequent to this master plan and might yield an improved arrangement of space.
- The draft architectural program was developed to begin this spatial analysis and uses gross level assumptions. It is purely conceptual and intended for planning purposes only. Space requirements for building components will need to be refined and conform to all applicable codes.
- The conceptual floor plan is an illustration of what can reasonably fit given the space constraints. The plans attempt to incorporate all program components, but are not a precise representation of the architectural program.

The following highlights the characteristics of the floor plan:

- The option has the stairway to the pedestrian bridge located far from Union Station and the train ticketing area.
- The option has elevator doors to the interior and exterior.
- The option has a door to the southbound rail platform.
- The freight area is close to the dedicated freight drop off parking but relatively far from the Greyhound bays.
- Stringing transportation uses in two distinct building volumes necessitates a long corridor with multiple doors. Several notable consequences are:
    - There will be a lot of space dedicated to passenger circulation.
    - Wayfinding will be complicated.
    - Many spaces within the terminal will be unobserved by ticketing agents. This could create security issues.
    - Security/Surveillance – The option has good surveillance of the waiting areas and allows the customer service personnel to see the bus bays through the large glass wall. There is no good surveillance of the restroom corridor and cameras would be needed to ensure security.
    - The floor plan has a pinch point on the sidewalk near the elevator and crosswalk (width is only 11-14 feet).

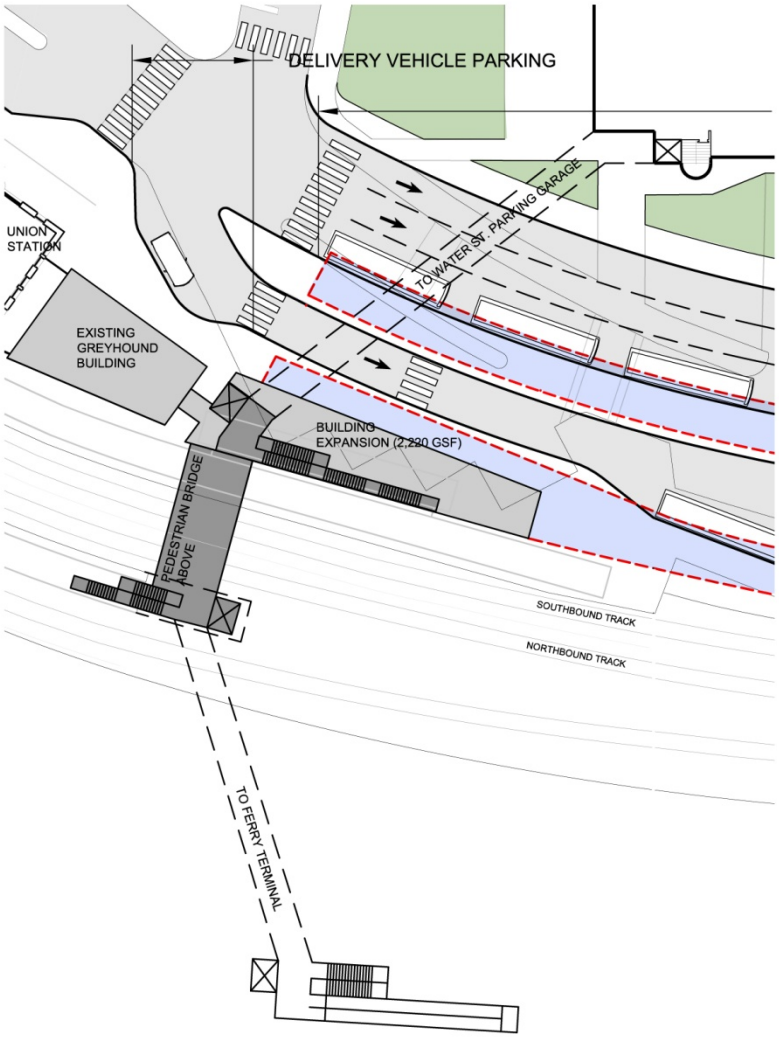
In summary, the Preferred Alternative's bus terminal has the following characteristics:

- It maintains a bus terminal on the east side of Water Street
- It requires relocated Water Street onto City-owned property in front of the Water Street Garage in order to provide the necessary space on the east side of the street
- It provides expanded capacity for buses
- It includes a new bus terminal building near bus stops as an addition to the current Greyhound building to provide a large enclosed waiting room with view of buses
- it requires use of currently private property (Union Station)

7.3.2. Optional Pedestrian Bridge Extensions

The up-and-over pedestrian bridge described above and incorporated into the expanded bus facility is the minimum segment required to accommodate rail passengers and considered a pre-requisite element of the short term plan by ConnDOT. Extensions could be included as part of the initial construction, or at a later date, to connect to the Water Street Garage and to connect to the Cross Sound Ferry facilities. These extensions are shown as dashed lines in Figure 7-8. A preliminary concept design for the ferry extension would pass over the City-owned parcel used for ferry parking to the Cross Sound Ferry property. It would include an elevator, stairs and an escalator at the site of a possible future high-speed ferry terminal to be built by Cross Sound Ferry. The extension to the Water Street garage would not include any new vertical circulation elements as vertical circulation in the Water Street Garage would utilize the existing stairway at the southeastern corner of the Garage and a restored elevator in the adjacent location or the new elevator recently installed.

Figure 7-8: Optional Pedestrian Bridge Extensions



7.3.3. Taxi, Auto Pick-up/Drop-off and Bicycles

Taxi and automobile pick-up and drop-off are critically important access modes for the train service at Union Station and are expected to grow in importance with the increased presence of Shore Line East at

the station. However, the space available for taxi and automobile pick-up and drop-off at the rail station and bus terminal is already constrained by the limited space on Water Street and strong competition for multiple uses. These uses include the existing SEAT bus stop, the Greyhound bus bays, Amtrak official parking, on-street parking and use of the curbside lane for travel lanes and parking garage entrances and exits. The expansion of bus facilities on the east side of Water Street does not reduce the curb space for such uses compared to the existing case but it does not expand it either. (Taxi and automobile pick-up and drop-off in the Greyhound bus bays occurred during Parade construction but are not considered an existing legal use.)

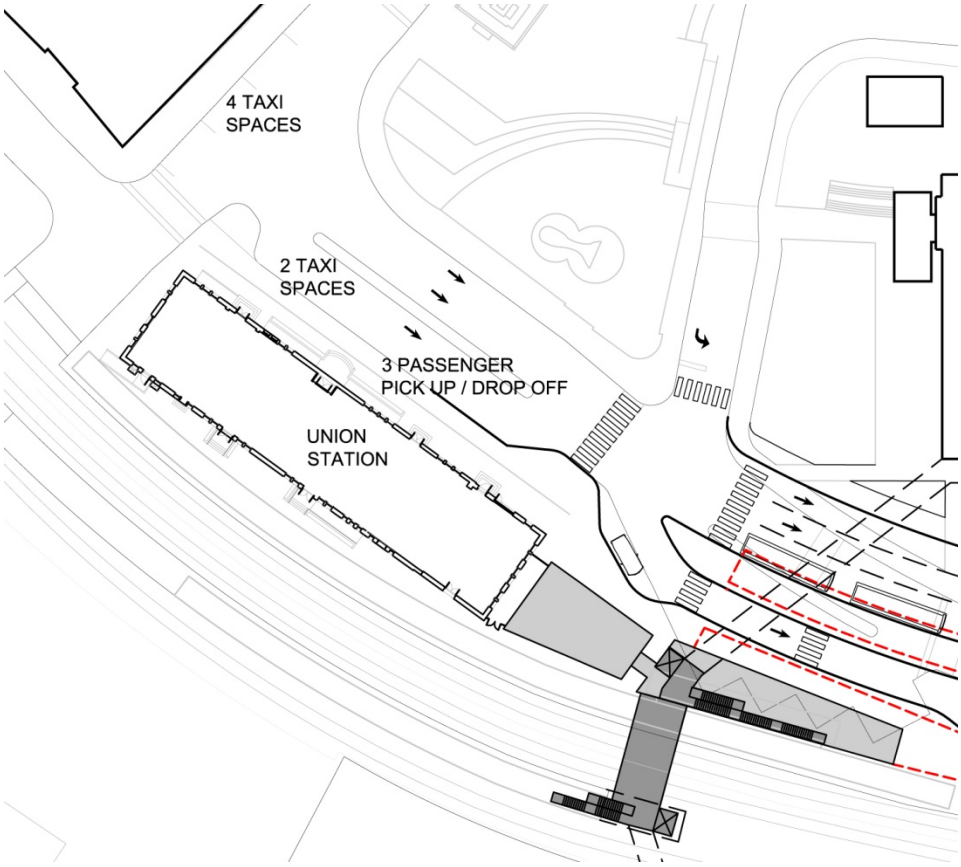
The proposed short term plan, shown in Figure 7-9, envisions retaining the existing taxi and automobile pick-up and drop-off in front of Union Station. The use of the first block of State Street (between South Water Street and Bank Street) is proposed as an additional taxi queue area. The most logical way to use this space would be to have taxis pick-up passengers in two spaces located at the south end of the curb line in front of Union Station and to have taxis queue on the first block of State Street until they can pull into these spaces. It should be noted that there are some retail/restaurant uses on the first block of State Street and there may be opposition to this suggestion. However, the current one way street pattern makes other options impractical. The recommendation affects only a few parking spaces, while it would add substantially to the taxi space available. It should also be noted that the taxi queuing space is envisioned to be limited to that necessary for the transportation functions at the RITC (connections with the train and bus service) and it is recommended that other taxi stands be located or continue to be used for general taxi needs in downtown New London.

It is recommended that the remainder of the spaces in front of Union Station should be designed to accommodate drop-off of passengers from automobiles and taxis but not pick-up of passengers (except for pick-up of disabled individuals). This is to avoid having vehicles sitting and waiting for trains to arrive. For taxis, the pick-up function is best handled in an orderly queue starting from the first two spaces at the southern end of the space front of Union Station and continuing on the first block of State Street. Taxis dropping off passengers would not pick up new passengers if there is a taxi queue; they would have to circle around and come back down State Street to be last in the queue. We recognize that this is a different mode of operation than the taxis are currently accustomed to and there would need to be discussion among the taxi operators to adjust their operating practice.

For automobile pick-up, the space in front of the Water Street Garage, noted in the figures as short-term parking, would be used. These spaces can be designated for various short term parking needs and can easily accommodate the vehicles waiting for arriving trains. Approximately 27 spaces can be provided there.

Provisions for non-motorized access, such as bicycles, should be also included in the final design of the RITC. Though space is limited, bike racks could be incorporated at one or more locations close to the rail station. Bike racks directly in front of the rail or bus station buildings would not be desirable due to the limited space and potential conflicts with pickup and drop-off activity and with bus passengers. Instead, bike racks could be located on the City Pier side of the tracks (near the platform to be used by Shore Line East) or just south of State Street where Amtrak vehicles now park (assuming Amtrak can use spaces in front of the Water Street Garage). Bike racks could also be located within or in front of the Water Street Garage, especially if the pedestrian bridge extends to the garage. Another possible, more secure, location would be inside the former baggage shed portion of Union Station itself. This location could also used in conjunction with a possible bike rental concession.

Figure 7-9: Taxi and Automobile Pickup and Drop-off Area



7.3.4. Pedestrian Improvements

Figure 7-10 provides an illustrative plan of all recommended immediate and short term pedestrian improvements. Figure 7-12 through Figure 7-13 are sections drawings at State Street, Water Street and Ferry Street showing the existing conditions and pedestrian improvements at these streets. Figure 7-14 is a phasing diagram that identifies immediate and short term improvements by location.

Immediate Pedestrian Improvements

Focus for immediate pedestrian improvements in the RITC area are the intersections of Water Street and Governor Winthrop Boulevard and Water Street and State Street. These two intersections are critical pedestrian and vehicular linkages to the waterfront, ferry services, City Pier and the Waterfront Park, and Union Station. The intersections need more clearly marked pedestrian zones at their rail crossings, pedestrian scale lighting, wider sidewalks and crosswalks.

Another focus for immediate pedestrian improvements is along the waterfront. Recommendations include developing a new waterfront pathway, with pedestrian scale lighting and guiding bollards, starting at City Pier and branching northerly in two directions - one path coursing along the back edge of the site adjacent to the railroad and the other following the water's edge to the Block Island Ferry boarding area. The

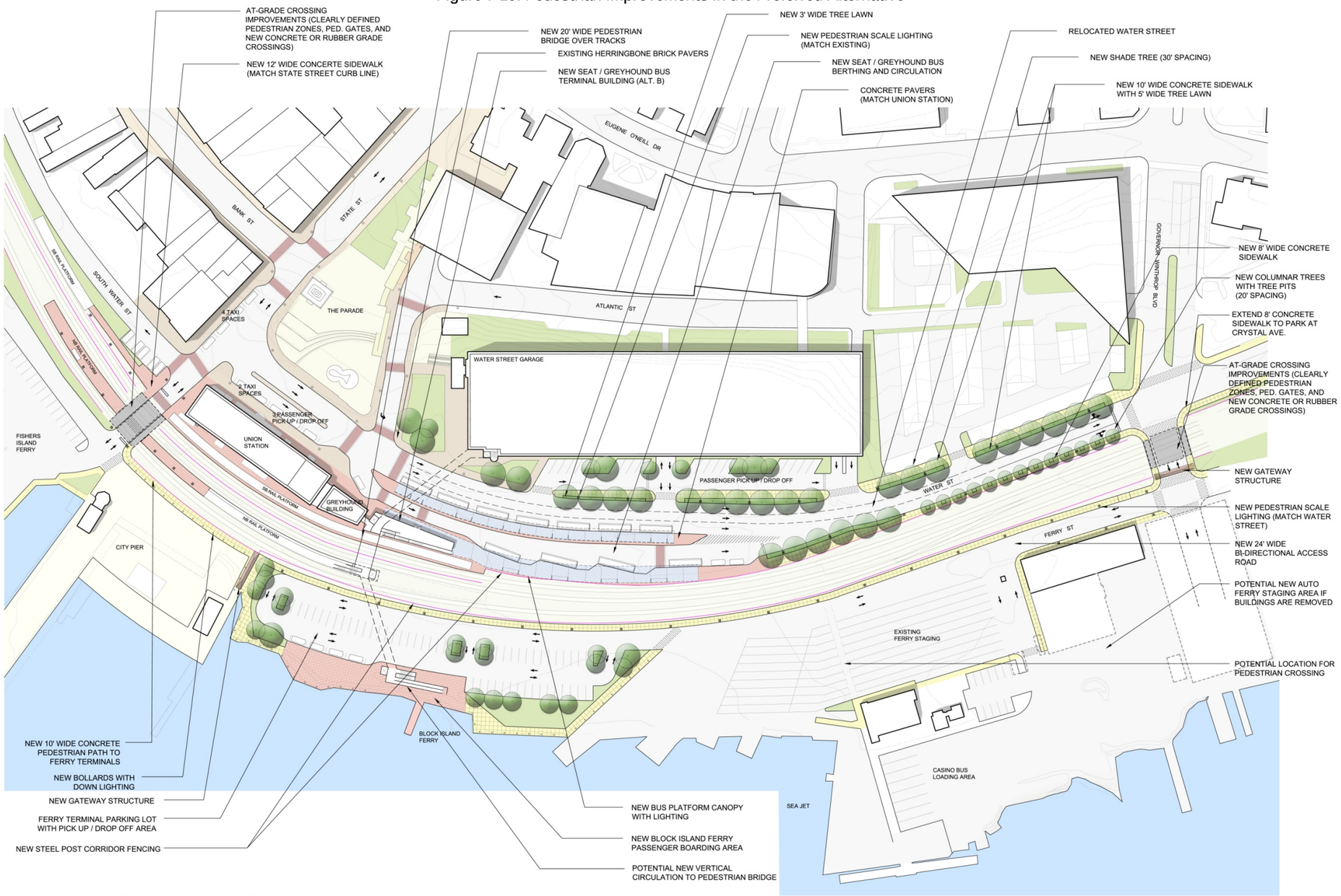
pathways would ultimately connect with Ferry Street and lead to the intersection of Water Street and Governor Winthrop Boulevard. Other immediate improvements include installing steel post rail corridor fencing within the RITC area and two gateway structures to create a sense of arrival at the ferry area. *Note that the City has erected steel post rail corridor fencing on the west side of the railroad right-of-way during the study period taking into account the consultant team recommendation.*

Other Short Term Pedestrian Improvements

Short term pedestrian improvements are defined as those that can be implemented along with the relocation of Water Street and development of the new Greyhound and SEAT bus berthing area and terminal building on the east side of Water Street, immediately north of the existing Greyhound building. This will create the opportunity to strengthen connections between the intersections of Water Street and Governor Winthrop Boulevard and Water Street and State Street, and between the Water Street Parking Garage and all transportation modes within the RITC district. Key pedestrian improvements along relocated Water Street include installing a new sidewalk on the east side of the street connecting to Governor Winthrop Boulevard lined with columnar trees, a wider sidewalk on the west side of the street with continuous tree lawn and shade trees, and pedestrian scale lighting. It is envisioned that the east side sidewalk would continue about 1,500 feet beyond Governor Winthrop Boulevard to the intersection with Crystal Avenue, the location of an existing pedestrian bridge and small park as well as the link to neighborhoods east of Water Street. Other recommendations include continuing Union Station's paving scheme through the new combined Greyhound and SEAT bus berthing area, which will provide a more uniform station area aesthetic.

The immediate and other short term pedestrian improvements will create a higher-quality pedestrian environment and will better tie together transportation modes. Together, they will create and more attractive RITC for residents, tourists, and transit and ferry patrons.

Figure 7-10: Pedestrian Improvements in the Preferred Alternative



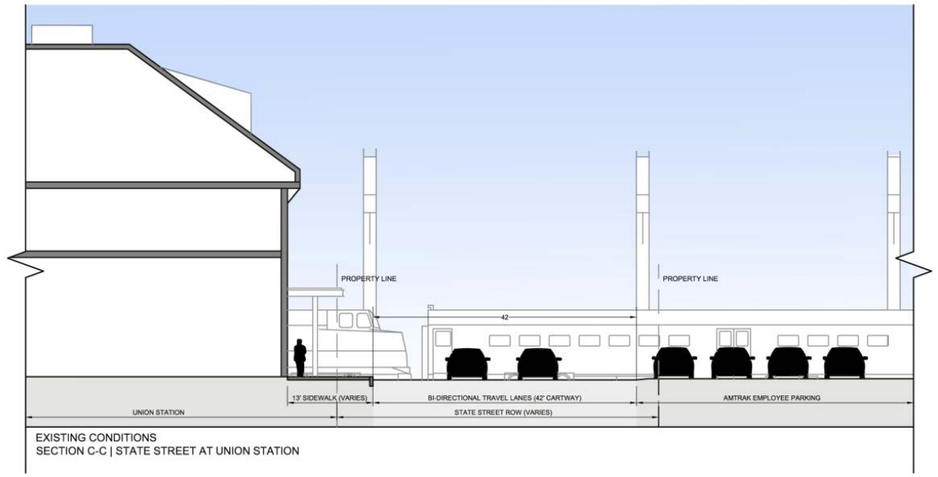
IMMEDIATE & SHORT RANGE PEDESTRIAN IMPROVEMENTS

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

SCCOG Southeastern Connecticut Council of Governments | TranSystems | Crosby | Schlesinger | Stockbridge CSS Landscape Architecture | Planning | Urban Design

DATE: JANUARY 25, 2010
0' 20' 40' 80'
LINEWORK AND CALCULATIONS ARE APPROXIMATE AND INTENDED FOR PLANNING PURPOSES ONLY

Figure 7-12: Specific Pedestrian Improvements – Section Views along State Street at Union Station



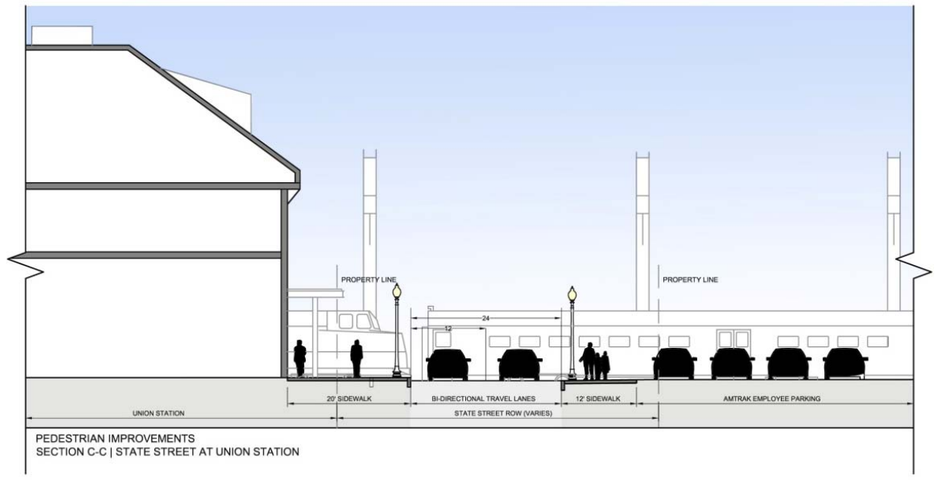
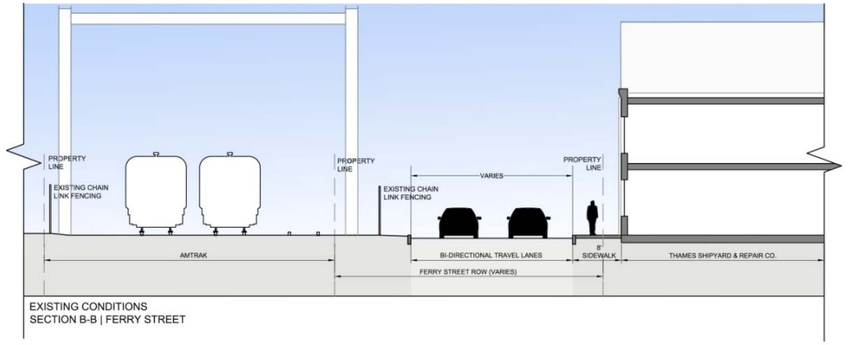


Figure 7-11: Specific Pedestrian Improvements – Section Views Along Ferry Street



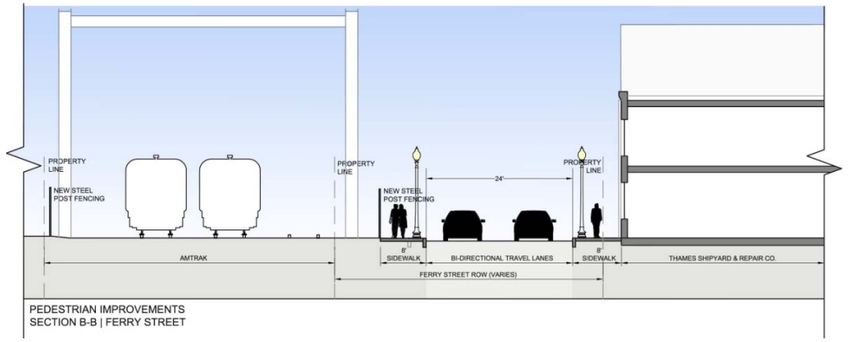
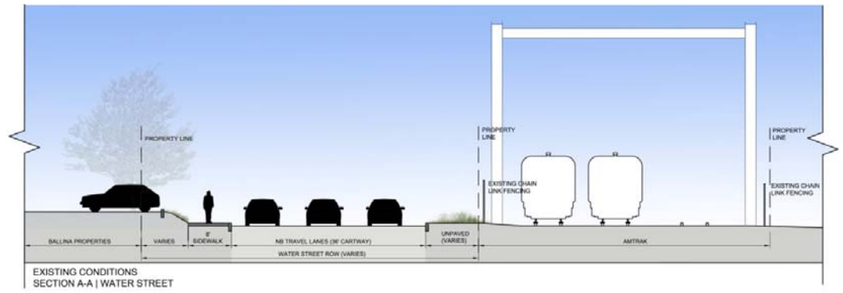


Figure 7-13: Specific Pedestrian Improvements – Section Views Along Water Street



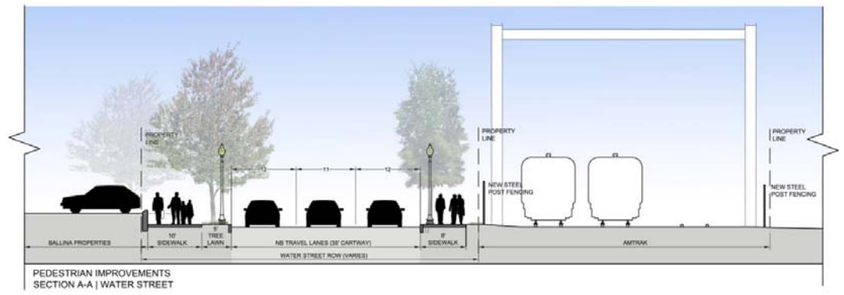
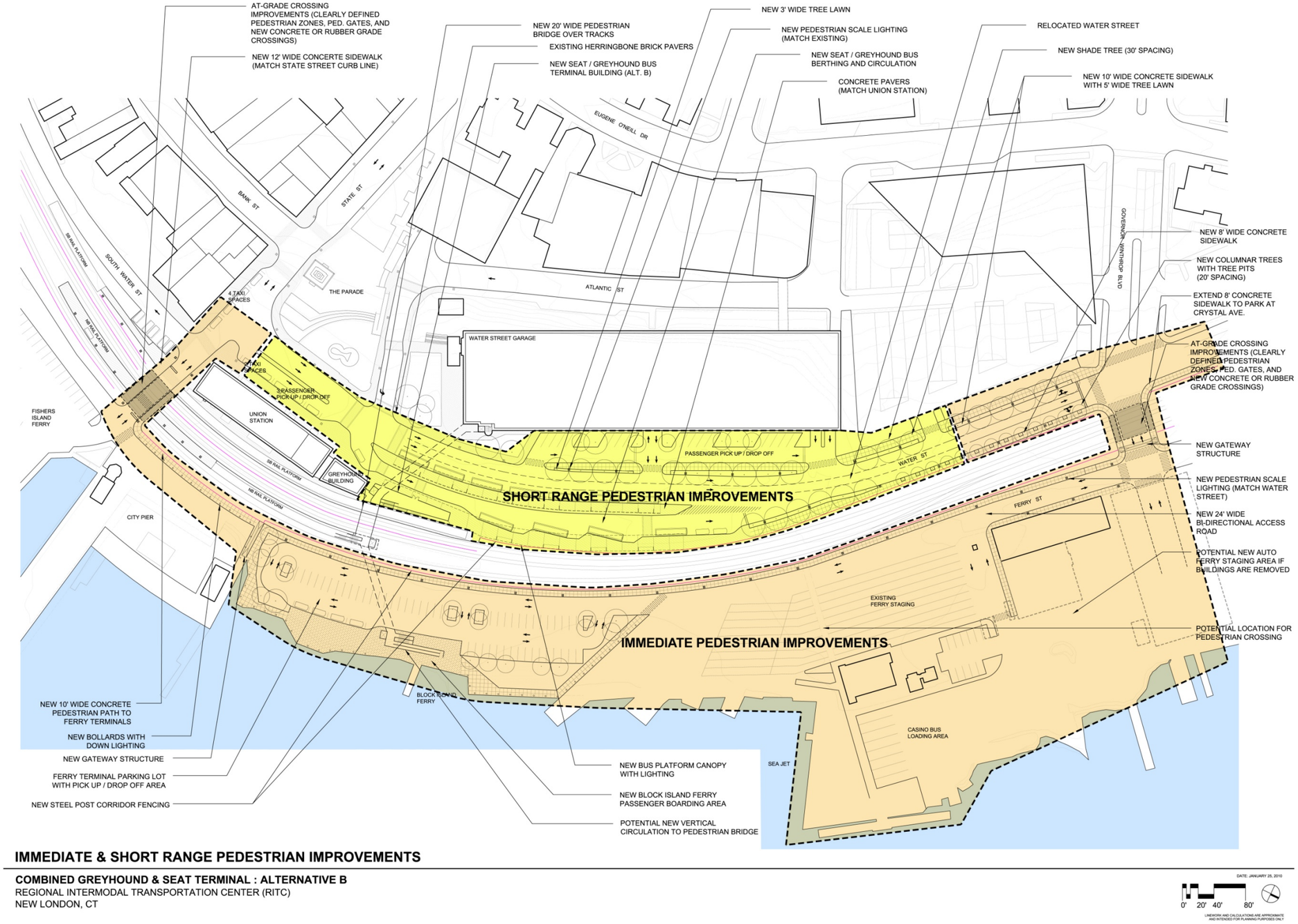


Figure 7-14: Immediate vs. Short Term Pedestrian Improvements



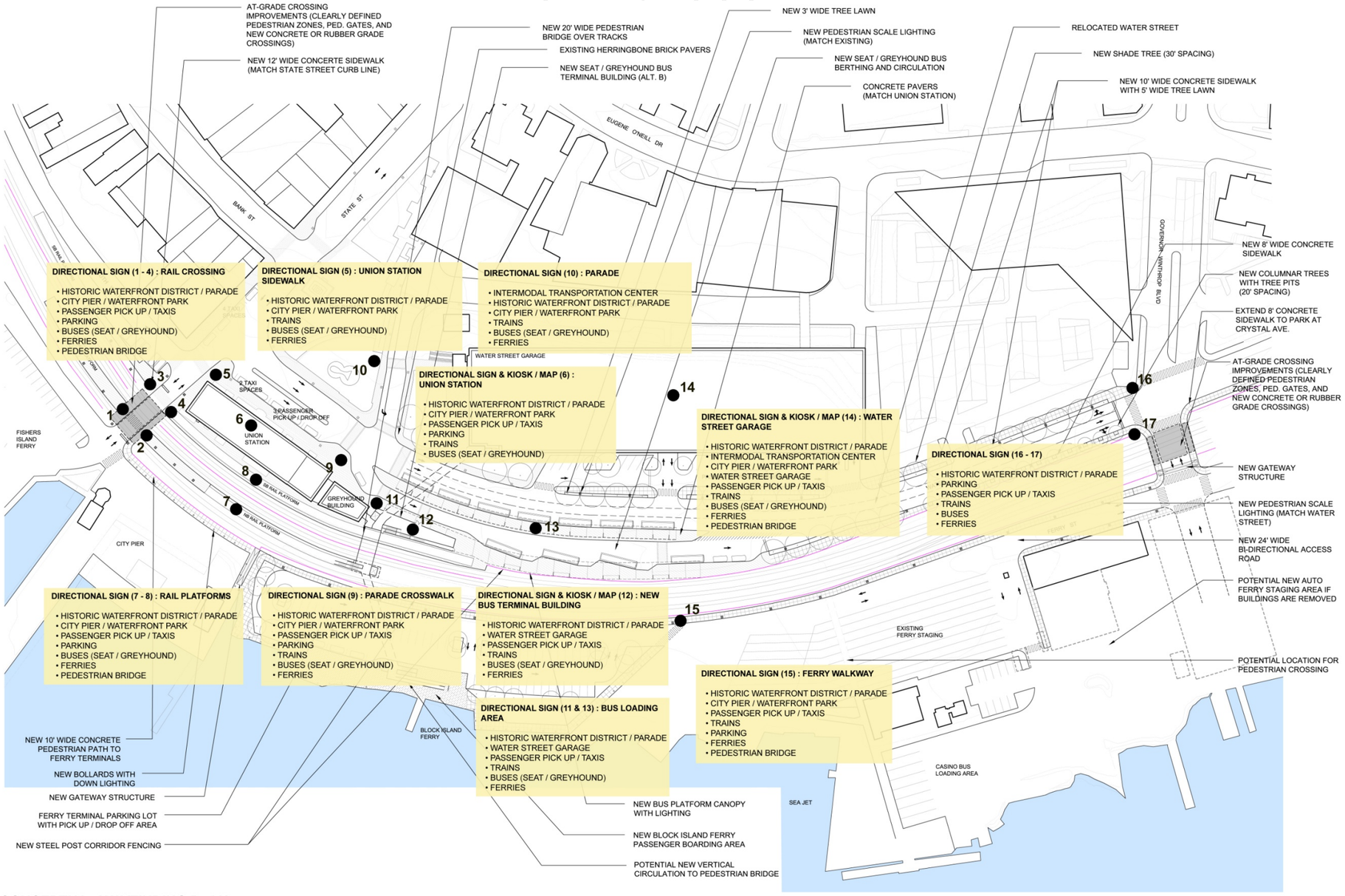
IMMEDIATE & SHORT RANGE PEDESTRIAN IMPROVEMENTS

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

DATE: JANUARY 25, 2010

LINEWORK AND CALCULATIONS ARE APPROXIMATE AND INTENDED FOR PLANNING PURPOSES ONLY

Figure 7-15: Wayfinding Signage Plan



CONCEPTUAL WAYFINDING PLAN

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

DATE: JANUARY 25, 2010

0' 20' 40' 80'

LINEWORK AND CALCULATIONS ARE APPROXIMATE AND INTENDED FOR PLANNING PURPOSES ONLY

7.3.5. Wayfinding

A wayfinding and signage program can help to provide a consistent identity to the RITC district, guide RITC users between transportation modes, and provide visitors with directions to and from important destinations and attractions within and outside the area.

The final wayfinding and signage program will require a more detailed design, and initiating that design is one of the recommendations of this plan. The following key recommendations should be included in the final program:

- Wayfinding signage should be placed at strategic locations in and around the RITC.
- New London tourism will benefit from a wayfinding program. The program should include other downtown destinations in addition to the RITC district.
- The program should include a variety of signage types:
  - Directional signs announcing the RITC and pointing the way at major intersections and along principal pedestrian routes.
  - Locus maps showing the entire area, both the Historic Waterfront District and RITC with transportation modes and important buildings labeled, and a "You Are Here" symbol.
  - Directional signs to specific buildings, uses and/or attractions. These signs should be located in the Historic Waterfront District and within the RITC.

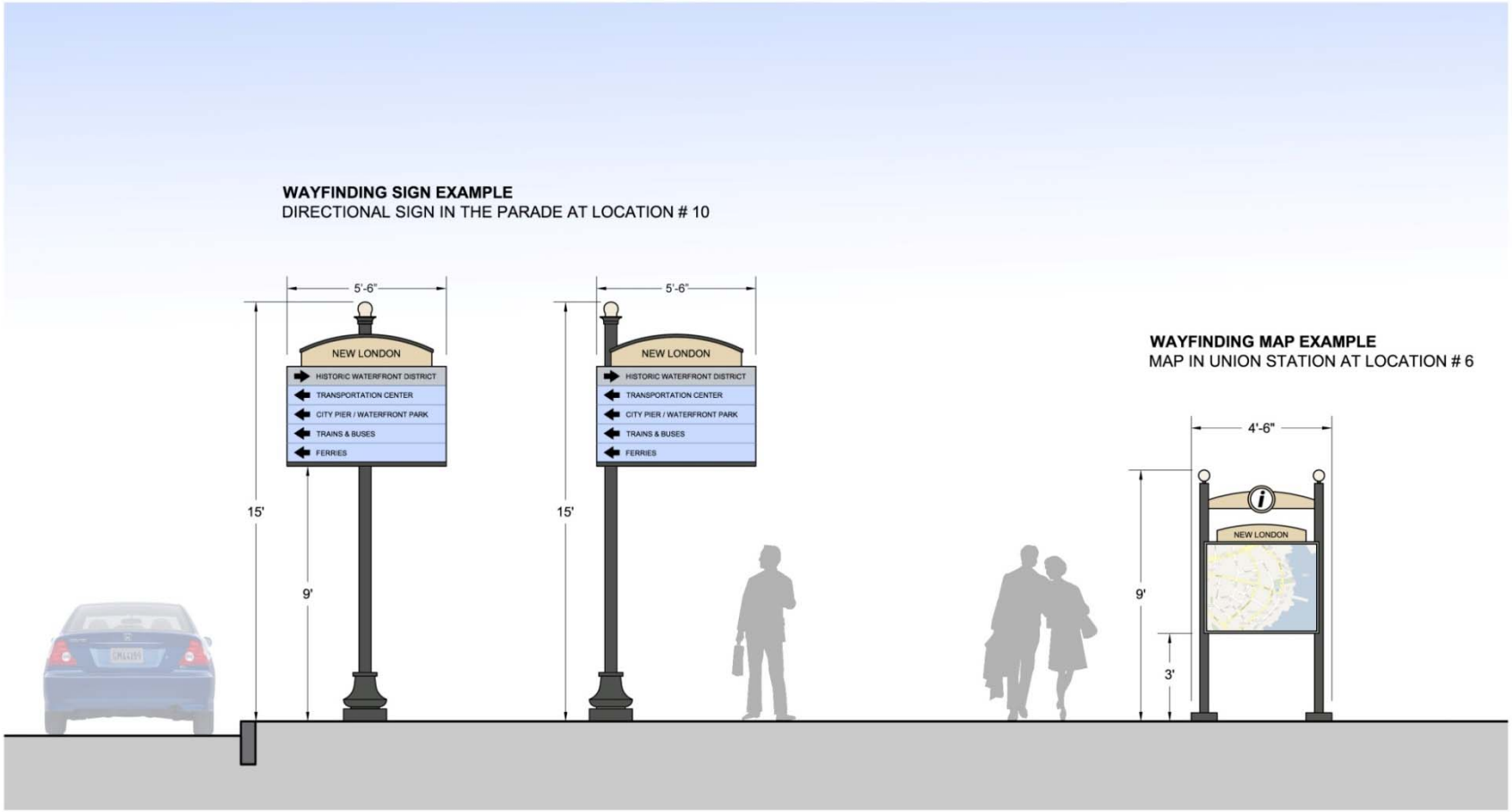
At a minimum, RITC sign content should include directions to the following:

- Historic Waterfront District
- City Pier/Waterfront Park
- Passenger pick up
- Taxis
- Major parking facilities
- Trains
- Buses (SEAT/Greyhound)
- Ferries
- Pedestrian Bridge

Figure 7-15 identifies the major decision points within the RITC. It is recommended that directional wayfinding signage be installed at each of the major decision points to help guide transit patrons and visitors to the various transportation modes and other destinations within the RITC. Suggested sign content at each of the wayfinding locations is also indicated.

The style of the signs could take a variety of forms, but one that acknowledges the character of the district would be distinctive and appropriate. The program can then be implemented as part of the implementation of other public improvements. An example of a sign that could be located at location 10 is shown in Figure 7-16.

Figure 7-16: Wayfinding Signage Example



7.3.6. Use of Union Station

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

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

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

Given the recently announced departure of Pfizer from Fort Trumbull and the overall economic downturn combined with the previously weak position of New London as an office market, the market for office space is severely depressed in the short term. Union Station faces competition from other downtown building spaces and the newly vacant first class office space at Fort Trumbull. However, if we look several years into the future, one can envision Union Station being better positioned as a result of proposed transportation and other downtown improvements, improving economic activity nationally, and a series of policy decisions designed to promote downtown New London as a transportation center and a site for TOD. It will be critical to take advantage of this time to develop a comprehensive TOD plan for the Historic Waterfront District, including Union Station, and to make policy decisions that support that plan, while also keeping options open to take advantage of arising opportunities.

7.4 Design Concerns Regarding the Preferred Alternative

In summary, the bus facility scheme was developed in response to the directions given by SCCOG and the Stakeholder Steering Committee (namely all passenger transportation facilities on the east side of Water Street close to Union Station and a pedestrian bridge over the railroad tracks). These directions pose a number of constraints on the design, and it is noted that the plan still has a number of drawbacks (with either alternative) that need to be well understood.

- Both alternatives (the alternative presented in the report as well as the alternative described in Appendix H) for the bus terminal use connected spaces in two distinct building volumes. Circulation within and between the buildings requires much of the facility's square footage. This raises concerns of efficiency, logical functional relationships, security, and ADA requirements.

- The sidewalk adjacent to the new terminal building will likely be very crowded. Even with the realignment of Water Street, the shifting of buses northward, and introduction of narrower travel lanes, the sidewalk adjacent to the new terminal is still a pinch point. For example, the 10-11 foot sidewalk provided in front of the Greyhound/SEAT building addition may not be adequate as both a general purpose sidewalk and circulation space for bus passengers
- The building addition extends the barrier created by the existing Greyhound building for those pedestrians who wish to pass between the north end of the rail platform and the street, the Parade and the garage (assuming they do not wish to go to or through Union Station). Allowing pedestrians to pass through the narrow building addition would complicate circulation within the building and would reduce its capacity as a waiting room.
- Greyhound buses will at times block the view of the SEAT buses from the passenger terminal waiting area discouraging use of the indoor waiting area.
- SEAT passengers will need to cross the bus aisle to access most bus berths from the terminal.
- While the design incorporates a wider sidewalk that varies between 8 feet and 15 feet on the east side of Water Street (between Governor Winthrop Boulevard and the existing SEAT bus stop), the need to accommodate buses has barred the possibility for a wider east side sidewalk that could accommodate additional pedestrian amenities (including substantial tree lawns that more effectively buffer the pedestrian realm from traffic lanes and bus and train activity).
- The relocation of Water Street would modify some of the Parade project's improvements north of Atlantic Street.
- The introduction of a building addition, vertical circulation towers and continuous bus canopies will have a significant visual impact on historic buildings.
- The bus terminal and canopies along the bus berths as well as the pedestrian bridge will further block views of the waterfront from public areas including the Parade, Water Street and State Street. Cross-section elevation views, context drawings (zoomed-out views) and 3-D visualizations help illustrate the potential impacts. (3-D visualizations of the view impacts were shown in Figures 7-4 through Figure 7-7.)
- Most of the space along both sides of Water Street is devoted to buses and short term parking and would reduce the amount of space devoted to trees and landscaping. Minimal space along Water Street is devoted to visitor amenities or transit oriented development. The visitor to New London arriving by ferry or train is not faced with an inviting, active urban space, but only a series of garage type facilities and a broad expanse of asphalt devoted to automobiles, bus circulation and parking.
- With the exception of the shared sawtooth bay, the SEAT bus bays will not have independent movement.
- The bus aisle for Greyhound buses is adequate, but narrow, and must occasionally be used by private vehicles using the freight drop-off area.
- The primary modes serving rail passengers such as auto pick up and drop off and taxis have not been given expanded space along the east side of Water Street. They are limited to the small existing space immediately in front of Union Station supplemented by the proposed taxi stand expansion on State Street and passenger pick-up space on the west side of Water Street in front of the Water Street Garage, a distance from Union Station.
- The relocation of Water Street reduces the size of the overall Water Street parcel which impacts any future redevelopment of the Water Street Garage and adjacent parcels.

Given these concerns, some alternatives to this Preferred Alternative are discussed in the following section, including a Fallback Minimum Construction Alternative.

7.5 Other Options

7.5.1. "Best Practices" Bus Terminal

The plan that has been developed for the east side of Water Street bus terminal is constrained by the space available even with the costly relocation of Water Street. The consultant team has highlighted a number of drawbacks associated with the location of the bus terminal there along with the necessary vertical circulation for the pedestrian bridge over the tracks. It is the professional opinion of the consultant team that a bus terminal that fully conforms to best practices in bus terminal design, while meeting the program needs articulated by the bus operators, cannot be designed for the east side of Water Street. Best practices would dictate that passenger waiting facilities are of adequate size, have an efficient design and be located proximate to and with a clear view of all bus bays. Pedestrian flows should be separated from bus and vehicular traffic and conflicts between major pedestrian movements should be avoided. Adequate space should be provided for all pedestrian movements and structures should not impede pedestrian flow between buses and to and from other modes. Bus bays should allow independent movement of all buses and bus traffic should be separate from passenger and freight pick-up and drop-off traffic. Finally, the design should be attractive, allowing green space whenever possible, and should complement the adjacent structures and uses.

From the viewpoint of physical feasibility, such a best practices design could be constructed on the west side of Water Street if the Water Street Garage were demolished and a bus terminal were located on the ground level of a new parking structure and/or development project. Such a facility could have adequate room to provide for independent movement of all SEAT buses. There would be adequate space for all the specified functions and the space could be configured in a more optimal way allowing better placement of adequate waiting areas adjacent to the bus loading areas. The bus terminal would be close enough to Union Station to permit easy transfers between the buses and rail services and other modes. If the pedestrian bridge were extended to the reconstructed garage, transfers between bus and rail could be made without crossing Water Street travel lanes. Separating the bus terminal from the vertical circulation elements of the pedestrian bridge will provide better pedestrian flow. Parking would be conveniently located above. Pick-up and drop-off for bus passengers and Greyhound freight could be incorporated into the design. Having the bus terminal on the west side of Water Street would not require (but would not prohibit) the relocation of Water Street and would allow the entire east side of Water Street to be used for taxis and expanded auto pick-up and drop-off associated with Shore Line East service. The east side of Water Street could also be landscaped replacing the proposed bus terminal and canopies with trees and green space and retaining the current connection between the street and the rail platform. In addition, it should be noted that this option relies only on City-owned land. Union Station property currently used by Greyhound could possibly be used to provide several additional parking spaces.

Despite these advantages, this is a costly option considering the need to demolish the Water Street Garage and then rebuild it to supply needed parking. In addition, it would require an interim plan for parking during the construction period. The City of New London advised SCCOG and the consultant team that it was not in a position to consider demolition and reconstruction of the Water Street Garage and that it does not have the funds to pursue this option even it was to obtain some FTA funding for the bus and bus related facilities. SCCOG directed that this option be dropped from further consideration because the City does not support it. Nevertheless, it was agreed that it was important to note that this option would result in a better bus terminal design and offer more space for other functions on the east side of Water Street. This option is reflected in some of the long term alternatives documented in Chapter 6 of this Final Report.

7.5.2. Fallback Minimum Construction Alternative

If the funding cannot be obtained to build a new bus terminal and shift Water Street westward in the short term, there would need to be a fallback plan that can be accomplished at lower cost. There are several possible options and one option has emerged as the Fallback Minimum Construction Alternative.

One option would be improving facilities in place such as providing additional and improved bus shelters and informational signage at the existing SEAT bus stop and renovating the interior of the Greyhound terminal while maintaining the existing Greyhound bus bays. This could be complemented by low cost pedestrian and wayfinding improvements. The renovation of the interior of the existing Greyhound building would require funding from Greyhound which would in turn require a more long term arrangement with the owners of Union Station. The renovation could allow the building to accommodate some waiting SEAT passengers, a SEAT information kiosk and access to the renovated restrooms by SEAT passengers, all without impacting Greyhound operations. The latter would require some SEAT funding as well. The modified building floor plan would be compact with less seating and would be located far from the SEAT bus loading area, but it would avoid some of the other concerns associated with the proposed short term plan.

Another option would be moving some bus terminal functions into the existing Union Station building. This would of course require lease or purchase of space inside Union Station. The Greyhound functions could be moved into the Union Station building while maintaining the current Greyhound bus bays. However, Greyhound prefers to have its ticket counter and freight handling as close to the buses as possible and so may not wish to move. Some or all of SEAT's space requirements. Use of the old baggage shed area would be subject to some reconstruction including addressing the floor level differential between it and the lobby. ADA access would also need to be improved at the station to make access convenient from the bus areas. Enhanced and expanded restrooms would likely be needed. The SEAT boarding area would need to remain in place but the closest bus would be located at least 300 feet from the Union Station main entrance. This would reduce the likelihood of use of the waiting room by SEAT passengers, particularly those who transfer from one bus to another. Due to the limited size and number of windows in Union Station, it would be difficult for passengers to see the arrival of their bus and passenger announcements/displays presumably using ITS technology would be required. Even with such announcements, passengers may be inclined to wait outside in all but the most inclement weather. Due to the long distance between Union Station and the SEAT bus stops, shelters would need to be provided at the bus stops to complement the waiting area in the Station. Due to the need for taxi and auto pick-up and drop-off for Amtrak, Shore Line East and Greyhound, it is not feasible to bring SEAT buses closer to the Station. Given these drawbacks, this option was not recommended.

A third option was developed that combines these ideas, using the Greyhound building for a passenger waiting room and ticketing/information office for both SEAT and Greyhound while using Union Station ground floor space to meet additional space needs. A link between the two buildings is envisioned. This concept forms the basis of the Fallback Minimum Construction Alternative (hereafter called the Fallback Alternative for short) described below. This alternative has been included, at the City's request, to identify an option that could be exercised to meet needs in the short term if the funding cannot be obtained to construct the Preferred Alternative or if there are other reasons not to pursue the Preferred Alternative. Since one primary reason for including it is the lack of funds, it is assumed to exclude the Pedestrian Bridge that is included in the Preferred Alternative; however, if funding can be obtained for the Pedestrian Bridge, it is compatible with the Fallback Alternative. The pedestrian improvements other than the Pedestrian

Bridge would be assumed to be included in the Fallback Alternative although the design would be revised to accommodate the current street configuration.

The Fallback Alternative, like the Preferred Alternative, keeps all the public transportation services on the east side of Water Street. However, it does not involve construction of new bus terminal building and it does not involve the relocation of Water Street or the creation of two parallel set of bus boarding areas. As a result, it cannot provide expanded capacity for buses, though it does accommodate the current needs. It utilizes existing buildings including both the Greyhound Building and Union Station itself for the bus terminal facilities, requiring interior modifications and the construction of a connection between the two buildings. Figure 7-17 shows the configuration of the bus terminal area and Figure 7-18 shows a Conceptual Floor Plan within the existing buildings (for the purposes of a feasibility assessment and not a final design).

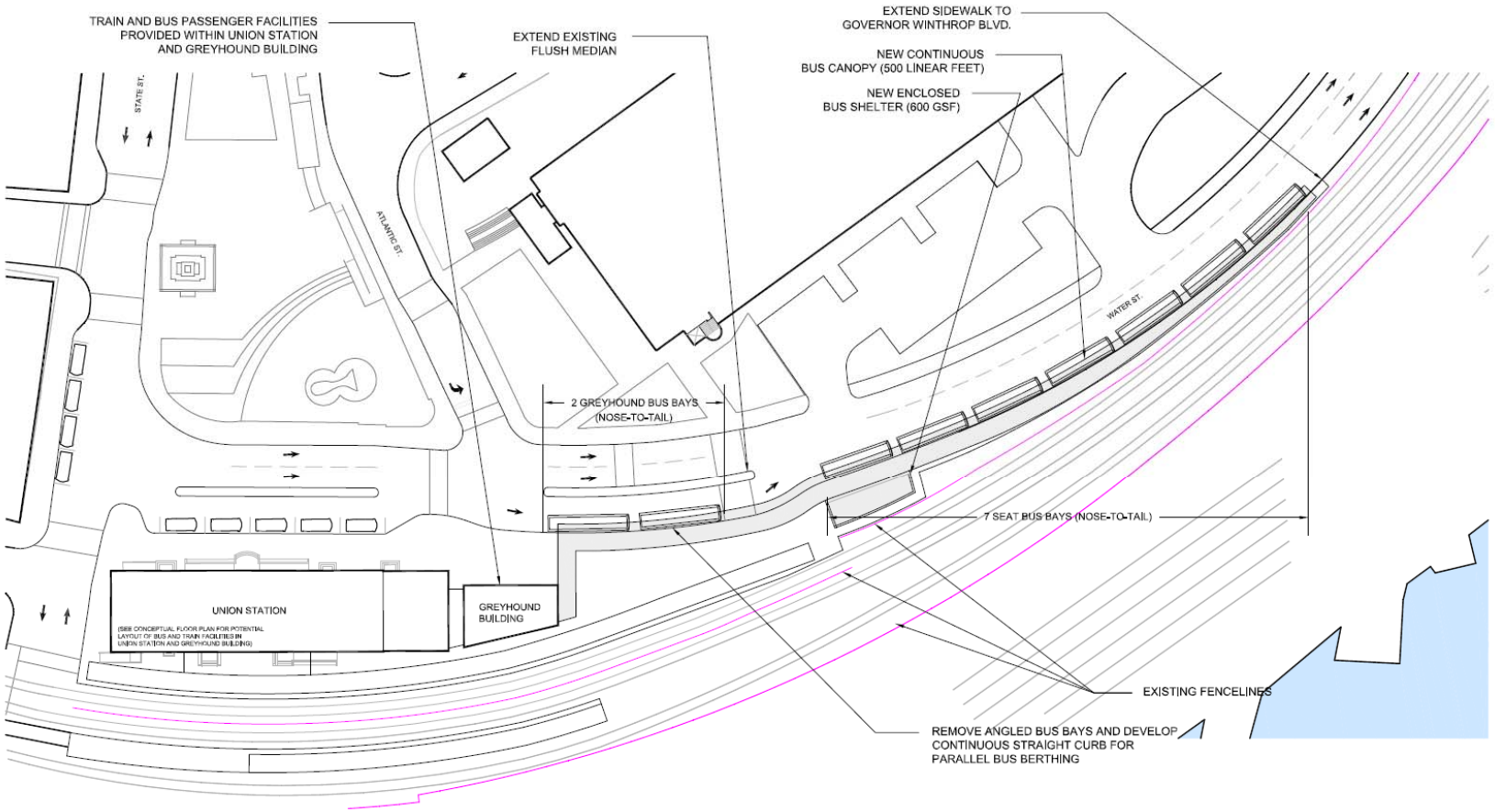
The major drawback of the Fallback Plan is the fact that the indoor waiting area would be located considerably farther from the SEAT buses than in the Preferred Alternative. Experience suggests that bus passengers prefer to wait near their buses. Canopies are provided at the bus boarding areas as in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

In summary, the Fallback Alternative has the following characteristics:

- It maintains a bus terminal on the east side of Water Street with the current bus capacity
- It does not require relocation of Water Street and preserves the full current Water Street Garage site for future development
- It uses existing buildings with renovation
- Like the Preferred Alternative, it requires use of currently private property
- It offers a smaller indoor waiting area which is farther from the buses than the Preferred Alternative
- It is considerably lower cost than the Preferred Alternative

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

Figure 7-17: Site Plan for Fallback Minimum Construction Alternative



FALLBACK / MINIMUM CONSTRUCTION ALTERNATIVE

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

DATE: JANUARY 25, 2010

0' 50' 100'

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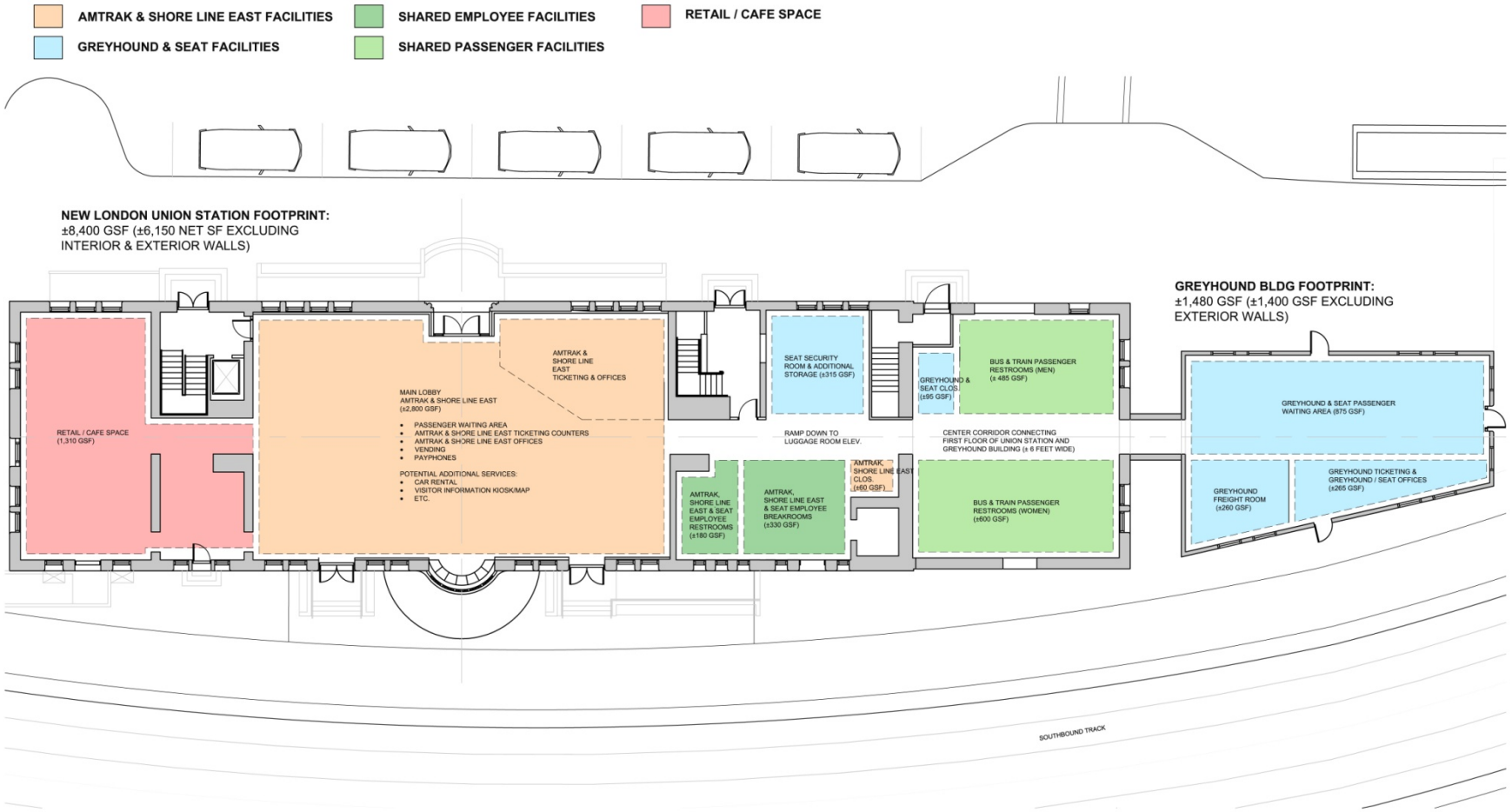
Figure 7-18: Conceptual Floor Plan for Fallback Minimum Construction Alternative



7.6 Non-Transportation Uses at Union Station

The Preferred Alternative continues the current use of the Union Station lobby for rail passenger facilities, while the Fallback Minimum Construction Alternative relies on much of the building's ground floor for bus and train passenger facilities. While it is recommended that the State purchase or arrange a long-term lease of Union Station property (in whole or in part) in order to support these transportation uses, the property will still include considerable space available for non-transportation purposes, particularly on the upper floors. Due to the overall economic downturn and the depressed market for office space, the Master Plan is not specific about how to use the remaining Union Station space in the near term. Instead, it will be critical to take advantage of this time to develop a comprehensive TOD plan for the Historic Waterfront District, including Union Station, and to make policy decisions that support that plan, but also to keep options open to take advantage of arising opportunities.

Any reuse of Union Station space beyond transportation uses would depend on greatly upgraded surroundings. The Parade Project is clearly a key step in this direction. The transportation improvements detailed in this Master Plan are the next step. This will also need to be accompanied by an upgrade of the remaining interior spaces to bring the building to current codes. In the past, the costs of such upgrades may have limited the ability of the private sector to market the space.

State ownership to foster the transportation goals could facilitate development in Union Station that would not happen without public funds. Office space could be developed for transportation related or other state related purposes. A visitor center or other visitor attraction could be housed in the building, for example. A detailed marketing and concept plan for the non-transportation redevelopment of the remainder of Union Station will need to be developed as market conditions improve. This study has outlined the transportation uses and the overall ten-year TOD potential in the area and has presented alternatives for the site. A final decision on the transportation center must precede the further development of options for reuse of Union Station.

It should be recognized that the critical transportation uses place constraints on the feasibility of using the remaining space, both on the ground floor and the upper floors, for many other types of uses. This is because they consume any on-site space that could be used for parking, they use the curb space that would be otherwise used for service entrances and deliveries and, in the case of the Fallback Alternative, they constrain access to upper floors by occupying almost all the ground floor space. (Only the long term vision concepts that place the bus terminal somewhere other than the east side of Water Street leave the Union Station property relatively unencumbered.) With or without these encumbrances, the upper floors may have a fairly limited marketability. The space is best suited to office space for either public or private tenants, although the space is rather uniquely configured, suggesting the market could be narrower than for more conventional spaces.

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

List of Tables

8. Costs and Economic Impacts of the Short Term Improvement Plan

This section covers both the costs of developing the enhanced RITC (including both immediate and short term improvements in the Preferred Alternative) and the economic impacts that would occur in the short term as a result of RITC construction. It also includes an order of magnitude estimate of the capital cost for the Fallback Minimum Construction Alternative for comparison purposes.

8.1 Capital Costs

Capital cost estimates are provided in Tables 8-1 and 8-2 for the Preferred Alternative (all passenger transportation facilities located on the east side of Water Street). Costs associated with immediate improvements have been calculated in 2011 dollars and those with short term improvements are presented in 2012 dollars. The plan includes pedestrian and wayfinding improvements as well as construction of a new and renovated joint bus terminal to serve both bus operators. Relocation of Water Street is necessary before this can be accomplished. These construction activities will require substantial capital expenditures and will require advance efforts to secure funding and to negotiate a lease or purchase of the property. Certain improvements to the pedestrian facilities can be accomplished early, without waiting for the relocation of Water Street and the construction of new and renovated bus terminal facilities. These are referred to as Immediate Pedestrian Improvements.

8.1.1. Immediate Pedestrian Improvements

The scope of the immediate term improvements would consist of:

1) New 4-Quad Railroad Warning Gates at both the State Street and Governor Winthrop Boulevard railroad crossings.
2) Rubberized crossing improvements at the State Street and Governor Winthrop railroad crossings and a wider sidewalk.
3) Sidewalk and curb and fencing improvements along the east side of the railroad right-of-way and on the City-owned lot, including decorative lighting.
4) Gateway arches at two locations adjacent to the ferry area.
5) New sidewalk along the west side of the railroad right-of-way from a point about 200 feet south of the Governor Winthrop crossing to the park at the intersection with Crystal Street.
6) Wayfinding elements (on the areas unaffected by the street relocation and some temporary wayfinding elements that can be relocated when the street is relocated as needed).

As shown in Table 8-1, the total estimate for these costs in 2011 dollars is $3.3M plus engineering/inspection and contingency; including those additional costs brings the total to $4.7M, excluding costs of improvements internal to the Cross Sound Ferry property.

Recommended pedestrian improvements which are internal to the Cross Sound Ferry property such as paving, walkways and landscaping are assumed to be entirely funded by the property owner; these costs have been estimated as a separate component as shown in Table 8-1.

Table 8-1: Capital Cost Estimates for RITC Preferred Alternative –Immediate Improvements

ITEM	COST
IMMEDIATE PEDESTRIAN IMPROVEMENTS	
Railroad Protective Gates at Governor Winthrop Blvd	$ 1,200,000
Railroad Protective Gates at State Street	$ 1,200,000
State Street and Governor Winthrop Rubberized Crossings	$ 300,000
Wayfinding and Gateway Structures	$ 150,000
Pedestrian Walkway, Fencing, Landscaping East of Rail ROW	$ 440,000
Subtotal	$ 3,290,000
Engineering & Inspection	$ 465,000
Subtotal	$ 3,755,000
Contingency	$ 705,000
Subtotal	$ 4,460,000
Escalation	$ 255,000
Total - Immediate Improvements (2011 $) excluding improvements internal to Cross Sound Ferry	$ 4,715,000
IMMEDIATE PEDESTRIAN IMPROVEMENTS INTERNAL TO CROSS SOUND FERRY	
Additional Sidewalk along Easterly Perimeter	$ 150,000
Perimeter Landscaping	$ 50,000
Block Island Express Boarding Area Pavement Reconstruction	$ 120,000
SeaJet Bus Parking Area Pavement Reconstruction	$ 320,000
Subtotal	$ 640,000
Engineering & Inspection	$ 50,000
Subtotal	$ 690,000
Contingency	$ 70,000
Subtotal	$ 760,000
Escalation	$ 46,000
Total - Immediate Improvements (2011 $) for improvements internal to Cross Sound Ferry	$ 806,000
Total - Immediate Improvements (2011 $) including improvements internal to Cross Sound Ferry	$ 5,521,000

The additional costs associated with improvements to Cross Sound Ferry are as follows:

1. Additional sidewalk along the easterly perimeter of the property – this is estimated at $150,000 excluding the boarding area.
2. Perimeter landscaping (excluding the paved drop-off and pickup area already included in the immediate improvements above) – this is estimated at $50,000.
3. Pavement reconstruction of the Block Island Express ferry boarding area – this is estimated at $120,000.
4. Pavement reconstruction of new bus parking area for the SeaJet – this is estimated at $320,000.

Thus the total cost of pedestrian/pavement/landscaping improvements at the Cross Sound Ferry property is $640,000. (This excludes demolition of the existing building any new roadway construction.) Engineering Inspection would add $50,000 and Contingency $70,000 to this estimate, and Escalation to 2011 $46,000, bringing the total for the Cross Sound Ferry improvement to $806,000 in 2011 dollars. The total cost for immediate improvements including those improvements at the Cross Sound Ferry property is $5.5M.

8.1.2. Non-Immediate Short Term Improvements

The cost estimate for the non-immediate short term improvements is shown in Table 8-2.

Pedestrian Bridge

A new pedestrian bridge would be constructed to enable travelers to cross the railroad tracks and potentially to directly access the Water Street Garage and Cross Sound Ferry property. The bridge is conceived of as three sections, only one of which is mandated by ConnDOT. The mandatory section is the central section that would connect from the southbound platform area and bus terminal area on the east side of Water Street spanning the Amtrak tracks to the northbound platform. Vertical access to this section of the bridge will include elevators and stairs. The optional western section of the new pedestrian bridge will connect the Water Street Garage to the bus terminal and will integrate the vertical circulation provided at the bus terminal and at the Garage (and optionally could include restoration of the existing elevator at the southeast corner of the Garage). The optional eastern section of the bridge will connect from the northbound platform over the freight railroad track to the Cross Sound Ferry property. Vertical access at the ferry side will include elevators, escalators and stairs.

The pedestrian bridge concept has been developed incorporating short spans using precast concrete units and precast units for stairs, enhanced architectural features, enclosed sides, escalators and security cameras, etc. The bridge is assumed to be constructed with a pitched standing seam metal roof and be fully enclosed with glazed curtain wall construction. The anticipated elevation of the structure over the tracks is envisioned at an elevation of 36 feet to provide the necessary clearance over the electrified lines.

The cost for the entire pedestrian bridge including all three sections is $8M plus engineering/inspection, contingency and escalation to 2012 dollars. The breakdown by section is shown in Table 8-2. The central section, required by ConnDOT would cost $3.2M and include vertical circulation (i.e., stairs and elevators) for the northbound and southbound platforms (the latter at the bus terminal). The optional western section to the Water Street Garage would cost $1M. It could rely on existing vertical circulation in the Water Street Garage or include a rehabilitation of the existing unused elevator shaft at the southeast corner (for an additional $300,000). The optional eastern section to the ferry area would cost $3.5M and include vertical circulation; an escalator was included there as requested by Cross Sound Ferry.

It should be noted that Connecticut DOT has not made a decision regarding the possibility of constructing a new Shore Line East platform on the east side (water side) of the tracks. In the long term, a new 120-foot platform for Track 6 located on the water side (east) of the track would be preferred and would likely cost $2M. Such a platform would require expansion of the required central section of the pedestrian bridge to include a third vertical circulation element, thus impacting the cost. It might also affect the decision to construct the optional eastern section of the bridge to the ferry area.

Table 8-2: Capital Cost Estimates for RITC Preferred Alternative –Short Term Improvements

ITEM	COST With Center Section of Pedestrian Bridge Only	COST With Optional Extensions to Pedestrian Bridge
SHORT TERM IMPROVEMENTS		
Pedestrian Bridge:		
Bridge Over Amtrak with Elevators and Stairs	$ 3,200,000	$ 3,200,000
Bridge to Garage (Optional)		$ 1,000,000
Garage Elevator Rehabilitation (Optional)		$ 300,000
Bridge To Ferry with Escalator, Stairs and Elevator (Optional)		$ 3,500,000
Subtotal Pedestrian Bridge	$ 3,200,000	$ 8,000,000
Water Street Reconstruction / Site Work	$ 1,700,000	$ 1,700,000
Pedestrian Improvements Ferry Boarding Area	$ 150,000	$ 150,000
Supplemental Wayfinding Improvements	$ 100,000	$ 100,000
Subtotal Water Street Relocations and Pedestrian Improvements	$ 1,950,000	$ 1,950,000
New Bus Terminal Building Addition	$ 500,000	$ 500,000
Existing Greyhound Building Renovation	$ 222,000	$ 222,000
Bus Canopy	$ 600,000	$ 600,000
Subtotal Bus Terminal	$ 1,322,000	$ 1,322,000
Subtotal – Short Term Improvements (2010 $)	$ 6,472,000	$ 11,272,000
Engineering and Inspection	$ 971,000	$ 1,691,000
Subtotal (2010 $)	$ 7,443,000	$ 12,963,000
Escalation to 2012	$ 745,000	$ 1,297,000
Rounded (2012 $)	$ 8,188,000	$ 14,260,000
Contingency 20%	$ 1,638,000	$ 2,852,000
Total (2012 $)	$ 9,826,000	$ 17,112,000
Total – Short Term Improvements (2012 $)	$ 9,900,000	$ 17,200,000.00

Water Street Relocation and Pedestrian Improvements

The relocation of Water Street includes reconstruction of the street as well as pedestrian improvements along the relocated street. Other pedestrian improvements in the short term include the area around the ferry terminal end of the pedestrian bridge and wayfinding improvements. Each is described below:

Water Street Reconstruction/Site Work

To provide sufficient space for the enhanced bus terminal, Water Street would need to be relocated between Atlantic Street and Governor Winthrop Boulevard. The cost estimate has assumed that utility relocation would be confined to adjustments and changes in surface features since the utilities would remain in the roadway right of way. The reconstruction of the street would include the creation of some sawtooth style bus bays on the east side of Water Street and the construction of a bus passenger island and a busway. Reconstruction of the sidewalk and parking area on the west side of Water Street would be required using City owned property in front of the Water Street Garage. Re-landscaping and new sidewalks would be required.

Pedestrian improvements that would need to await completion of the Water Street relocation include:

1. Sidewalk and curb and fencing improvements along the west side of the railroad right-of-way, the east and west sides of Water Street in the area of the street relocation including decorative lighting and landscaping. The sidewalks at the RITC bus terminal would use pavers like those at Union Station to unify the area.
2. Crosswalks across Water Street in the affected section of Water Street.

The cost of this element, including the pedestrian improvements, is $1.7M plus engineering/inspection, contingency and escalation to 2012 dollars.

Pedestrian Improvements at the Ferry Boarding Area

Other pedestrian improvements would include paving and support amenities (consisting of concrete pavers, curbing and landscaping) for the passenger boarding area at the ferry terminal touchdown for the pedestrian bridge. The cost for this element is $150,000 plus engineering/inspection, contingency and escalation to 2012 dollars.

Wayfinding Improvements

Wayfinding improvements would include wayfinding signage and wayfinding maps throughout the area in accordance with the wayfinding plan. The cost for this element is $100,000 plus engineering/inspection, contingency and escalation to 2012 dollars.

Bus Terminal

The bus terminal includes the renovation of the existing bus terminal and the construction of a new building addition, as well as the construction of canopies along the bus boarding areas. (The construction of a bus island, busway and sawtooth bays is included above in the Water Street reconstruction cost.) Each is described below:

Existing Bus Terminal - The concept includes the complete interior renovation of the existing bus terminal building. The renovation of the existing space is envisioned to include: new restrooms, (public and

employee); a new Greyhound baggage/freight storage room, a SEAT storage area and a SEAT employee break room, as well as circulation space. Design elements of the renovated terminal include renovated mechanicals and bathroom facilities with vandal resistant finishes. No major changes are included to the building exterior.

New Bus Terminal - A one-story addition would be constructed next to the existing terminal building with a large glass wall facing the bus boarding areas. This addition would house a new passenger waiting area for both Greyhound and SEAT passengers. A ticket vending booth and small office will also be provided for each operator. The building would include seating, static and real time displays, lockers, vending machines and environmental controls. The new bus terminal addition will be integrated with the proposed pedestrian bridge. Access to the bridge will be by an elevator and stairs.

Canopies - Canopies would be constructed along the bus boarding areas situated on the east side of Water Street and on the passenger boarding island to provide both SEAT and Greyhound passengers with shelter as they arrive and depart. The structure is envisioned as a structural steel frame that employs a cantilever design with a pitched, standing seam metal roof. The structure will have no ceiling construction but will be lighted. Design elements of the canopy will include: low back tempered glass, tinted standing seam metal roof, on demand seat heaters and benches.

The cost of all the bus terminal elements (with the full pedestrian bridge) is $1.3M plus engineering/inspection, contingency and escalation to 2012 dollars.

The total cost of all the non-immediate short range elements (with the full pedestrian bridge) including engineering/inspection, contingency and escalation to 2012 dollars is $17.2M.

The total cost of immediate and short range elements (with the full pedestrian bridge) including engineering/inspection, contingency and escalation to future year dollars for future year expenses is about $22M, excluding those improvements internal to Cross Sound Ferry and about $23.0 M including the improvements internal to Cross Sound Ferry.

8.1.3. Bus Terminal Operating/Maintenance Costs

Projected operating and maintenance costs of the new bus facility serving Greyhound and SEAT and the pedestrian overpass structure were developed during the preparation of the Master Plan. The costs associated with utilities, service, security, and maintenance, and operating costs associated with a facility consisting of a ticketing area, convenience facility, waiting area, and bridge are anticipated to be between $6.00 and $8.00 per square feet per month or annually between $266,400 and $355,200 for the New London Facility in 2010 dollars. The unit costs shown in Table 8-3 were developed using information on costs from similar facilities in Connecticut, including Bridgeport Bus Station (at the Intermodal Transportation Center) and the Guilford Shore Line East train station.

Table 8-3: Breakdown of New Bus Facility Operating and Maintenance Costs

Category	% of operating costs	Unit Cost Per Square Foot Per Month
Cleaning and Janitorial	20%	$1.20-$1.60
Repair and Maintenance	20%	$1.20-$1.60
Utilities	40%	$2.40-$3.20
Security	10%	$0.60-0.80
Administrative	10%	$0.60

Estimates for the repair and operating/maintenance costs for Union Station and the Water Street Garage were obtained from other sources and are discussed in Section 8.1.4. Since the existing ferry facilities will continue to be owned by Cross Sound Ferry and Fishers Island Ferry, their operating costs are not included in the Master Plan.

8.1.4. Union Station and Water Street Garage Repair and Operating/Maintenance Costs

Since it is recommended in Chapter 10 that the State purchase (or long term lease) Union Station and since ConnDOT suggested that such a purchase would need to be combined with a purchase (or long term lease) of Water Street Garage, there will be a cost associated with acquiring these properties. The cost of acquiring Union Station and Water Street Garage will have to be negotiated with the private owner and the City respectively. Determining a purchase price for these properties is beyond the scope of this study. In prior years, ConnDOT commissioned two appraisals of Union Station and the owner of Union Station made known his desired price should the railroad station be sold. Both Union Station and the City's Water Street Parking Garage have assessed values for tax purposes. These figures, along with updated appraisals, would be the logical starting points for negotiations to purchase the two buildings.

The costs to bring these facilities into a state of good repair and the ongoing costs of operating and maintaining these facilities also need to be addressed. The following provides information on these items based on readily available information.

Union Station

- Operating Expenses
  Operating expenses on an annual basis were reported to be approximately $256,843 by Norman Benedict in his appraisal of Union Station prepared for ConnDOT in 2006.

  It should be noted that currently Union Station obtains income from leases including Amtrak and Greyhound. This income offsets operating costs. Of course a considerable portion of the space in Union Station is vacant. In his appraisal in 2006, Norman Benedict reported that a potential annual income of $420,000 could be realized at Union Station when fully leased.

- Repair Costs
  In 2006, the Norman Benedict appraisal reported the estimated cost of renovating the facility to allow for leasing to be $1,560,000.

  In January 2007, ConnDOT commissioned a condition inspection report conducted by DMJM/Harris/AECOM to evaluate existing conditions, and prepare a cost estimate of renovations

and code improvements. This was supplemented in August 2007 to include recommendations for the elevator pit.

The reports estimated the cost of repairs and improvements necessary to meet code requirements and provide suitable access and egress to the leasable areas as follows:

2007 Projected Budget $	$1,044,254
2007 Elevator Pit	$ 124,127
	$1,168,381
A/E Inspection Fees (20%)	233,676
	$1,402,057
Escalation to 2012	$ 240,310 (1)
	$1,642,367 (2)

(1) Estimated at 3% per year
(2) Exclusive of Tenant Fit Out Costs

Note that the above is consistent with the repair cost cited in the 2006 Norman Benedict appraisal.

Water Street Garage

- Operating Expenses
  Annual operating expenses and income have been reported for the following periods:

	Income	Expenses
July 2005 – June 2006	$678,315	$359,291
July 2006 – June 2007	$643,097	$304,936
July 2007 – June 2008	$528,627	$351,982
July 2008 – June 2009	$599,777	$376,073

  Thus the net revenue after operating expenses ranges from $200,000 to $300,000 based on this four year period.

- Repair Costs
  In October 2007, Desmond Associates prepared a condition inspection report for the City and developed a five (5) year plan of improvements estimated to cost $2,551,640. Currently, Desmond has been commissioned to prepare plans for approximately $850,000 of improvements in 2010. This leaves about $1.7 M in future costs for needed improvements. The City is also considering conducting additional aesthetic architectural enhancements to the façade in 2010, but the cost for these have not been identified by the City.

8.1.5. Short Term Economic Impacts of the Preferred Alternative

Fiscal and economic impact analyses were conducted as part of this study which identify that the construction of the RITC improvements will have positive short term fiscal and economic impacts. From the City and regional perspective, the improvements to the RITC will generate both direct and indirect jobs, regional material purchases, and regional consumer expenditures. However, the property is currently under private ownership and future public ownership will remove a real property tax generating property (the

current tax payment to the City is $25,661[1]). From the State's perspective, the improvements to the RITC will generate income tax and sales tax. The improvements to the RITC have positive economic and fiscal impacts. However, these quantified impacts are only during the construction period. The negative impact resulting from the loss of real property tax is ongoing.

The results of an economic-fiscal impact evaluation for the proposed Regional Intermodal Transportation Center short term impacts are provided in this section. The improvements to the RITC will provide a range of economic and fiscal impacts to the City of New London and the State of Connecticut. These quantified impacts occur during the construction of the facilities.

During the construction period, a variety of new economic opportunities will be generated. The construction will create 88 full-time equivalent direct jobs with an aggregate payroll of nearly $4.2 million. Almost $6.7 million in material purchases will be made in the region and consumer expenditures will total nearly $3.6 million. All amounts have been inflated annually by 1.5% to 2012 dollars. The summary of the analysis is shown in Table 8-4. Additional documentation of the economic-fiscal impact evaluation is presented in Appendix I.

Table 8-4: Summary of Estimated Economic & Fiscal Impacts

Economic Impacts [1]			
	Direct	Indirect	Total
Jobs (FTE) [2]	88	57	145
Payroll	$4,185,001	$2,077,853	$6,262,855
Material Purchases (regional)	$6,679,062		$6,679,062
Consumer Expenditures	$3,556,656		$3,556,656

Annual Fiscal Impacts (3/)	State of Connecticut	City of New London	TOTAL
Income Tax	$155,175		$155,175
Real Property Tax		($25,660)	($25,660)
Indirect Sales Tax	$76,149		$76,149
TOTAL	$231,324	($25,660)	$205,664

1. Total estimated jobs and payroll do not differentiate as to where employees live or as to where employees make consumer expenditures
2. FTE indicates "full-time equivalent", working 2,080 hours annually
3. It is assumed that the building will be owned by the State, as recommended by this study. Therefore, permit fees are not applicable because the City will lose jurisdiction over the property.

The related fiscal impacts, quantified on the direct impacts only, of construction will be approximately $205,700 to the State and City. This includes over $155,000 in income tax from construction workers and over $76,000 in sales tax of indirect consumer retail expenditures. All amounts have been inflated annually by 1.5% to 2012 dollars. In addition, tax revenues are based on current prevailing tax rates. It is assumed

[1] This tax loss may not be as large as estimated if payments are made by the State in lieu of taxes. Such payments could be 35-40% of the tax.

that the City and State will waive sales taxes on material purchases related to construction and building permit fees.

Assuming that Union Station will transfer to public ownership as recommended, the property will not generate real property taxes and the City will have a loss of over $25,000 per year not counting any Pilot payment from the state. When capitalized using current 30 year municipal bond yields of 4.5%, this translates into a loss of approximately $570,000 to the City over a 30 year period.

8.1.6. Capital Cost of the Fallback Minimum Construction Alternative

The cost for the Fallback Alternative short term improvements (excluding immediate pedestrian improvements and any pedestrian bridge) is estimated at $3 M (in 2012 dollars). The immediate pedestrian improvements would be expected to be about the same as in the Preferred Alternative) and consists of providing the following: (See Table 8-5)

- Bus Canopy and Bus Shelter along Water Street
- Code and Service improvements to the First Floor and Elevator Pit of Union Station
- First Floor fit-out and renovation of the Greyhound, Amtrak and First Floor lease space
- HVAC and life safety improvements

Exterior renovation, door and window replacement, roofing, emergency power, communications, hazardous material remediation, furniture and structural improvements have not been included.

Table 8-5: Cost Estimate for the Fallback Alternative (2012 dollars)

Pedestrian Improvements	
Ferry Boarding Area	$150,000
Supplemental Wayfinding	$100,000
Pedestrian Subtotal	$250,000
Union Station	
Bus Canopy & Bus Shelter	$350,000
Water Street Sidewalk Reconstruction	$100,000
Existing Station Code and First Floor Space Upgrades	$341,000
Elevator Upgrades (1)	$125,000
Escalation for 5 & 6 above	$59,000
First Floor Space Fit Out	$875,000
Union Station - Subtotal	$1,850,000
Subtotal	$2,100,000
20% Engineering & Inspection	*$420,000*
Subtotal	$2,520,000
Contingency 20%	*$504,000*
TOTAL	$3,024,000
(1) Based on CTDOT 2007 Conditions Reports	

Thus the capital cost of the Fallback Alternative is about $6.9M less than the Preferred Alternative (assuming the Preferred Alternative includes the center section of the Pedestrian Bridge and the Fallback

Alternative does not). If funding were available to construct the center section of the pedestrian bridge in addition to the Fallback Alternative, approximately $4.5 M additional would be required (including engineering inspection, contingency and escalation).

8.1.7. Summary of Costs

The capital cost estimates for the Preferred Alternative are:

- Immediate Improvements (in 2011 dollars):
  - $5.5 M including improvements on the Cross Sound Ferry property
  - $4.7 M excluding improvements on the Cross Sound Ferry

- Short term Improvements (in 2012 dollars):
  - $9.9 M including the center section of the pedestrian bridge
  - $17.2 M including the full pedestrian bridge

The above costs exclude the costs of acquiring Union Station and the Water Street Garage or making repairs to those facilities. Costs to purchase these facilities would be the result of negotiation. Repair costs, based on prior studies, appear to be in the range of $1.6 M for Union Station and $1.7 M for the Water Street Garage (excluding repairs are underway in 2010 at the Water Street Garage). ConnDOT is preparing cost estimates for immediate improvements to allow Shore Line East to use Track 6 from the platform currently used for Track 2. In the long term, a new 120-foot platform for Track 6 located on the water side (east) of the track would be preferred and would likely cost $2 M.

The short term improvements for Fallback Minimum Construction Alternative would cost just over $ 3M (excluding immediate pedestrian improvements), which would be about $6.9 M less costly to construct than the Preferred Alternative.

The operating and maintenance costs for Preferred Alternative are:

- RITC excluding the Water Street Garage, ferry facilities and Union Station itself (in 2010 dollars):
  - $0.27 M-$0.36 M per year.
- Union Station:
  - Currently, the Union Station operating and maintenance costs are covered by the private owner. A 2006 appraisal study identified that cost at about $0.26 M. This does not include the effect of offsetting lease revenues from Amtrak and Greyhound.
- Water Street Garage
  - The Water Street Garage, owned by the City of New London, reported an operating cost of about $0.38 M for the year ending June 2009 but revenues more than covered this cost and resulted in net revenue of about $0.22 M.
- Ferry Properties
  - The operating and maintenance costs of the ferry properties are covered by the private owners.

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9. Environmental Issues

This chapter of the Final Report describes the environmental issues associated with the project. Section 9.1 documents the current environmental conditions at the site, including contamination issues, and the natural and cultural environmental issues. Section 9.2 identifies the environmental strategy recommendations regarding the need for environmental permits and detailed investigations.

9.1 Current Environmental Conditions at the RITC Site

9.1.1. Contamination Issues

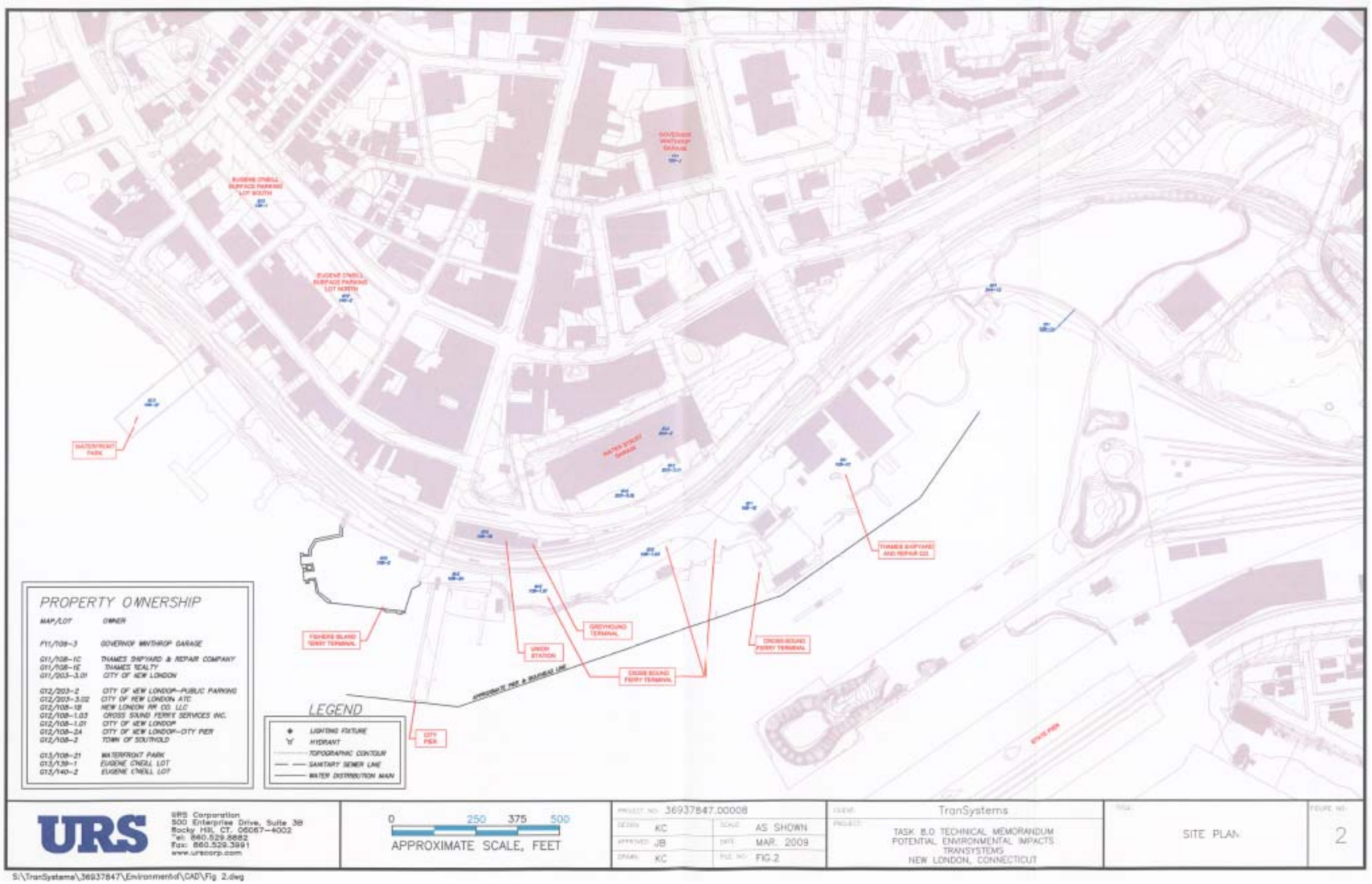
Existing development along the ferry terminus and railroad parcels have a history of uses which could yield potential for site contamination. A detailed site inventory was conducted as part of the current study to identify and evaluate any areas of concern. Figure 9-1 shows the property parcels at the site.

The consulting team conducted a screening of fourteen individual parcels (assessor's lots) in the City of New London that comprise the RITC Master Plan and Efficiency Study area. This area is located in the general vicinity of Union Station, Water Street and the ferry terminals along the Thames River. The review was conducted to provide a preliminary assessment of potential environmental impacts to soil and/or groundwater at the individual parcels comprising the RITC. This screening relied on secondary data obtained through a review of regulatory databases, historical aerial photographs, fire insurance maps, soils maps, and other readily available documentation pertinent to the study area. The scope of work did not include a site inspection or a review of files at the Connecticut Department of Environmental Protection.

In general, all of the RITC parcels along the Thames River east of Water Street and the current rail lines were the location of historical rail and vessel shipping activity and/or other industrial manufacturing or processing activity. In addition, all of these parcels, including the parcels currently occupied by the Cross Sound Ferry operations, City Pier, Fisher's Island Ferry operations, and Waterfront Park were expanded in area via the placement of fill material along the shoreline of the Thames River at various times between approximately 1951 and 1986.

This assessment did not identify historic filling activities on the RITC parcels located to the west of Water Street and the current rail corridor. However, all of these parcels (including the Water Street Garage facility, the Eugene O'Neil Drive parking lots, and the Governor Winthrop Parking Garage) were previously occupied by building structures dating back to the late 1880s and are located in areas of mapped Urban Land which also indicates the potential for the presence of fill material. The review identified that most of the Site has been used for industrial and transportation purposes since at least the late 1800s and/or was developed with building structures dating to the 1880s.

Figure 9-1: Site Plan Showing Property Parcels



Former and/or current businesses at the Site include, but are not limited to, the following:

- Thames Shipyard and Repair Co.;
- New London Gas & Electric Company;
- Boiler Works;
- Box Factory;
- New England Carpet Company;
- Thos Drummond's Boiler Works;
- Bishop Lumber and Coal Company;
- New York, New Haven & Hartford Railroad and Steamship Companies;
- Federal Biscuit Co.;
- Mohegan Cotton Mills Co; and,
- N.Y. N. H. & H. R. R. Maintenance Department.

A review of the Sanborn maps indicated that the following structures were formerly present on various Site parcels:

- Railroad tracks;
- Railroad freight houses;
- A machine shop;
- Oil storage;
- Potential manufactured gas plant, coal gasification plant;
- Coke (and/or coal) storage;
- Automobile garage;
- Junk storage;
- 1,000,000 cubic foot "gas holder";
- Aboveground storage tanks/numerous oil tanks;
- Engine room; and,
- A paint shop.

Other findings of this assessment are:

- Spills or other environmental issues (as indicated by listings on State and Federal environmental databases) that indicate the possible likelihood for contamination were identified on several of the parcels;
- Soils at the Site are mapped as urban land complex and/or urban land indicating the possibility of the presence of urban fill on the parcels. Such urban fill is often polluted with contaminants; and,
- Spills or other environmental issues (as indicated by listings on State and Federal environmental databases) that indicate the possible likelihood for contamination were identified on several properties adjoining or in the vicinity of the Site parcels and indicate the potential for impact to the Site from these off-Site sources.

Unless otherwise noted, this assessment did not identify the documented presence of contaminated soil and/or groundwater at the Site parcels. However, based on the current and former industrial use and potential filling activities, it is possible that contaminated soil and/or groundwater exist at the Site parcels from releases of chemical and/or materials used at, placed on or transported through the parcels.

The consultant team assigned a Potential Impact Rating of Low, Moderate or High, to each of the parcels. A Low Potential Impact Rating indicates minimal potential for impacts to soil and/or groundwater. A Moderate Potential Impact Rating assumes impacts to soil and/or groundwater are likely to be present. A High Potential Impact Rating assumes impacts to soil and/or groundwater are present, based on these data. It is the consultant team's opinion that there is a high probability that the soil and groundwater at the Site is likely impacted. The consultant team's findings relative to the Site, including assigned Potential Impact Ratings, are summarized in Table 9-1. Detailed information is provided in Appendix J.

9.1.2. Environmental Conditions – Natural and Cultural Issues

This section documents the findings of a preliminary screening of the natural environment and cultural and community resources located in the general vicinity of the existing RITC site. A preliminary environmental screening was conducted through the following means:

- Review of Connecticut Department of Environmental Protection (CTDEP) Geographical Information Systems (GIS) data and other CTDEP environmental publications.
- Review of National Register of Historic Places data.
- Field reconnaissance that involved a windshield survey of environmental resources.

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

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

A brief summary of findings is presented below for each of the aforementioned resource categories and/or issue areas. In addition, Figure 9-2 and Figure 9-3, respectively, depict cultural and environmental resources at the site.

Section 106 Resources

The National Register of Historic Places (NRHP) is the nation's official list of cultural resources worthy of preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. Information on the NRHP website, a review of records and discussion with staff at the State Office of Historic Preservation, and information contained in various reports prepared for the City of New London were consulted for this section. Some of the historic sites and districts discussed below are depicted graphically in Figure 9-2.

Table 9-1: Summary of Contamination Findings

Parcel ID	Property Address[1]	Current Occupant/Description	Current Uses	Historical Uses	Site-Specific Database Findings	Potential Environmental Issues	Potential Impact Ranking
108.1.01	Water St.	Cross Sound Ferry	Leased Parking for Cross Sound Ferry	Railroad Freight House, Coal Storage.	None	Former industrial use, urban fill, current automobile parking.	Moderate
108-1.03	Water St.	Cross Sound Ferry	Parking/Vehicle Queuing	Railroad Freight House, Coal Storage.	None	Former industrial use, urban fill, current automobile parking.	Moderate
108-1E	2 Water Street	Cross Sound Ferry	Parking/Vehicle Queuing/Ferry Slips	Railroad Freight House, Steamboat Landing, New London Gas & Electric Company, Coal Shed, Beef Warehouse, Molasses Storage, Motorworks & Machine Shop, Carpet Manufacturing, Coal & Lumber Yard, Boiler Works, Box Factory.	CT Spills	Former industrial use, urban fill, coal storage, current automobile parking, possible fuel oil tank, documented oil spill.	Moderate to High
108-1C	Ferry St.	Thames Shipyard & Repair Co.	Cross Sound Ferry Operations & Maintenance	Coal and Lumber Yard, Gas Storage, Coal and Coke Storage, Boiler Works , Machine Shop, possible coal gasification plant, New London Gas & Electrical Company, Connecticut Power Company Gas & Electric Plant, Oil and Gas Storage.	RCRA SQG, AIRS, Spills	Current and former industrial use including possible coal gasification plant, vessel repair facility, urban fill, RCRA generator, possible oil tanks, documented diesel fuel spill.	High
108-1B	Water St.	Union Station	Passenger rail and bus terminal.	Train Station.	Spills	Former industrial use, current bus station, adjacent railroad tracks and urban fill.	Low to Moderate
108-2A	City Pier	Concrete pier and plaza area.	Public plaza and waterfront access.	Ferry/barge slips.	Spills	Former industrial use, urban fill.	Low to Moderate
108-2	State St.	Fisher's Island Ferry Auto/passenger ferry terminal.	Parking/Vehicle Queuing/Ferry Slips	Railroad Freight House, Rail Lines, Ferry Slips.	UST	Former industrial use, railroad use, oil tank, urban fill, automobile parking.	Low to Moderate
203-2	160 Water Street	Water Street Garage Parking garage	Municipal Parking Garage.	Tenements, Saloons, Dwellings, Cigar Shop, Police Station, Chinese Laundry, Cobbler, Ice House, Liquor Store.	None (LUST listing for Old Middle School at 26 Water Street).	Former industrial use, urban fill, LUST, possible oil tank, current automobile parking.	Low to Moderate
203-3.01	140 Water St.	North entrance/exterior parking lot at Water Street Garage	Ground Level.	Tenements, Saloon, Molasses Storage, Bakery, Dwellings, a portion of Mohegan Cotton Mills, and N.Y. N.H & H. RR Maintenance Department.	None (LUST listing for Old Middle School at 26 Water Street).	Former industrial use, urban fill, adjacent LUST, possible oil tank, current automobile parking.	Low to Moderate
203.3.02	Water St.	South exterior parking lot at Water Street Garage	Parking.	Barber Shop, Paint Shop, Thomas Hotel, Atlantic Hotel, Boss Bakery, Federal Biscuit Co., Automobile Parking, Police Station, a portion of Mohegan Cotton Mills, and N.Y. N.H & H. RR Maintenance Department.	None (LUST listing for Old Middle School at 26 Water Street).	Former industrial use, urban fill, adjacent LUST, possible oil tank, current automobile parking.	Low to Moderate
140-2	Eugene O'Neill Dr.	Eugene Lot (North) Parking lot	Municipal Parking	Residential and/or commercial development.	None	Former buildings, possible industrial use, urban fill, current automobile parking.	Low to Moderate
139-1	Green St.	Eugene Lot (South) Parking lot	Municipal Parking	Residential and/or commercial development.	None	Former buildings, possible industrial use, urban fill, current automobile parking.	Low to Moderate
108-21	Waterfront Park	Public Walk/Plaza/Pier.	Public promenade/waterfront access.	Railroad sidings and shipping piers.	EPA Brownfields, Fed. IC/EC	Former industrial use, urban fill, Brownfield site.	High (Documented)
199-3	Governor Winthrop Blvd.	Governor Winthrop Garage	Private Parking	Residential and/or commercial development.	None	Former buildings, possible industrial use, urban fill, current automobile parking.	Moderate

[1] Based on Assessor's cards.
Potential Impact Rating:
Low - Assumes minimal potential for impacts to soil and/or groundwater to be present.
Moderate - Assumes impacts to soil and/or groundwater are likely to be present.
High - Assumes impacts to soil and/or groundwater are present.

Figure 9-2: Historic and Community Resources

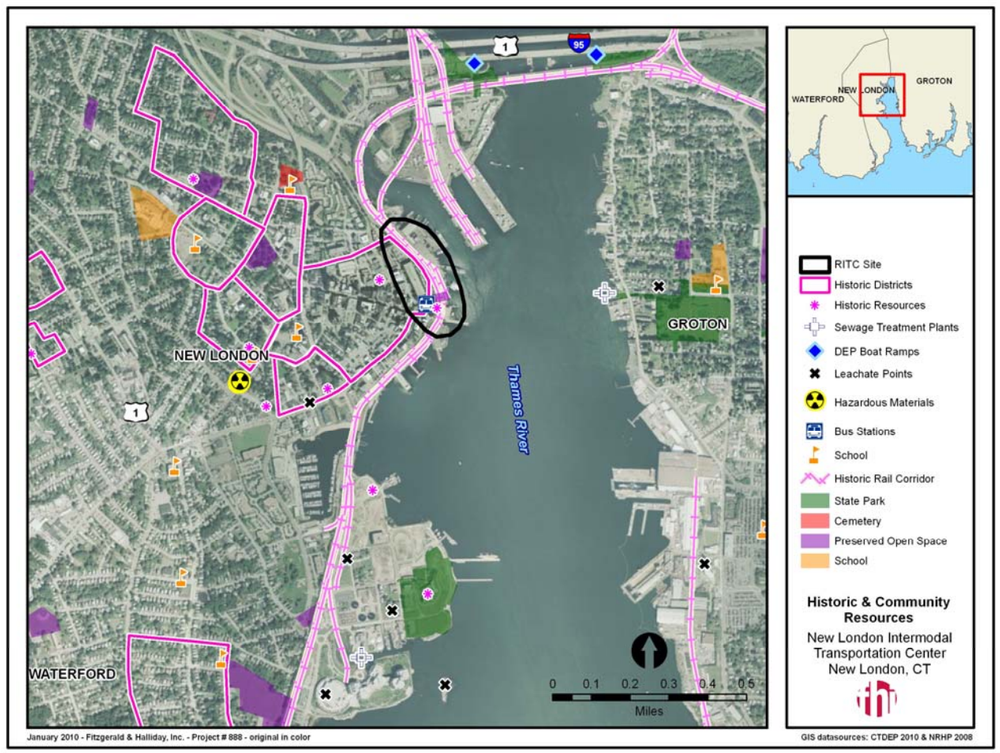
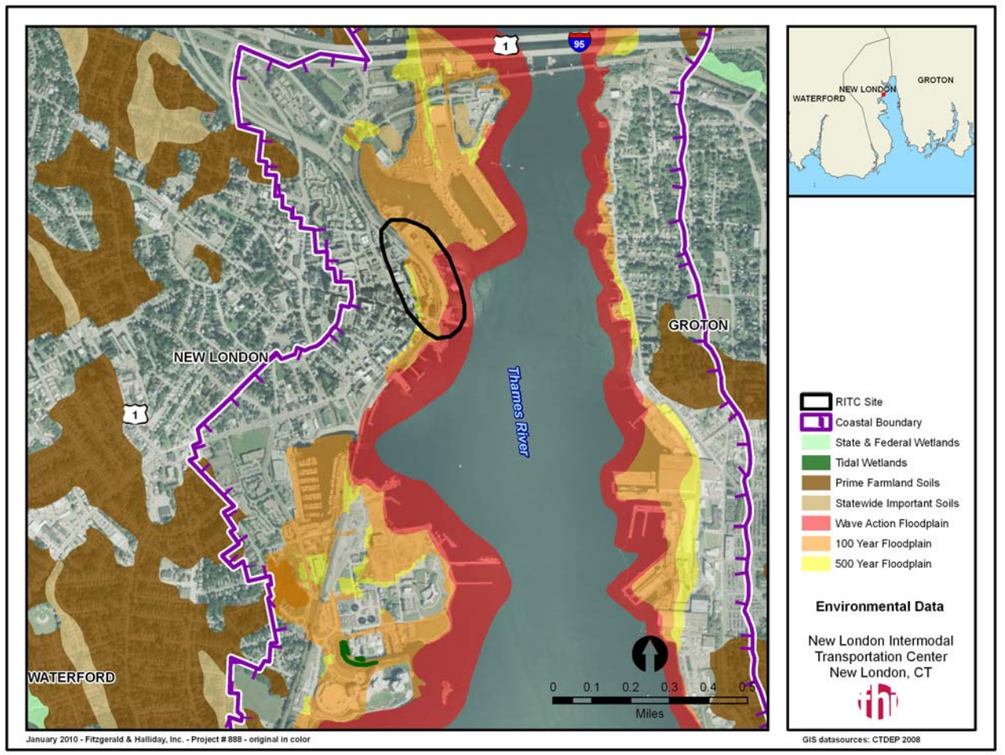


Figure 9-3: Environmental Data – Natural Environment



The proposed RITC project is located within the Downtown New London Historic District, which was formally listed on the National Register of Historic Places (National Register) on April 13, 1979. Union Station, which was individually listed on the National Register in 1971, is a significant historic resource within this district. The station is the largest railroad station designed by Henry Hobson Richardson and one of the two most important buildings designed by him in the State of Connecticut. Although the Greyhound Terminal Building located immediate adjacent to Union Station on the north is not described in the National Register nomination as a contributing structure within the Downtown New London Historic District, the building is approximately 100 years old. Thus, due to the historic sensitivity of the project area, any work conducted at this location will have to be carefully orchestrated with the Connecticut State Historic Preservation Officer (SHPO) to ensure full compliance with Section 106 of the Historic Preservation Act, as federal funds will likely be used to develop the RITC. If the project were privately funded, Section 106 would not apply.

The location of the Greyhound Terminal Building within the Downtown New London Historic District does not mean the building cannot be altered or removed for a new terminal. However, a process must be followed whereby a project's sponsor works directly with the SHPO, as well as with identified consulting parties and the public. The sponsor must show an effort was made to minimize harm and that all prudent and feasible alternatives to avoid an adverse effect were made. This assessment of prudent and feasible alternatives would include revisiting alternatives such as the RITC alternative with the bus terminal located west of Water Street on the site of the existing Water Street Parking Garage. If an historic structure is removed, mitigation generally entails extensive documentation of the structure, to preserve a record of the structure.

Section 4(f) Resources

Section 4(f) of the 1966 Department of Transportation Act (49 USC 303) prohibits use of land from any public park, recreation area, wildlife or waterfowl refuge, or historic property listed on or eligible for the NRHP unless there is no feasible or prudent alternative to the use of the land and the project includes all possible planning to minimize harm. There are no public recreational areas, or wildlife or waterfowl refuges in the project vicinity; however, the H.H. Richardson-designed Union Station building is listed on the NRHP and thus qualifies for protection as a Section 4(f) resource.

In addition, the RITC project is located adjacent to Union Station, within the Downtown New London National Register Historic District, and would require modification to the existing Greyhound Terminal Building which is approximately 100-years old. Therefore, Section 4(f) protections would apply to the RITC project since it has the potential to result in either direct or constructive use impacts to adjacent National Register properties. Section 4(f) is not advisory in nature and is taken seriously by federal agencies.

Section 6(f) Resources

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

Coastal Resources

As seen in Figure 9-4 the proposed RITC concept is located entirely within Connecticut's coastal boundary as defined by section 22a-94 of the Connecticut General Statutes (CGS). Therefore, a Connecticut Department of Environmental Protection (CTDEP) Coastal Consistency Review and a City of New London Coastal Consistency Review will be required in order to ensure full compliance with coastal resource and use policies designated in Connecticut's Coastal Management Act. Coastal resources in the vicinity of the project site include Shorelands and Coastal Flood Hazard Areas. Shorelands are essentially any developed areas within the coastal zone that are not subject to coastal flood hazards. The proposed RITC concept most likely will be consistent with all Shorelands use policies as defined in CGS 22a-92(b)(2)(I). Coastal Flood Hazard Areas are lower elevation areas that may be impacted by coastal flooding attributed to 100-year storms [(CGS 22a-92(a)(2); CGS 22a-92(b)(2)(F); CGS 22a-92(b)(2)(J); and CGS 22a-92(c)(2)(B)]. The RITC concept would have to be evaluated with respect to Coastal Flood Hazard Areas to determine if any new infrastructure is planned within the hazard area. The Union Station property partially lies within the 100-year flood zone and it is likely construction of the pedestrian bridge would also be within this zone. If new infrastructure is planned within the Coastal Flood Hazard Area, then an assessment would be needed to determine the extent to which that new infrastructure may or may not affect coastal flooding, erosion, and natural patterns of water circulation and tidal exchange.

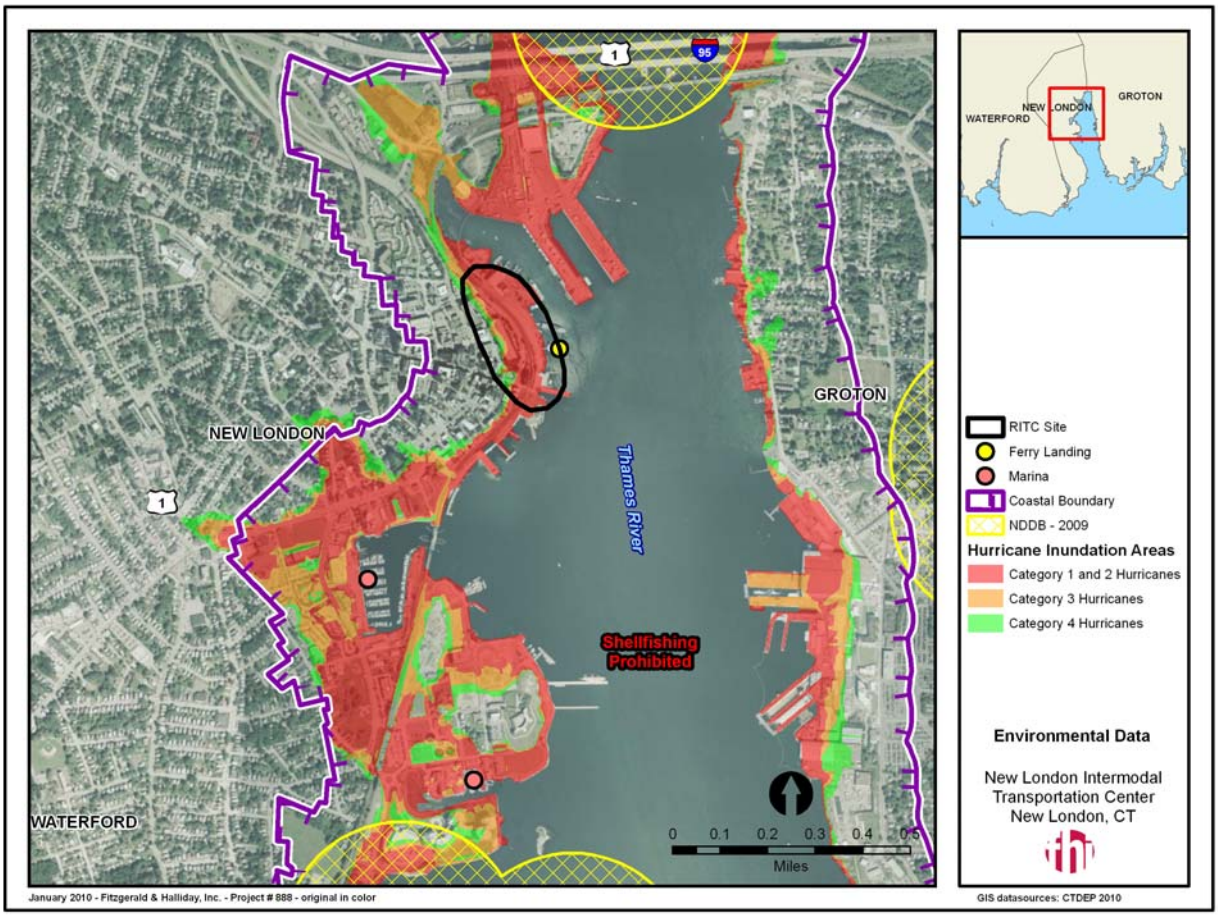
Floodplains and Stream Channel Encroachment Lines

There are no CTDEP Stream Channel Encroachment Lines (SCEL) associated with the Thames River in the vicinity of the RITC site. Because a portion of the site is located within the 100-year floodplain as designated by the Federal Emergency Management Agency (FEMA), a Flood Management Certification may need to be filed with the CTDEP for the RITC project. This certification is required if state funding will be used in order to demonstrate that the proposed action will not directly cause flooding or exacerbate existing flooding conditions at or downstream of the project area. Any structures placed within the 100-year floodplain (such as the pedestrian bridge) will need to be flood-proofed up the height of the 100-year flood elevation. Floodplain resources in the vicinity of the RITC site are depicted on Figure 9-4.

Management of Stormwater Runoff

It does not appear that the proposed RITC concepts will introduce a significant amount of impervious surface over existing conditions. However, a narrow strip of natural landscaped area located east of the Water Street Parking Garage would be eliminated with the westerly relocation of Water Street; and a small grassy strip located east of Water Street would be eliminated to accommodate new bus parking bays arranged in a saw-tooth configuration. These two existing green areas are the only pervious surfaces in the immediate project vicinity. Their removal and subsequent development as described above would result in a slight increase in impervious paved surface area over existing conditions. Additionally, new bus canopies, a new/expanded bus depot building, and a new pedestrian overpass will create additional impervious rooftop surfaces on the existing site. It is also likely that the proposed RITC concepts will include the construction of either new or upgraded storm drainage facilities in the project area that will connect to existing stormwater drainage infrastructure. The addition of new impervious surfaces on the project site and potential improvements to existing site drainage as part of the proposed RITC project must comply with both the *Connecticut Stormwater Quality Manual* (CTDEP, 2004) and the *Connecticut*

Figure 9-4: Environmental Data – Hurricane Inundation Areas



Sedimentation and Erosion Control Manual (CTDEP, 2002). Compliance will help ensure that contaminated stormwater runoff from the site is properly treated prior to it being discharged into the nearby Thames River. During construction, a Stormwater General Permit from Construction Activities will need to be obtained from CTDEP.

Visual Impacts

The City of New London is in the final stages of completing the Parade Project. That project involved a complete re-configuration of the Parade area located at the intersection of Bank Street and State Street. One of the main elements of that project was to open up the view shed of the Thames River to the east from locations along State Street and the Parade. In particular, the newly reconfigured Parade area now allows for direct views of the Thames River along a line of sight to the north of existing Union Station and the Greyhound Terminal Building.

The proposed RITC concept calls for a new/extended Greyhound Terminal Building to the north of the existing building, new bus canopies, and a new pedestrian overpass across the existing rail corridor which would enable rail passengers to safely cross between the north and south rail platforms. That pedestrian bridge could optionally be expanded in order to provide a direct connection (over Water Street) to the Water

Street Parking Garage on the west and a connection to the Cross Sound Ferry to the east. These structural elements will effectively obstruct the direct line of sight views of the Thames River that the Parade project intended to and successfully created.

Wetlands

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

Surface Water Resources

The only surface water resource in the vicinity of the existing site is the Thames River, which is located directly to the east. The river, which is tidally influenced in the vicinity of the existing site, is designated by the CTDEP as a Class SC/SB water resource with respect to water quality. The SC/SB classification means coastal waters (S) with a current water quality classification of C and a water quality goal of B. Designated uses of SC waters are for fish, shellfish, and wildlife habitat, certain aquaculture operations, recreational uses, industrial, and other legitimate uses, including navigation, but the C classification means that the water is presently not meeting all Water Quality Criteria due to pollution. Class SB designated uses include SC uses plus shellfish harvesting for transfer to a depuration plant or relay (transplant) to approved areas for purification prior to human consumption.

Groundwater Resources

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

Public Water Supply Reservoirs

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

Fish, Shellfish, and Wildlife Habitats

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

site, shellfishing in the Thames River is prohibited. Recreational fishing occurs at public access points along the shore of the Thames River near the existing site.

Rare, Threatened or Endangered Species and Significant Natural Communities

The CTDEP Natural Diversity Data Base (NDDB) was consulted to obtain a preliminary understanding as to whether or not any rare, threatened or endangered plant and animal species or significant natural communities exist in the project area. The NDDB contains information on the status of more than 1,000 rare species of plant and animals, including invertebrates, and 45 significant natural communities There are no rare, threatened or endangered plant or animal species or significant natural communities on or adjacent to the existing site.

Active Farmland and Farmland Soils

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

Wild and Scenic Rivers

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

Hurricane Inundation Areas

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

Noise Sensitive Areas

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

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

9.2 Recommended Environmental Strategy

9.2.1. Detailed Investigation of Contamination

It is recommended that prior or during the next phase of design development of improvements requiring excavation for building foundations, utilities, or other significant construction requiring excavation, soil

samples and testing for materials should be conducted to determine the absence or presence of contamination. These soil samples can be combined with structural geotechnical borings. Excavations for utility infrastructure and the disposal of soil/reuse from excavations can be reused as backfill, however, excess materials need to be disposed of in accordance with CTDEP requirements.

Renovation or modification to the existing Greyhound Terminal Building and the Water Street Parking Garage could require addressing materials containing asbestos, lead or other regulated substances. A thorough inspection and necessary tests of floor tiles, piping, window sealants and other potentially asbestos containing material (ACM) should be conducted by a certified testing lab.

9.2.2. Required Permits, Certificates and Approvals

The following permits, certificates, and approvals may be required for construction of the RITC project:

State

- CTDEP Coastal Consistency Review and Determination
- CTDEP Flood Management Certification
- General Permit for Storm Water and Dewatering Wastewaters from Construction Activities
- CTDEP Contaminated soil/and/or sediment management
- State Historic Preservation Officer approval (Through the Section 106 Process)

City of New London

- City of New London Coastal Site Plan Review and Determination
- Local Building Permit (New London Building Official)

It should be noted that working through the Section 106 and Section 4(f) processes will add time and expense to the RITC design and development project. The project sponsor will need to work directly with the State Historic Preservation Officer, as well as with identified consulting parties, such as New London Landmarks, Inc. and the public. New London Landmarks is a non-profit corporation formed to promote the preservation and development of the urban environment of New London that was originally founded in the 1970s to save the proposed demolition of Union Station. The sponsor must show an effort was made to minimize harm and that all prudent and feasible alternatives to avoid an adverse effect were made. The assessment of prudent and feasible alternatives may include revisiting the alternatives of placing the bus terminal located west of Water Street on the site of the existing Water Street Parking Garage.

10. Implementation Issues

The project to create an enhanced Regional Intermodal Transportation Center would need substantial funding, a lead agency that could own and build the project and coordination among the various transportation providers. This chapter addresses the management, governance and operation of the Regional Intermodal Transportation Center, the need for capital and operational funding, and the steps necessary to implement the short term improvements envisioned in the Master Plan.

10.1 Management, Governance and Operational Considerations

The RITC encompasses a variety of modes and both public and private interests. The Master Plan reflects the goals of the study to make intermodal travel more seamless and to increase the integration and coordination of modes at the RITC. In doing so, it envisions enhanced facilities for intermodal transfer involving both initial capital (construction and equipment) costs and ongoing operating and maintenance costs. As the specific improvements in the Master Plan were developed, the question arose as to how an improved RITC would be governed, that is who would lead the implementation of the master plan, own the facility, make policies, manage it, fund it, operate it and maintain it.

10.1.1. Governance Options

Governance of the RITC should promote the provision of good service to the customers of the center, and provide a reasonable income to its owners. Customers should be served by safe and well-maintained routes between parking and train, bus and ferry services, good wayfinding information to guide travelers, and convenient and up-to-date schedule information for the various modes located throughout the RITC area. The short term improvements envisioned in the Master Plan will benefit passengers using the various RITC modes, including the additional commuter rail passengers expected to use the station with the introduction of expanded Shore Line East service. Better wayfinding will help to facilitate intermodal connections and help downtown visitors to find their way to the station and the ferry facilities and transportation users find their way to downtown businesses.

The major beneficiaries of additional travelers at the RITC will be:

1) The operators of the various passenger transportation modes at the facility (Greyhound, SEAT, Amtrak, Shore Line East, Cross Sound Ferry, taxis, etc.)
2) Parking facility owners (primarily the City which currently owns the Water Street Garage)
3) The owner of Union Station should benefit by an increase in travelers that would enable it to lease space for fast food or a coffee shop on the first floor. In the future if commuter rail proves to be attractive, there may be an increased opportunity to develop the upper floors at Union Station as offices or as condominium units. In addition, the owner could benefit from leasing space to SEAT.
4) Local businesses – through increased patronage

While some elements of the RITC would continue to be owned, managed and operated by individual entities, there will likely be a need for coordination among the various transportation operators and for shared funding of some elements. In addition, there will need to be an entity assigned to maintain the proposed pedestrian bridge over the rail tracks, particularly if it extends to the Water Street Parking Garage and the Cross Sound ferry terminal which are owned by the City and the ferry company, respectively.

As part of the study, research was conducted on the types of governance at other intermodal transportation centers in Connecticut and around the country and the special provisions put in place to finance operation of those centers as one step towards developing a governance recommendation that would complement the physical plan recommendations developed as part of the RITC Master Plan. This effort is documented in Appendix K. Several primary organizational models of governance were identified that involved varying assignments of ownership, funding, and management responsibilities among stakeholders/partners. They included:

- Single Existing Public Entity
- Coordination among Several Existing Entities
- New Special-Purpose Entity
- Existing Private Developer/Company

The recommended governance structure outlined below is a combination of the first three options.

10.1.2. RITC Ownership and Governance Recommendations

The recommended governance structure is as follows:

- The rail station, bus station and pedestrian bridge should be owned by the State.
- The ferry facilities would remain under separate ownership, that is, by the ferry operators.
- The Water Street Garage could either remain under separate ownership by the City or could be purchased by the State.
- A new authority or district is not likely to be needed in this case, but an association of key stakeholders would be advisable to integrate customer services including schedule information and wayfinding and to ensure collaboration during implementation and on an ongoing basis.

It is recommended that the State of Connecticut Department of Transportation (ConnDOT) play a lead role in the RITC improvements, given the State's interest in providing high quality rail connections in New London, including the expansion of its Shore Line East commuter rail service, promoting bus transit services, and ensuring safe and efficient pedestrian crossings of the railroad right-of-way. It is recommended that the State purchase the Union Station property in its entirety in order to assure continued public use of the improvement and eligibility for FTA funding. This would have to be accomplished through negotiation with the private owner to purchase the property or, alternatively, enter into a long term lease. (A long-term lease could be for the entire property or could be limited to the first floor and the surrounding area needed for the bus terminal and pedestrian bridge[1].) ConnDOT has also indicated that any purchase of Union Station by the State may need to be accompanied by a purchase or lease of the Water Street Parking Garage currently owned by the City in order to ensure a revenue stream to cover operating and maintenance costs (the garage operating income does exceed its operating expenses). In that case, negotiations with the City would also be needed. (It is a common approach to link the train station to the source of parking revenue as is the case in New Haven, Hartford and Stamford.) However, since the Water Street Garage serves multiple purposes, arrangements would need to be made to ensure continued use for non-transportation purposes if ConnDOT purchased the garage.

[1] In the case of a limited lease provisions would need to be made to provide for parking for private development of the upper floors; perhaps an arrangement could be made to provide dedicated parking for this purpose in the Water Street Garage.

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

The ferry facilities would continue to be owned by the ferry companies and Cross Sound Ferry would be expected to fund improvements to the ferry facilities, such as the High Speed Ferry terminal it has proposed in the past, as well as the recommended improvements to pedestrian and vehicular circulation and parking on its property.

In order to ensure that public information is coordinated and that the various stakeholders of the RITC are involved in the continued improvements in the area, it is suggested that an RITC Association be established to advise ConnDOT on implementation of the center and to agree on a plan for dissemination of public information for the RITC. Formation of this group may be an important first step toward implementation of the Master Plan. The principal membership of this Association would be the transportation providers, the City and Connecticut DOT and any private owner if private property is involved. A private non-profit organization could be set up with a Board of Directors that includes representatives of the City of New London, the Council of Governments, SEAT, Union Station Associates (if they were still an owner of the property), the ferry operators, Greyhound, and the local taxi companies. To cover expenses of its activities, each would be asked to contribute funding to the coordinating body, in relation to the benefits expected from the improved RITC. For example, if the City of New London retained ownership of the Water Street Garage, it could pledge a portion of new parking revenues to support the work of the RITC Association. The RITC Association might take on activities such as contracting to have informational kiosks installed at different points in the RITC, or contracting with a marketing firm to develop a brochure which shows all the services at the RITC. Staff could be provided to the RITC Association as an in-kind service from the City or SEAT.

The precise structure of such an association will need to be developed through discussions among the members.

10.1.3. Operational and Informational/Marketing Improvements

Responsibilities of this association would likely include arrangements for ongoing operational coordination (e.g., schedule coordination, information sharing, joint marketing and ticketing, etc.), sharing of maintenances responsibilities for intermodal linkages and longer term planning for the RITC. These are described below:

Schedule Coordination and Static Information Sharing - Schedule coordination opportunities are likely to be limited particularly given New London's position as an intermediate bus and rail stop and SEAT's current multi-hub system. However there is potential for static information sharing, e.g., posting Amtrak, SLE, CS Ferry, FI Ferry, SEAT and Greyhound schedules in the Union Station lobby, bus terminal and ferry terminals (each operator could produce schedules for posting at other locations so updates involve only one piece and not an entire display).

Real-Time Information Sharing on Delays and Service Adjustments - While Amtrak has an online system and ferries know the status of all trips, the other operators may not have real time information. An RITC Association would need to address the issue to develop a system allowing operators to post information (or tie into existing systems such as Amtrak).

Joint Ticketing - Joint ticketing opportunities are mostly likely for ferry service in combination with Amtrak, Shore Line East and Greyhound. Greyhound might also be able to handle SEAT pass sales under a contract arrangement.

Joint Marketing and Pre-Trip Customer Information - Opportunities for joint marketing and pre-trip customer information are most likely for the ferries in combination with Amtrak, SLE and Greyhound.

Sharing of Maintenance Responsibilities for Linkages - Individual entities could be assigned specific responsibilities or there could be a jointly-funded cleaning/maintenance contractor.

Longer Term Planning - An association would provide a forum for longer term planning to meet future needs and continue the process of developing improvements to intermodal linkages.

10.2 Funding for Short Term RITC Improvements

ConnDOT is currently seeking an earmark for improvements at Union Station and has obtained an amount of $7 M in the current draft of the transportation reauthorization bill, somewhat less than had been sought. Even if this funding is ultimately secured, additional funding will be necessary to implement the short term improvements. Transportation Enhancement Funding once reauthorized may be an additional source. Federal funds will require local shares and the State looks to municipal entities to supply local shares. Development of a funding plan was not part of the scope of this study but is an important next step.

10.3 Next Steps

This *Master Plan and Efficiency Study* identified a short term Preferred Alternative, comprised of both immediate and short term improvements, as well as a Fallback Minimum Construction Alternative that would be less costly. The Master Plan recommends that the State take a lead role in owning and building the facility with the support and ongoing guidance of an association of key stakeholders including the City of New London and the transportation providers. Much remains to be done to implement the study findings.

The next steps to advance the project include the following:

- *City endorsement of study findings* – Implementation of the proposed improvements would require approval of the City of New London. The Parade, the Water Street Garage and the location of Water Street itself would be impacted by the improvements. The project would also clearly have visual, environmental, transportation and economic impacts on the city as a whole. While City staff and elected officials participated as stakeholders in the study, City Council endorsement is important in order to advance the project. City building permits will also be required.

- *Coordinate with the Connecticut Department of Transportation* – As the most likely lead agency and ultimate owner/operator of much of the RITC, ConnDOT will need to begin to take the lead role in advancing the project.

- *Form an association to continue key stakeholder involvement* – The formation of an RITC Association will be critical to maintain the momentum developed by this study and to continue the involvement of the numerous stakeholders. The Association could initially take the form of an

informal advisory group to SCCOG and ConnDOT, but could eventually evolve into a more formal organization with responsibility for marketing, information, operations and planning.

- *Pursue funding opportunities and develop a detailed financial plan* – The proposed earmark, if obtained, would provide funding for only part of the project. Additional funding sources would be required. Local matching funds would also be required for most funding sources. A source of operating funding for the facility would also be needed, possibly including of rental income from the operators, contributions from the RITC association, parking revenues and/or other sources.

- *Negotiate with the property owners to acquire or lease the necessary properties* – State ownership of much of the RITC is recommended; however, the cost to acquire or lease Union Station can only be determined through negotiation with the private owner. Also, the State and City would have to negotiate a price for the garage if ownership is to be transferred.

- *Develop more detailed facility designs and conduct required environmental studies* – The Master Plan includes only design concepts for the RITC. More detailed preliminary design and environmental studies will be necessary to advance the project before final design can begin and environmental permits obtained.