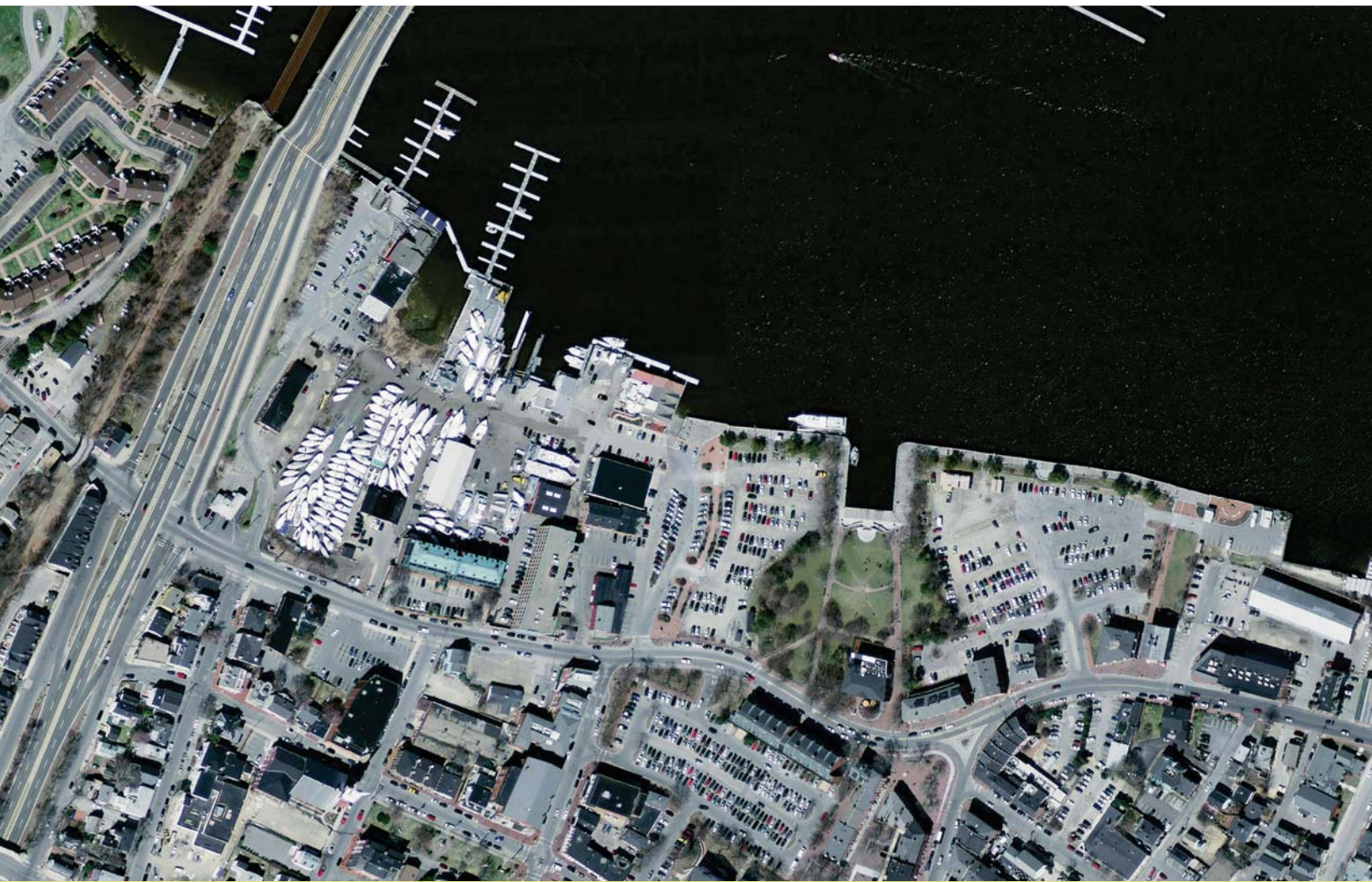




INTERMODAL PARKING FACILITY SITE EVALUATION & ALTERNATIVE ANALYSIS REPORT

NEWBURYPORT, MASSACHUSETTS



SUBMITTED TO: **MVRTA**
MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY

SUBMITTED BY:



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JUNE 25, 2010

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Appendix E	Intermodal Parking Facility – Market Value Assessment and Rental Value of Potential Retail Space

1.0 Introduction

The City of Newburyport is located approximately 28 miles northeast of Boston along the south side of the Merrimack River. The portion of Newburyport known as Plum Island is located on the Atlantic coast. Newburyport was established as a town in 1764 and as a city in 1851. In 1811, a major fire destroyed much of the downtown area, which resulted in reconstruction of mostly Federalist style buildings, many with brick or stone facades. These historic buildings are a source of pride to the city, and along with a rich maritime history, contribute to a quaint and thriving downtown area. The downtown, both functional and livable, is also a popular tourist destination.

The Newburyport waterfront reflects and celebrates its rich maritime history. Like many other coastal communities across New England, it is the waterfront that is providing the engine for economic revitalization once again. This dichotomy of economic revitalization and cultural preservation is a challenging one that provides much opportunity for stakeholders, consensus building and design guidelines. Often, parking management and public transit serve as central themes of these driving principles amidst dense waterfront zones.

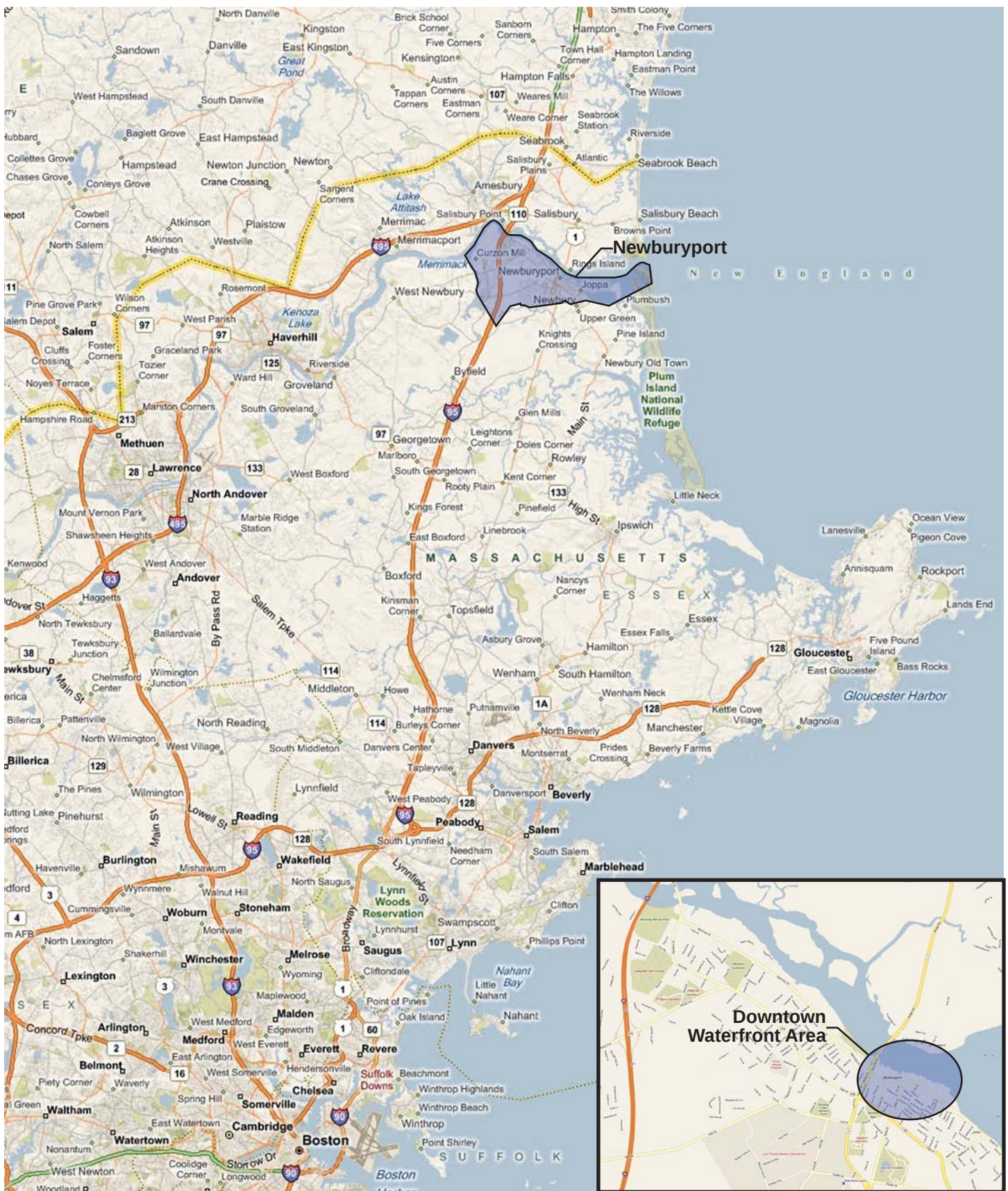
1.1 Project History/Background

It is clear that Newburyport has been pro-active with regard to parking management in the downtown, as evidenced by the many parking studies conducted over the past decade. Now, with a proposal to reclaim existing parking areas for parkland, a consensus must be reached and the foundation for a parking solution must be brought forth in preparation for implementation.

The Merrimack Valley Transit Authority (MVRTA), which is the local transit authority servicing Newburyport and the nearby cities of Haverhill and Lawrence, has a goal to improve its existing bus service in downtown Newburyport and facilitate access between downtown and the commuter rail station located approximately one mile south of downtown. The City of Newburyport and the MVRTA have joined forces to achieve their goals of enhancing transit operations and providing an adequate parking supply within the Newburyport downtown core. The City and the MVRTA, with the assistance of their congressional representatives, obtained funding to determine a suitable site and perform preliminary design for an Intermodal Parking Facility in the vicinity of downtown Newburyport. The Intermodal Parking Facility would provide a minimum of two bus bays for MVRTA use, parking for MVRTA and the City of Newburyport and possibly retail space to complement adjacent land uses. The City of Newburyport and its downtown are depicted on Figure 1.1.

The MVRTA selected Tetra Tech Rizzo (TTR) in May 2009 as the lead consultant on the project. The study team consists of the MVRTA, a representative from the City of Newburyport and several subconsultants. The study team is as follows:

- Merrimack Valley Regional Transit Authority – Project Leader
- City of Newburyport Office of Planning & Development
- Real Estate Perspectives, LLC – Project Oversight
- Kleinfelder/Sea Consultants – Project Manager/Reviewer



6 0 1.5 3 6

Approximate Scale in Miles

Intermodal Parking Facility
 Alternative Site Evaluation Report
 Newburyport, Massachusetts

- Tetra Tech Rizzo – Lead Consultant/Traffic/Environmental Assessments
- The Foster Company – Real Estate Appraisal
- Domenech Hicks & Krockmalnic Architects – Architect
- Desman Associates – Parking
- Keville Enterprises, Inc. – Construction Cost Estimates

1.2 Scope of Report

This Intermodal Parking Facility Site Evaluation & Alternative Analysis Report begins with a review of previous parking evaluations, a narrative on the site selection process and a detailed description of the two final sites (Sections 1 through 4). It then summarizes the results of a transit operations analysis conducted in Newburyport, which resulted in a recommendation to the MVRTA for enhanced service to the city, and also data needed to determine parking demand related to transit (Section 5).

Having gained an understanding of how transit operations could be enhanced in the city, calculations were performed to determine the demand for parking related to transit. A full parking demand analysis was completed. It considered not only demand generated by transit, but also existing parking needs in the downtown area and parking needs generated by future public and private redevelopment under consideration. The detailed parking demand analysis is provided in Section 6.

Once the approximate number of new parking spaces needed to augment the existing downtown parking supply was established, two preliminary design options were developed for each of the two final sites. These four options are presented in Section 7. The final sections of the report (Sections 8, 9 and 10) summarize the environmental impact analyses and financial assessments performed for each design option. The report concludes with a recommendation for a final site that is based on the engineering/architectural analyses as well as input gleaned from city officials and Newburyport citizens through a series of public meetings (Section 11).

2.0 Summary of Previous Studies

A review of parking and traffic studies conducted in the City of Newburyport was undertaken. These earlier studies, conducted over a 13-year period beginning in 1996, document the parking and traffic circulation challenges faced by the City.

2.1 Parking Studies

The parking studies that focused on providing additional parking in downtown Newburyport generally concluded that there will be a demand for approximately 450 to 500 additional parking spaces and that the existing Green Street parking lot was the preferred site downtown for a parking structure. Sites considered by previous studies included Green Street, Titcomb Street (east of Titcomb Street), Liberty Street and Prince Place. The 450 to 500 space projected demand assumed a loss of parking from the proposed Newburyport Inn and Conference Center development, which was to be located on the existing waterfront parking lots. As this project is no longer being proposed, the projected parking demand of 450 to 500 spaces is no longer appropriate.

The following documents were reviewed as part of this study, and a brief summary of each is provided below:

- *City of Newburyport Downtown Parking Study* (David J. Friend, Transportation Planning Services, September 1998)
- *Newburyport Structured Parking Study* (Hayden Wegman Consulting Engineers, November 1999)
- *Newburyport Parking Management Plan* (C&C Consulting Engineers, LLC, August 2002)
- *City of Newburyport Structured Parking Study – Phase II* (Miller Dyer Spears Inc and C&C Consulting Engineers, LLC, June 2002)
- *Newburyport Parking Committee Parking Patron Survey* (C&C Consulting Engineers, LLC, August 2002)
- *Newburyport Parking Garage and Mixed Use Feasibility Study* (Dore & Whittier Architects Inc., July 2005)
- *Downtown Newburyport Parking Planning Study* (Traffic Solutions Inc., April 2005)

City of Newburyport Downtown Parking Study, September 1998

The *City of Newburyport Downtown Parking Study* was prepared by Transportation Planning services in September 1998. It studied the impact of the proposed Newburyport Inn and Conference Center development on the Waterfront Trust and Newburyport Redevelopment Authority (NRA) owned parking lots adjacent to the Merrimack River. The study states that the NRA East and NRA West lots, which at that time totaled approximately 643 spaces, form a significant component of the public parking inventory in the City of Newburyport and

elimination of these lots would have a substantial negative impact on the public parking supply in the city.

Transportation Planning Services prepared an inventory of all off-street/on-street, public/private parking supply in the study area and collected data on the utilization of public parking spaces on a typical weekday and weekend. The methodology consisted of studying the future parking supply/demand by comparing the peak period parkers displaced by the project with the number of publicly available parking spaces at the completion of the project. The parking inventory identified a total of 3,673 parking spaces located in downtown Newburyport. Of the 3,673 total spaces 1,970 (54 percent) were publicly available and 1,703 (46 percent) were private/restricted spaces. The accumulation survey indicated that peak hour parking utilization exceeded 90 percent. The study noted that the daytime peak hour occurs between 10:00 a.m. to 2:00 p.m., with the evening peak occurring at 7:00 p.m.

The study noted that at peak periods the combined occupancy of the NRA East and NRA West lots equaled 300 parked vehicles and this number would increase to approximately 400 vehicles during a Saturday evening or an event at the waterfront. The NRA West lot was the lot of choice for downtown employees in need of long-term parking. The NRA East lot was preferred by shoppers and served as a spillover lot for those who were unable to find parking in the NRA West Lot.

The study also included a survey of people parking in the NRA parking lots. The survey showed that on a weekday approximately 23 percent of parkers were working, 12 percent were shopping, 4 percent were getting on a bus, 31 percent were recreating, 19 percent were dining and the remaining 11 percent cited other purposes for parking downtown.

Based on the detailed site plan analysis of the Newburyport Inn and Conference Center development, the study calculated that a total of 430 publicly available parking spaces would be eliminated by the project. Comparing this with new or replacement public parking spaces being provided (at the corner of State Street and Harris Street), the study estimated the net loss of public parking spaces to be 398 spaces. As a result, the study recommended that the feasibility of constructing new public parking facilities should be evaluated.

Newburyport Structured Parking Study, November 1999

Hayden Wegman Consulting Engineers investigated the potential for developing structured parking in the City of Newburyport. The study methodology consisted of a review of earlier studies, discussion with individuals from the community and field observations to study the parking operations, parking demand and the relationship of individual land uses throughout the downtown.

The study concluded that there was adequate parking supply in the study area. However, the elimination of the NRA lots and additional development in the study area would result in a shortfall of 473 parking spaces. This was based on a 10 percent increase of the 430 spaces identified in the Downtown Parking Study eliminated by the then proposed Newburyport Inn and Conference Center.

The study recommended that the City plan for the construction of 450-500 additional parking spaces within 300 feet of Merrimack Street/Water Street to serve existing and future development. The study identified and analyzed four potential sites for the development of the parking structure. The sites evaluated based on location, urban design and physical/social context include the following:

1. Green Street Site. The study noted that the Green Street site, being municipally owned, eliminates acquisition costs. This lot also has the distinct advantage of being located near prime attractions in downtown Newburyport. Moreover, the topography of the site allows for efficient and flexible design options.

The study observed that the location of the site on Merrimack Street close to Route 1 makes it highly visible and easily identifiable. The proximity to Green Street and Pleasant Street provides good access point options in terms of overall circulation. However, the study raised a significant concern regarding the Green Street site; namely, the current use of the site as a 183-space parking lot, which would need to be replaced until construction of the parking structure was complete. The site is surrounded by historically significant buildings, which adds to the construction cost due to special architectural design and setback considerations.

2. Merrimack Street Site (Titcomb Street Site). The study stated that this privately owned site has several advantages in terms of site location, including access and development potential. However, it raises several issues with respect to site purchase, site clean up and the impact on its surroundings.

The corner location of this site allows for the possibility of access from two streets and allows for well organized options for a parking structure. However, the study stated that the private ownership of the site by three or more owners makes the acquisition process complex.

The study also notes that the existing use of the site as a gas station and oil dealership needs to be assessed for the presence of hazardous material and increased cost of site remediation.

3. Liberty Street Site. The study stated that the Liberty Street Site has significant disadvantages. It lists site location, access, development potential and capacity as issues of concern. Although located close to prime tourist and commercial activity, this site would require complex circulation through small city streets.

The study noted that the small dimensions of the site make it very difficult to develop efficient structured parking facility. In addition, the private ownership of the site adds acquisition cost to the total project cost.

4. Prince Place Site. Field observations conducted during the course of the study indicated significant drawbacks to development of a structured parking facility on this site. The site is hard to find and near small streets that complicate vehicular and pedestrian circulation.

The study stated that the municipal ownership of the site reduces site acquisition costs but the site dimensions are too small to create an efficient parking design, unless surrounding properties are acquired.

Structured Parking Study - Phase II, June 2002

This study provides a detailed evaluation of a parking garage bounded by Merrimack Street to the north, city hall and the police station to the east, private property on the south and Titcomb Street to the west. It includes parking facility layouts, cost estimates, property appraisals and a Phase I Environmental Site Assessment.

The study documents that the site was selected due to its proximity to Route 1 and downtown, as well as the fact that it expands the downtown area and provides a good footprint for a parking garage. Moreover, no existing parking spaces are lost due to its construction. The study also found that the 10-foot change in elevation that occurs in the north/south direction allows the structure to have two entry/exit points. The projected cost for the garage on this site was estimated at \$11,088,000, including design and construction.

Note: The Titcomb Street site evaluated for this study is approximately half the size of the Titcomb Street site presently being considered.

Newburyport Parking Management Plan, August 2002

This letter report, written by Preston Samuel, P.E. of C&C, LLC (formally Hayden-Wegman) provides a review of the parking demand in downtown Newburyport. It builds on the studies completed in 1998 by Transportation Planning Services (David Friend) and in 1999 by Preston Samuel, P.E. of Hayden-Wegman. In summary, David Friend determined that 430 spaces would be lost as a result of the then proposed Newburyport Inn and Conference Center on the NRA/waterfront parking lots. In 1999 Preston Samuel, based on prior studies, interviews with the parking committee, police chief, the director of the chamber of commerce and a real estate agent, as well as observations, found that the 430 parking spaces, increased by 10 percent to 473 (or approximately 450 to 500 spaces) would reflect the actual parking demand.

Similarly, in this 2002 study, Preston Samuel, P.E. interviewed the police chief, the director of the chamber of commerce and a real estate agent and determined that the 400 to 450 space demand for parking was still valid.

Newburyport Parking Committee Parking Patron Survey, August 2002

A survey of parkers along State Street, in the Green Street lot, in the waterfront lots and along the western fringes of downtown was conducted in order to better understand the parking needs of visitors to downtown. Participants were asked how long they parked, how far they traveled to come to downtown, how often they came to downtown, the purpose of their trip, if they had packages and if they were able to park within one block of their destination.

The following briefly summarizes the results of the survey:

- 22 percent were working
- 26 percent were shopping
- 32 percent were tourists
- 40 percent parked for 1 hour or less
- 42 percent parked for 1 to 4 hours
- 38 percent arrived from somewhere else in Newburyport
- 38 percent traveled less than 20 miles
- 51 percent reported visiting once in a while
- 42 percent reported visiting everyday
- 64 percent did not have packages
- 75 percent could park within 1 block of their destination

Newburyport Parking Garage and Mixed Use Feasibility Study, July 2005

The City of Newburyport contracted Dore and Whittier Architects and a team of consultants to prepare a feasibility study for the development of structured parking in the downtown. The scope of this study included analysis of two potential sites: the Titcomb Street site and Green Street site. As a part of the analysis, the study team reviewed earlier parking studies and met with various city departments, local interest groups and adjacent property owners to gain preliminary input.

The study explored mixed-use development options for both locations to reduce the overall cost of the development to the City. The consulting team studied Newburyport's Master Plan and Newburyport's Strategic Development plan to understand the future demand generated by proposed development projects in the downtown. The study team evaluated the sites based on garage configuration, design, number of spaces created, proximity to prime locations, impacts on surroundings, impact on existing supply and cost.

Titcomb Street Site. The study concluded that site constraints at the Titcomb Street site limit flexibility in design and as a result the project would be difficult to construct. It states that the limited lay down and staging areas at this location make it necessary to carry out these activities off-site. The site constraints with respect to mixed-use development make an open parking design impossible. This would increase the overall cost of construction due to increased costs related to ventilation, security and lighting. The entire site is not publicly owned and provisions need to be made in the budget for acquisition costs.

Note: The Titcomb Street site evaluated for this study is approximately half the size of the Titcomb Street site presently being considered.

Green Street Site. The study team preferred the Green Street site for the development of a new structured parking facility. As highlighted in earlier studies, this site has distinct location, site dimensions and public ownership advantages. The study stated that this site offers more potential for mixed-use development due to its location near prime retail and commercial establishments.

The site's location allows for a more cost-effective design, both in terms of layout and ability to maintain an open garage designation. However, as discussed in earlier studies, the development of a parking structure at this location would displace 183 existing parking spaces, and provisions to replace these spaces would need to be made.

In conclusion, both locations were found to be feasible for developing a public-private partnership that contains a mixed-use component to offset the construction costs of the potential garage. It was proposed that the City would own and operate the garage and the developer would own the mixed-use component. The study concluded that the Green Street location, with the potential for 578 spaces, presents the preferred options for the development of a garage and the integration of a mixed-use component.

Downtown Newburyport Parking Planning Study by Traffic Solutions Inc., April 2005

The City of Newburyport considered a paid parking program for the efficient use of its public parking resources. Traffic Solutions Inc. was retained to assist the City in identifying the scope of the paid parking program and to provide a blueprint for its implementation.

Review the Off-street Parking Plan. The study reviewed the draft revenue model prepared by the City, recommended an operations model for the off-street lots and developed a staffing and phasing plan. The study team revised the revenue plan based on the existing conditions and their experience with similar projects elsewhere.

Some of the significant changes made by the study team to the draft revenue model consisted of calculating revenue based on strict parking enforcement as compared to the moderate approach that the city's model had considered, including maintenance cost in the model, and increasing salary of personnel in order to attract qualified professionals. The proposed revenue model accounts for the effect of certain incentive plans that the study recommends. The study laid out the framework for an operations model specific to parking time durations, all day parking and senior parking program.

Identify Revenue Collection System Appropriate for the City of Newburyport. The study team researched various options for revenue collection and identified a few that would be appropriate for Newburyport. The options studied were mechanical meters, electronic meters, Central payment parking systems using Pay and Display machines, Pay and Walk-Away systems, Smart card technology and Access controlled parking systems. The above studied systems offer flexibility in payment options using currency, coins and credit or debit cards.

The study recommended that the City should employ the Pay and Walk-Away system for the surface lots whereas the proposed parking garage should be equipped with the Access controlled parking system. The study also suggested that the City should adopt the smart card technology for both surface as well as structured parking.

Develop a Downtown Parking Management Plan. A review of the City of Newburyport's established parking regulations was conducted to identify and recommend improvements, changes and/or additions to the parking regulations. It was suggested that the schedule of parking fines be incorporated into the parking ordinance.

The study team provided a comprehensive blueprint for the policies and procedures required to manage the City's public parking inventory and undertook a space by space layout for the on-street parking in the downtown. They evaluated the current conditions and interviewed stakeholders in order to suggest an optimal on-street parking limit of one hour in downtown Newburyport.

The study indicated that the current ordinance for establishment of residential permit program was extremely generic and the City needed to create clear standards for including streets in the residential permit program.

Provide Recommendations for the Establishment of City Parking Department, Commission or Authority. The study concluded that in order to achieve an efficient and self-supporting parking system, the City of Newburyport should establish an independent parking entity responsible for managing and maintaining its public parking resources. The study team developed a mission statement, identified the functions that the entity would need to perform and evaluated five different organizational models to help the establish a parking entity. The Parking Department model appeared to be the most appropriate for the City of Newburyport. The study recommended a staffing plan with administration personnel, maintenance/revenue collection personnel and enforcement officers.

2.2 Traffic Studies

The subject of parking cannot be considered in isolation without studying the condition of the traffic circulation and movement in the area of each potential development site. As a result, past traffic studies conducted in the City of Newburyport were also reviewed to gain an understanding of prevailing traffic conditions in the study area. The following traffic studies were reviewed as part of this evaluation, and a brief summary of each is provided below.

- *Newburyport Central Business District Citizen Traffic Analysis and Recommendations* (Citizens' Traffic Committee & the City of Newburyport Office of Planning and Development, June 1996)
- *Downtown Waterfront Area Traffic Study* (City of Newburyport Office of Planning and Development, February 1999)

Newburyport Central Business District Citizen Traffic Analysis and Recommendations, June 1996

This study, conducted by the Citizens' Traffic Committee, assessed the traffic flow problem in downtown Newburyport. The committee investigated the traffic flow concerns by studying in detail four petitions filed by the citizens of Newburyport from the year 1974 to 1995. The committee noted that a traffic flow problem had existed since 1974, and to date, no appropriate solution had been found. The study noted that the changes in traffic flow completed by the TOPICS program in 1974 resulted in an increased traffic volume in small residential streets, thus intensifying the risk of pedestrian-vehicle conflicts. The committee concluded that there was widespread discontent in the neighborhoods and that the City's various band-aid solutions were viewed as extremely unsatisfactory.

The methodology adopted by the committee to study the traffic problem consisted of creating a ranking system based on the width of street, the predominant land uses along each respective street and their ability to handle different volumes of traffic. The committee noted that smaller streets like Fruit Street and Fair Street were handling heavy volumes of traffic whereas Green Street and High Street, which could handle these large volumes, were being by-passed. Based on these findings, the study focused on identifying alternative routing options for traffic. The committee developed criteria against which the different options were measured to arrive at a most suitable solution.

This study concluded that the city needed to reroute traffic away from the residential streets and suggested two alternatives to achieve this goal. The first consisted of reversing the current direction of State Street from one-way south bound to one-way north bound, reversing the direction of Green Street from one-way north to one-way south, converting Liberty Street to a two-way street and allowing “No Thru Traffic” at the intersections of Prospect, Fair and Fruit Streets. The second solution was almost similar to first except it proposed converting Green Street to a two-way street.

Downtown Waterfront Area Traffic Study, February 1999

The City of Newburyport retained Highway & Traffic Signal Design Inc. (HTSD) to examine the existing and future circulation needs of downtown Newburyport. HTSD prepared an inventory of data, assessed future conditions, evaluated alternatives for improvements and provided recommendations. Data inventory included daily and peak hour traffic counts, intersection geometry, traffic control devices, pedestrian movements and traffic signal phasing and timing plans.

The study observed that Route 1 and Merrimack Street experienced congestion during peak hour as well as non-peak hours. The traffic speed on Merrimack Street was interrupted by pedestrians crossing without the aid of crosswalks or signal controls. Similar occurrences were observed along State Street and Pleasant Street. The study also documented issues of unmarked or fading crosswalk/lane markings, lack of posted speed limits, dangerous on and off ramps, defective signal controls, no posted bus stops and inadequate queue storage lengths.

The study recommended that a detailed inventory of traffic infrastructure and equipment should be created and upgrades completed where needed. The study suggested limiting parking on Fair Street due to high volumes of traffic and limited width. In addition, the study recommended the following two alternatives to effect traffic circulation improvements:

- Two-way Green Street and Liberty Street with State Street one-way northbound
- Two-way Green Street and Liberty Street with State Street two-way

Of the two alternatives considered, the study recommended the second alternative due to its ability to reduce traffic queue lengths.

3.0 Initial Site Selection Process

The MVRTA instructed the study team to select and evaluate in detail two sites on which an Intermodal Parking Facility could be located in the vicinity of downtown Newburyport. In order to select two sites for evaluation, an initial site selection screening process was employed. An outline of this process is provided below. A detailed description of each step of the process is also described in this chapter. The initial site selection process followed a four-step process:

Step 1- Identify Potential Sites

- Developed a list of attributes necessary to consider tracts of land as potential sites.
- Identified viable sites evaluated by previous City of Newburyport parking studies.
- Considered other large land areas as potential sites.
- **Ten sites were selected for consideration.**

Step 2 – Reduce Ten Sites to Six Sites

- Discussions were held with the MVRTA and City of Newburyport officials regarding the viability of ten potential sites.
- Four sites were dropped from consideration as they were determined not to be viable because of technical or political issues.
- The six remaining sites were presented to the Newburyport Parking Committee on August 20, 2009. No objections to the sites were expressed by the committee.
- **Ten sites were narrowed to six sites for the initial Evaluation.**

Step 3 – Conduct Initial Evaluation of Six Sites

- Developed a detailed list of criteria on which to evaluate the six sites.
- Ranked sites based on criteria.
- Evaluation results for the six sites were presented at a public meeting on September 15, 2009. MVRTA received comments from city officials and the public.
Six sites were narrowed to three sites.

Step 4 – Reduce Three Sites to Two Sites via Conceptual Plan Analysis

- Developed conceptual parking facility plans for three top ranked sites.
- Presented three top sites and potential concept plans to Newburyport Parking Committee on November 19, 2009.
- **The Newburyport Parking Committee endorsed the recommendation of the MVRTA and study team for two final sites.**

The following sections provide a detailed description of these four steps.

3.1 Step 1 – Identify Potential Sites

The site selection process began with developing a list of attributes on which to choose sites suitable for a multimodal parking facility in Newburyport. This list, developed with input from the MVRTA and City of Newburyport officials, includes:

- Adequate size to accommodate a parking facility of approximately 350 spaces or approximately one acre
- Potential to facilitate intermodal connections in Newburyport
- Considered in previous parking studies (see Section 2)
- Convenient access to downtown Newburyport
- Cooperative land owner(s)

The 350 parking space requirement was based on initial parking demand calculations developed by the study team. These preliminary calculations are presented in detail in Section 6. The 350 spaces include a preliminary estimate by the City of approximately 300 spaces needed to replace parking lost in the development of a waterfront park on the site of an existing surface lot, and a preliminary estimate by the study team of approximately 50 spaces to accommodate motorists who will park in the proposed facility and then access the MVRTA system.

The process of selecting sites included reviewing sites previously considered by the City and evaluated in earlier studies, a thorough review of aerial and assessor's maps to identify large parcels and discussion with City of Newburyport officials. As part of this process, ten sites were identified as potential locations for the Newburyport Multimodal Parking Facility. The ten sites are shown on Figure 3.1 and briefly described below:

1. Waterfront West. This eight-acre site is bound by the Merrimack River to the north and Merrimack Street to the south. It is comprised of 17 parcels of land owned by New England Development. The site is presently under consideration by the owner for a multi-use development project. The property owner is receptive to considering a public parking facility at the site.

2. Waterfront Trust/Newburyport Redevelopment Authority (NRA). The two parcels that create the Waterfront Trust/NRA site are owned by entities associated with the City of Newburyport. The westerly parcel is under the jurisdiction of the Newburyport Waterfront Trust, a quasi-public nonprofit organization. The easterly parcel is under the jurisdiction of the NRA. This 2.5-acre site is located on the Merrimack River. It is currently being considered by the NRA for redevelopment as a waterfront park.

3. Titcomb Street East. The one-acre Titcomb Street East site includes an existing gas station, a former garage (used for light industrial purposes in the past), a multifamily house and a driveway easement that connects the back of the Newburyport Police Station to Titcomb Street. It is



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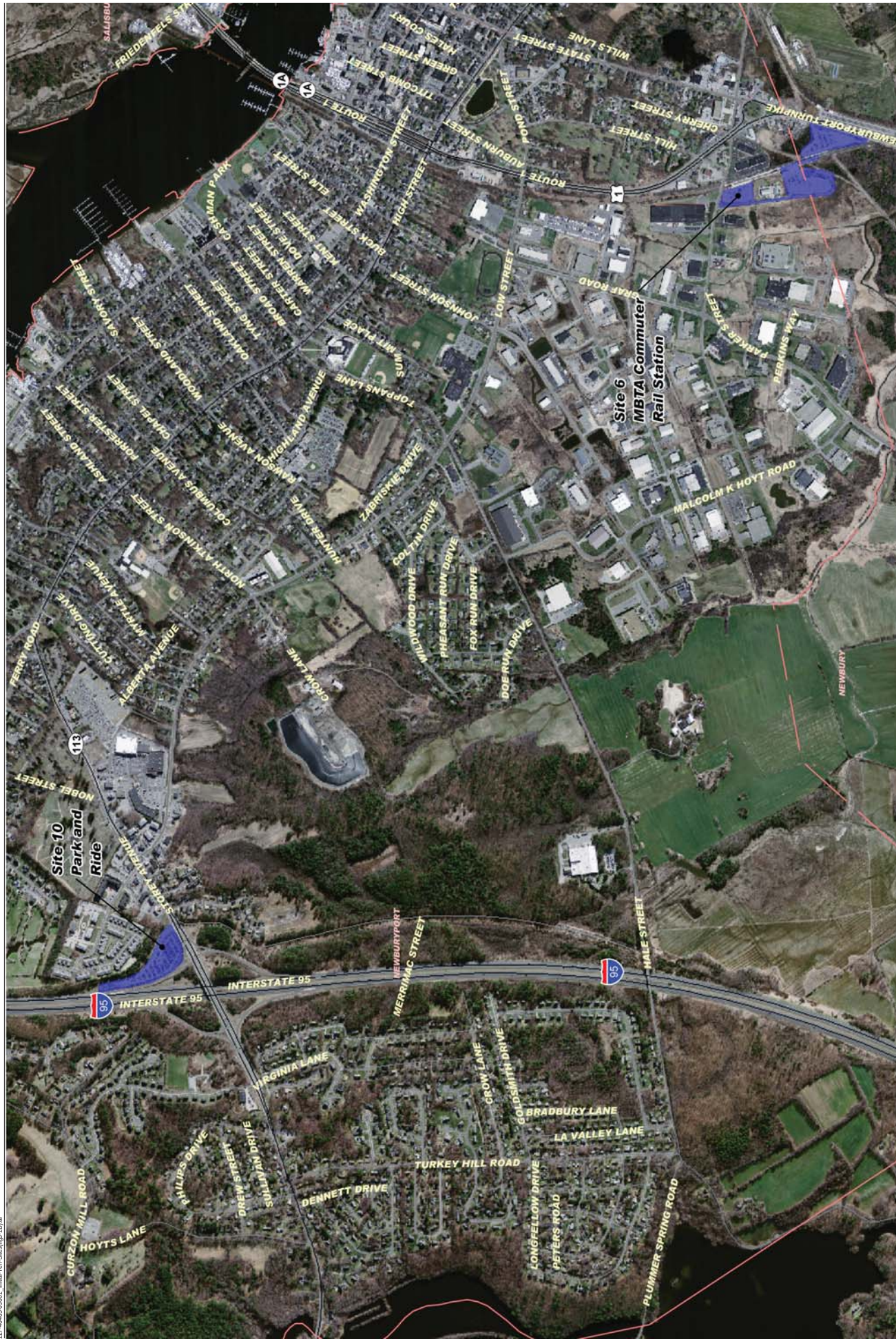
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- Parcels
- Public Property
- Private Property

Approximate Scale in Feet

280 0 70 140 280

Base Map: MassGIS 2008 Airphoto



Intermodal Parking Facility
Alternative Site Evaluation Report
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Legend

- Parcels
- Public Property
- Private Property

1000 0 250 500 1000

Approximate Scale in Feet

Base Map: MassGIS 2008 Airphoto

comprised of six parcels. The City indicated that the abutting portions of Titcomb Street could be considered as part of this site. Four of the parcels on this site are owned by New England Development. The gas station is not owned by New England Development and was for sale during the initial screening process. New England Development is receptive to a parking facility on this site. This site has been considered in previous parking studies as a site for a structured parking facility.

4. Green Street. The Green Street site is an existing surface parking lot owned by the City of Newburyport. The 2.5-acre site consists of one parcel. This site has been considered in previous parking studies as a site for a structured parking facility.

5. Prince Place. Two public parcels, a portion of Hale Court and three private parcels form this L-shaped, one-acre site. An existing Verizon building and a parking lot are located on the privately owned parcels, and the publicly owned parcels are occupied by a surface parking lot. This site has been considered in previous parking studies as a site for a structured parking facility.

6. MBTA Commuter Rail Station. The MBTA Commuter Rail Station, although not located in downtown Newburyport, was considered as a potential site as it would add rail transit to the list of travel modes serviceable by the proposed facility. It is located approximately one mile south of downtown Newburyport on the west side of Route 1. The site spans the towns of Newburyport and Newbury. Three large surface parking lots comprise most of this 12-acre site.

7. NRA. The NRA site is located on the south bank of the Merrimack River, east of State Street. Four of the five parcels that form this 3.5-acre site are regulated by the NRA, and the fifth parcel is regulated by the Waterfront Trust. It is currently being considered by the NRA for redevelopment as a waterfront park.

8. Titcomb Street West. The one-acre site known as Titcomb Street West consists of seven parcels. All of the parcels are owned by New England Development. Located on this site are a former theater building, a multifamily house and a bridal shop. The property owner is receptive to considering a parking facility on this site.

9. Liberty Street. Five privately owned parcels form this 0.75-acre site. The site is occupied by the Daily News (local newspaper) plant and offices, a laundry mat, a hair salon and parking areas. This site has been considered in previous parking studies as a site for a structured parking facility.

10. I-95 Park and Ride. The I-95 Park and Ride site is located at the northeast corner of the I-95/Route 113 interchange, and is approximately three miles west of downtown Newburyport. This 6.5-acre site provides approximately 530 parking spaces and is owned by the Massachusetts Department of Transportation. The parking lot is maintained by private bus companies that provide service between Newburyport and Logan Airport and downtown Boston. This site was initially considered as it is well utilized, and on most weekdays the 530 spaces are fully occupied. As part of the American Recovery and Reinvestment Act, a project that will add 105 new parking spaces has been designed for this site and will be constructed in the near future.

3.2 Step 2 – Reduce Ten Sites to Six Sites

Through a series of meeting with City officials, the MVRTA and the study team, three sites were eliminated from consideration: including Waterfront Trust/NRA, NRA, and I-95 Park and Ride. The Waterfront Trust/NRA and NRA sites were eliminated as town officials indicated that although the proximity of the two sites to downtown made them attractive, they did not want to use valuable waterfront property for parking. Locating a parking facility on this site would also be inconsistent with the City's adopted Waterfront Master Plan. Finally, a concept plan for a waterfront park, which encompasses both sites, has been developed and endorsed by the NRA.

The Park and Ride site was eliminated due to its distance from downtown Newburyport (three miles) and because additional parking has already been proposed for the site as noted above, will be constructed in the near future. As a result of the initial analysis of sites, the study team determined that each of the two Titcomb Streets sites were too small and not well configured for a multi-modal parking facility. However, if the sites were combined into one site, it would constitute a reasonable site for further consideration. Thus, a total of six sites, as shown on Figure 3.2, were brought forward for a more detailed analysis, those sites were:

1. Waterfront West
2. Titcomb Street
3. Green Street
4. Liberty Street
5. Prince Place
6. MBTA Commuter Rail Station

At this point in the process an introductory meeting was held on August 20, 2009 with the City of Newburyport Parking Committee. The ten initial sites were presented and the rationale for eliminating the two publicly owned waterfront sites and the I-95 Park and Ride site were reviewed with the committee. An overview of a preliminary list of criteria on which to evaluate the six sites was also presented at this meeting. The committee was supportive of the process and was most interested in the Green Street and Titcomb Street sites, as these two sites had been previously identified in previous studies as adequate for a structured parking facility.

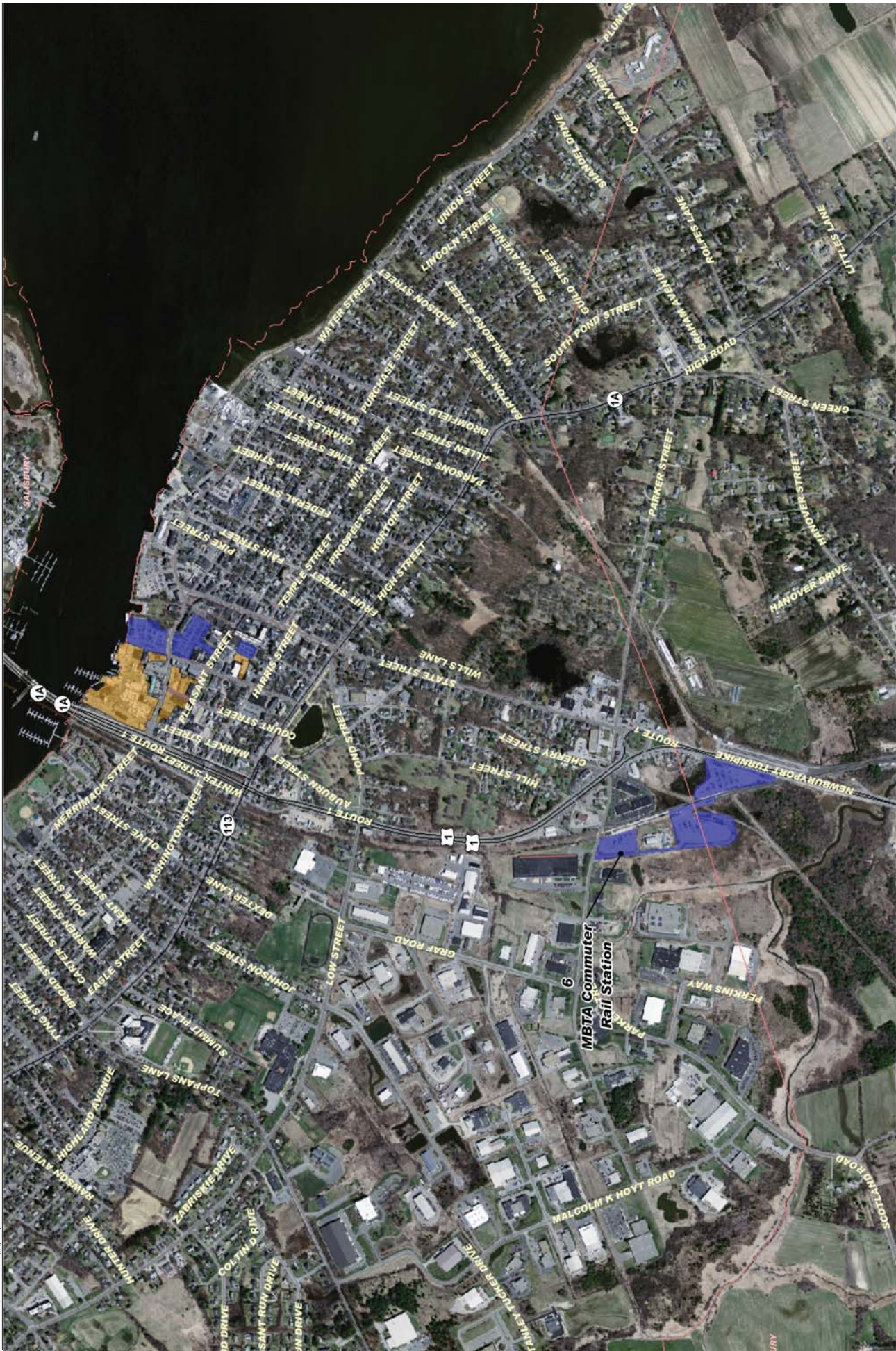
3.3 Step 3 – Detailed Evaluation of Six Sites

A comparative analysis of the six sites was performed using a detailed list of weighted criteria. This next level of analysis determined that three sites were considered viable and worthy of further consideration and a higher level of evaluation.

3.3.1 Evaluation Matrix

The study team developed a detailed list of criteria on which to evaluate the six sites. A total of 35 criteria were developed and organized into five major categories: (1) parking and multimodal requirements; (2) site location; (3) accessibility; (4) environmental impacts; and (5) cost. Each criteria was weighted by assigning a value of 1 to 5, with 1 indicating a less important criterion and 5 indicating a very important criterion. For example, the criterion: *Impact of the Project on*





Legend

	Parcels
	Public Property
	Private Property

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Sites for Screening Figure 3.2B

On-Street Parking was assigned a value of 1 where as the criterion: *Ability to Accommodate Parking Demand* was assigned a value of 5.

A matrix was developed which included for each criteria the metric on which to evaluate, its weighted value and the evaluation value assigned to the criteria for each site. Table 3.1 presents the matrix and the results of the numerical analysis of the six potential sites. The numeric values shown in the matrix in Table 3.1 were determined through numerous discussions and meetings with the MVRTA, City officials and the study team. During these discussions, a set of positive and negative attributes were identified for each site. These attributes are summarized in Table 3.2.

Out of a potential of 575 possible points (the sum of the weighted values (115) multiplied by 5, the highest assigned evaluation value), Green Street received the highest ranking with 440 points. The Waterfront West and Titcomb Street sites were virtually tied, with 384 points attributed to the Waterfront West site and 379 points attributed to the Titcomb Street site.

Table 3.1 Site Screening Matrix

Criteria	Metric	Weight	1 Waterfront West		2 Titcomb Street		3 Green Street		4 Liberty Street		5 Prince Place		6 MBTA Station	
			Evaluation	Weighted Value	Evaluation	Weighted Value	Evaluation	Weighted Value	Evaluation	Weighted Value	Evaluation	Weighted Value	Evaluation	Weighted Value
Parking and Multimodal Requirements	Multimodal conductivity	4	3	12	4	16	4	16	4	16	3	12	4	16
	Accommodates parking demand	5	5	25	3	15	5	25	2	10	2	10	1	5
	Net increase in parking spaces	4	5	20	5	20	2	8	4	16	2	8	3	12
Site Location	Availability of land	5	2	10	3	15	5	25	1	5	1	5	2	10
	Efficiency of site size and layout	5	5	25	3	15	4	20	2	10	1	5	5	25
	Consistency with city policies	2	3	6	2	4	3	6	1	2	1	2	1	2
	Potential for mixed-use applications	3	4	12	5	15	5	15	2	6	1	3	1	3
	Strengthens/enhances area residential/commercial dev.	2	4	8	3	12	4	16	3	12	3	12	1	4
	Zoning limitations	2	3	6	2	4	4	8	2	4	2	4	4	8
	Ability to permit	2	3	6	3	6	5	10	2	4	2	4	3	6
	Constructability	5	5	25	3	15	3	15	2	10	1	5	5	25
	Utility availability	1	5	5	5	5	5	5	5	5	5	5	3	3
	Potential for hazardous waste	5	2	10	2	10	4	20	2	10	3	15	4	20
Accessibility	quality of access from Rte. 1 and Merrimac St.	4	5	20	4	16	4	16	3	12	1	4	1	4
	distance between site and bus routes 51	3	4	12	4	12	5	15	1	3	3	9	5	15
	quality of access between garage and street for cars/vans	1	4	4	5	5	5	5	3	3	2	2	4	4
	quality of access between garage and street for buses	3	4	12	4	12	4	12	2	6	1	3	4	12
	quality of access between garage and street for tour buses	2	4	8	4	8	5	10	2	4	2	4	1	2
	can site provide adequate space for layover areas and bus bays	2	5	10	3	6	4	8	1	2	1	2	5	10
	can site accommodate separate bus and car drives	3	4	12	5	15	3	9	1	3	2	6	5	15
	proximity to work locations in downtown	4	2	8	4	16	5	20	4	16	3	12	1	4
	proximity to residents	3	2	6	4	12	4	12	3	9	3	9	1	3
Environmental Impacts	compatibility with land uses	5	2	10	3	15	3	15	1	5	1	5	2	10
	potential impacts to vehicular traffic	1	4	4	3	3	3	3	2	2	2	2	3	3
	potential impacts to pedestrian	3	4	12	4	12	3	9	3	9	3	9	5	15
	potential impacts to on-street parking supply	1	5	5	3	3	4	4	1	1	2	2	5	5
	facilitates public access and public use of the waterfront area	4	1	4	4	16	1	4	3	12	4	16	4	16
	potential impacts to aquifer	1	2	2	3	3	3	3	3	3	4	4	3	3
	potential impacts to wetlands	3	2	6	5	15	5	15	5	15	5	15	2	6
	compatibility with adj. buildings, street types, vistas along main roads	4	3	12	2	8	2	8	1	4	1	4	4	16
	evaluate design against historic character of street/neighborhood	4	4	16	1	4	2	8	1	4	1	4	4	16
	impacts to minorities and/or low income areas	2	3	6	3	6	5	10	3	6	5	10	5	10
Cost	relative cost of site	5	2	10	2	10	5	25	1	5	1	5	2	10
	Cost to design/construct	5	4	20	3	15	3	15	2	10	2	10	5	25
	Economic viability	5	3	15	3	15	5	25	3	15	3	15	1	5
	potential for profit													
Total Points		575*	384		379		440		259		242		348	
RANK			2		3		1		5		6		4	

* 575 equals the sum of the weighted values (115) multiplied by 5, the highest assigned evaluation value

Table 3.2 Site Summary

1. Waterfront West	
<u>Pros</u>	<u>Cons</u>
- Privately owned by cooperative land owner - Large site which would easily accommodate parking demand - Facilitates access to waterfront - Potential for mixed use development	- Cost of land - Long history of waterfront related industrial uses on site increases potential for underground contaminates - MVRTA buses required to enter and exit via a left turns - Proximity to Route 1 ramps
2. Titcomb Street	
<u>Pros</u>	<u>Cons</u>
- Good access for MVRTA buses - Good access for pedestrians - No waterfront impacts - Across street from potential waterfront development	- Site configuration would increase construction costs - Comprised of multiple parcels - One parcel owner may not be a cooperative party to work with the MVRTA - Long history of light industrial uses and an existing gas station increases potential for underground contaminates
3. Green Street	
<u>Pros</u>	<u>Cons</u>
- No acquisition costs as City owns site - Large flat rectangular site - Good access for MVRTA buses - Near center of downtown	- Potential impacts to historic structures and a residential building - Long history of light industrial uses including a gas station increases potential for underground contaminates
4. Liberty Street	
<u>Pros</u>	<u>Cons</u>
- Near center of downtown - Walkable distance to residential areas	- Cost of land - Small site would limit capacity of garage - Impact to adjacent residential neighborhood
5. Prince Place	
<u>Pros</u>	<u>Cons</u>
- Near center of downtown - Walkable distance to residential areas	- Cost of land - Small site would limit capacity of garage - History of on-site newspaper printing and dry cleaning increases potential for underground contaminates - Constructability limited by site configuration and size
6. MBTA Commuter Rail Station	
<u>Pros</u>	<u>Cons</u>
- Large flat site - No impact to residential areas - Constructability	- Not in downtown Newburyport - History of transit uses increases potential for underground contaminates

3.3.2 Public Meeting

At a public meeting held at Newburyport City Hall on September 15, 2009, the project was introduced, the process of site selection was presented and the results of the detailed analysis of the six sites were summarized and explained. Comments on the top three sites (Green Street, Titcomb Street, Waterfront West) were received from many of the approximately 70 meeting attendees. These comments are briefly presented below:

Green Street Site

- The Green Street lot has always been filled with employees and not customers.
- A parking garage will kill retail establishments in Merrimack Place by ruining their views, restricting airflow and destroying ambiance.
- Views of the water and steeple should be preserved.
- Values appearance of the church and concerned with views from the church with a large parking garage in the background.
- Merrimack Landing Condominium Association will not support a parking lot on the Green Street lot.
- There is a Montessori School adjacent to the Green Street lot.
- How will the construction impacts be mitigated for the Green Street Site?
- Business owners can't see how we can construct a parking garage on the Green Street site without impacting their business.
- Removal of ledge may be required at the Green Street site. How will existing structures be protected?

Titcomb Street Site

- Buses will add to congestion in the area.
- 85 percent of traffic entering city comes off Route 1. Titcomb Street site would be a good interceptor.
- The site would be improved with a parking garage.
- How will air quality for abutting residences be addressed?
- How close can the parking garage be to abutting properties?

Waterfront West

- How would height restrictions along the waterfront be addressed?
- Has constructing a parking garage adjacent to Route 1 been considered?

Given the virtual tie in the numerical analysis between the Titcomb Street and Waterfront West sites, and based on the comments received at the hearing, the study team determined that further study was needed to reduce the three top sites to two final sites.

3.3.3 Step 4 – Three Sites to Two Sites Through Development and Analysis of Preliminary Conceptual Plans

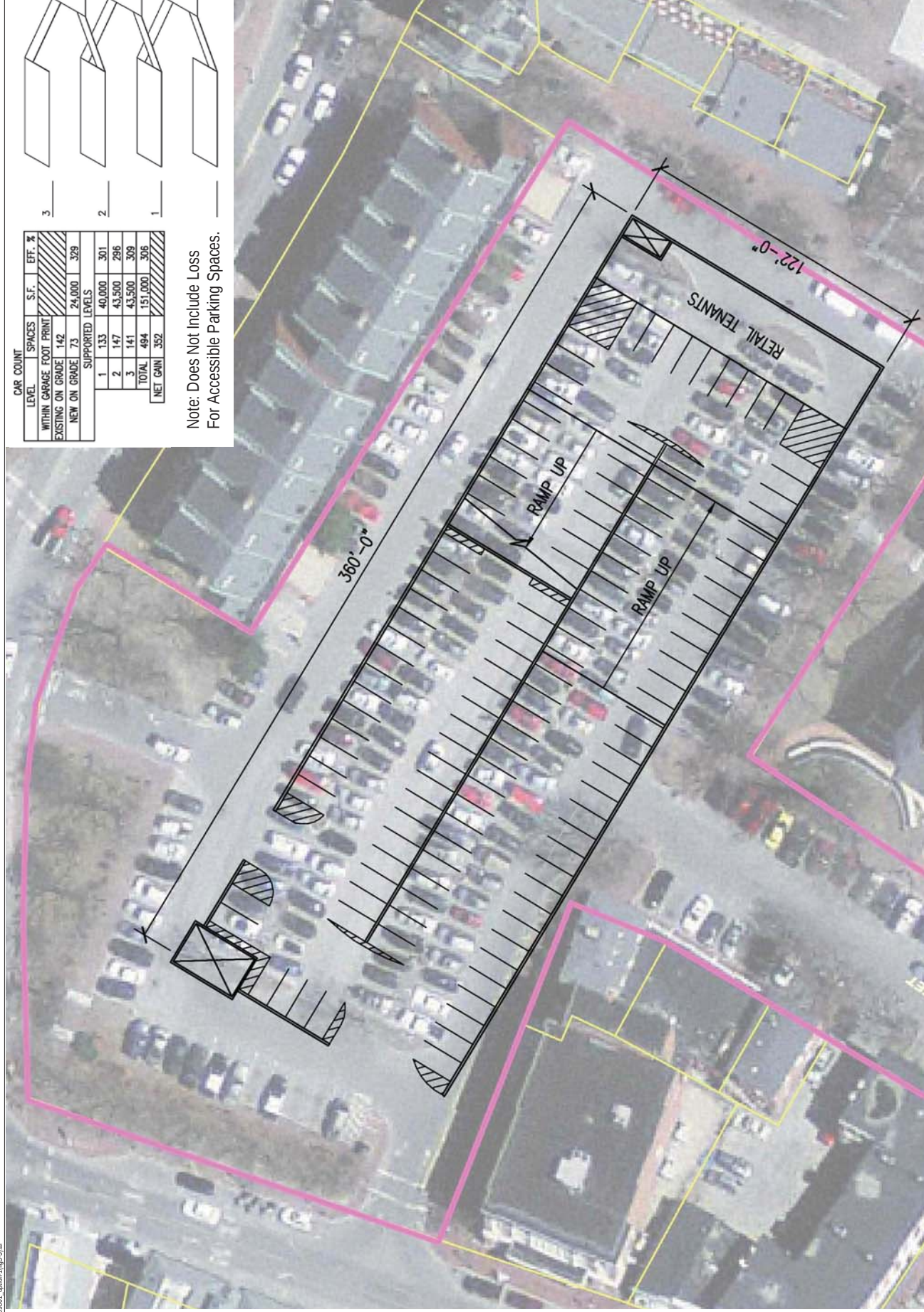
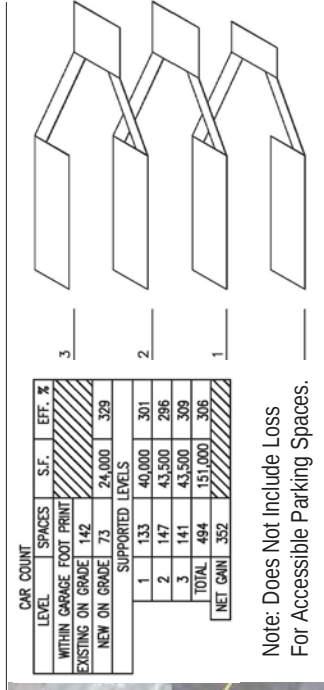
In order to narrow the three sites identified as a result of Step 3 of the process to two final sites, additional analyses were necessary. This additional analysis took the form of conceptual level plan development showing the approximate layout and size of an intermodal facility on each site. As these concepts were developed, careful consideration was given to comments received at the public hearing regarding impacts on residences, business and historic structures. Building height, access to local roadways and effects on MVRTA Bus 51 route were also considered.

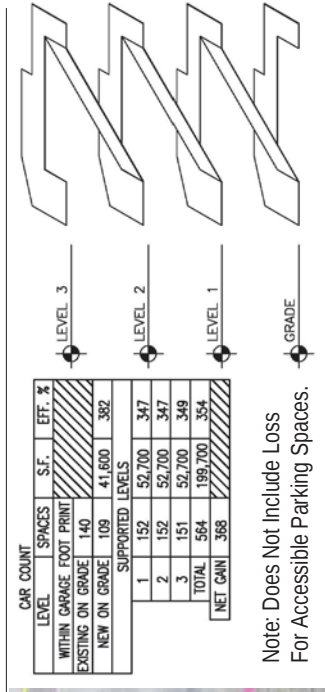
Numerous concept plans were sketched and evaluated by the study team and MVRTA. The concepts considered viable, and worthy of further refinement, are shown on Figures 3.3, 3.4 and 3.5 for the Green Street site, on Figures 3.6, 3.7 and 3.8 for the Titcomb Street site and on Figure 3.9 for the Waterfront West site. Several other concepts were considered for the Waterfront West site, but only the concept shown in Figure 3.9 was considered acceptable by New England Development, the owner of the site.

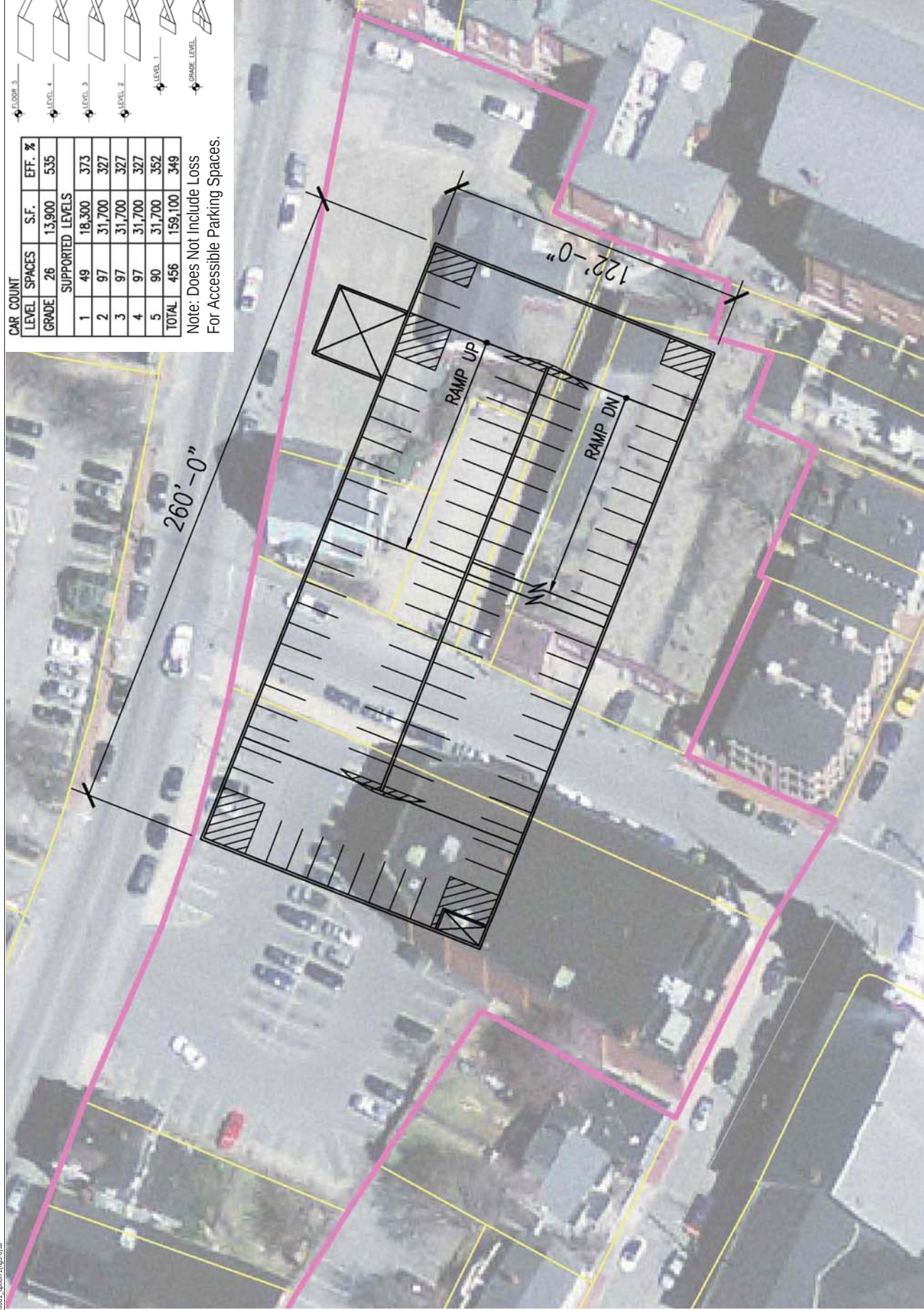
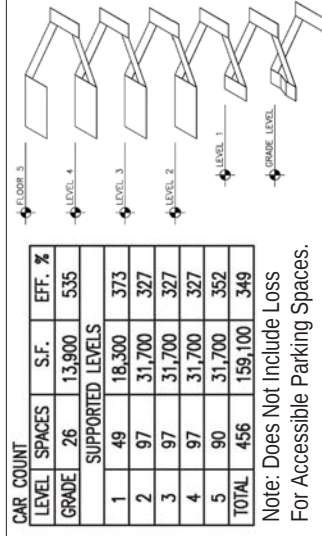
As a result of this phase of evaluation, it became evident that access of Route 51 onto the Waterfront West site would be problematic as the bus proceeds eastbound on Merrimac Street. A left turn onto the site, a counter clockwise maneuver on the site by the bus and then a left turn back onto Merrimac Street, would be required. In the opinion of the MVRTA and the study team, the concept plan developed for the Waterfront West site indicated that the site could be considered further only if the City strongly supported it. Access for the MVRTA bus system at the Green Street and Titcomb Street sites was considered significantly better than at Waterfront West.

The technical/engineering recommendation to the City was to eliminate the Waterfront West site and take the Green Street and Titcomb Street sites to the next level of analysis. The final step of this stage of the process was to present these concept plans and the technical issues to the City of Newburyport Parking Committee to solicit their recommendations of the two final sites.

On November 19, 2009 the concepts for the three final sites were presented to the Newburyport Parking Committee. The committee endorsed the Green Street and Titcomb Street sites as the final two sites to be evaluated in the site selection process.

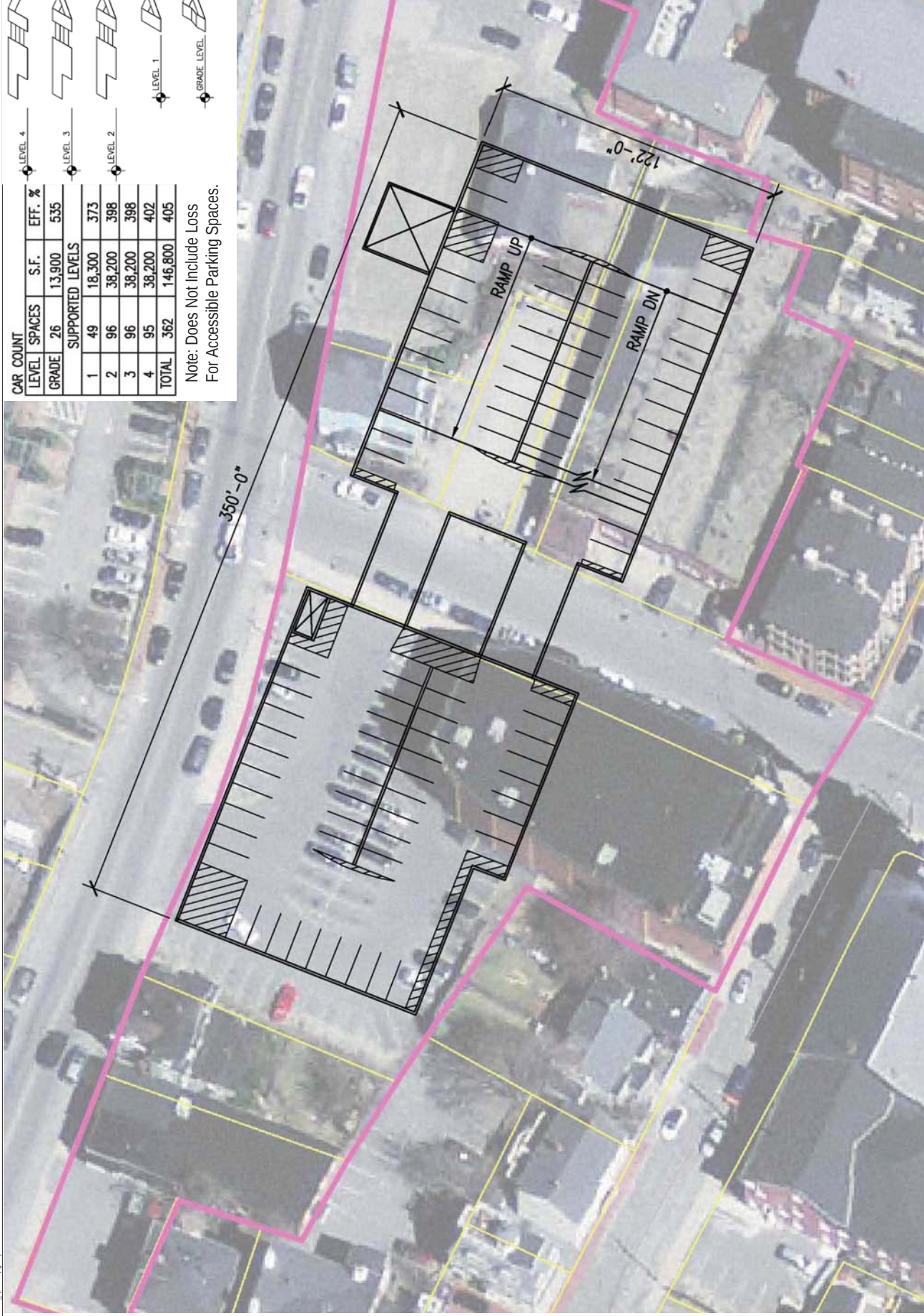
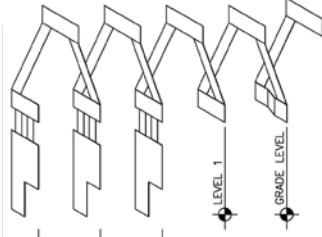






CAR COUNT			
LEVEL	SPACES	S.F.	EFF. %
GRADE	26	13,900	535
SUPPORTED LEVELS			
1	49	18,300	373
2	96	38,200	398
3	96	38,200	398
4	95	38,200	402
TOTAL	362	146,800	405

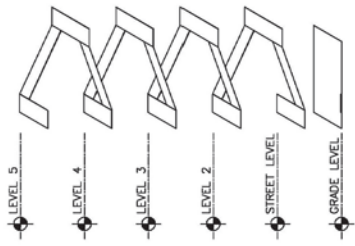
Note: Does Not Include Loss
For Accessible Parking Spaces.





CAR COUNT			
LEVEL	SPACES	S.F.	EFF. %
GRADE	69	23,400	339
SUPPORTED LEVELS			
STREET	55	21,000	382
2	72	23,400	325
3	72	23,400	325
4	72	23,400	325
5	35	11,600	331
TOTAL	375	126,200	337

Note: Does Not Include Loss
For Accessible Parking Spaces.



4.0 Existing Site Conditions

4.1 Green Street Site

The ground survey of the Green Street site conducted between January 13, 2009 and February 11, 2009 is shown on Figure 4.1.

4.1.1 Area and Ownership

The site is currently owned by the City of Newburyport and is comprised of the existing Green Street surface parking lot along with access ways on Green Street, Merrimac Street and Unicorn Street. It is approximately 94,000 square feet (2.16 acres) in size.

4.1.2 Topography

The topography of the site can be described as being mostly a plateau, which drops down to Merrimac Street to the north. The plateau slopes from south to north with a downward grade of approximately 2.5 percent. Within the wide planted area along Merrimac Street, the site slopes at a rate of approximately 10 percent towards the street. The lowest site elevation is along the northern boundary (Elev. 83 feet, based on an assumed datum), while the highest elevation is along the southern boundary (Elev. 91 feet). Apart from sporadically placed trees between parking stalls, the site has significant vegetation in the planted area to the north, which provides continuity with the waterfront park and creates a soft edge towards the river.

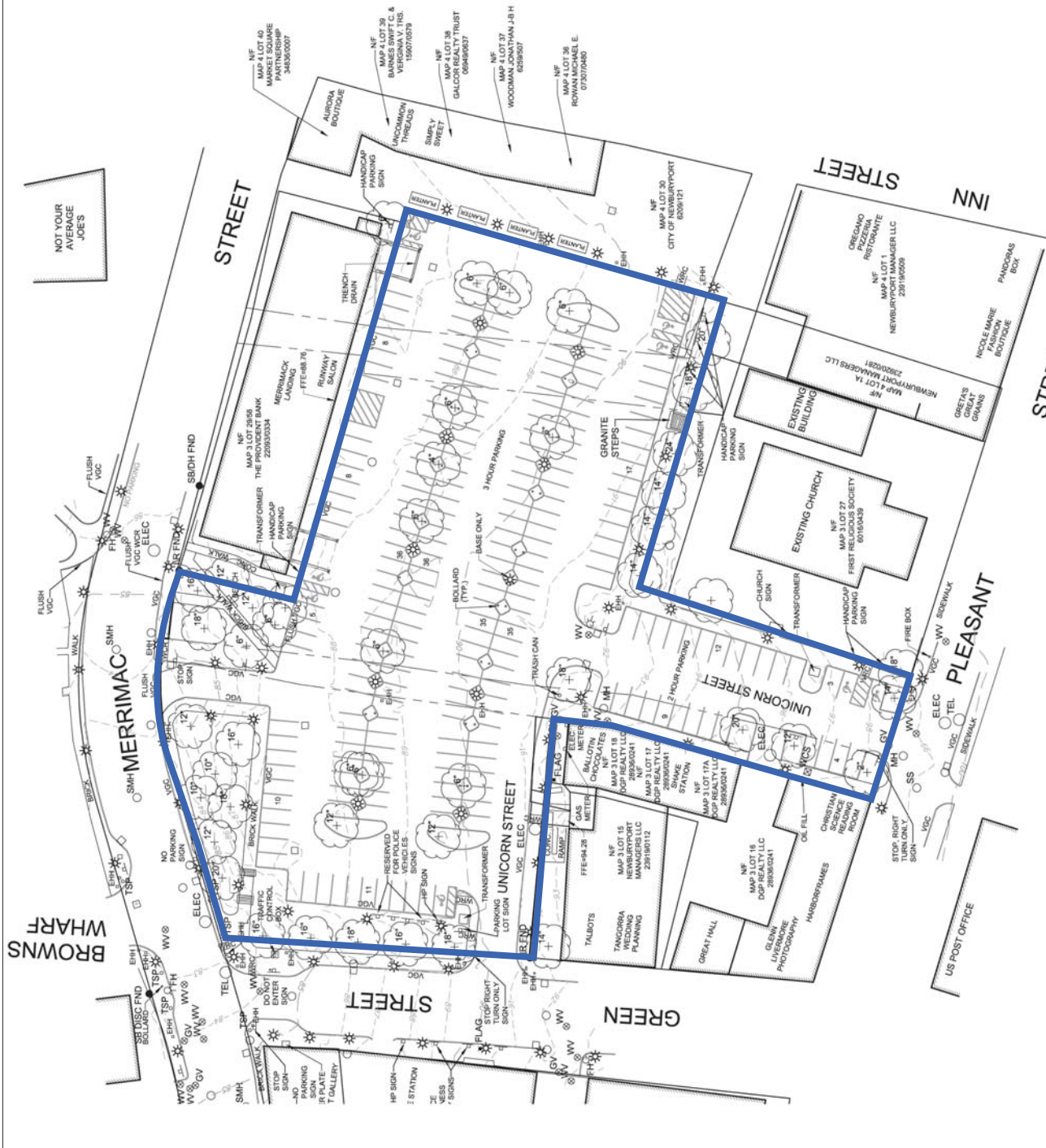
The site is presently occupied by 230 parking spaces: 193 spaces restricted to a three-hour duration, five handicapped spaces and four spaces designated for police use only, for a total of 202 spaces in the main rectangular shaped area. An additional 28 spaces are located on Unicorn Street. These spaces, located on both sides of the street, are perpendicular to traffic flow.

4.1.3 Site Access

Green Street parking is accessed from three driveways located on Merrimack Street, Green Street and Unicorn Street. As Green Street is one-way northbound, only a right turn inbound and a right turn outbound is permitted at the Green Street driveway. Merrimac Street allows two-way travel; however, the driveway is restricted to a right turn inbound and outbound. Unicorn Street functions as short access way between Pleasant Street and the Green Street parking lot. Perpendicular parking is located on both sides of the street and access to a private court yard, where there is room to park approximately 10 vehicles, is provided on the west side of Unicorn Street. Pleasant Street is one-way westbound, thus access at this location is also right-in/right-out.

4.1.4 Adjacent Land Use

To the north, the site abuts Merrimack Landing, a three-story, mixed-use brick building accommodating retail, office and residential uses, and features many successful elements of Newburyport's historic preservation policy. To the east, the Inn Street Mall occupies the area between the site and a row of three-story buildings facing Inn Street, some of which also have



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**Green Street Site -
Existing Conditions**



entrances located on the mall. To the south on the west side of Unicorn Street are the Strand Theater building (commercial/retail) and a single family home. To the south, on the east side of Unicorn Street, is the First Religious Society church and the back of a retail shop that faces Pleasant Street. Finally, towards the west, the site abuts Green Street. The Newburyport Police Station and City Hall buildings are located on the opposite side of Green Street.

4.1.5 Pedestrian Circulation

All streets surrounding the site are heavily used by pedestrians traveling to and from the site and traveling between various uses in the downtown area. Pedestrians were observed traveling between the Inn Street Mall area and Green Street via the Green Street parking lot.

Sidewalks are located on Green Street and Merrimac Street. Crosswalks are located at the Merrimac Street/Green Street intersection on the Green Street and the westbound Merrimac Street approaches. The Merrimac Street crosswalk has a pedestrian activated traffic signal.

4.1.6 Natural Resources

This section describes the results of the natural resources assessment, which included a base map review of resources identified in the Massachusetts Wetlands Protection Act. The project area surrounding the Green Street site was evaluated for the presence of natural resources.

The objectives of the natural resources assessment were to develop a database describing environmental conditions and regulations related to the protection of natural resources. Applicable and available state, federal and local environmental records and regulations were reviewed to identify environmental issues pertinent to the two final sites. The natural resources assessment evaluated the five environmental issues described below.

4.1.6.1 Aquifer Recharge/Groundwater Protection

Existing data were used to determine whether or not the final two sites were situated in a public aquifer recharge area or if public drinking water supplies were located within 500 feet of the final two sites. Data reviewed for this issue included the Massachusetts Geographic Information System (MassGIS).

The MassGIS Aquifers Datalayer (2007) and Public Water Supplies Datalayer (2009) indicate that the Green Street site is not located in a public recharge area and no public drinking water supplies are located within 500 feet of the Green Street site.

4.1.6.2 Wetland Resource Areas

Existing local, state and federal wetland maps were used to determine the approximate extent of wetland resource areas on the final two sites. This included the use of National Wetland Inventory (NWI) maps, the U.S. Natural Resources Conservation Service (NRCS) Soil Surveys and the MassGIS wetlands data layer.

The U.S. Army Corps of Engineers (USACE) regulations that accompany the Federal Clean Water Act [33 CFR Parts 321-330 (November 12, 1986)] define waters of the United States as aquatic habitats that include open water and wetlands. Wetlands are further defined as those areas that inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas [33 CFR 328.3(b)] and can be isolated or bordering on a water body/waterway. This definition emphasizes a wetland's attributes of hydrophytic vegetation, hydric soils and hydrology. Pursuant to the USACE *Wetlands Delineation Manual* (Environmental Laboratory, 1987) (the Manual), the mandatory technical criteria that characterize these parameters include:

Hydrophytic Vegetation. The predominant vegetation consists of macrophytes, which typically grow in soils that are periodically deficient in oxygen as a result of excessive water content.

Hydric Soils. Hydric soils are those soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions (typified by thick organic surface layers, gleying, or mottles) within a depth of 18 inches.

Hydrology. An area has wetland hydrology when it is saturated to the surface or inundated at some time during the growing season of the prevalent vegetation. Typical indicators include surface scoured areas and water-stained leaves.

The regulations of the Massachusetts Wetlands Protection Act (MA WPA); 310 CMR 10.00 et seq. define five freshwater wetland resource area subject to protection: Bank, Bordering Vegetated Wetland, Land under Water Bodies/Waterways, Bordering Land Subject to Flooding and Riverfront Area. Each of these resource areas is defined as follows:

Bank (310 CMR 10.54). Bank consists of the land area that normally abuts and confines a water body. Bank occurs between a water body and a vegetated wetland and adjacent floodplain or between a water body and an upland. Bank within the project area is associated with the land surface that abuts and confines the Merrimack River.

Bordering Vegetated Wetland (310 CMR 10.55). Bordering Vegetated Wetland (BVW) includes those vegetated freshwater wetlands that border on water bodies and waterways. The technical criteria and methodology is set forth in *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act* (MA DEP, 1995). There are no Bordering Vegetated Wetlands on either of the final two sites.

Land under Water Bodies/Waterways (310 CMR 10.56). The land under any creek, river, stream, pond or lake is a resource area subject to protection under the MA WPA. The land under the Merrimack River qualifies as Land under Water Bodies/Waterways.

Bordering Land Subject to Flooding [(310 CMR 10.57(2)(a)(3)). The boundary of Bordering Land Subject to Flooding is defined as the maximum lateral extent of floodwater, which will theoretically result from the statistical 100-year frequency storm. Bordering Land Subject to Flooding is associated with the 100-year floodplain of the Merrimack River. The 100-year floodplain does not extend to either of the final two sites.

Riverfront Area (310 CMR 10.58). Riverfront Area is defined as the land between a river's mean annual high-water line and a parallel line located 200 feet away, measured horizontally from the river's mean annual high-water line. The land within 200 feet of the mean annual high-water line of the Merrimack River qualifies as Riverfront Area. Riverfront Area does not extend to the Green Street site.

4.1.6.3 Endangered and Threatened Species

The presence or absence of endangered or threatened plant or animal species was documented based on a review of the Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife and Certified Vernal Pools data layers of MassGIS. Based on this review, the Green Street site is not located within Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife.

4.1.6.4 Floodplains

The 100-year floodplain was determined from MassGIS as shown in Figure 4.2. The 100-year floodplain does not extend to the Green Street site.

4.1.6.5 Coastal Zone Management

The Massachusetts Coastal Zone Management (CZM) Program was established to protect and manage the development and use of the coastal zone under the provisions of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.). Any regulated expansion or development of either of the final two sites may require the preparation of a "consistency determination." If the project actions within the coastal zone are consistent with the policies and programs of the state coastal zone management agency and local agencies charged with administering the program, the state will concur with the project determination.

MassGIS was used to determine the presence or absence of coastal resources on or adjacent to the Green Street site. The Green Street site is located within a regulated CZM Area.

4.1.7 Potential for Oil and Hazardous Materials in Soil and Groundwater

In February 2010, Tetra Tech Rizzo performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1527 of the Green Street parking lot. A copy of the ESA is provided in Appendix A. The investigation included a review of the site history, a site reconnaissance visit, interviews, and a review of local and regulatory files pertaining to the site and surrounding area.

Historic databases reviewed indicated that the site has a history of on-site operations involving the use and storage of oil and hazardous materials. Review of a Sanborn Fire Insurance Map dated 1961 revealed that a gasoline filling station was located in the northern portion of the site, at the intersection of Unicorn and Merrimac Streets. The locations of the underground storage tanks (USTs) associated with the filling station were not depicted on the Sanborn map, and a review of local records did not yield further information pertaining to the tanks. The Sanborn maps also



Approximate Scale in Feet

200 0 100 200

Figure 4.2

indicated that a machine shop had formerly been located at the site. Such operations typically involve the use of oils and solvents, and often generate metal filings as waste. Additionally, a review of federal databases showed that the site is listed in the Federal Brownfields database due to OHM impacts to site soils. (The source or type of the contamination was not identified).

Based on the findings of the Phase I ESA, Tetra Tech Rizzo recommended that a Ground Penetrating Radar (GPR) survey be conducted in the northern portion of the site, where a filling station was formerly located, to determine if there is evidence that USTs are still present. A GPR survey identifies subsurface features and anomalies without drilling, digging or probing. Additionally, it is the opinion of Tetra Tech Rizzo that in order to evaluate if the site has been affected by potential releases of OHM from historic industrial and commercial operations (a filling station, machine shop, shoe manufacturing, lumber yard and a laundry), and to characterize the OHM impact to site soils associated with the listing of the site as a Federal Brownfield property, a subsurface investigation would need to be performed.

The Green Street site has had a long history of industrial and commercial uses that may affect underlying soils. Because the Green Street site has been owned by the City of Newburyport and used as a parking lot, there has been no reason for subsurface investigations, and therefore no reportable conditions have been found and reported to the DEP. Subsurface investigations will be needed to characterize soils for construction and disposal purposes. If reportable conditions are found, the DEP will need to be notified and the soil management process will need to be undertaken under a Release Abatement Measure Plan prepared by a LSP in compliance with the MCP regulations and the DEP Policy on Construction of Buildings in Contaminated Areas. Further assessment and risk characterization will ultimately need to be performed to demonstrate that a condition of No Significant Risk to human health and the environment exists to achieve closure under the MCP regulations.

4.2 Titcomb Street Site

A topographical survey of the Titcomb Street site was conducted between January 13, 2009 and February 11, 2009 and is shown on Figure 4.3.

4.2.1 Area and Ownership

The Titcomb Street site has a total area of approximately 93,473 square feet or 2.1 acres. It is comprised of seven privately owned parcels, plus Titcomb Street between Merrimac Street and Pleasant Street. Table 4.1 summarizes information provided in the City of Newburyport assessor's database including the street address, map/lot, area, current land use and owner for each of the seven parcels. The area for the Titcomb Street right-of-way was measured from the survey plan.

Figure 4.3

Table 4.1 Titcomb Street Site Property Ownership and Parcel Information

Address	Map/Lot	Area	Current Land Use	Owner
49-57 Merrimac Street	47-10	17,995 s.f.	Gas Station (no active use)	Anchor Fuels LLC
85-87 Merrimac Street	47-39	7,350 s.f.	Commercial	Newburyport Manager LLC TRS
81-83 Merrimac Street	47-38	4,700 s.f.	2 Family	Newburyport Manager LLC TRS
90 Pleasant Street	47-34	31,910 s.f.	Health Club	Newburyport Manager LLC TRS
1 Titcomb Street	47-15	3,110 s.f.	3 Apartments	Newburyport Manager LLC TRS
5-7 Titcomb Street	47-16	3,431 s.f.	Driveway easement	Newburyport Manager LLC TRS
9-11 Titcomb Street	47-17	13,077 s.f.	Garage (no active use)	Newburyport Manager LLC TRS
Titcomb Street	-	Approx. 11,900 s.f.	Roadway right of way	City of Newburyport
Total Area		93,473 s.f.		

4.2.2 Topography

Titcomb Street separates the site into westerly and easterly areas. The westerly area is bounded by Market Street to the west, Merrimac Street to the north, Titcomb to the east and Pleasant Street to the south. The easterly area is bounded by Titcomb Street to the west, Merrimac Street to the north, municipal buildings to the east and Pleasant Street to the south. The entire site is located on the side of hill with a 15 foot change in elevation from the southerly high area on the south side of the health club building (Elev. 102, based on an assumed datum) to the northerly low area located along Merrimac Street adjacent to the gas station (Elev. 87 feet). The topography of the westerly area consists of a constant 5 percent down-slope in the northbound direction (towards the river). In the easterly area, there is also a 5 percent down-slope with a portion of the land carved out to accommodate a large open area on which an unoccupied gas station is presently located. A retaining wall is located on the south and west sides of the gas station property.

Overall, the site is either built or paved, and there are very few landscaped areas. Parking areas on the site are limited to serving the existing uses on the site. No public parking areas are provided.

4.2.3 Site Access

Regional access to the Titcomb Street site is via Merrimack Street. Merrimack Street is a 60-foot wide arterial. It forms a grade-separated interchange with Route 1 approximately 600 feet west of Titcomb Street and unsignalized intersections with Green and State Streets, east of Titcomb Street. Green Street is the major entry to downtown Newburyport and is one-way southbound from Route 113 to Merrimac Street. State Street is the major egress from downtown and is one-way northbound from Merrimac Street to Route 113.

There are seven driveways (four on Merrimac Street and three on Titcomb Street) serving the various land uses on the site. The driveways are shown on Figure 4.3 and are listed in Table 4.2.

Table 4.2 Titcomb Street Site Access

Address	Current Land Use	Access	Status
49-57 Merrimac Street	Gas Station (no active use)	2 Driveways on Merrimac St.	Inactive
85-87 Merrimac Street	Pure Bliss (bridal shop)	1 Driveway on Merrimac St.	Active
81-83 Merrimac Street	Two-family	None	
90 Pleasant Street	Health Club	1 Driveway on Merrimac St.	Active in summer 2009, not presently active
1 Titcomb Street	Three-family - Apartments	Curb Cut on Titcomb St.	Active in summer 2009, not presently active
5-7 Titcomb Street	Police Department Driveway	Curb Cut on Titcomb St.	Active
9-11 Titcomb Street	Garage (no active use)	Wide curb cut on Titcomb St.	Inactive

4.2.4 Adjacent Land Use

The Titcomb Street site abuts several commercial, residential and public buildings. To the east, there is the Police Station and the City Hall, both of which are three-story buildings with less than 10-foot setbacks from the common property lines. To the south are primarily residential buildings, oriented to face Pleasant Street. These buildings have either windows that face directly to the site or landscaped backyards that act as a buffer from the site. On the opposite side of Pleasant Street is the Central Congregational Church. To the west, there are two and three-story residential buildings facing Market Street. Finally, to the north, the site faces on the opposite side of Merrimac Street a set of parcels that makeup the Waterfront West site, considered as a potential site for the Intermodal Parking Facility. Currently, there are several buildings on the north side of Merrimack Street which face the site. These buildings are occupied by restaurants, retail space and condominiums.

In the east portion of the site, a 15-foot wide easement runs east to west allowing egress from the Police Station drop-off area to Titcomb Street. The egress function is anticipated to be incorporated into a proposed intermodal facility on this site.

4.2.5 Pedestrian circulation

In the vicinity of the site, sidewalks are provided on both sides of Merrimac Street, Titcomb Street and Pleasant Street. Crosswalks are located at the Merrimac Street/Titcomb Street intersection on the westbound Merrimac Street and Titcomb Street approaches. Although some pedestrians have been seen on Titcomb Street, the sidewalks of Merrimack Street have significantly higher levels of pedestrian activity throughout the year.

4.2.6 Natural Resources

This section describes the results of the natural resources assessment, which included a base map review of resources identified in the Massachusetts Wetlands Protection Act. The project area surrounding the Titcomb Street site was evaluated for the presence of natural resources.

The objectives of the natural resources assessment were to develop a database describing environmental conditions and regulations related to the protection of natural resources. Applicable

and available state, federal and local environmental records and regulations were reviewed to identify environmental issues pertinent to the two final sites. The natural resources assessment evaluated the five environmental issues described below.

4.2.6.1 *Aquifer Recharge/Groundwater Protection*

Existing data were used to determine whether or not the final two sites were situated in a public aquifer recharge area or if public drinking water supplies were located within 500 feet of the final two sites. Data reviewed for this issue included the MassGIS.

The MassGIS Aquifers Datalayer (2007) and Public Water Supplies Datalayer (2009) indicate that the final two sites are not located in a public recharge area and no public drinking water supplies are located within 500 feet of the final two sites.

4.2.6.2 *Wetland Resource Areas*

Existing local, state and federal wetland maps were used to determine the approximate extent of wetland resource areas on the final two sites. This included the use of National Wetland Inventory (NWI) maps, the U.S. Natural Resources Conservation Service (NRCS) Soil Surveys, and the MassGIS wetlands data layer.

The USACE regulations that accompany the Federal Clean Water Act [33 CFR Parts 321-330 (November 12, 1986)] define waters of the United States as aquatic habitats that include open water and wetlands. Wetlands are further defined as those areas that inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328.3(b)] and can be isolated or bordering on a water body/waterway. This definition emphasizes a wetland's attributes of hydrophytic vegetation, hydric soils and hydrology. Pursuant to the USACE *Wetlands Delineation Manual* (Environmental Laboratory, 1987) (the Manual), the mandatory technical criteria that characterize these parameters are outlined as follows:

Hydrophytic Vegetation. The predominant vegetation consists of macrophytes, which typically grow in soils that are periodically deficient in oxygen as a result of excessive water content.

Hydric Soils. Hydric soils are those soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions (typified by thick organic surface layers, gleying or mottles) within a depth of 18 inches.

Hydrology. An area has wetland hydrology when it is saturated to the surface or inundated at some time during the growing season of the prevalent vegetation. Typical indicators include surface scoured areas and water-stained leaves.

The regulations of the MA WPA; 310 CMR 10.00 et seq. define five freshwater wetland resource area subject to protection: Bank, Bordering Vegetated Wetland, Land under Water Bodies/Waterways, Bordering Land Subject to Flooding, and Riverfront Area. Each of these resource areas is defined as follows:

Bank (310 CMR 10.54). Bank consists of the land area that normally abuts and confines a water body. Bank occurs between a water body and a vegetated wetland and adjacent floodplain or between a water body and an upland. Bank within the project area is associated with the land surface that abuts and confines the Merrimack River.

Bordering Vegetated Wetland (310 CMR 10.55). Bordering Vegetated Wetland includes those vegetated freshwater wetlands that border on water bodies and waterways. The technical criteria and methodology is set forth in *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act* (MA DEP, 1995). There are no Bordering Vegetated Wetlands on either of the final two sites.

Land under Water Bodies/Waterways (310 CMR 10.56). The land under any creek, river, stream, pond or lake is a resource area subject to protection under the MA WPA. The land under the Merrimack River qualifies as Land under Water Bodies/Waterways.

Bordering Land Subject to Flooding [(310 CMR 10.57(2)(a)(3)). The boundary of Bordering Land Subject to Flooding is defined as the maximum lateral extent of floodwater, which will theoretically result from the statistical 100-year frequency storm. Bordering Land Subject to Flooding is associated with the 100-year floodplain of the Merrimack River. The 100-year floodplain does not extend to either of the final two sites.

Riverfront Area (310 CMR 10.58). Riverfront Area is defined as the land between a river's mean annual high-water line and a parallel line located 200 feet away, measured horizontally from the river's mean annual high-water line. The land within 200 feet of the mean annual high-water line of the Merrimack River qualifies as Riverfront Area. Riverfront Area does not extend to either of the final two sites.

4.2.6.3 Endangered and Threatened Species

The presence or absence of endangered or threatened plant or animal species was documented based on a review of the Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife and Certified Vernal Pools data layers of MassGIS. Based on this review, the Titcomb Street site is not located within Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife.

4.2.6.4 Floodplains

The 100-year floodplain was determined from MassGIS as shown in Figure 4-2. The 100-year floodplain does not extend to the Titcomb Street site.

4.2.6.5 Coastal Zone Management

The Massachusetts Coastal Zone Management Program was established to protect and manage the development and use of the coastal zone under the provisions of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.). Any regulated expansion or development of the Titcomb Street site may require the preparation of a "consistency determination." If the project actions within the coastal zone are consistent with the policies and programs of the state coastal

zone management agency and local agencies charged with administering the program, the state will concur with the project determination.

MassGIS was used to determine the presence or absence of coastal resources on or adjacent to the final two sites. The Titcomb Street site is located within a regulated CZM Area.

4.2.7 Potential for Oil and Hazardous Materials in Soil and Groundwater

In February 2010, Tetra Tech Rizzo performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527 of the Titcomb Street Parcel in Newburyport. The ESA is located in Appendix B. The investigation included a review of the site history, a Site reconnaissance visit, interviews, and a review of local and regulatory files pertaining to the site and surrounding area.

According to Sanborn maps reviewed, the site was made up of several parcels which were developed as dwellings and various commercial properties including garage and auto sales shops, bottling company, oil company with truck storage garage (9 Titcomb St), sign painting shop, gas stations (at 49-57 Merrimac St; 87 Merrimac St), liquor warehouse/bottling, marble works and a movie theatre.

A review of state and local databases revealed that several of the properties within the site boundaries have historic USTs and aboveground storage tanks (ASTs). The property at 49-57 Merrimac Street was used as a gasoline service station from approximately 1969 to 2007. According to Deputy Chief Stephen Bradbury of the Newburyport Fire Department, nine underground storage tanks were removed from the 49-57 Merrimac Street portion of the site between 1985 and 2007, and a minor leakage of gasoline was observed around the fuel pumps associated with the USTs (three 10,000-gallon gasoline USTs) that were removed from the property in 2007. This property is listed twice in the State Sites and State Spills databases, as follows:

- **Release Tracking Number (RTN) 3-3593:** The property (BP-Gibbs Station – 51 Merrimac Street) was listed as a Location To Be Investigated (LTBI) on July 15, 1991 due to a release of petroleum to soil and groundwater. The source of the release is not specified in the database. The database indicates that a Class B1 Response Action Outcome Statement (RAO) was filed for this release in September 1995, which indicates that a Permanent Solution has been achieved for the release.
- **RTN 3-24027:** A release of an unspecified quantity of gasoline from a pipe occurred at the former Gibbs Oil Gasoline Service Station constituting a 72-hour reportable condition. The release was reported to the DEP on July 7, 2004. A Class A2 RAO was submitted on April 4, 2008, indicating that the remedial activities implemented were sufficient to achieve a Permanent Solution; however, contamination has not been reduced to background levels.

The 85-87 Merrimac Street parcel, a former gas station, is listed in the State Spills database due to the detection of reportable concentrations of gasoline compounds (volatile organic compounds (VOCs) and petroleum hydrocarbons in soil, which constituted a 120-day reportable condition.

This condition was reported to the DEP in June 2002 and RTN 3-21816 was assigned. A Class B2 Response Action Outcome Statement was filed in February 2003, indicating that remedial actions have not been conducted because a level of No Significant Risk exists, but that level is contingent upon one or more Activity and Use Limitations (AULs) that have been implemented. The AUL was recorded at the applicable Registry of Deeds on January 7, 2003.

The properties at 9 Titcomb Street and 83 Merrimac Street currently have ASTs containing heating oil located on site. These ASTs were unable to be viewed during the site reconnaissance visit due to safety concerns associated with the deteriorating structures of the buildings. Additionally, during previous assessments conducted at 9 Titcomb Street, a dry well was identified in the basement of the building.

Based on the findings of the Phase I ESA, Tetra Tech Rizzo recommends several measures be taken at the site. We first recommend that a Ground Penetrating Radar (GPR) survey be conducted at the 85-87 and 49-57 Merrimac Street parcels, which were formerly used as gasoline stations, to determine if there is evidence that USTs are still present on those parcels. Although recent records show that USTs were removed in 2007, it is possible that older USTs used to store gasoline, waste oil and/or heating oil may still be present on the parcels.

A GPR survey identifies subsurface features and anomalies without drilling, digging or probing. If the GPR survey identifies UST(s) at the property, we recommend that the UST(s) be removed in accordance with applicable federal, state and local regulations. Additionally, we recommend that the dry well identified by Ransom Environmental Consultants, Inc. in the basement of the 9 Titcomb Street building during their 2002 site investigations be closed in accordance with applicable Underground Injection Control state regulations. Finally, it is our opinion that in order to evaluate if the site has been affected by potential releases of OHM from the historic commercial and industrial operations at the site and immediate abutters, a subsurface investigation be implemented.

The Titcomb Street site includes several properties where reportable conditions have been found and reported to DEP. When DEP receives such a notification, it assigns a Release Tracking Number (RTN) and the property must be assessed and remediated, if necessary, to achieve a Response Action Outcome. The three reported releases at the Titcomb Street site have achieved a Response Action Outcome, although of various classes. The 85 -87 Merrimac Street parcel has a Class B2 RAO, which incorporates an Activity and Use Limitation, which is a deed restriction. The deed restriction limits the uses of the property and human access to the soils until the soils are remediated. Often, human access to the soils is restricted by keeping the parcel paved. If that parcel is included in the intermodal facility redevelopment, a soil management plan will need to be prepared by a LSP in compliance with the MCP regulations to manage soils during the construction process. It is possible that the design and construction of the garage may include the removal of the soils, and the AUL may be able to be released. Conversely, the soils may be able to remain in place under the new facility, and the AUL be amended to reflect the new use.

The 2004 release of gasoline at the former Gibbs gasoline station resulted in the filing of a Class A2 RAO, indicating that the remedial activities implemented were sufficient to achieve a Permanent Solution; however, contamination has not been reduced to background levels. This will

also prompt the need for a soil management plan prepared by a LSP in compliance with the MCP 310 CMR 40.0000 and DEP Policy #WSC-00-425, Construction of Buildings in Contaminated Areas.

The Titcomb Street site has a long history of industrial and commercial uses that may affect underlying soils. Although subsurface investigations have been implemented at both former gas stations, little is known about subsurface conditions on the remainder of the site. Subsurface investigations will be needed to characterize soils for construction and disposal purposes. If reportable conditions are found, the DEP will need to be notified and the soil management process will need to be undertaken under a Release Abatement Measure Plan prepared by a LSP in compliance with the MCP regulations and the DEP Policy on Construction of Buildings in Contaminated Areas. Further assessment and risk characterization will ultimately need to be performed to demonstrate that a condition of No Significant Risk to human health and the environment exists to achieve closure under the MCP regulations.

5.0 Transit Analysis

Every community goes through a process of change in lifestyle and development patterns that has a significant effect on its transit system. Certain age groups such as young adults and senior citizens, cannot rely on the private automobile to experience their environment. Public transportation networks make a community “livable.”

The purpose of this chapter is to describe the various existing transit services in Newburyport and to quantify existing and projected ridership. As the final site for the Intermodal Parking Facility would accommodate transit related parking demand in Newburyport for 2030, projected transit ridership for passengers beginning their trip in downtown Newburyport and returning to downtown are estimated and used to determine future parking demands.

This analysis does not consider transit ridership for passengers with an origin other than Newburyport, as it is beyond the scope of this study and would not affect parking demand.

5.1 Existing Services

The City of Newburyport does not operate a transportation agency. The City relies on a number of public transit authorities such as the MVRTA and private carriers to provide transportation services.

Public transit is provided in Newburyport by:

- MVRTA
- MBTA
- Newburyport Council on Aging Vans

Private transit is provided in Newburyport by:

- C&J Trailways at the I-95 Park and Ride
- The Coach Company at the I-95 Park and Ride
- Private Tour Buses

The Clipper City Rail Trail, currently under construction, connects the MBTA Commuter Rail Station, located south of downtown to the Merrimack River in downtown. The trail serves all non-motorized travel modes and is sufficiently complete to allow public use.

5.1.1 MVRTA

General. The MVRTA service district includes 15 cities and towns in northeast Massachusetts, one of which is Newburyport. Established in 1974, its original purpose to provide local fixed route bus service within the greater Lawrence and Haverhill areas, since then, the MVRTA has expanded to provide service to several other municipalities in the Merrimack Valley and beyond.

The MVRTA serves approximately 2.5 million passengers per year, operates 23 routes in the Merrimack Valley and has its administrative and operational center located in Haverhill. The MVRTA service in Newburyport consists of Route 51 and a Ring and Ride system.

Route 51. Route 51 travels between Haverhill and Newburyport with stops in Merrimack and Amesbury. It provides some local service within Newburyport. As the bus enters Newburyport it stops at two shopping centers (Port Plaza and Market Basket), the Anna Jacques Hospital, Heritage House, the MBTA Commuter Rail station (only on weekdays at 6:50 a.m., 7:50 a.m. and 6:26 p.m.) and finally downtown on State Street. As the bus begins its return trip from State Street in Newburyport back to Haverhill, it stops in Newburyport at Heritage House, Anna Jacques Hospital, Market Basket and Port Plaza. It does not stop at the MBTA Commuter Rail station on the return trip.

Anecdotal data from the MVRTA suggests that the primary passenger trips on Route 51 are student and shopping trips, with the main destinations being Northern Essex Community College in Haverhill, Port Plaza, Market Basket, Anna Jacques Hospital and downtown in Newburyport and the Stop and Shop in Amesbury.

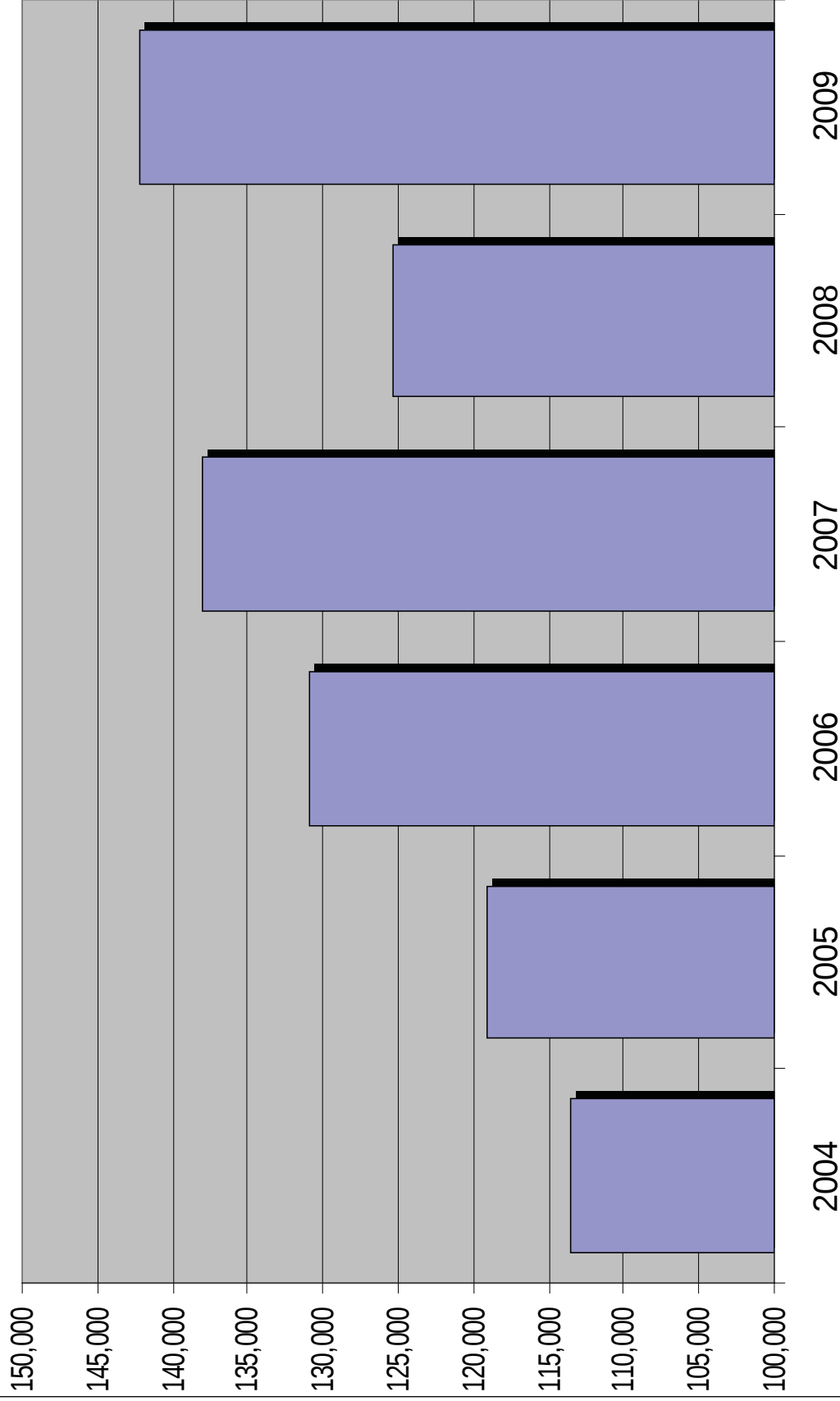
The current fixed Route 51 bus service operates on a Monday through Saturday schedule, with no service provided on Sundays or on holidays. The Route 51 weekday hours are 5.00 a.m. to 7:30 p.m. with varying frequencies. As the bus primarily services shopping trips in Newburyport, service is more regular between approximately 9:00 a.m. and 2:00 p.m., with a frequency of 70 minutes. On Saturday, service is provided between 9.00 a.m. and 7:30 p.m., with a frequency of 70 minutes between approximately 12:20 p.m. and 7:30 p.m. MVRTA operates two vehicles on Route 51. Passengers may request curbside pickups at their locations (wave system), or can catch the bus at designated stops. MVRTA may offer the "route deviation" service within 1/4 mile of the fixed route. [Source: "Coordinated Public Transit-Human Services Transportation Plan", MVPC, 2007]

Bus Route 51 historic ridership data provided by MVRTA is illustrated in Figure 5.1. The data indicates that MVRTA yearly ridership data increased between 2004 and 2009 by approximately 3.3 percent per year.

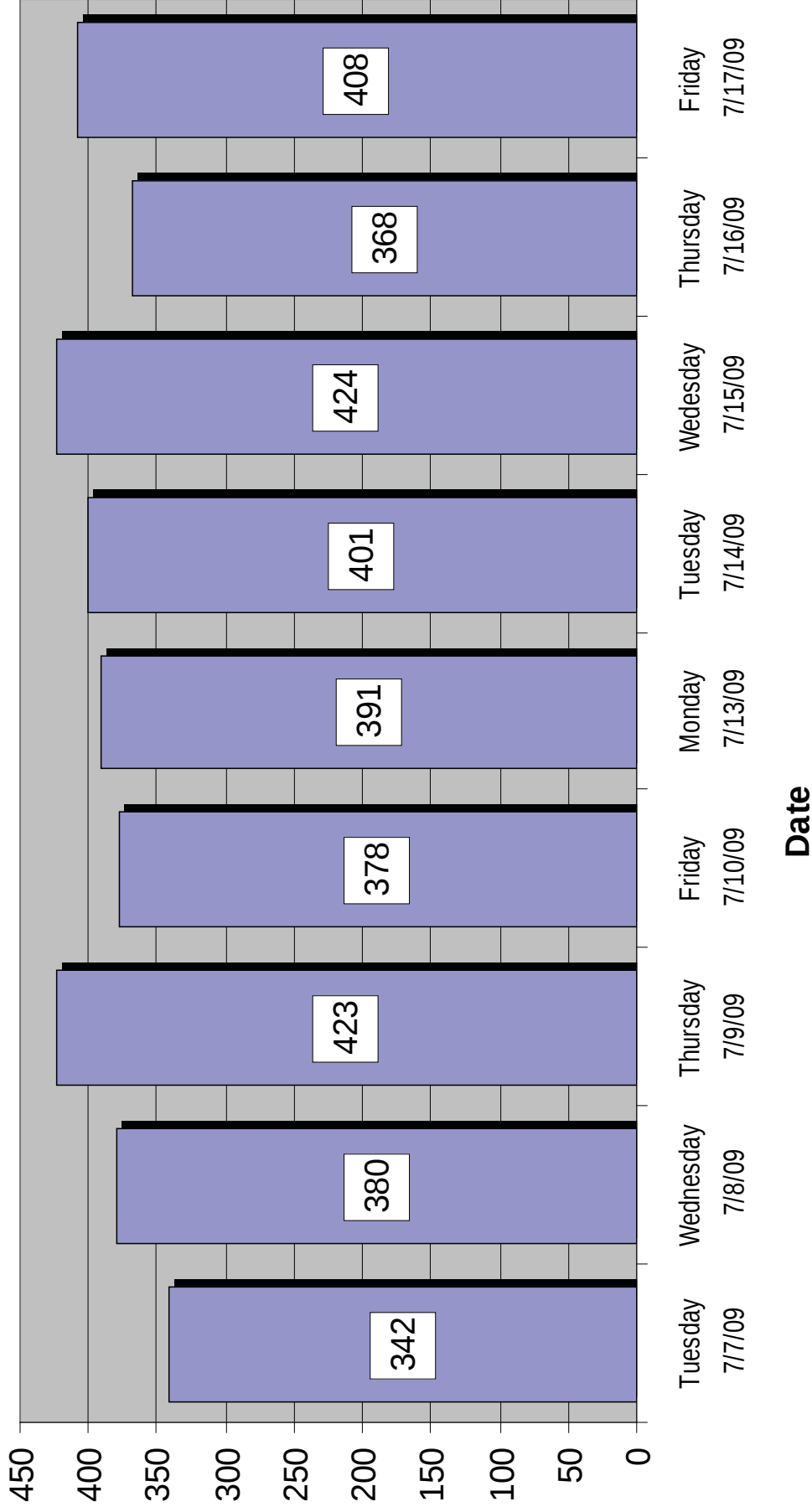
Monthly ridership data from 2009 indicates that Route 51 provided 133,776 total trips or an average of 11,148 trips per month. Ridership was at its highest level in September and October, with 13,700 trips per month and below average in July with 10,322 trips.

Weekday passenger count data obtained by the MVRTA from Tuesday, July 6, 2009 through Friday, July 17, 2009 on Route 51 indicates that the route carried an average of 378 passenger round-trips, with 390 boardings and 365 alightings. This data is illustrated in Figure 5.2. Ridership in July 2009 is approximately 10,322 trips, which is approximately eight percent lower than the average month. Therefore, the weekday average ridership was increased by eight percent to represent average weekday ridership conditions. In total, average weekday ridership on Route 51 is approximately 410 passenger round-trips per day.

MVRTA Bus 51 Yearly Boardings



MVRTA Bus 51 Weekday Boardings



Ring and Ride. In order to provide additional local service in Newburyport, MVRTA currently operates an advanced request transit system (Ring and Ride). Riders must be certified in advance that they are eligible to use the service and call for a reservation at least 24 hours in advance. Eligible users are residents along James Steam Mill Heritage House, Plum Island and Marlboro Street. The Ring and Ride service connects at the current Route 51 State Street stop with the main MVRTA service. [Source: *ibid.*]

Special transportation services for the elderly and for persons with disabilities are operated under EZ-Trans, a curb-to-curb paratransit transportation system provided in lift-equipped vehicles. Occasionally, MVRTA contracts with the American Medical Response Company, a private shuttle carrier, to perform the EZ-Trans service for medical appointments and access to the Anna Jacques Hospital on Highland Avenue.

Past Newburyport Service. MVRTA provided a local bus route within Newburyport that was discontinued in July 2007. Ridership was fewer than three passengers per hour, and funding for the route was no longer available.

5.1.2 Massachusetts Bay Transportation Authority

The MBTA provides commuter rail service between Newburyport and North Station in Boston. The Newburyport Line is a 27.7-mile branch of the "Eastern" Line of the North Service. The other branch of the Eastern Line terminates at Rockport. The Eastern branch, which re-opened in 1998 and which consists of a single-track alignment with a layover facility in Newburyport next to Route 1, has eleven stops, two of which are located within the Merrimack Valley. The Rowley and Newburyport stations are the northernmost stops on the line, with Newburyport as the terminus of the branch. The Newburyport Commuter Rail Station is located approximately 3/4 miles south of downtown Newburyport on the west side of Route 1.

The MBTA operates 13 weekday trains between Newburyport and Boston's North Station. The first inbound train (toward Boston) departs Newburyport at 5:27 a.m., while the last inbound train departs at 8:41 p.m. The first outbound train (toward Newburyport) departs Boston's North Station at 6:30 a.m. and arrives at 7:29 a.m., while the last direct train departs North Station at 9:30 p.m. The travel time for the route is about 65 minutes, and it includes ten stops between Newburyport and North Station. Five inbound trains and one outbound train are provided during the morning peak hour and four outbound and two inbound trains are provided during the afternoon peak hour. [Source: "Coordinated Public Transit-Human Services Transportation Plan", MVPC, 2007]

The ticketing is done on-board, and the cost for the trip between Newburyport and Boston is currently \$7.75 (Zone-8), which is the highest in the MBTA commuter rail system. The round trip cost is \$15.25.

The MBTA operates five or six car train sets to an accessible platform at Newburyport. The station is served by the MVRTA Route 51 with timed transfers (schedule coordination) between modes; two in the morning peak period and one in the afternoon. The station parking area consists of the east lot accessed from Route 1 and the west lot accessed via Boston Way, for a total capacity of 814 spaces. Due to the economic conditions of 2008-2010, the observed weekday parking

utilization ratio has varied between 30 and 50 percent; however ,MBTA published data indicate a weekday average of 75 percent. In any case, there is ample existing parking capacity to accommodate sudden ridership surges or short-term station ridership increase.

Historical weekday morning commuter rail station boardings for the four lines of the North Service are shown on Figure 5.3. The data indicates that the Newburyport branch has the second highest boardings among the four lines, evidence that the station is popular among Newburyport residents and adjacent communities.

Between February 2001 and July 2007, Newburyport Commuter Rail Station boardings have varied as shown in Figure 5.4, which indicates a minor average yearly increase of approximately one percent per year.

5.1.3 Newburyport Council on Aging

The Newburyport Council on Aging operates two vans that can accommodate wheelchairs. The vans are available to transport Newburyport senior citizens and their friends to medical appointments, grocery stores or any other Newburyport locations.

5.1.4 Newburyport Park and Ride (PNR) on I-95

The busiest PNR lot in the state is located at the I-95/Route 113 interchange. The PNR includes 510 spaces and is owned by the MassDOT. The two main carriers using the facility are C&J Trailways, who lease the bus shelter and maintain the property, and The Coach Company. The facility is lighted after dusk and includes bike racks and public phones.

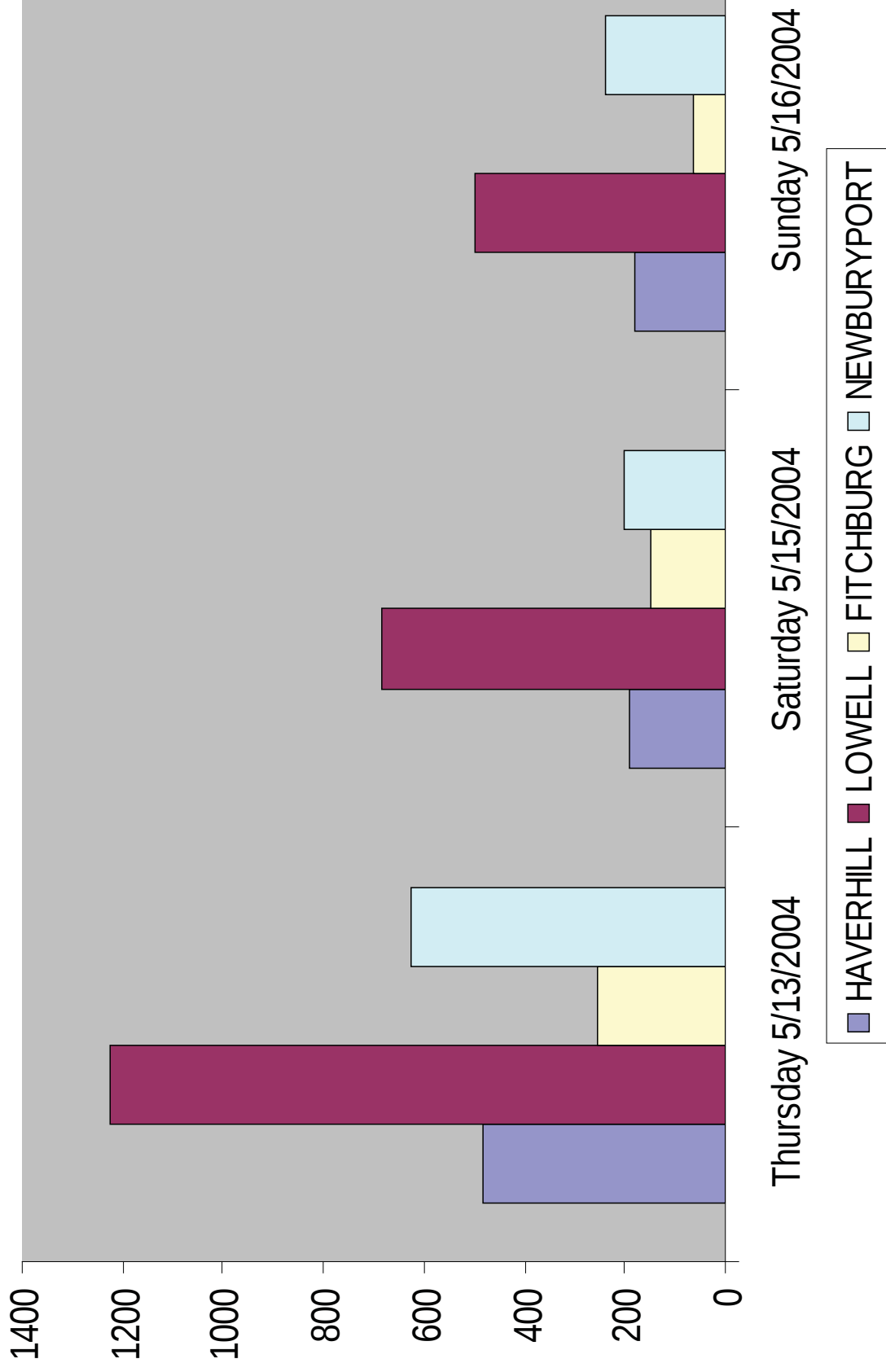
Anecdotal data supplied by C&J suggests that there is considerable commuter passenger demand currently unmet, but soon to be partially met with a proposed PNR expansion. The 510 existing parking spaces are typically full on most weekdays.

C&J Trailways is a private carrier based in New Hampshire that offers regularly scheduled commuter bus service between Southern New Hampshire and the Newburyport Park and Ride Lot to South Station in Boston and Logan Airport. During weekdays, service frequency is 20 minutes during the morning and afternoon peak periods, while the weekend frequency drops to 60 minutes. Trip duration is 70 minutes, and roundtrip fare cost is \$27.00 (77 percent more than a MBTA round trip).

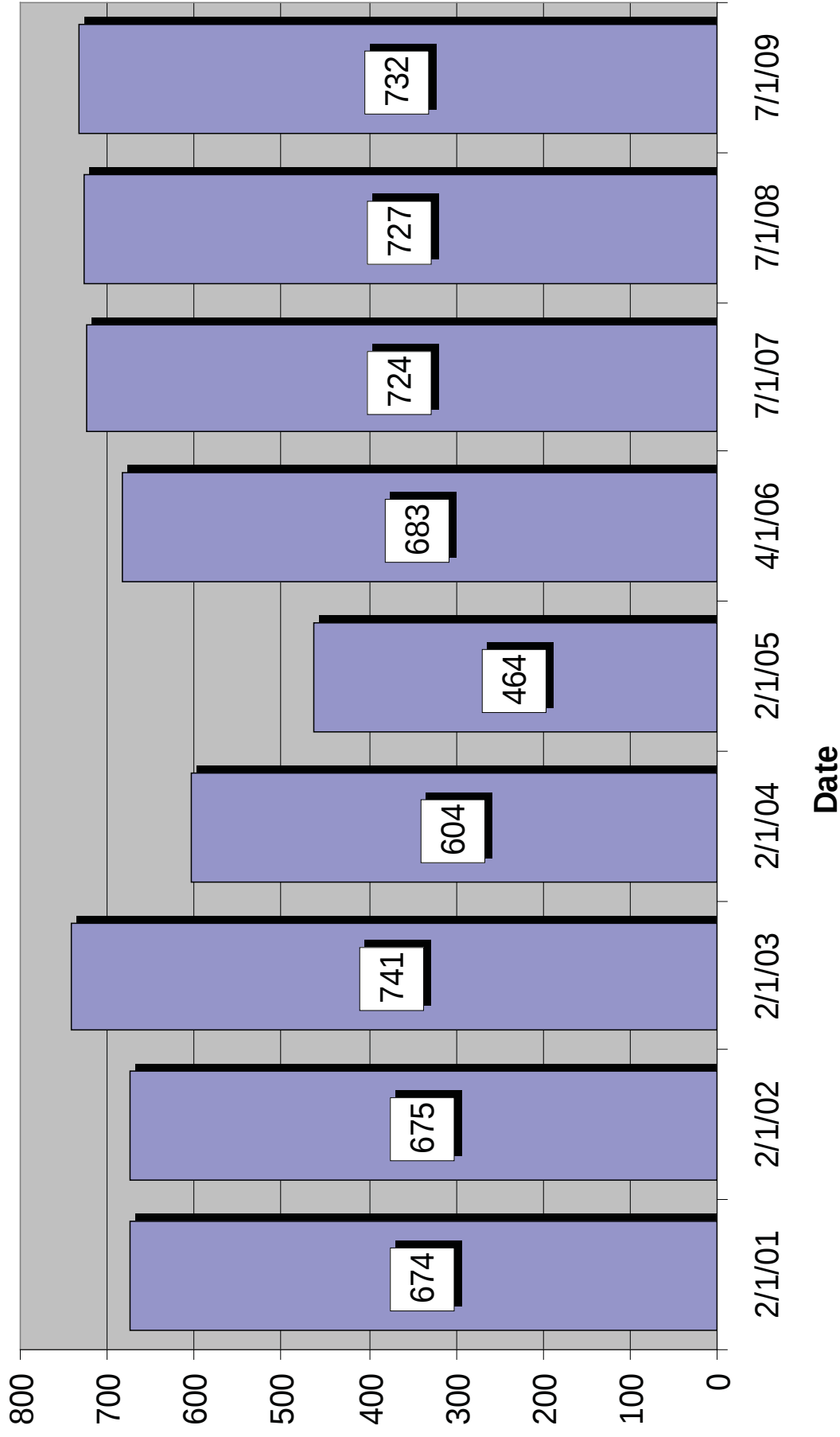
C&J currently carries 500 passengers per day from the PNR to Boston. Although the ridership data made available by the carrier is generic and does not detail peak demand during the commuting hours and user origins, it is evident from the data and observations that C&J Trailways service appeal is towards a more regional area of customers driving from New Hampshire and the interstate network.

The Coach Company is another private carrier based in New Hampshire offering service to various downtown locations in Boston from Amesbury, Boxford, Byfield, Georgetown, Groveland, Haverhill and Newburyport. It also offers bus service to Foxwoods Resort and Casino from

MBTA North Service - Boardings at Terminals, 2004



MBTA Commuter Rail Weekday Boardings at Newburyport



Newburyport and Haverhill. Boston commuter buses are provided on weekdays, while the Foxwoods Casino buses are provided seven days a week. From Newburyport, the trip duration to Boston is 70 minutes and the fare cost is \$26.00 (70 percent more than the MBTA ticket cost). There are six morning and afternoon buses. Ridership data made available by this carrier indicates that 142 passengers are transported from the Park and Ride to Boston. This data is generic and indicative that the supplied service is balanced to the available passenger demand at downtown Newburyport and the high school stop (two of the six buses serve these two stops). The bus picks up approximately 80 percent of its passengers at the PNR, a fact which suggests that commuter bus to Boston currently has a limited appeal to downtown Newburyport residents.

Thus, in total approximately 1,284 passenger trips (642 round trips) are provided by private carriers at the I-95 Park and Ride facility in Newburyport.

5.1.5 Tour Buses

Several tourist operators such as Port City Tours & Transportation conduct tours of historic Newburyport sites. These tours start and/or terminate in the downtown. The peak period of those tours occurs in the summer months. According to City officials, two tour buses enter downtown per week.

5.1.6 Clipper City Rail Trail

The 1.1-mile long Clipper City Rail Trail is located along the west side of Route 1 connecting the MBTA Commuter Rail station and the Merrimack River in downtown Newburyport. Construction on the trail was begun in fall 2009 and is sufficiently complete to be used by the public. The Clipper City Rail Trail is part of a larger envisioned regional trails network, including the Coastal Trails Network, the Border to Boston trail and the Merrimack River Trail. The trail is open to all non-motorized uses including walking, bicycling and rollerblading. Additional information on the Clipper City Rail Trail can be found at:

www.cityofnewburyport.com/Planning/RailTrailProject.html.

5.2 Proposed Improvements to Transit Operations in Newburyport

Transit improvements are either ongoing or planned for the MVRTA bus system, the I-95 Park and Ride facility and the MBTA Newburyport Commuter Rail Station. Each of these projects is expected to increase ridership on the MVRTA system and would affect the demand for parking at the proposed Newburyport Intermodal Parking Facility.

MVRTA Bus Routes. For many years the MVRTA has been concerned about the 70-minute frequency on existing Route 51. It has considered several modifications to the route including separating it into two routes: a regional route servicing Haverhill, Merrimack, Amesbury and Newburyport, and a local route serving destinations within Newburyport. Yet in the past, City of Newburyport officials have not been interested in changing the service. The local Newburyport route, discontinued about three years ago, was not well utilized. However, in order to support and encourage use of the proposed intermodal facility in Newburyport, modifications/options are again

being considered, and are an integral part of the planning effort conducted for the Intermodal Parking Facility.

The first option separates Route 51 into two routes. Existing Route 51 would transition into a regional route, connecting Haverhill, Merrimack, Amesbury and Newburyport. The second route would be a local route providing service only within the City of Newburyport. The local route would service all of the stops in Newburyport currently serviced by the existing Route 51 and would add the I-95 Park and Ride to the west, additional frequency and service to the MBTA Commuter Rail Station to the south and possibly Plum Island to the east.

A second option would also separate Route 51 into two routes. Existing Route 51 would connect downtown Haverhill to the new transportation center proposed in downtown Amesbury and would no longer continue into Newburyport. A second route, designated as Route 52, would provide service between the Amesbury Transportation Center and downtown Newburyport. Passengers traveling between Haverhill and Newburyport would transfer between Route 51 and Route 52 at the new Amesbury Transportation Center.

The portion of the proposed Route 52 within Newburyport is shown on Figures 5.5, 5.6 and 5.7. Service frequency for Route 52 would be every 60 minutes, a 10-minute improvement over the existing Route 51 frequency. It is recommended that Route 52 have slightly different routes in the morning and afternoon to accommodate MBTA commuter passengers using the proposed Intermodal Parking Facility. During the morning peak commuting periods, it is suggested that Route 52 provide service to the MBTA commuter rail station after traveling through downtown Newburyport (See Figure 5.6). For the afternoon peak commuting period, it is suggested that Route 52 stop at the MBTA Commuter Rail Station prior to proceeding into downtown. (see Figure 5.7). Route 52 would stop at the I-95 Park and Ride facility on both in inbound and outbound travel directions.

It is also recommended that a full transit study be conducted by the MVRTA in cooperation with the communities of Haverhill, Merrimack, Amesbury and Newburyport in order to determine the most efficient routes to accommodate both regional and local trips currently provided by the MVRTA Route 51. A full transit analysis is beyond the scope of this document. However, for purposes of the transit and parking analyses contained within this study, and as suggested by the MVRTA, the second option described above and shown in Figures 5.5 through 5.7 is assumed to be implemented by the MVRTA by 2030. It is noted that the design and implementation of this option would need to be reviewed and discussed with the City of Newburyport.

Modification to Route 52 would be required for the Titcomb Street site. These modifications are presented in Sections 7.4.3 and 7.5.3 and 8.8.

MBTA Expansion. A connection of the “Eastern” Commuter Rail Line to the MBTA’s Blue Subway Line would have a positive affect on ridership throughout the branch. Neither the Blue Line extension to Lynn nor a Wonderland pedestrian Connector, two known projects that would make the transfer possible, are included in the State’s current long range transportation plan.

Transit Oriented Development. A Transit Oriented Development (TOD) is under consideration





Intermodal Parking Facility
Alternative Site Evaluation Report
Newburyport, Massachusetts
Route 52 - Afternoon Route
(Westerly Area
of Newburyport)



Approximate Scale in Feet

Base Map: Bing Maps

for the Newburyport MBTA Commuter Rail Station. The City is currently in the process of establishing a Smart Growth District to encourage growth in accordance with the purposes of Massachusetts General Law Chapter 40R. The purpose of Chapter 40R is to facilitate housing production and mixed use development. Specifically, the district would allow a mix of residential and non-residential uses at a higher density than allowed in the general business districts of the city. See www.transitrealty.com/pipeline.asp#newburyport for more information.

I-95 Park and Ride Facility Expansion. American Recovery and Reinvestment Act (ARRA) Project No. 605022 entails constructing 105 additional spaces at the I-95 Park and Ride Facility at a cost of \$3,600,000. Construction is under way as of March 2010 and should be completed by early 2011. The entire Park Ride facility will be resurfaced, new pavement markings will be installed, upgrades to the existing lighting will be provided and sidewalks will be constructed to meet ADA/AAB requirements. Even after the expansion, the PNR at I-95 is expected to be 100 percent utilized.

5.3 Projections for 2030 Transit Ridership

Projected transit ridership for passengers beginning their trip in downtown Newburyport and returning to downtown are estimated and used to determine parking demand. This analysis does not consider transit trips for passengers with an origin other than Newburyport, as these trips would not affect parking demand at the proposed facility.

Projections for 2030 transit trips at the proposed Newburyport Intermodal Parking Facility have been evaluated in this section and will form the basis for transit related parking demand at the proposed Intermodal Parking Facility discussed in the following chapter. The increase in transit ridership in downtown Newburyport is directly related to MVRTA Route 52 and indirectly to the Newburyport Commuter Rail Station boardings and users of the I-95 Park and Ride facility. Future ridership levels for Route 52 were projected based on the following trip types:

- Regional Commuting Trips – by bus only
- Local Commuting Trips – by bus only
- Regional Commuting Trips – by bus and MBTA Commuter Rail
- Regional Commuting Trips – by bus and private carrier at I-95 Park and Ride
- Non-commuter Trips – by bus

As noted previously, ridership on Route 51 increased at a rate of 3.3 percent per year between 2004 and 2009. This increase in ridership is assumed to continue on the basis of two trends in Newburyport: an increase of elderly citizens and an increase of jobs within the city. These increases are projected in the Metropolitan Area Planning Council's (MAPC) Metrofuture 2030 regional growth scenario (www.metrofuture.org). Transit ridership on both the MVRTA and MBTA services would be affected by the additional senior citizens and the emergence of new jobs.

Compared to 2010, demographic projections for Newburyport for 2030 indicate that, in general, the numbers of persons within the working age groups (ages 20 to 64) will remain approximately

the same. However, workers between the ages of 20 and 24 and ages 45 to 64 will increase and workers between the ages of 25 and 44 will decrease. As persons within the 20 to 24 and 45 to 64 age groups are more likely to use public transit, this indicates that there may be a higher use of public transit by 2030 by Newburyport residents. A chart which summarizes the projected change in population for various age groups between 2000 and 2030 is provided on Figure 5.8.

The number of retired or elderly persons (65+) is projected to increase between 2000 and 2030 by 1,550 persons, or 64 percent. This is the result of the baby-boomer phenomenon (broadly defined as those born between 1946-1964), a demographic bulge in population growth than from 2009 onward has started adding significant numbers of people who can not or will not chose to drive. Having options to move out of the house for medical appointments or other aspects of social life has been deemed a public health issue by some researchers. It is in this context that a robust and identifiable public transportation system can address the transit needs of this age group and the fact that by planning year 2030, all boomers will have retired. Of particular importance to this project is the age group over 75 years of age. This group is more prone to use public transportation. Between 2000 and 2030, it is anticipated that there will be an increase of approximately 530 people over age 75, of which approximately 20 percent (106 persons) are likely to use public transit per day.

As shown in Figure 5.8, employment increases for 2030 are expected in all sectors except manufacturing. The growth of the Newburyport Industrial Park and its success will be part of those changes in the Newburyport employment. According to Metrofuture projections, the approximately 10,000 people employed in Newburyport in 2000 will grow to 11,800 employees by 2030, a total increase of approximately 1,800 jobs (18 percent).

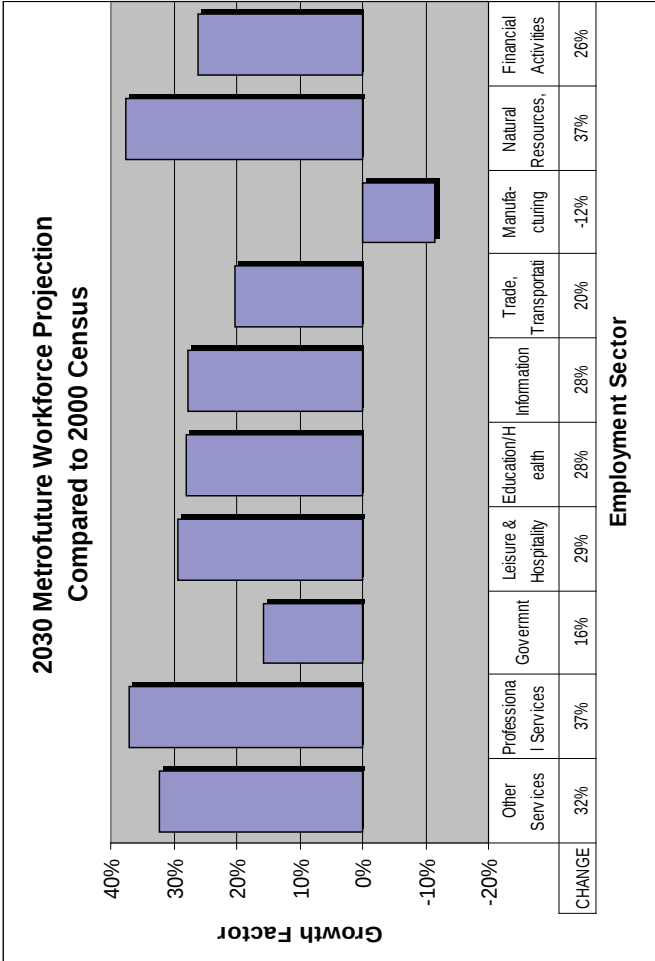
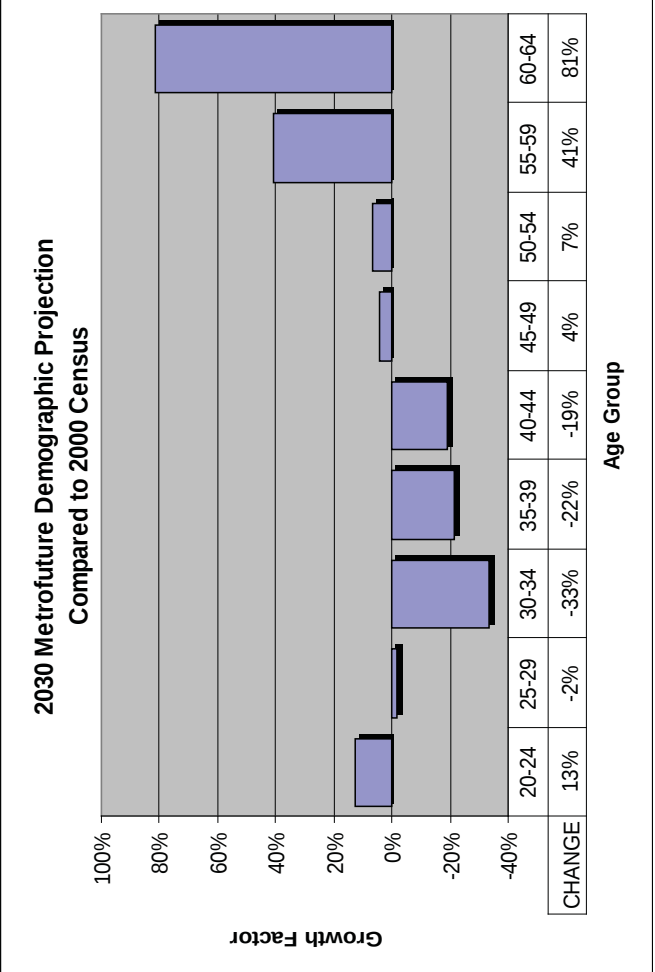
5.3.1 Regional Commuting Trips by MVRTA Bus

Future passengers on Route 52 will still be able to travel to Merrimack and Haverhill by transferring to the modified Route 51 at the proposed Amesbury Transportation Center.

Based on the US 2000 Census Journey to Work data, 28 persons currently use a bus to travel from Newburyport to Amesbury, Merrimack or Haverhill. It is assumed that all of these commuters use the MVRTA system. Assuming these passengers make a roundtrip using the MVRTA, they generate approximately 56 existing passenger trips on a weekday.

It is projected that the historic growth of 3.3 percent annual growth on the MVRTA Route 51 will continue through 2030. This is attributed to the improved service on the MVRTA, including proposed Route 52, and transit rider amenities at the proposed Intermodal Parking Facility, such as easy access to parking, bus shelters, benches, paratransit and ring-and-ride connections. Additionally, the higher percentage of workers in age categories more likely to use public transit would also contribute to ridership increases on Route 52 by 2030.

Sustaining the current growth rate of 3.3 percent per year between 2000 and 2030, an increase of 92 regional MVRTA passenger trips are projected to be added to the existing 56 regional commuter passenger trips. This results in a total of 148 regional commuter bus trips in 2030.



5.3.2 Local Commuting Trips by MVRTA Bus

Based on the US 2000 Census Journey to Work data, 24 persons currently use a bus to travel from their home in Newburyport to their job within Newburyport. It is assumed that all of these commuters use the MVRTA system. Assuming these passengers make a roundtrip using the MVRTA, they generate approximately 48 existing local commuter passenger trips on a weekday.

Currently, approximately one third of all jobs in Newburyport are filled by Newburyport residents. Thus, of the 1,800 new jobs anticipated in Newburyport by year 2030, approximately 600 will be filled by Newburyport residents. Assuming approximately two percent will use the MVRTA to commute to work, an additional 12 person MVRTA commuters or 24 passenger trips will result. Thus, by 2030 it is expected that there will be 72 local commuting passenger trips on Route 52 (24 new trips plus the 48 existing trips).

Additionally, if plans for the Transit Oriented Development (TOD) at the MBTA Commuter Rail mature in the next 20 years, ridership of Route 52 will be positively affected. Additional jobs will be created at the TOD which may further increase local commuting trips.

5.3.3 Commuting Trips by MVRTA Bus and MBTA Commuter Rail

Current state projections for the Newburyport Commuter Rail Station indicate that ridership will decline in the next decade, though boardings at the station indicate a historical growth rate between 2004 and 2009 of approximately one percent per year. It is likely that better station access, especially when supported by a robust “feeder” bus service, will have a positive effect on MBTA ridership.

The MBTA Commuter Rail is the most inexpensive of roundtrip option to downtown Boston. In 2009, data provided by the MBTA indicates that 732 passengers boarded at the Newburyport Commuter Rail Station resulting in 1,464 train passenger trips, assuming a round trip. As only very limited service is presently provided between the commuter rail station and downtown Newburyport via Route 51, it is estimated that less than 2 percent of these commuter rail passengers travel to the station use the Route 52 bus (approximately 15 passengers or 30 train passenger trips).

Assuming that service by the MVRTA via Route 52 to the Newburyport Commuter Rail Station is improved, it is estimated that approximately five additional commuters would use MVRTA system to travel between the Intermodal Parking Facility and the Newburyport Commuter Rail station. Thus, by 2030 a total of 20 commuters are projected to commute via a combined MBTA and MVRTA service, generating a total of 40 bus passenger trips on the MVRTA Route 52.

5.3.4 Commuting Trips by MVRTA Bus and Private Carriers at the I-95 Park and Ride Facility

Approximately 642 passengers are currently transported from the I-95 Park and Ride facility to Boston by private bus companies. A total of 510 parking spaces are provided at the site, and are typically occupied fully during most weekdays. It appears that some number of passengers either park illegally, carpool to, walk to, bike to or are dropped-off at the facility. Assuming very few

carpoolers, walkers/bicyclists, it is estimated that 125 passengers are dropped off. Some of these drop-off passengers may consider using their vehicles to travel to the facility when the proposed 105 new spaces are completed. It is assumed that by 2030 approximately 5 to 10 percent of the existing 125 drop-off passengers (10 passengers) may use Route 52 instead of being dropped off, thereby generating 20 bus passenger trips.

5.3.5 Non-Commuter Transit Trips

As noted above, Route 51 currently provides approximately 410 weekday bus trips. Based on the analysis above, 134 of these trips are related to commuting (56 regional, 48 local and 30 MBTA). Therefore, the remaining 276 bus trips are non-work related trips (shopping, medical appointments, school related, downtown businesses, etc.).

Improved service by the MVRTA, which is related to the proposed Route 52 and transit rider amenities at the proposed Intermodal Parking Facility, is expected to sustain the current overall growth rate of 3.3 percent for an additional 135 daily passengers or 270 transit trips at 2030. At the same time, the non-commuter transit trips will increase due to the mobility needs of the 75+ age group. As noted above, this group is expected to increase daily ridership by 2030 by approximately 106 daily passengers or 212 transit passenger trips.

The aggregate of these two increases is 241 additional passengers or 482 additional transit passenger trips by 2030.

5.3.6 Clipper City Rail Trail

As the trail was completed last fall, no trip data or usage statistics are available for the facility at this time.

5.3.7 Summary of Existing and Projected Transit Passenger Trips

Table 5.1 provides a summary of the projected ridership on Route 52. By 2030 Route 52 is expected to carry by 762 passenger trips, an increase of 387 over 2009 passenger levels.

Table 5.1 Projected Route 52 Daily Ridership Originating at the Proposed Intermodal Parking Facility

	2009 Existing Passenger Trips	Projected Additional Passenger Trips	2030 Passenger Trips
Regional Commuters (Newburyport to other towns) – by bus	56	92	148
Local Commuters (Newburyport to Newburyport) – by bus	48	24	72
Regional Commuters – by bus and MBTA	30	10	40
Regional Commuters – by bus and private carriers at I-95 Park and Ride	0	20	20
Non-Commuter Trips – by bus	276	241	482
Total Daily Passenger Trips	410	387	762

6.0 Parking Analysis

6.1 Existing Conditions

Public parking in downtown Newburyport is available on-street and in four surface parking lots. On-street parking in the vicinity of downtown is generally limited to two hours and is free. Table 6.1 provides a list of the public off-street parking lots including the number of spaces, allowed duration and fee. In total, the city provides approximately 715 off-street parking spaces in downtown.

Table 6.1 Summary of Public Off-Street Parking

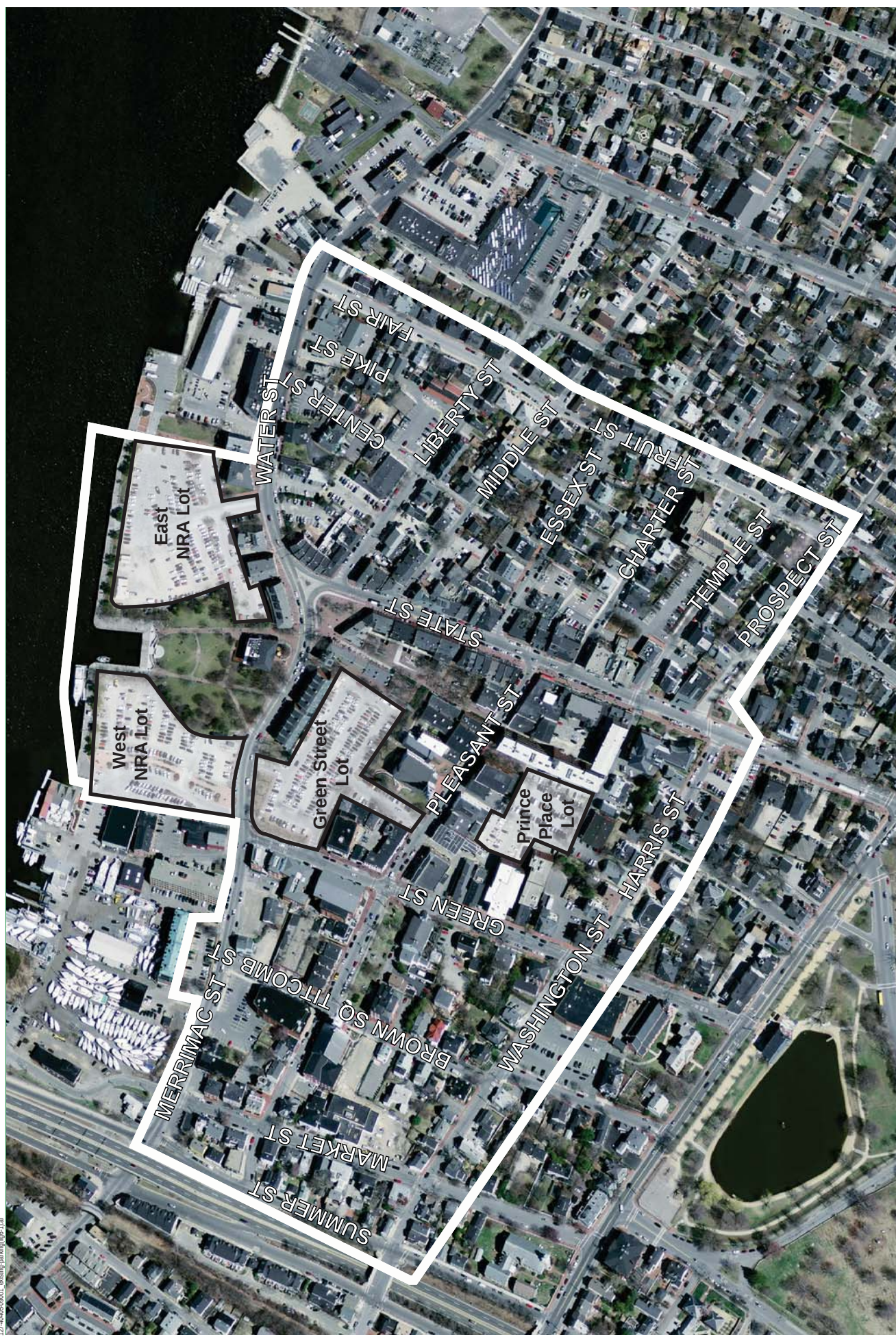
Parking Lot	No. of Spaces	Parking Duration	Fee
Green Street	230*	3 hours	None
Waterfront Trust/NRA Westerly Parking Lot	194	All day	Typical - None Summer Friday, Saturday and Sunday - \$5.00
NRA Easterly Parking Lot	245	All day	Typical - None Summer Friday, Saturday and Sunday - \$5.00
Prince Place	48	3 hours	Free
Total Off-Street Spaces	715		

*Includes 202 spaces in the Green Street lot and 28 spaces in the Unicorn Street lot

A parking utilization study was conducted for the downtown area, which for this analysis is the defined as the area bounded by the Merrimack River to the north, Fruit Street to the east, Washington Street, Harris Street and Prospect Street to the south and Summer Street to the west. This area is depicted on Figure 6.1. Separate utilization studies were conducted for the on-street spaces and for the off-street spaces in the four public parking lots (Green Street/Unicorn Street, Waterfront Trust/NRA Easterly, NRA Westerly and Prince Place). In total 1,407 parking spaces (692 on-street and 715 off-street) were included in the study.

The utilization study was conducted during the peak summer period on Thursday, August 6, 2009 and Saturday, August 8, 2009. On Thursday, utilization counts were obtained every two hours between 8:00 a.m. and 6:00 p.m. On Saturday, utilization counts were obtained every two hours between 12:00 p.m. and 8:00 p.m. The parking space utilizations for the on-street, off-street and total downtown area are summarized in Table 6.2.

On Thursday the highest utilization in the downtown area (80 percent) was recorded at 2:00 p.m. On Saturday the highest utilization occurred in the evening at 8:00 p.m., with 84 percent of the existing spaces occupied. The Green Street/Unicorn Street parking lot was found to be the highest utilized lot, with 100 percent of the parking spaces being occupied in each of the observations conducted on Saturday and approximately 98 percent of spaces occupied during the 12:00 p.m. and



Intermodal Parking Facility
Alternative Site Evaluation Report
Newburyport, Massachusetts



Base Map: Bing Maps

Existing Parking
Utilization Study Area Figure 6.1

2:00 p.m. observations on Thursday. This parking lot is located central to the business and shopping districts of downtown Newburyport.

Table 6.2 Existing Parking Utilization

Location	Capacity (spaces)	Utilization - Thursday, August 6, 2009						Utilization - Saturday, August 8, 2009				
		8 a.m.	10 a.m.	12 p.m.	2 p.m.	4 p.m.	6 p.m.	12 p.m.	2 p.m.	4 p.m.	6 p.m.	8 p.m.
Waterfront Trust/ NRA Westerly Lot	194	30%	65%	98%	90%	65%	85%	85%	97%	85%	80%	95%
NRA Easterly Lot	245	15%	25%	25%	70%	70%	45%	36%	60%	65%	75%	75%
Green Street/ Unicorn Street	228	20%	80%	97%	99%	75%	80%	100%	100%	100%	100%	100%
Prince Street	48	75%	90%	100%	85%	80%	75%	100%	98%	90%	94%	100%
Parking Lot Utilization	715	25%	58%	74%	86%	71%	70%	75%	86%	83%	86%	90%
On-Street Utilization	692	54%	72%	70%	74%	67%	65%	78%	78%	76%	78%	77%
Total Utilization	1,407	39%	65%	72%	80%	69%	67%	76%	82%	80%	82%	84%

6.2 Parking Requirements for the Intermodal Parking Facility

The City of Newburyport supports alternative forms of transportation and has long been a user of the MVRTA. It realizes that a connection point in downtown for walkers, bicyclists, bus riders and automobile drivers might increase ridership on the MVRTA and reduce vehicular traffic in downtown. Thus, the idea of an Intermodal Parking Facility was brought forward by the City. The City also recognizes that the existing parking supply in downtown is generally sufficient for the present, but that the planned expansion of the existing waterfront park which encompasses two publicly owned surface parking facilities would remove a significant portion of the off-street public parking in downtown and that these spaces would need to be replaced.

As part of the initial screening process presented in Section 3.0, a preliminary parking demand analysis was performed. This analysis indicated that approximately 350 parking spaces were needed. Detailed parking demand calculations are presented in this section.

6.3 Parking Demand Calculations

Similar to the preliminary parking demand calculations, the final calculations considered existing need and future need related to new development in the city, improvements to transit operations in Newburyport and the new Clipper Rail Trail. These calculations also considered parking requirements related to the facility being used as a park and ride location for carpoolers and the potential for retail development associated with the proposed parking facility. As the Intermodal

Parking Facility is expected to accommodate parking needs in downtown Newburyport through 2030, the final parking demand calculations were conducted for a 20-year planning horizon.

6.3.1 Existing Parking

As noted above, the parking utilization studies conducted in the summer of 2009 indicate that there is no existing latent demand for additional parking in the vicinity of downtown Newburyport. Utilization of the existing downtown parking supply was less than 85 percent through out the two summer days on which the studies were conducted.

6.3.2 City Projects

The City of Newburyport Planning Director has indicated that there is only one project proposed in the vicinity of downtown which will cause a need for new public parking. As described above in the preliminary parking demand calculations, an expansion to the existing waterfront park located on the south bank of the Merrimack River is proposed. The parking areas affected by this project are shown on Figure 6.2. Although City officials originally indicated that 300 spaces would be displaced as part of this project, a count of the existing spaces located on the two parking lots impacts by the project and a review of the proposed park plan shown on Figure 6.3 indicates that 235 spaces are displaced by the project. The plan shown on Figure 6.3 has been endorsed by the Newburyport Redevelopment Authority. Table 6.3 summarizes the calculation for parking requirements related to the waterfront park expansion.

Table 6.3 Newburyport Waterfront Park Expansion Effect on Parking Supply

	Waterfront Trust/NRA West Lot		NRA East Lot	Total
	Waterfront Trust	NRA		
Proposed Parking with Waterfront Park	79	36	89	204
<u>Existing Parking Supply</u>	<u>50</u>	<u>144</u>	<u>245</u>	<u>439</u>
Difference	+29	-108	-156	-235

*Newburyport Waterfront Park Expansion Preferred Alternative (The Cecil Group, Rev. January 28, 2009)

6.3.3 Private Development

The only private development project being considered in the vicinity of the two sites is a project located on the Waterfront West property, one of the six sites considered for the Intermodal Parking Facility. As noted above in the discussion regarding Initial Site Selection Process, this 17-parcel site is located on the north side of Merrimac Street and on the east side of Route 1. A mixed-use development project including residential, hotel and commercial components has been discussed for the site by its present owner New England Development.

The site is zoned as Waterfront Mixed Use (WMU)/Waterfront West Overlay District (WWOD)/Waterfront West Overlay District –Special Permit (WWOD-SP). In accordance with the Newburyport Zoning Ordnnances, “all parking within the WWOD-SP Area shall be provided by the applicant without the use of municipal parking lots or structures or Newburyport Redevelopment Authority parking lots or structures.” Therefore, this project would not create a demand for parking





Not To Scale

Proposed Waterfront Park Expansion

Figure 6.3

within the proposed Intermodal Parking Facility. However, if the Titcomb Street site is selected for the facility, it is likely that New England Development and the MVRTA would explore opportunities for joint development and the parking to support such a program.

6.3.4 MVRTA

The demand for parking related to the MVRTA is based on the analysis of future (2030) transit operations in Newburyport presented in Section 5.0 Transit Analysis. The proposed MVRTA Route 52 would service a variety of commuter trips and non-commuter trips as summarized in Table 5.1. These include regional commuting trips provided solely by Route 52, regional commuting trips (Newburyport to other MVRTA communities), local commuting trips (Newburyport to Newburyport), regional commuting trips via the MVRTA and MBTA and non-commuter trips.

For each of these transit trips, an estimate was made as to the percentage of passengers which would drive and park at the facility before boarding the bus. Table 6.4 summarizes parking demand related to transit. It is estimated that approximately 20 parking spaces are needed to accommodate passengers driving, parking and boarding Route 52 at the Intermodal Parking Facility.

Table 6.4 Parking Demand Related to Transit Trips

Transit Trip	2030 Route 52 Passengers	Percent Drive to Intermodal Parking Facility	Required Parking Spaces
Regional Commuters (Newburyport to Other MVRTA towns)	74	5%	4
Local Commuters (Newburyport to Newburyport)	36	5%	2
Regional Commuters (by bus and MBTA)	20	10%	2
Regional Commuters (Private Bus at I-95 PNR)	10	10%	1
Non-Commuters - MVRTA	379	3%	11
Total	519		20

6.3.5 Clipper City Rail Trail

As the Clipper City Rail Trail project's northerly end-point/entrance will be within a half-mile from both sites, it is likely that some users of the trail, especially bicycle riders, may park at the Intermodal Parking Facility and use local roadways to travel to the entrance. As no trip data is available for the facility at this time, it is estimated that perhaps five to ten vehicles may park in the facility and either walk/bike to the rail trail. It is estimated that a slightly higher number of trail users may park at the Titcomb Street site than the Green Street site as it is closer to the trail head.

6.3.6 Carpools

The U.S. Census data for Newburyport indicates that, in 2000, 279 persons carpool from Newburyport to work locations along I-495 and I-95. By 2030 it is estimated that the number of commuters who will carpool from Newburyport will increase to 301 persons. This estimate assumes an approximate increase of 0.25 percent per year for 30 years, or a total increase of eight percent in carpool activity. Assuming approximately 10 percent of these commuters would meet

and park at the Intermodal Parking Facility in downtown, it is estimated that 15 parking spaces would be required to accommodate the carpooling activity.

6.3.7 On-Site New Retail

The Intermodal Parking Facility may include space for retail uses could be rented by commercial tenants for ground floor retail facing the public right of way. In accordance with Newburyport Zoning Ordinance specialty retail, retail trade and retail services require three parking spaces per 1,000 square feet of gross floor area. For the purposes of this evaluation, it is assumed that those three parking spaces are distributed as two for customers and one for employees, an average industry standard for various retail/restaurant uses for suburban downtowns.

While this analysis was being prepared, conceptual level designs for the Green Street and Titcomb Street sites were being developed. The two concepts developed for each site are fully described in Section 7.0. The Green Street Option A includes approximately 12,300 square feet of retail space, while Green Street Option B does not include any retail space. Titcomb Street Options A and B include approximately 11,500 square feet and 8,000 square feet of retail space, respectively.

Table 6.5 summarizes the retail areas and associates parking for each option.

Table 6.5 On-Site Retail Parking Demand

Option	Retail Area	Space/ 1,000 s.f.	Customer Parking Spaces	Employee Parking Spaces	Total Required Spaces
Green Street – Option A	12,300 s.f.	3	25	12	37
Green Street – Option B	0 s.f.	3	0	0	0
Titcomb Street – Option A	11,500 s.f.	3	23	12	35
Titcomb Street – Option B	8,000 s.f.	3	16	8	24

6.4 Summary

Table 6.6 provides a summary of the parking demand for the four options. The demand varies slightly between the four options due the difference in retail space in the four conceptual options and to the distance of the site relative to the Clipper City Rail Trail trailhead.

The parking demand projected for 2030 ranges from a low of 275 spaces for the Green Street – Option B facility to a high of 315 spaces for the Titcomb Street – Option A facility. It is desirable that a parking facility include a 10 percent surplus in parking spaces to accommodate turn-over and to reduce the time for vehicles circulating in the facility while searching for a parking space. Thus, Table 6.6 includes the parking demand for each option assuming the 10 percent. The total parking spaces, plus the 10 percent additional spaces, is known as the ‘practical capacity’ of the facility. The practical capacity of the options range from 303 spaces at Green Street – Option B facility to 347 spaces at Titcomb Street – Option A facility.

Table 6.6 2030 Parking Demand Summary

	Green Street Option A	Green Street Option B	Titcomb Street Option A	Titcomb Street Option B
Existing Need	0	0	0	0
City Projects	235	235	235	235
Private Development	0	0	0	0
MVRTA	20	20	20	20
Clipper City Rail Trail	5	5	10	10
Carpools	15	15	15	15
On-Site Retail	37	0	35	24
Total Demand	312	275	315	304
10 Percent Margin (for practical capacity)	31	28	32	30
Demand with 10% Additional Capacity	343	303	347	334

7.0 Intermodal Parking Facility Options

A total of four conceptual designs for the Intermodal Parking Facility were developed. Two conceptual designs were prepared each for the Green Street and Titcomb Street sites. These conceptual level designs are provided as potential plans for the MVRTA and the City to consider. The MVRTA, working with City of Newburyport officials, may decide to proceed into final design with one of these concepts as currently envisioned or in a modified form, or may want to consider a completely different scheme in the final phase of the facility.

The development of these concepts was mindful of the parking demand requirements set forth in Chapter 6.0 and considered local zoning and design guidelines, the state building code, federal and state accessibility requirements, potential structural designs and the historic character of downtown Newburyport. This section briefly summarizes these requirements before introducing the four conceptual designs.

7.1 Design Standards

7.1.1 Parking

Chapter 6.0 provides a detailed analysis on the demand for additional parking in 2030 in downtown Newburyport. The analysis indicated that the facility should ideally accommodate a range of 303 to 347 new parking spaces.

7.1.2 Local Zoning and Design Guidelines

The following requirements describe allowed maximums or minimums set by zoning, design guidelines and building code. The MVRTA facility shall aim to perform better than regulated minimum/maximum requirements.

For a major project such as the Intermodal Parking Facility, the City of Newburyport zoning by-law includes Site Plan review (Section XV) with the provisions summarized in Table 7.1. These requirements are appropriate to both the Green Street and Titcomb Street sites.

Table 7.1 City of Newburyport Zoning Requirements

Zoning District	B-2 – Downtown Business District
Parking Structure Dimensions*	
Minimum lot size	20,000 s.f.
Frontage	60 feet
Height	40 feet
Lot Coverage	100%
Set backs	0 feet
Parking Requirement for Retail Space	3 spaces per 1,000 s.f.

*Code 413B (parking)

7.1.3 State Building Code (SBC)

Although the next stage of the Intermodal Parking Facility project would determine the exact building code requirements for the design of the facility, the following general design requirements can be established at this stage:

- The parking garage would be designed as an open facility.
- On the basis of its floor area, the structural system selected would be able to afford the fire resistance ratings specified in paragraph 406.3.5, without the use of sprinklers.
- The building elevations would be designed so as to provide the necessary degree of “openness” as prescribed in paragraph 406.3.3.1.
- The MVRTA waiting room and the retail use would be considered ancillary to the parking garage and would be fire separated per all code requirements.
- The parking garage would include concealed drains, which depending on current MassDEP regulations may or may not need to be connected to the sanitary sewer system.

7.1.4 Accessible Design Standards

The location of accessible parking spaces is regulated at both a Federal and a State level. For Federally funded projects, the U.S. Department of Transportation has adopted American with Disabilities Act Standards for Transportation Facilities (www.access-board.gov/ada-aba/ada-standards-dot.cfm). Accessible Design is regulated with 521 CMR at the State level, a document that prescribes the accessible route inside parking facilities in paragraph 23.3.

In this conceptual design study, the designers have assumed that every floor of the facility would be fully accessible, an approach that has a maximum effect on the envelope of the facility and allows the maximum level of overall barrier-free design.

The accessible route is defined from the MVRTA bus doors to the:

- sidewalks connecting to the city street system
- MVRTA waiting area to be provided at grade
- accessible parking spaces at every parking level accessed by use of an elevator

7.1.5 Community Character

Community character shall be in harmony with and of a size and shape (scale and massing) appropriate to the neighborhood character, with a design which screens objectionable elements and which maintains scenic views. More details are offered in Section 7.1.7 – Facade Treatment.

The proposed conceptual design options for both sites exceed the above requirements. In the final design stage of the project, the designers shall strive to achieve a high performance building within its larger downtown context. In particular, size and location of open space elements, landscaping features and streetscape amenities can meet a higher-than-minimum quality standard, appropriate to the symbolic nature of a public building in the district and the transportation identity of the building owner.

7.1.6 Structural Considerations

The MVRTA is expected to be the long-term-owner of the new parking facility and would therefore be involved not only with the initial design and construction phase but also long-term maintenance and upkeep of the garage. As a result, an optimum structural system that can satisfy both the project requirements and long-term durability criteria is necessary to ensure a successful project and useful service life.

Selection of the structural system is influenced by several factors. Major considerations that determine structural system selection include:

- Function
- Service life
- Quality of construction
- Aesthetics/lighting/security
- Maintenance
- Cost
- Schedule

The underlying importance of each consideration can be either emphasized or de-emphasized depending on the use, location and owner's desires. When undertaking the structure selection process, weighted priorities must be established to not only aid in the selection process, but also to establish guidelines for the design team to follow.

The Newburyport Intermodal Parking Facility could be a point of first impression encountered by visitors to the community. As such, the structure is expected to have an architectural theme consistent with the City's long and rich history. It is in MVRTA's interest to design and construct a structure that not only reflects an architectural style appropriate with that of the city, but also is capable of withstanding severe exposure conditions resulting in a long, useful service life.

For any new parking facility it is necessary to evaluate the structural criteria, as well as architectural, durability provisions, functional, safety and serviceability features. For a facility to function well in each of these categories, the respective designers must, in addition to being vigilant to details and the owner's desires, have a solid knowledge of the influence and impact each category can have on the other. Building a well thought out and well designed parking structure can yield a significant return on an investment.

The design options identified in this report are based on an open parking structure, utilizing long-span construction. These design principles maximize parking efficiency and increase user visibility and passive security. In this region of the country free-standing parking structures are primarily constructed of either precast concrete, cast-in-place post-tensioned concrete and a hybrid of steel and concrete slabs (primarily precast double tees). Structural systems considerations for the MVRTA parking facility are as follows:

- System 1 – Precast Concrete Deck, Beams and Columns

- System 2 – Cast-in-Place Post-Tensioned Concrete Deck, Beams and Columns
- System 3 – Steel Frame with Precast Concrete Deck

7.1.6.1 *Precast Concrete Deck, Beams and Columns*

A precast, prestressed structural system is comprised of plant-produced concrete beam, column and double tee floor components, shipped to the site and erected by crane. In recent years the current local standards in the Northeast have seen a shift to wider double tee floor components. Presently, the leading area producers are setup to mass-produce 12 foot wide double tees.

Since the precast members are produced under plant-controlled conditions, the manufacturing process is tightly controlled, resulting in a high level of quality control. Typical construction sequencing includes the scheduling of the off-site manufacturing of the precast superstructure to occur concurrently with the site-work and installation of the foundation elements. Façade treatments such as bricks, half bricks, pigments or special aggregates can be cast into the precast spandrels for a variety of finishes to meet almost any architectural need.

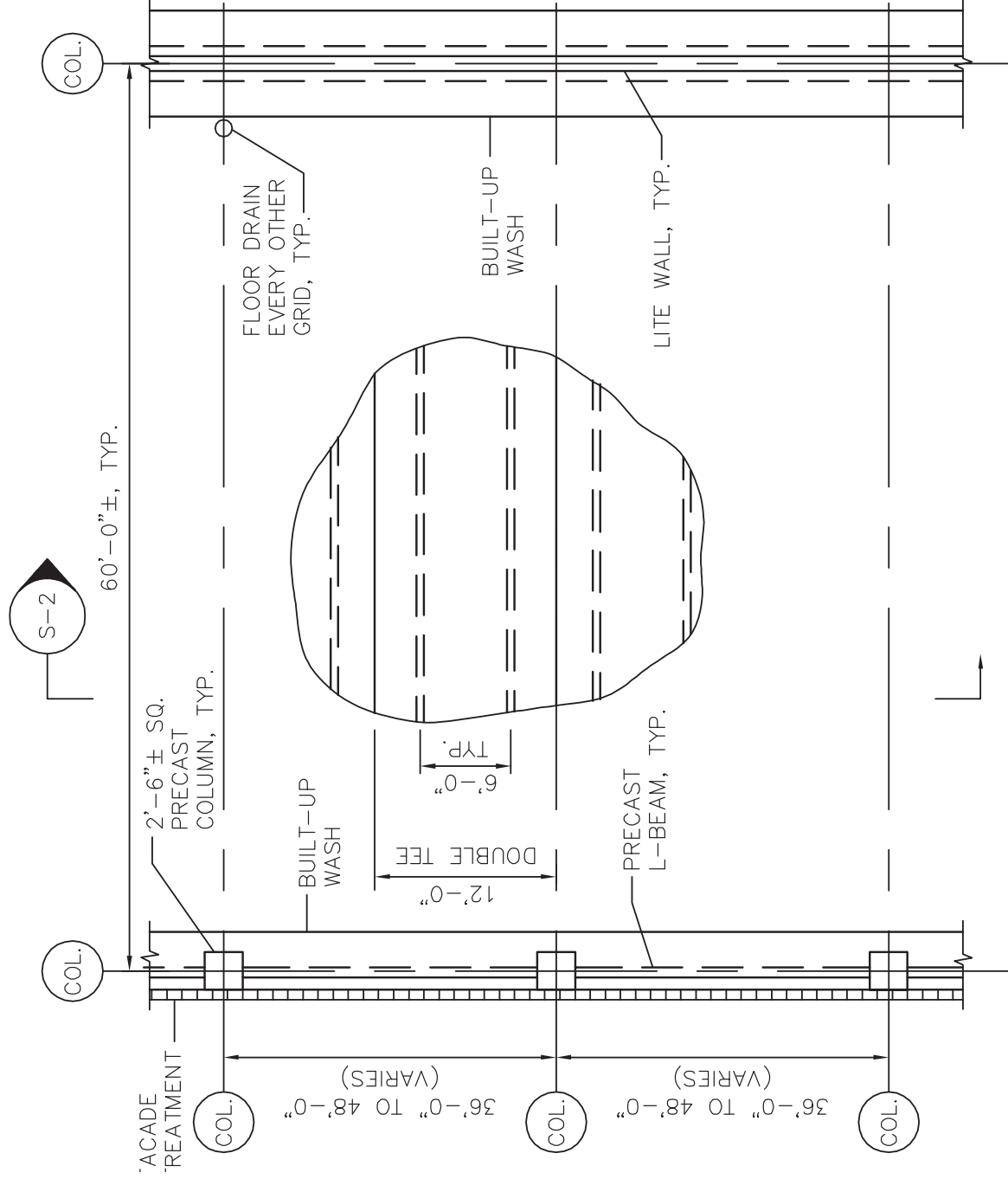
The stems of the precast tees are typically 6 feet on center and 2'-10" deep, and tend to provide the feel of a low "ceiling" as viewed from the floor below. Light fixtures, placed between the tee stems for vehicular clearance, tend to have limited reflective lighting due to the close proximity of the stems to the fixture. Thus, even with additional fixtures for increased lighting, a precast parking structure with a 10'-8" floor-to-floor height is perceived as having a floor to ceiling height of only 7'-10". Figures 7.1 and 7.2 depict a typical plan view and section view for a precast facility.

7.1.6.2 *Cast-in-Place, Post-Tensioned Concrete Deck, Beams and Columns*

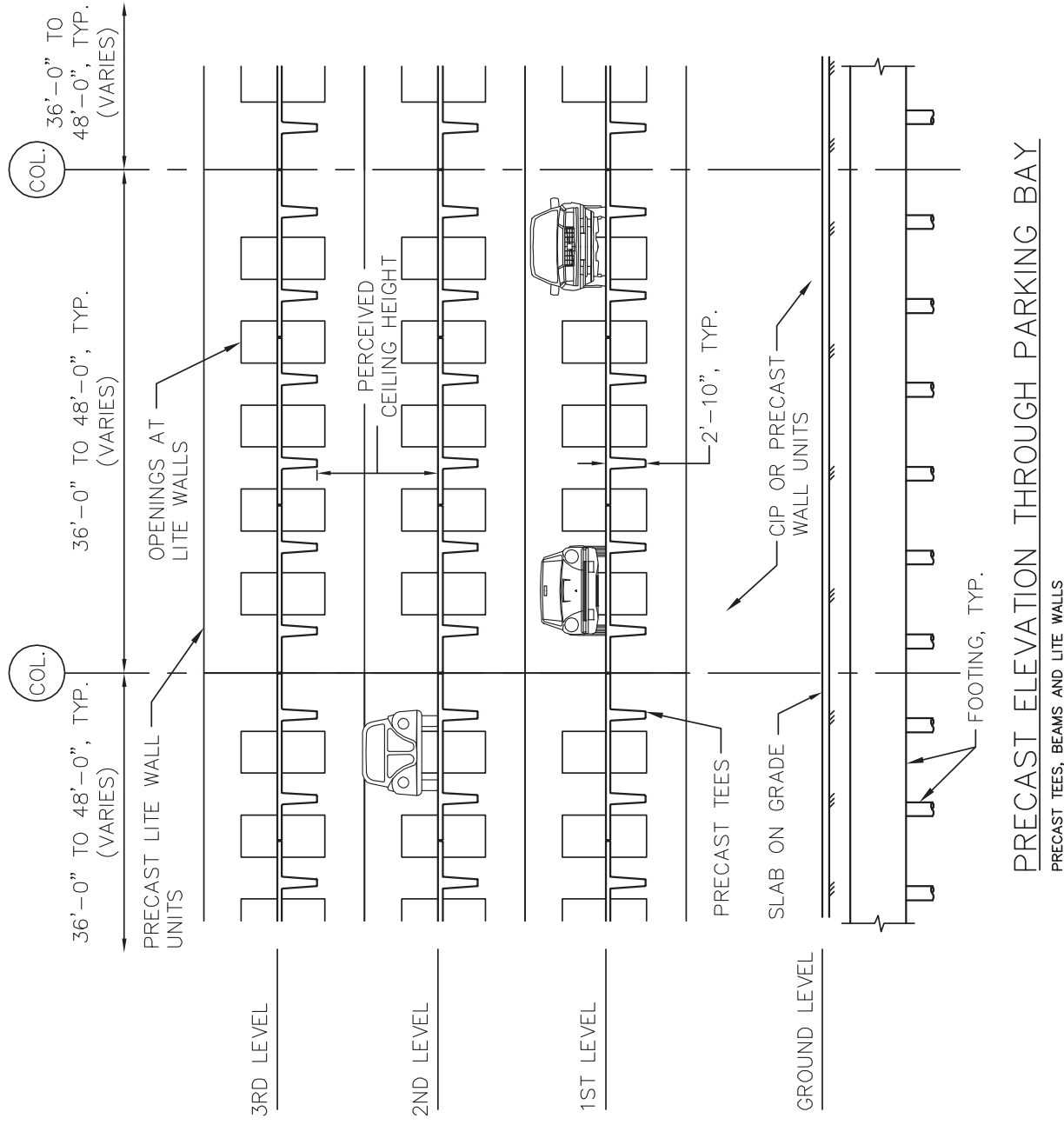
Cast-in-place, post-tensioned (P/T) concrete structures incorporate site cast beams, columns and floor slab members similar to conventionally reinforced concrete. The addition of post-tensioning reduces beam and slab sizes and enables long-span construction. By placing a compressive post-tensioned force on the floor slab, cracks due to shrinkage and volume change are minimized.

Upon completion of the foundation and slab-on-grade work, the forming of the superstructure can commence. Each level is either shored to the lowest on-grade level or through a series of supported levels to a point that has been deemed capable of supporting the form-work and wet load of the placed slab. Due to the limitations of allowable stressing lengths, site casting logistics, effects of shrinkage, elastic shorting, etc., each floor must be poured in sections. Once the concrete is placed in a section, it is necessary for the concrete to cure for approximately 48 hours to gain sufficient strength prior to tensioning the strands.

One of the benefits of placing the slab in this manner is the reduced number of joints in the floor slab. However, the nature of on-site P/T construction requires a longer schedule than precast construction and is sensitive to on-site weather conditions. Timing of the superstructure construction needs to be considered. P/T structures can be constructed during the winter months; however, provisions for heating, special curing requirements and snow removal all add to the cost of a P/T project. It is imperative that the schedule account for downtime due to adverse weather



TYPICAL PRECAST FLOOR PLAN
PRECAST TEES ON PRECAST FRAME



conditions. Failure to do so can result in the placement and curing of concrete under adverse conditions, ultimately compromising the quality and durability of the project.

Since the concrete is batched off-site, trucked to the site and pumped, placed and cured under field conditions, the potential for variation in the cast-in-place concrete color, finish and quality are increased compared to precast. Unlike plant manufactured precast concrete, the burden of quality control under a P/T system is shifted to the field where full-time inspection efforts are necessary to safeguard the quality of construction and success of the project.

The perceived ceiling height of a P/T garage is the basically underside of the slab above. Thus, on a structure with a 10'-8" floor-to-floor height, the floor to ceiling height appears to be 10'-2" versus a perceived ceiling height of only 7'-10" for that of a similar precast structure. This allows for improved lighting and signing capabilities, and creates the feeling of openness and improved visibility. Should the owner decide to further increase the reflectance of the lighting, the underside of a post-tensioned slab can be painted at less expense than precast double tees. Figures 7.3 and 7.4 illustrate a typical plan view and section for a P/T garage.

7.1.6.3 Steel Frame with Precast Concrete Deck

Steel framed parking structures have come into use within the last 25 years with a variety of floor plate systems used. Predominant construction methodologies in recent years feature the use of precast concrete double tee floor members. Thus, the layouts of the column grids for a steel frame parking structure are generally similar to that of a precast structure designed to follow a multiple of the 12-foot wide double tee presently available from most precast producers. The use of a precast double tee floor slab results in the same perceived lower ceiling effect as found in an all precast structure. The steel frame components of parking structure are fabricated under plant conditions and offer many of the same advantages that precast structure does when compared to a cast-in-place concrete structure including, tight quality control, shorter construction durations and lower construction costs.

The exterior architectural cladding for this type of structure offers flexibility with regard to design and can be constructed from a variety of materials including precast, steel beams, steel grilles, cables and glass.

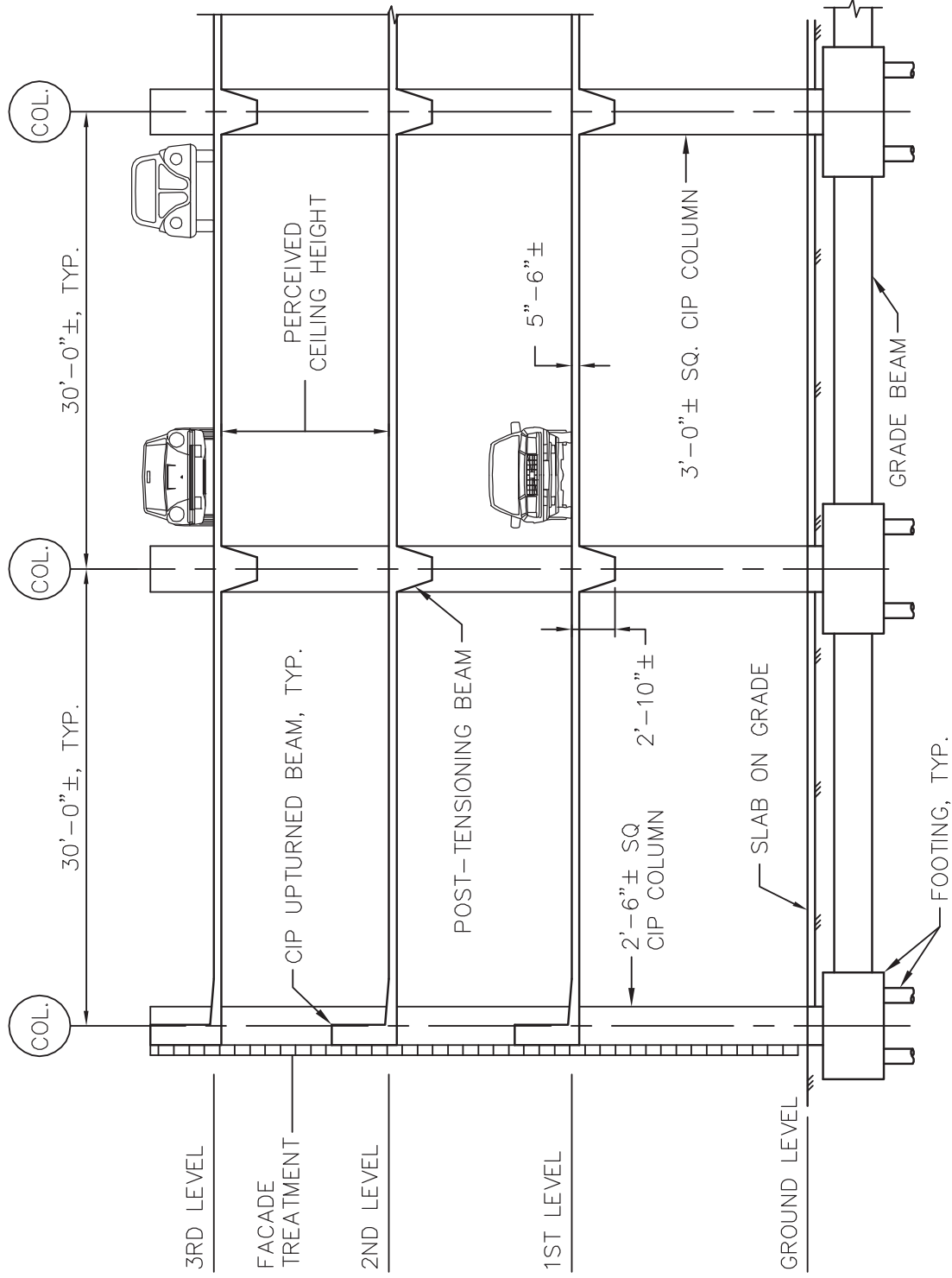
To protect the steel frame components from the severe exposure conditions, it is recommended that the frames be coated with a protective multi-coat system of hot dip galvanizing. During the construction phase, the coating is subject to nicks and scrapes which become weak links where corrosion of the steel can be initiated. With the appearance onto the market in only the past 25 years, there is not a variety of structures that can attest to the long-term durability of this type of parking structure.

Steel garage construction must be classified as Type IV "Non-combustible," otherwise fireproofing of the steel is required. Typical stand-alone garages can readily be designed to fall within a Type IV category; however, should any mixed-use, or future modification or construction of adjacent structures be considered, then fireproofing would most likely be required.

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POST-TENSIONED ELEVATION THROUGH PARKING BAY

CAST-IN-PLACE POST-TENSION SYSTEM

Typically steel frame systems have been a cost-effective alternative for the construction of parking structures; however, the steel industry has recently undergone volatile price hikes rendering the steel industry vulnerable. The global economy can impact the price of steel, potentially making the cost of construction for a steel frame somewhat conjectural. Figures 7.5 and 7.6 depict a typical plan view and section view for a steel framed facility.

7.1.6.4 Recommendation

Each design option developed for the Titcomb Street and Green Street sites has been developed with a functional layout that can be easily constructed from any of the aforementioned systems. Through our assessment of this project, MVRTA requirements and sensitivity of the community and anticipated exposure conditions, we believe the selected system must have the following attributes:

- Aesthetic flexibility to facilitate the necessary architectural features to ensure the new structure successfully complements this historic minded marine community.
- Durability with provisions built into the design and construction to ensure an optimum service life with nominal maintenance and upkeep under extreme exposure conditions.
- Provide a safe, secure and welcoming parking environment
- Cost effectiveness

Based on our review of the available systems and criteria list above, it is our opinion that a structural system comprised of precast concrete deck with precast beams and columns would best meet a balance of the identified attributes required for this project. Furthermore, should it become a determining criteria; a precast solution would facilitate a short construction schedule due to the off-site production of the super structure.

7.1.7 Façade Treatment

For a parking facility to be considered an open parking structure, and not require mechanical ventilation, a significant area of wall openings is required. These openings present a challenge to façade design. However, with the following design elements and treatments incorporated into the final design, the structures façade would be consistent with the historic nature of existing buildings in downtown Newburyport:

- Balanced massing and open space to bring out superior urban design qualities
- Breakdown of long uninterrupted façade surfaces into smaller components of 40 to 50 feet
- Visible sills under exterior openings
- Differentiated elevator/stair tower design from parking structure design
- Clearly mark the point of entry into the facility and to the MVRTA waiting area
- Differentiate commercial storefronts from upper floor façades in terms of color, transparency and finishes

To meet design requirements associated with detailing clarity, material quality and architectural trim as required by the Newburyport Local Historic District Commission, all conceptual designs

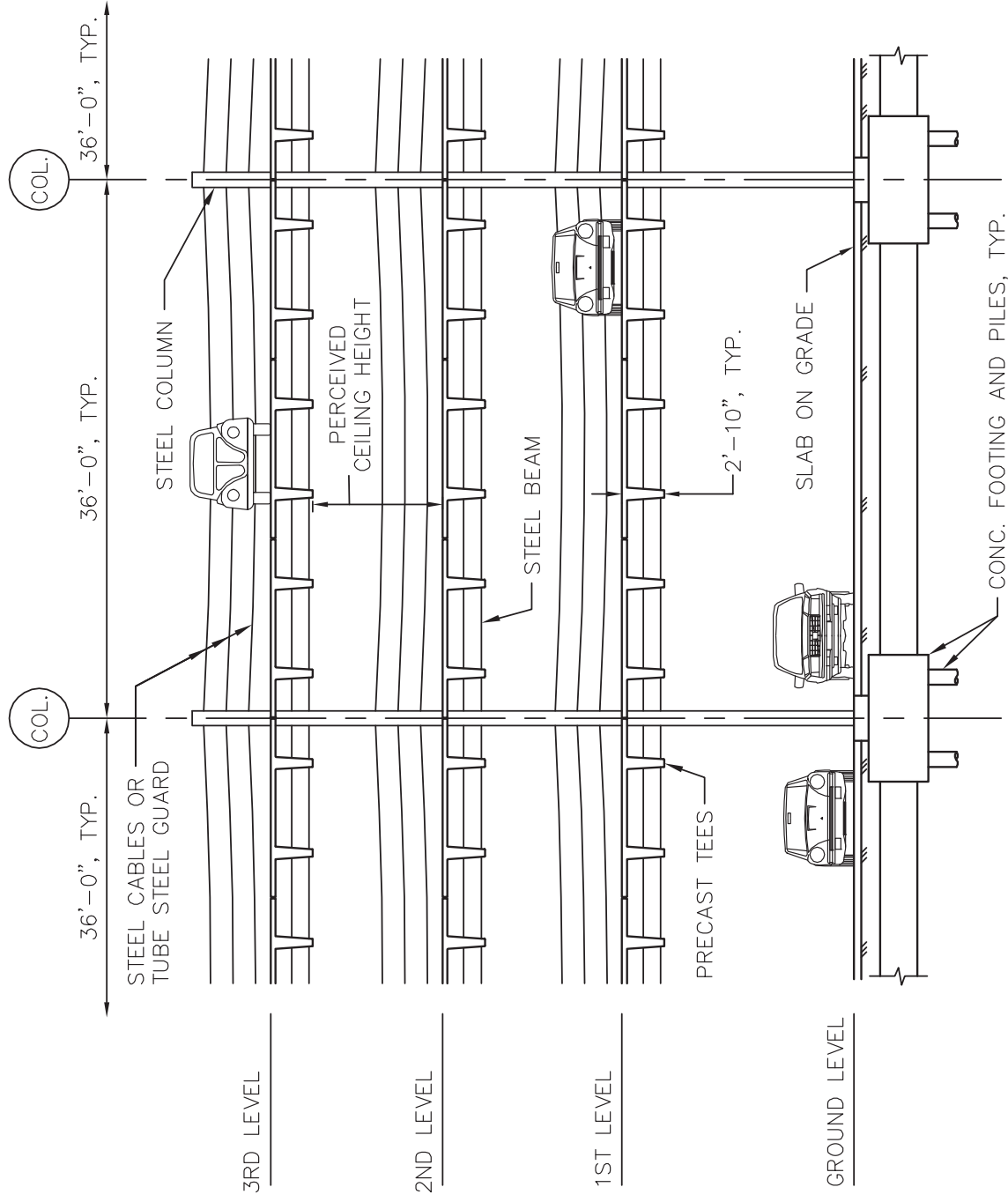
PRECAST TEES, STEEL BEAMS AND COLUMNS

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BICKS &
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ARCHITECTS**

TETRA TECH RIZZO

**DESMAN
ASSOCIATES**

Typical Parking Garage - Steel Frame
and Precast Plan View



STEEL FRAME ELEVATION THROUGH PARKING BAY

PRECAST TEES, STEEL BEAMS AND COLUMNS

propose a veneer wall erected and anchored outside of the garage structure, composed of brick and architectural precast elements. Furthermore, and in order to meet the requirement of compliance with the overall downtown neighborhood character, the following additional design elements should be taken into consideration:

- Use fenestration and horizontal trim to emphasize distinction between building floors
- Provide cornices to emphasize the third story roofline. Cornices should project approximately one to two feet, clearly terminating at the street wall.
- Where landscaping elements abut interior spaces, provide a visual and functional connection

7.1.8 MVRTA Operations in the Facility

The Intermodal Parking Facility would assume the role of route terminus for MVRTA Route 52 buses. In most likelihood, however, and due to the type of service provided for Newburyport, the dwell time would be short. In addition, space constraints would not allow for any layover area for MVRTA or any other buses or shuttles at the Intermodal Parking Facility.

The passenger waiting area would be an amenity to those transferring between different modes and the MVRTA bus service. The waiting area could include displays with schedule information and potentially an accessible bathroom that the commercial tenant monitors/maintains. Furthermore, there would be an MVRTA office accessed from within the waiting area equipped with a short-term storage component.

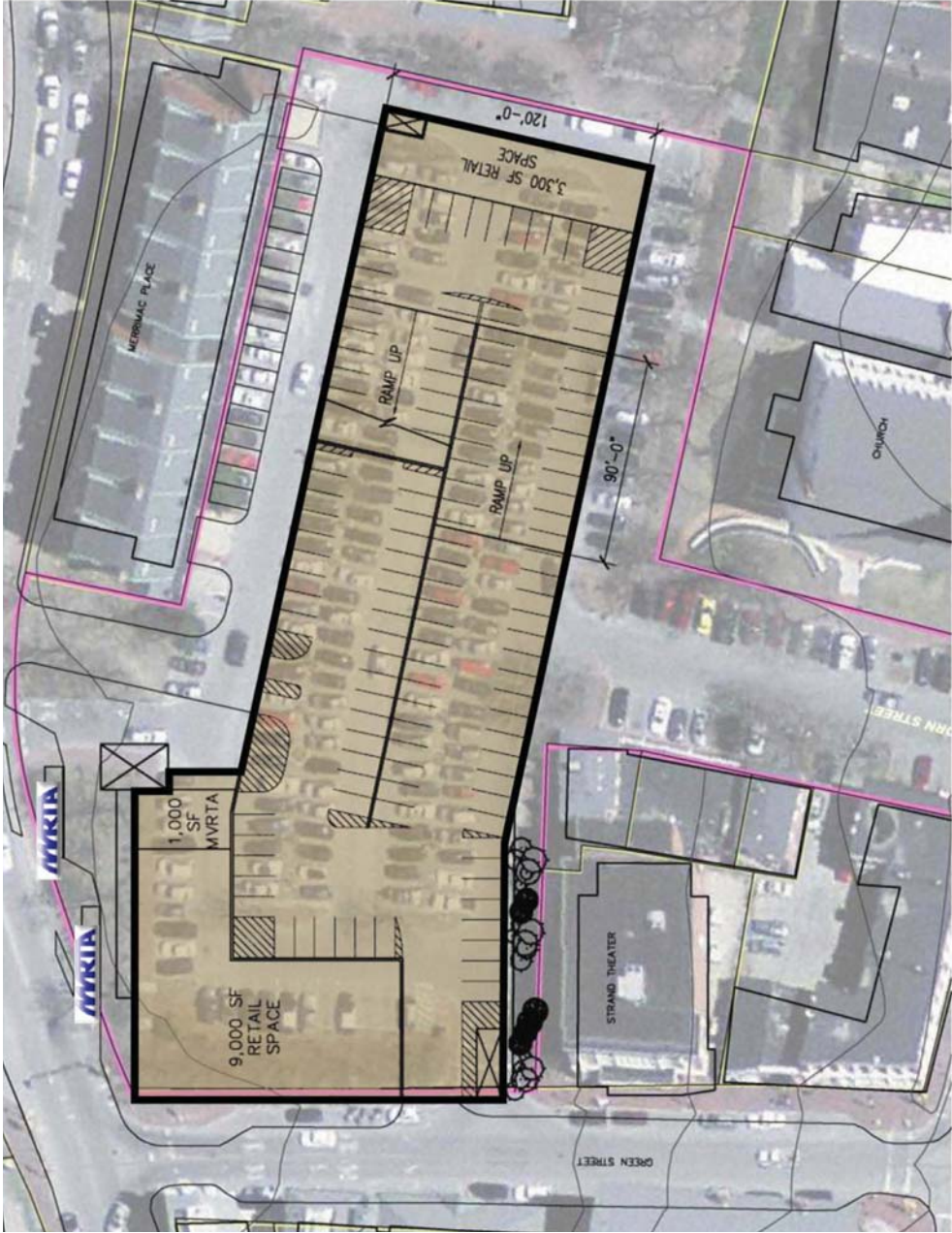
7.2 Green Street – Option A

7.2.1 Parking Functional Design

The Green Street – Option A concept is shown on Figures 7.7 and 7.8. This option features a two-bay, 446-space structure with parking on two supported levels and on a slab on grade. The garage itself has a footprint of approximately 57,000 square feet and a total area of 138,400 square feet. Parking spaces are located on the up and down ramps in this option. Ingress and egress points would be located on both Green and Merrimac Streets with two-way traffic at each access point. An additional 17 spaces would be located in a surface parking lot on the north side of the structure between the garage and Merrimac Place. In addition to the garage itself, this option would contain a total of 13,300 square feet of retail/commercial space including 9,000 square feet of retail and 1,000 square feet of commercial space (reserved for the MVRTA) on the corner of Green and Merrimac Streets and 3,300 square feet of retail space on the east side of the structure facing Inn Street. This parking option would result in a net gain of 261 parking spaces to the city and has an efficiency of 310 square feet per parking space.

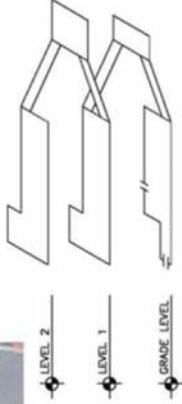
7.2.2 Site Access and Perimeter Treatment

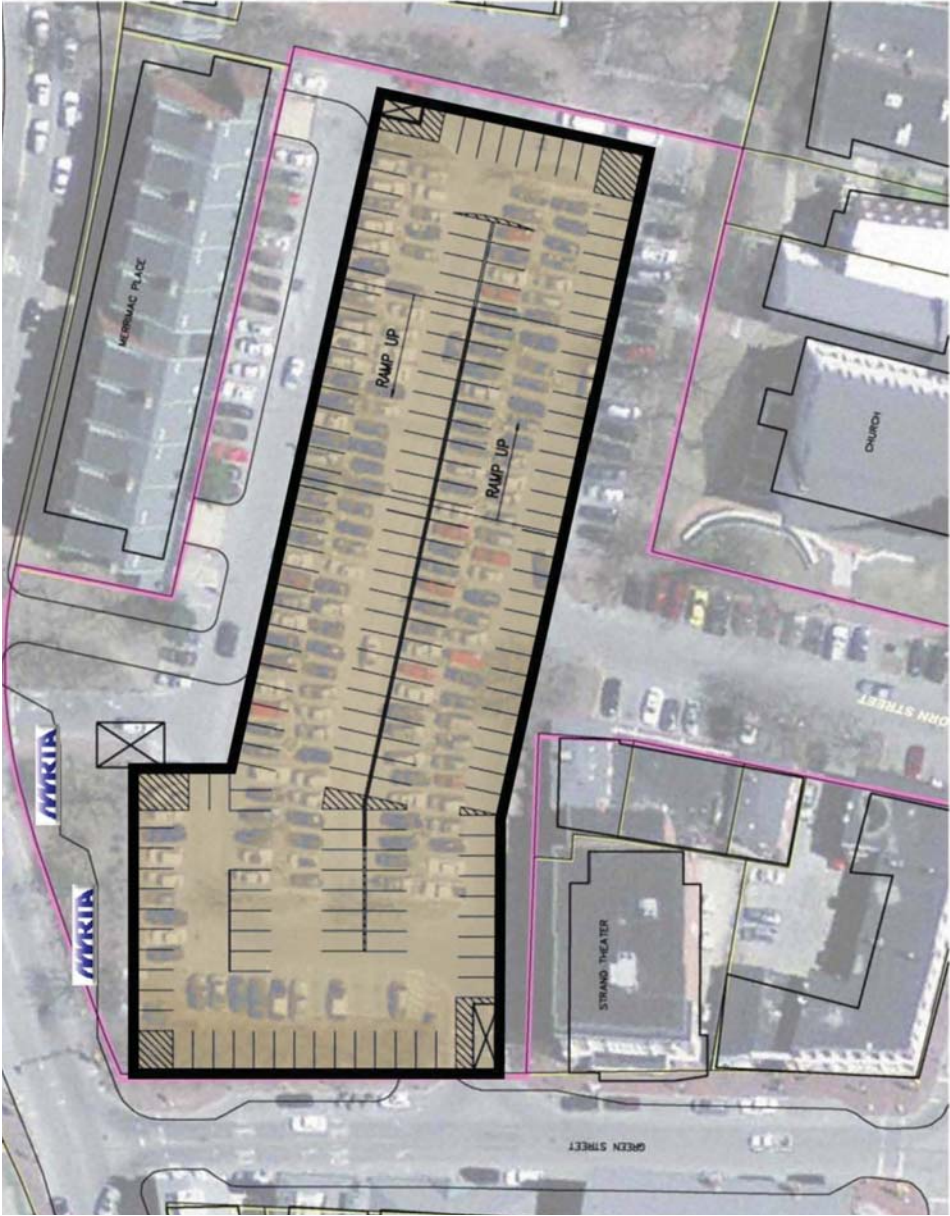
Site access is provided through two driveways, one on Green Street and the second on Merrimac Street. Both driveways are within 50 feet of the existing parking lot driveways. The third existing



CAR COUNT				S.F.		EFF. %
LEVEL	SPACES	EXISTING (202)				
NEW SURFACE	17					
GARAGE ON GRADE	74			24,400	330	
SUPPORTED LEVELS						
1	186			57,000	307	
2	186			57,000	307	
GARAGE	446			138,400	310	
TOTAL	463					
NET GAIN	261					

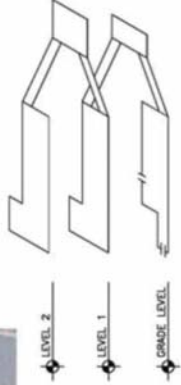
NOTE:
DOES NOT INCLUDE LOSS FOR
ACCESSIBLE SPACES.





CAR COUNT		SPACES		S.F.		B.T.F. %	
LEVEL		EXISTING (202)					
	NEW SURFACE	17					
	GARAGE ON GRADE	74		24,400	330		
SUPPORTED LEVELS							
1		186		57,000	307		
2		186		57,000	307		
	GARAGE	446		138,000	310		
	TOTAL	463					
	NET GAIN	261					

NOTE:
DOES NOT INCLUDE LOSS FOR
ACCESSIBLE SPACES.



access point at Unicorn Street would be closed, but can become an optional third entrance to the facility, if this connectivity is deemed desirable by the community and by the abutters. As shown on Figure 7.9, buffer zones with evergreen trees planted in landscaping strips next the facility would be lined along a pedestrian street equipped with civic amenities are introduced along the south boundary with the First Religious Society church and the Strand Theater building. On the north boundary, the current access lane to the Merrimack Landing basement parking function is not impacted by the layout of the Intermodal Parking Facility.

Figure 7.10 provides a cross-section of Green Street – Option A which shows the relative heights of the First Religious Society Church, the proposed facility and Merrimack Landing. As seen in Figure 7.10, the facility, including the elevator tower, is lower than the roof lines of the church and Merrimack Landing.

7.2.3 MVRTA Operations

The MVRTA Route 52, as shown in Figures 5.5, 5.6 and 5.7, would service the Green Street Option A design of the Intermodal Parking Facility. The two berths of the facility are saw-tooth type and would be located on the northwest corner of the site along the reconfigured Merrimack Street south sidewalk. The berth closest to the elevator tower would be assigned to MVRTA use only, while the other one could be assigned for general use by private and municipal bus services.

Weather protection along the exterior would be provided with canopies lining the north building façade above ground level. The waiting area would be located adjacent to the elevator tower.

7.2.4 Building Tenants and Building Appearance

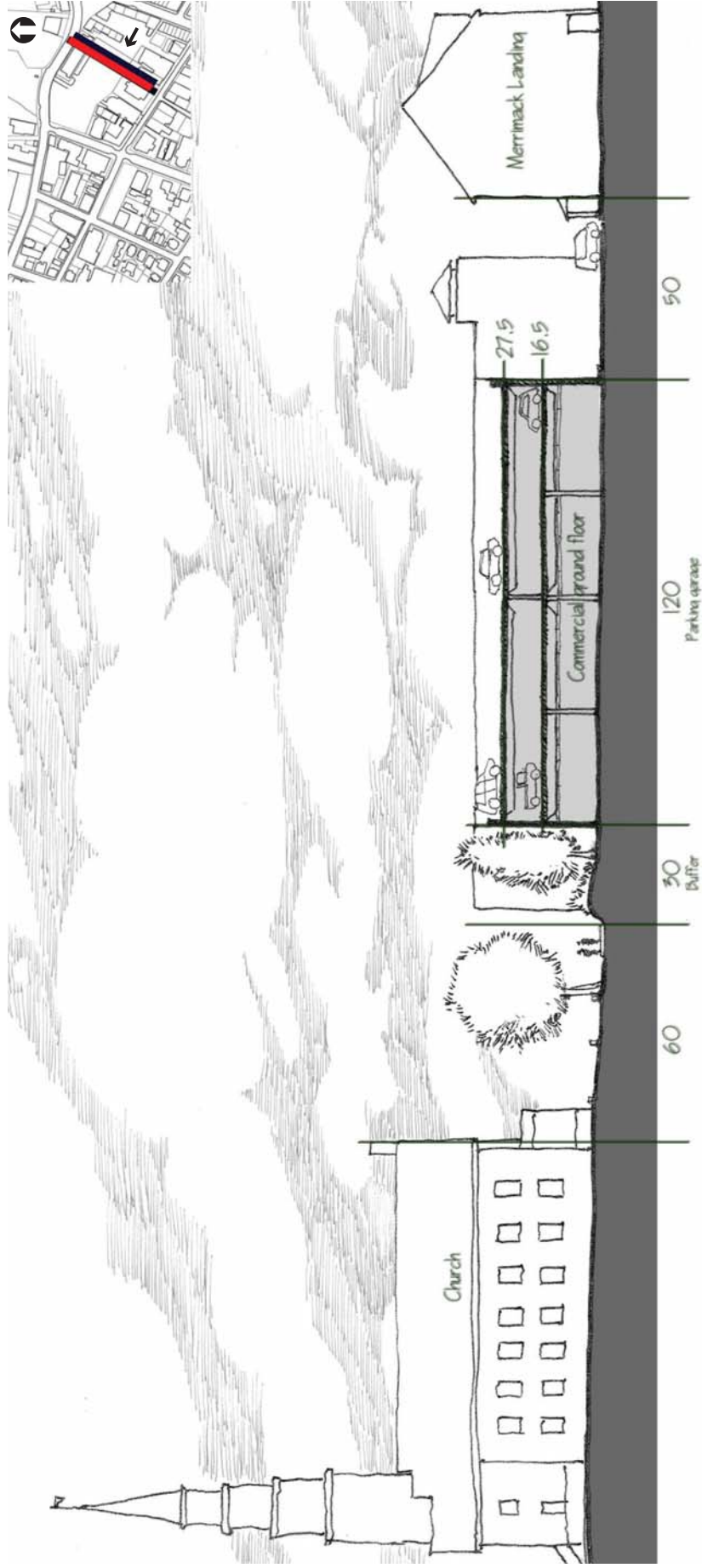
The design utilizes the 6-foot height differential between Green Street site entrance, which defines the first at-grade parking level of the facility and the Merrimack Street sidewalk, in order to provide an increased interior height for the tenant spaces.

Tying into the elements mentioned in 7.1.6, the basis of design creates a “street” wall and holds the corner of the city block, suggests a variation in the plane of all façade and avoids horizontally proportioned openings. The urban design attributes of this option include features such as the completion of the corner of the block, the extension of the historic streetscape of both Green and Merrimack Streets and a delineation of the pedestrian way behind Inn Street with new ground level retail. This retail amounts to approximately 3,300 square feet and provides a desired land use as the building faces Inn Street. Although the parking facility would be a new mass introduced into the urban fabric as shown on Figure 7.11, the boundaries would be softened with landscaped strips and the perimeter is enlivened with ample public sidewalks. Figure 7.12 depicts a possible façade treatment for the building wall facing the Merrimack Street/Green Street intersection.

7.2.5 Property Lines and Impacts

No private property would be taken to construct Green Street – Option A. The site is currently owned by the City of Newburyport. The existing surface parking lot would be replaced with the structured Intermodal Parking Facility. A small landscaped area (approximately 2,100 square feet)

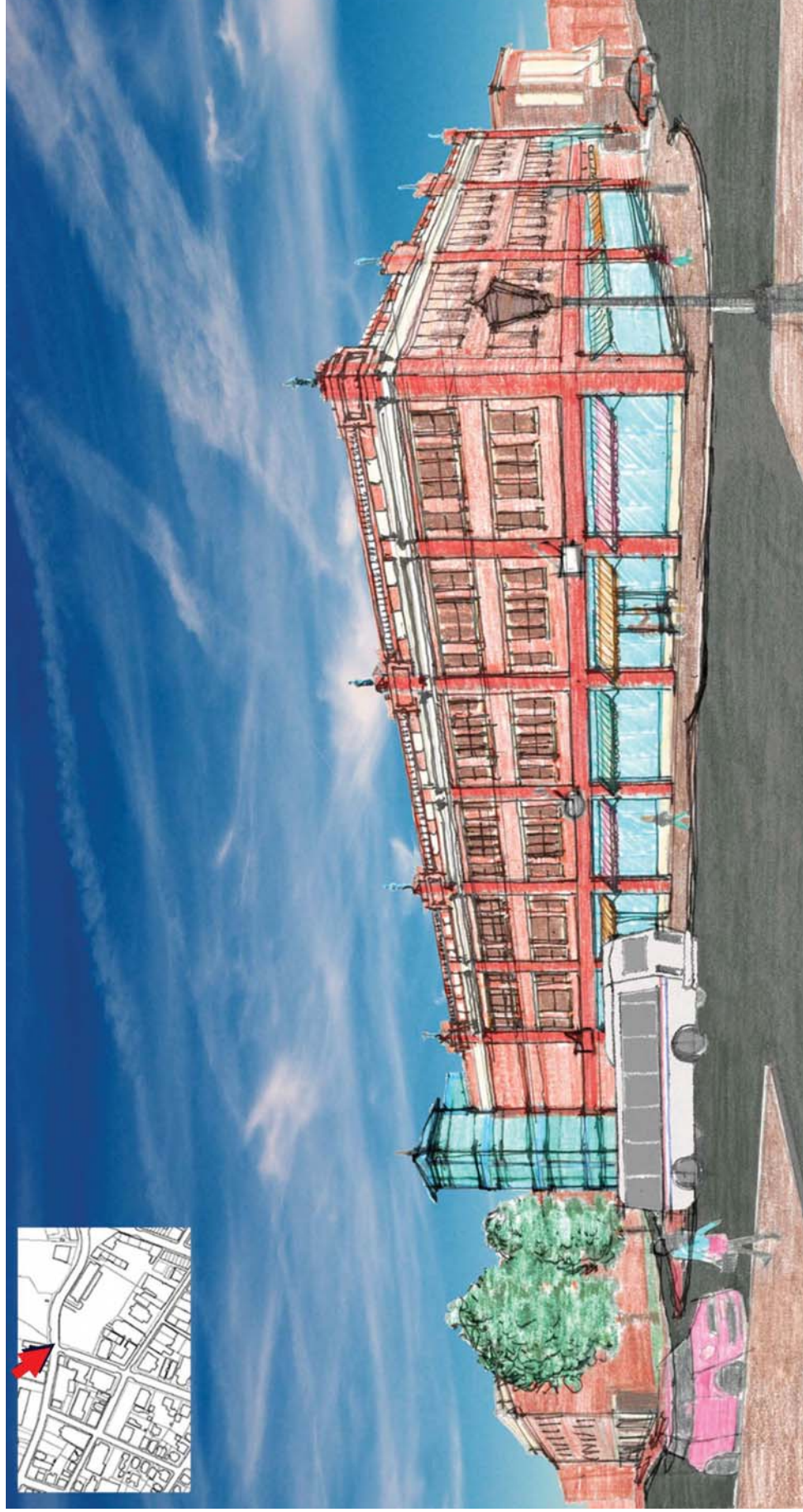




Intermodal Parking Facility
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Green Street - Option A
Cross-Section
Figure 7.10





Intermodal Parking Facility
Alternative Site Evaluation Report
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Green Street - Typical
Facade Treatment

Figure 7.12

currently provided at the corner of Green Street and Merrimac Street would be removed to accommodate the MVRTA bus berths.

7.3 Green Street – Option B

7.3.1 Parking Functional Design

The Green Street – Option B concept is shown on Figures 7.13 and 7.14. This option is also a two-bay structure, but with a significantly smaller footprint of 28,500 square feet and three supported levels and on a slab on grade. This facility has a total area of 111,000 square feet. It would contain 299 parking spaces and occupy only the westerly half of the site. The ramps in this option would not accommodate parking. The easterly portion of the site would be occupied by a 129-space surface parking lot. Ingress and egress to this site would be provided via Green Street, Merrimac Street and Unicorn Street. This design option would provide for approximately 1,000 square feet of space for MVRTA use, which would be located at the northeast corner of the garage. Green Street – Option B would result in a net gain of 226 parking spaces to the city, with an efficiency of 371 square feet-per space in the garage.

7.3.2 Site Access and Perimeter Treatment

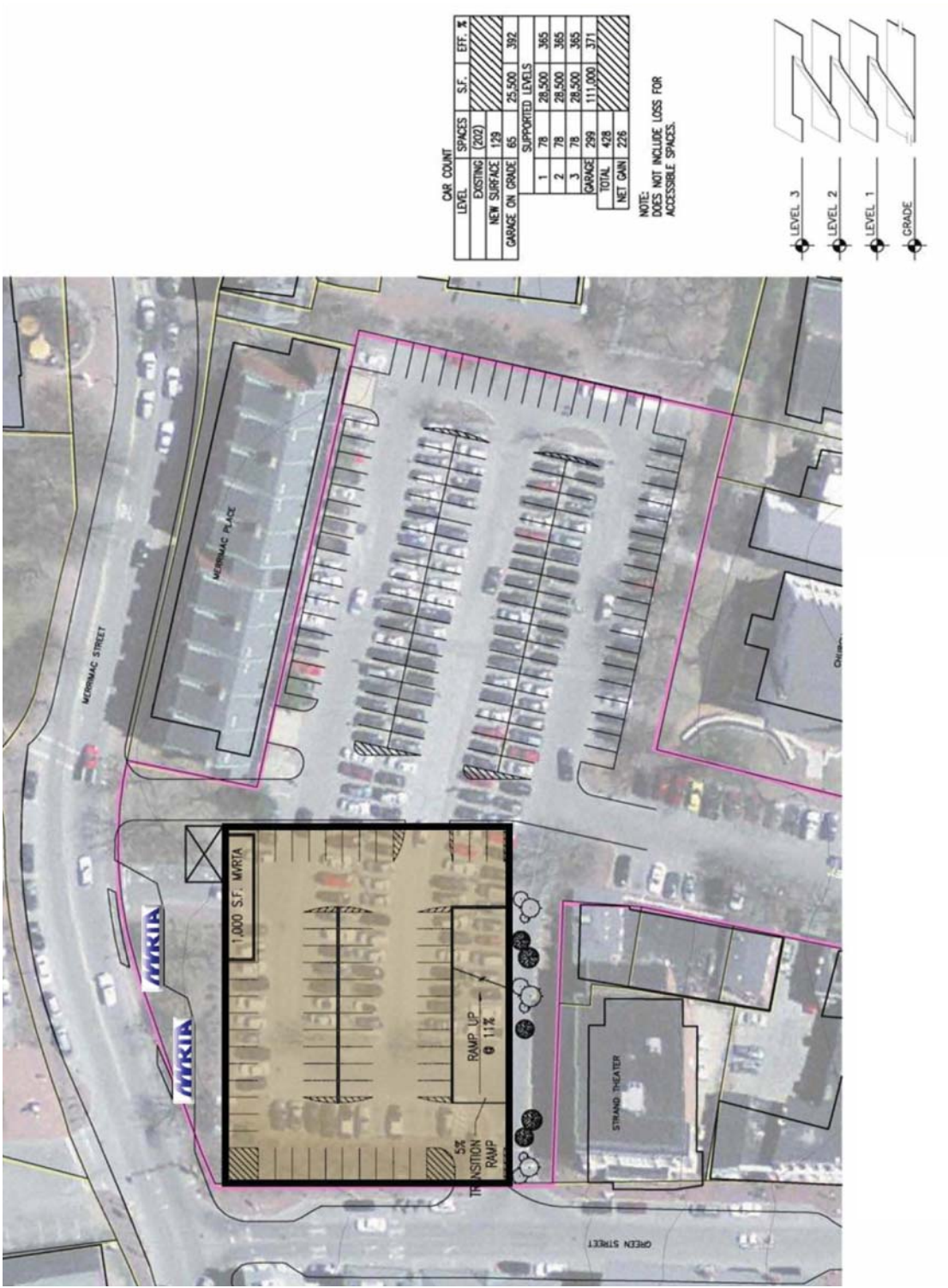
Site access would be provided in a similar fashion as with Green Street – Option A except that the existing Unicorn Street access way remains unchanged (i.e. open). The buffer zones along the southerly property lines would be considerably wider than in Option A and would allow for an organized landscaping south facing zone receiving ample sunlight and softening the relationship with the Strand Theater, as depicted on Figure 7.15. Access to the Merrimack Landing basement parking function is not impacted.

7.3.3 MVRTA Operations On-Site

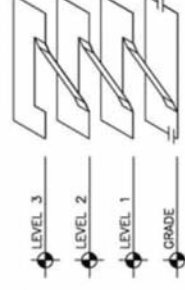
The MVRTA Route 52, as shown in Figures 5.5, 5.6 and 5.7, would service the Green Street Option B design of the Intermodal Parking Facility. The two berths, the canopy and the indoor waiting area of the Intermodal Parking Facility are similar to those in Option A.

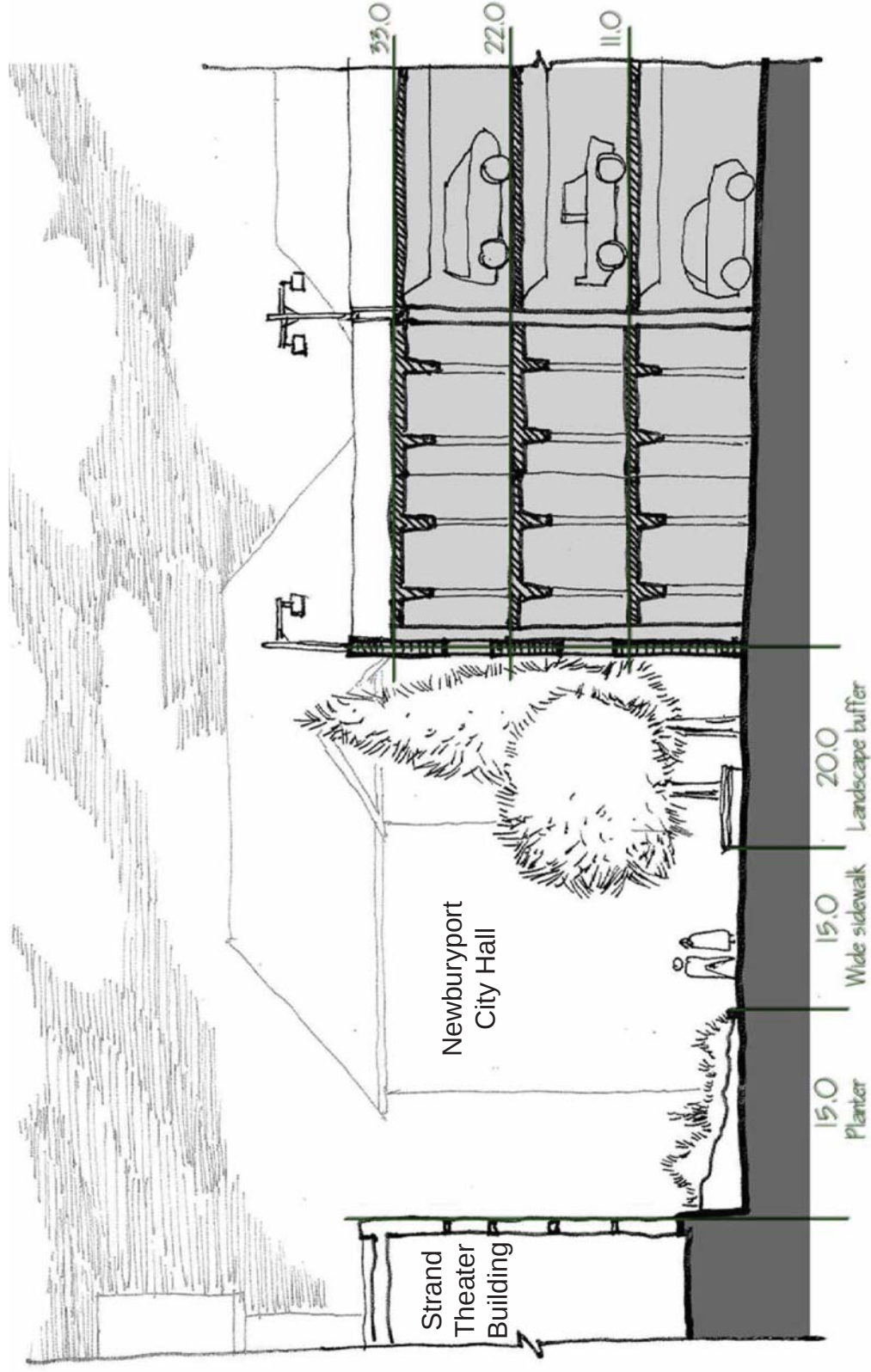
7.3.4 Building Tenants and Building Appearance

In this option, the proposed footprint can be a reference to conditions several decades back in the history of Newburyport, when buildings lined Green Street all the way to Merrimac Street. The building size is constrained by streets on all its sides and, as a result, very limited space is provided for ground floor uses facing Merrimac Street. A 1,000-square-foot area is carved out of the northern parking bay and is assigned to MVRTA operations as a waiting area. The building appearance follows the basis of design elaborated in Option A, although given the impact of an additional floor compared to Option A, the façade includes cornice treatment at the top of the third floor as shown on Figure 7.12. A cross-section depicting the Strand Theater building and the proposed facility is shown on Figure 7.16. The potential for organized landscaping in the newly



NOTE:
DOES NOT INCLUDE LOSS FOR
ACCESSIBLE SPACES.





created area between the theater building and facility is depicted on the figure as well as the relationship to Newburyport City Hall (in the background).

7.3.5 Property Lines and Impacts

No private property would be required to construct Green Street – Option B. The site is currently owned by the City of Newburyport. Approximately half of the existing surface parking lot would be replaced with the structured Intermodal Parking Facility. A small landscaped area (approximately 2,100 square feet) currently provided at the corner of Green Street and Merrimac Street would be removed to accommodate the MVRTA bus berths.

7.4 Titcomb Street – Option A

7.4.1 Parking Functional Design

The Titcomb Street – Option A is shown on Figures 7.17 and 7.18. This option A is a 3 ½ level, two-bay structure located on Merrimac Street, extending over Titcomb Street. It would occupy several parcels of the site, but would not include the property at 49-57 Merrimac Street (former gas station). A portion of the structure would be constructed on Titcomb Street, effectively closing Titcomb Street between Merrimac Street and Pleasant Street.

The grade level of the structure would contain only 4,790 square feet of parking area, approximately 11,500 square feet of retail space and 5,000 square feet of commercial are designated for the MVRTA. The retail space would run along Merrimac Street and the commercial space runs along the east side of the structure and would sit atop where Titcomb Street currently exists. The garage would have a footprint of 32,650 square feet, a total area of 102,740 square feet. and would contain 323 spaces. Parking would be permitted on the up and down ramps. A 31-space surface parking lot would be located on the southeast corner of the site, with ingress and egress points on Merrimac Street and what would remain of Titcomb Street. The parking structure would only be accessed at its northwest corner from Merrimac Street. There is a net gain of 354 parking spaces of which 31 would be restricted for the tenant occupying the retail space. This option has an efficiency of 318 square feet per space.

7.4.2 Site Entrances/Exits and Perimeter Treatment

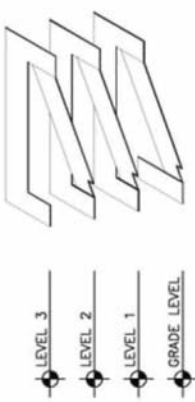
As shown on Figure 7.19, Titcomb Street from Pleasant Street to Merrimac Street would be closed to public traffic and turned to a throughway/alley connecting Pleasant Street to a new surface parking lot in the middle of the block. The purpose of the open parking would be to service the ground floor retail uses proposed in the Intermodal Parking Facility. The facility itself would be accessed directly from Merrimac Street about 150 feet east of its intersection with Market Street.

The site perimeter includes certain features that are required for a public building such as the Intermodal Parking Facility, but also are necessary for mitigation with the abutting properties. Landscaping and exterior elements such as compactors and air handling units require placement that does not create concealed spaces. Safety can be enhanced by providing building perimeter



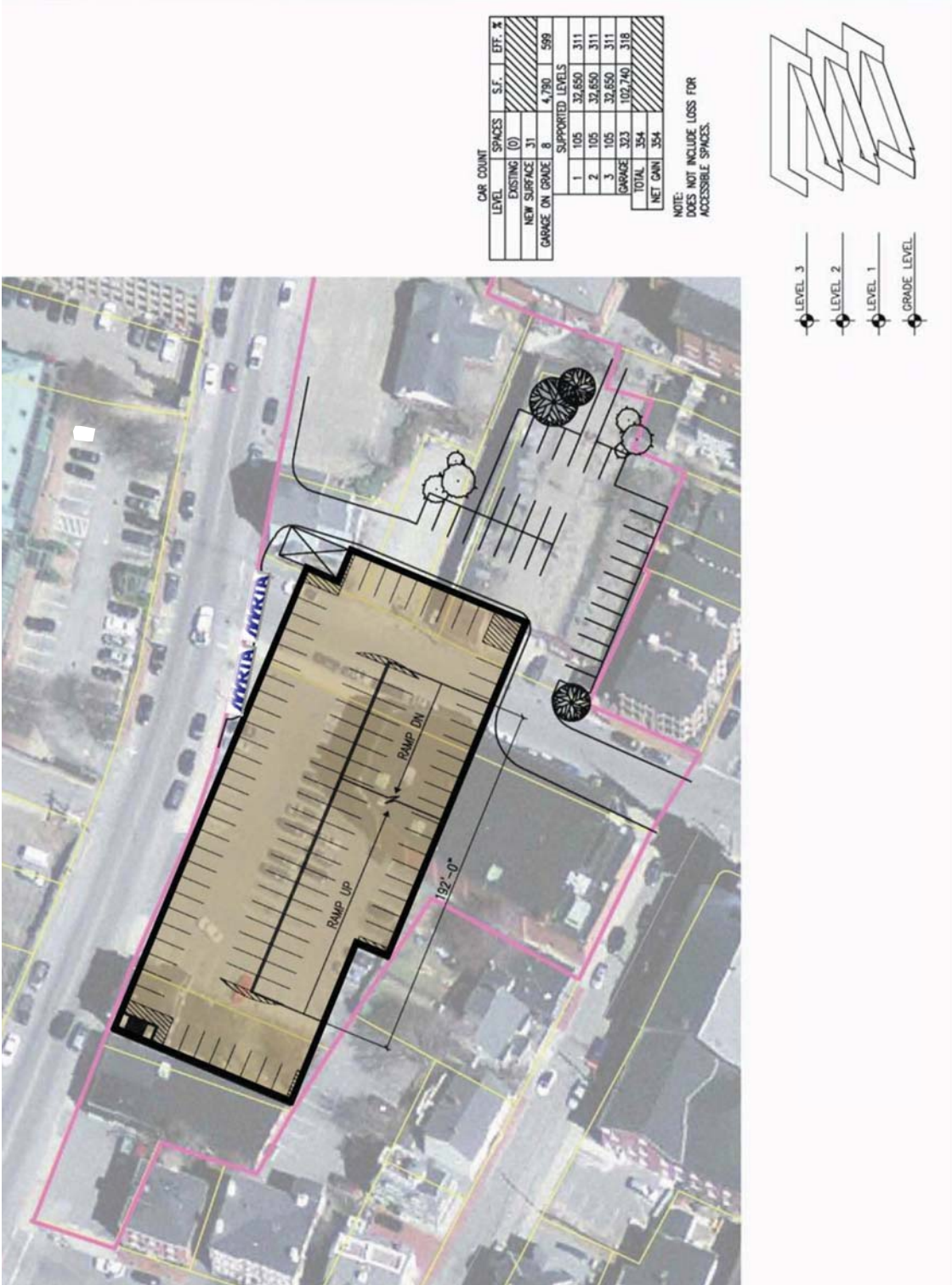
CAR COUNT		SPACES	S.F.	EFF. %
LEVEL	EXISTING (0)			
NEW SURFACE	31			
CARPACE ON GRADE	8		4,790	599
SUPPORTED LEVELS				
1	105		32,650	311
2	105		32,650	311
3	105		32,650	311
CARPACE	323		102,740	318
TOTAL	554			
NET GAIN	554			

NOTE:
DOES NOT INCLUDE LOSS FOR
ACCESSIBLE SPACES.



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Titcomb Street - Option A
Grade Level
Figure 7.17



Intermodal Parking Facility
Alternative Site Evaluation Report
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Titcomb Street - Option A
Typical Level
Figure 7.18



access and exterior lighting that limits the dark areas, while at the same time does not spill over to the abutting properties. Planting evergreens along the south boundary can help conceal the utilitarian nature of the building's back façade. Site design would include sloping the perimeter landscape away from the abutting properties and avoiding impacts to existing fences. Where possible and allowable by codes and regulations, the stormwater would be captured and diverted into the landscape to recharge the aquifer.

7.4.3 MVRTA Operations

The two bus berths of the Intermodal Parking Facility would be situated along Merrimac Street parallel to the curb, with a modified sidewalk constructed partially within the property line of parcel 47-34. Along the ground floor of the Intermodal Parking Facility, the proposed arcade would offer weather protection and would be adjacent to the MVRTA waiting area. This option would require a modification to the new Route 52 (described in Section 5.2). Route 52 would proceed onto Green Street from High Street as noted in Figures 5.6 and 5.7, but would turn left from Green Street onto Pleasant Street, right onto Market Street and then right again onto Merrimac Street. This modification is shown on Figure 7.19.

7.4.4 Building Tenants and Building Appearance

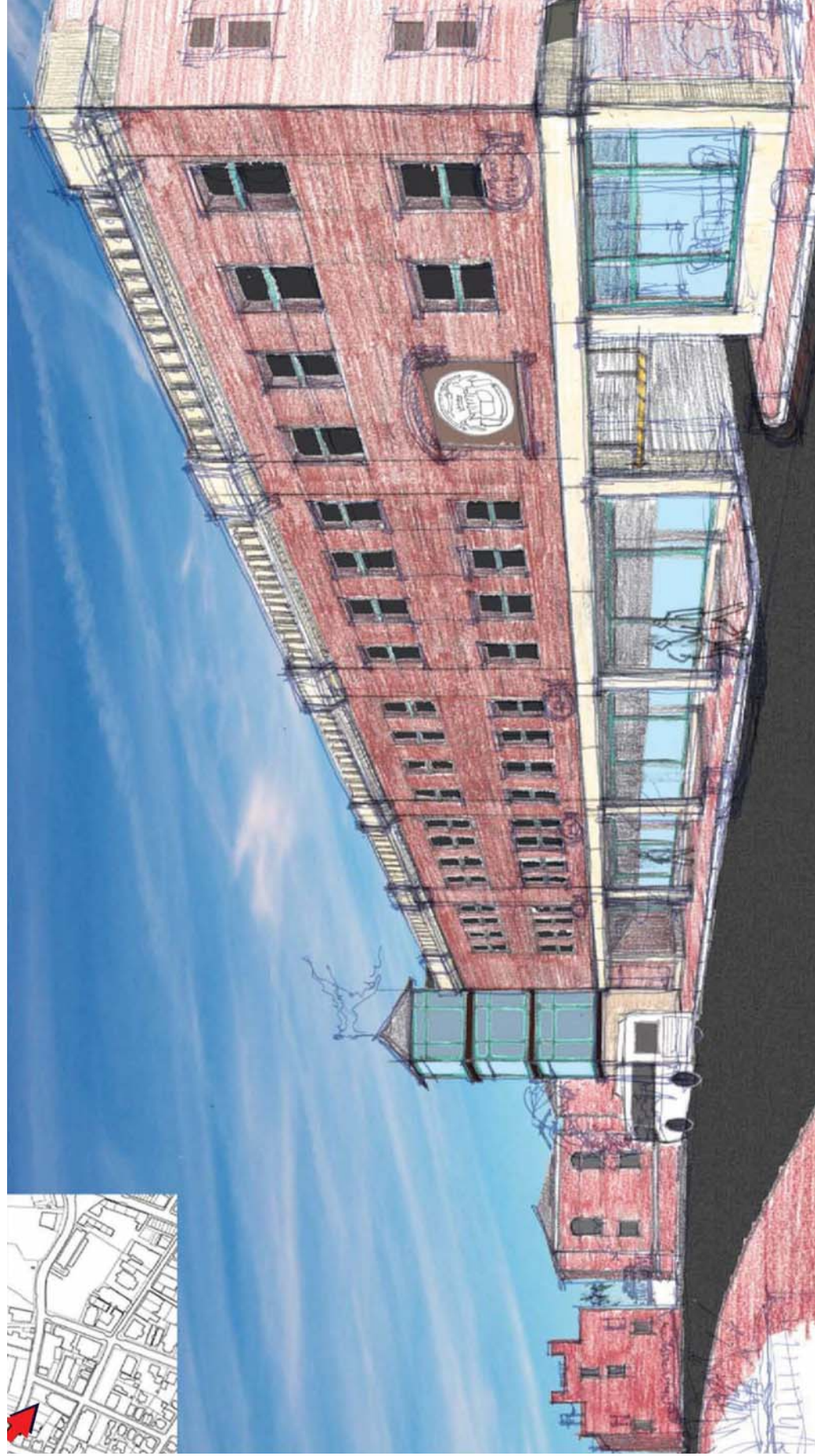
Anecdotal evidence has suggested that a retail or grocery store sized at approximately 8,000 to 10,000 square feet would be able to flourish in downtown in the vicinity of the Titcomb Street site. With this scale in mind, the design has assigned half of the ground floor area to non-parking related uses and has added a service entrance from the internal parking lot.

The building façade that faces Merrimac Street measures approximately 250 feet in length, a size seen in some buildings situated in others parts of downtown such as Merrimack Landing located on Merrimac Street, east of Green Street. These other buildings illustrate clarity and minimal ornamentation, a rhythm of human-scale openings and quality detailing with materials and their transition. The Intermodal Parking Facility appearance would build on these elements and would become integrated into the Newburyport cityscape. One possible design for the facility's Merrimac Street façade is shown on Figure 7.20. The internal building façades need not be as solid and emphasized as the one facing Merrimac Street. Their design would be based on priorities such as noise barriers, light spillage prevention, landscaping elements, concealment of mechanical items and maintenance schedule.

A cross-section of the Titcomb Street – Option A is shown on Figure 7.21. As seen in the figure, the height of this 3.5-story facility would be consistent with nearby buildings.

7.4.5 Property Lines and Required Takings

Table 7.2 summarizes the area of each of the parcels which comprise the Titcomb Street site that would be required to implement Titcomb Street – Option A. Of the 93,500 square feet that comprise the existing site, it is estimated that approximately 64,700 square feet would be required.



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Titcomb Street - Option A

Rendering

Figure 7.20

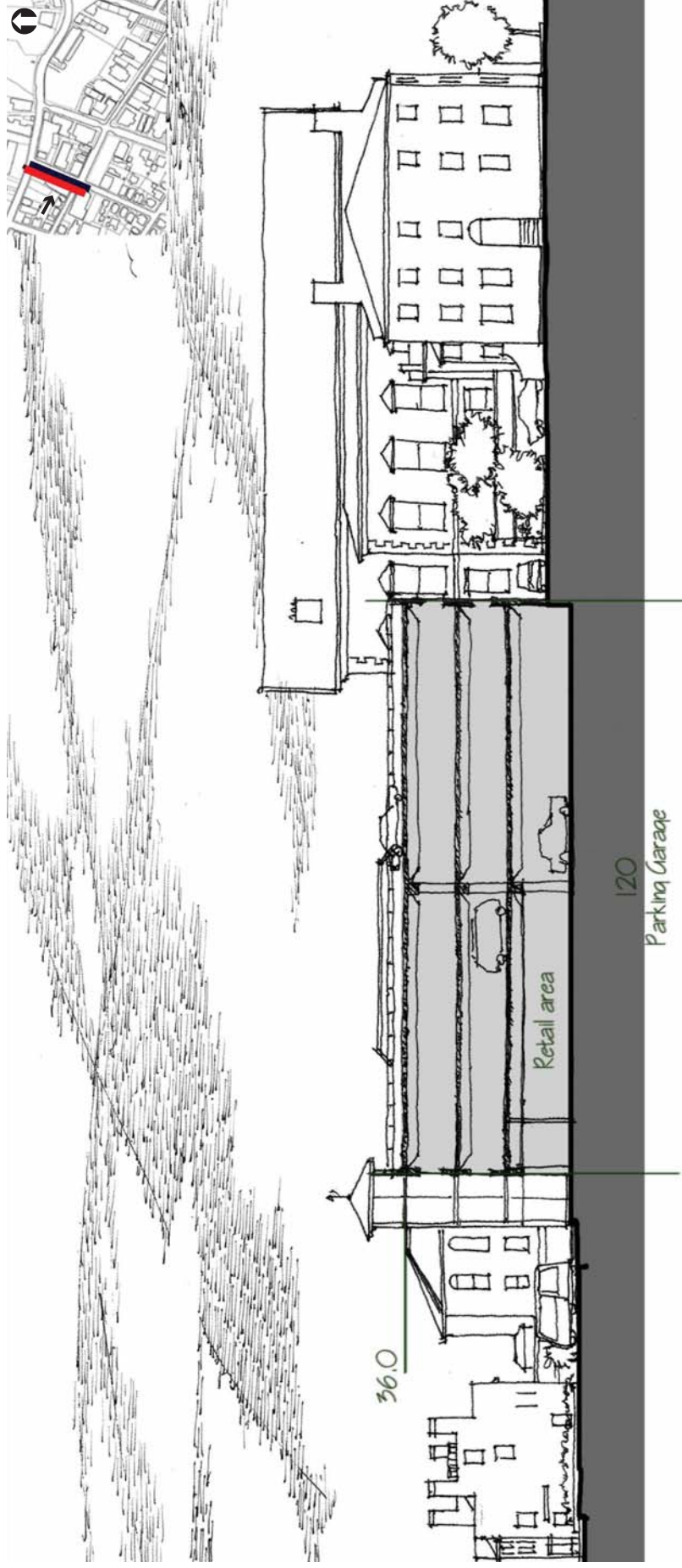


Table 7.2 Titcomb Street – Option A Property Requirements

Address	Map/ Lot	Area	Current Land Use	Area Required for Titcomb Street - Option A
49-57 Merrimac St.	47-10	17,995 s.f.	Gas Station (no active use)	None
85-87 Merrimac St.	47-39	7,350 s.f.	Commercial (bridal shop)	None
81-83 Merrimac St.	47-38	4,700 s.f.	2 Family	4,700 s.f.
90 Pleasant St.	47-34	31,910 s.f.	Health Club	31,910 s.f.
1 Titcomb St.	47-15	3,110 s.f.	3 Apartments	3,110 s.f.
5-7 Titcomb St.	47-16	3,431 s.f.	Driveway easement	None – easement would remain
9-11 Titcomb St.	47-17	13,077 s.f.	Garage (no active use)	13,077 s.f.
Titcomb St.	-	11,900 s.f.+/-	Roadway right of way	11,900 s.f.+/-
Total		93,473 s.f.		64,687+/-

In the vicinity of the health club, a new 7,500 square feet parcel could be created with frontage on Pleasant Street. The MVRTA could sell or lease this parcel.

7.5 Titcomb Street – Option B

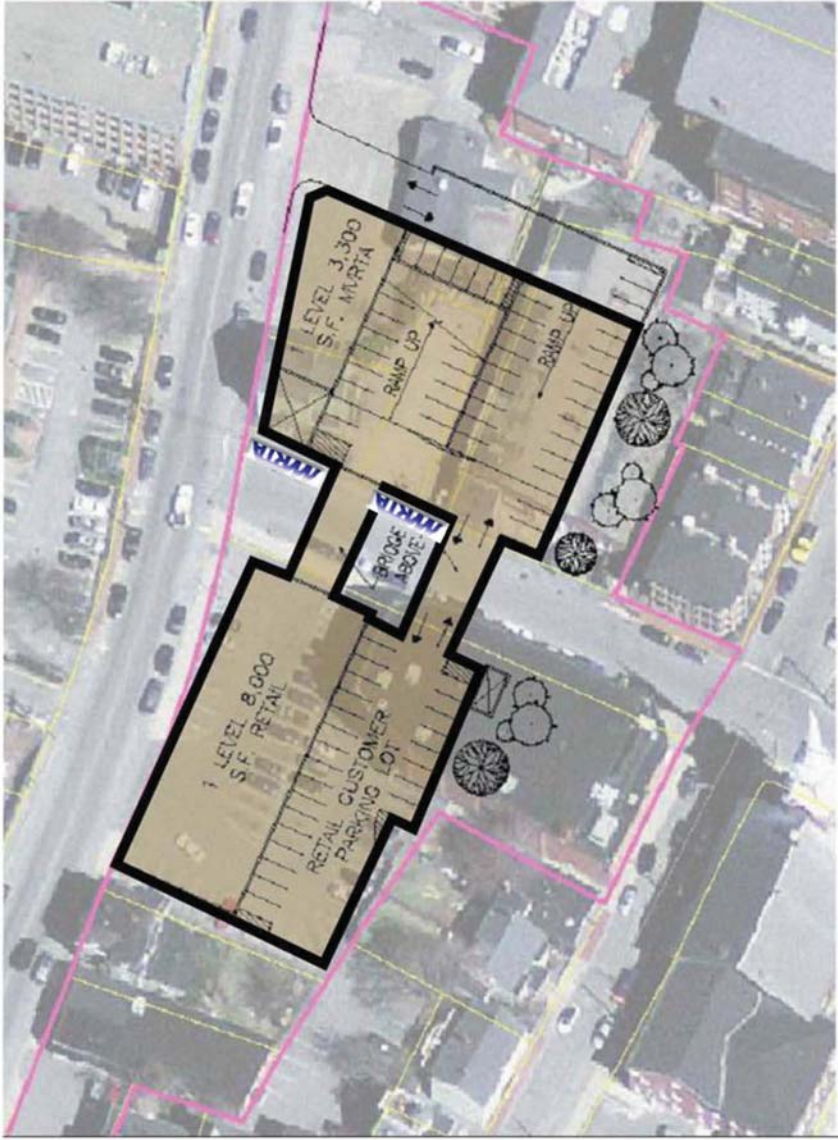
7.5.1 Parking Functional Design

Titcomb Street – Option B is shown on Figures 7.22 and 7.23. This option would be a 107,950-square foot structure with two bridges over existing Titcomb Street. West of Titcomb Street on-grade is an 8,000-square-foot retail space and a 25-space surface parking lot associated with the retail space. Two structured levels would be provided over the retail space and surface parking spaces. East of Titcomb Street would be a surface level of parking (35 spaces), a structured level with 51 spaces, two additional structured parking levels spanning Titcomb Street and 3,300 square feet of commercial space for use by the MVRTA. The top two 38,400-square-foot levels that span both sides of Titcomb Street each would provide 105 parking spaces.

Access to the structure would be via Merrimac Street or Titcomb Street while the surface lot on the west side of the site could only be accessed from Titcomb Street. The top two levels of the garage would be accessed via the portion of the structure that is on the east side of the site. Two, two-way vehicle bridges are located on each of the top two levels of the garage that would connect the portion of the structure on the west side of Titcomb Street, with the portion of the structure on the east of the Titcomb Street. With this option, there would be a net gain of 321 parking spaces of which 35 would be restricted to retail use. The structure has an efficiency of 365 square feet per space.

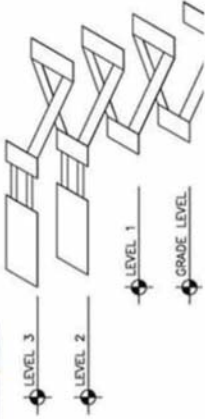
7.5.2 Site Entrances/Exits and Perimeter Treatment

The parking garage building would be accessed from a driveway on Merrimac Street, east of Titcomb Street and from a driveway on Titcomb Street, south of Merrimac Street. The western portion of the site includes an open parking lot associated with the ground floor retail facing Merrimac Street and placed under the third and fourth level of the parking facility above. This parking lot would be accessed by a driveway located opposite the existing Titcomb Street repair garage driveway. The proposed site plan for Titcomb Street – Option B and the new parcels are shown on Figure 7.24.



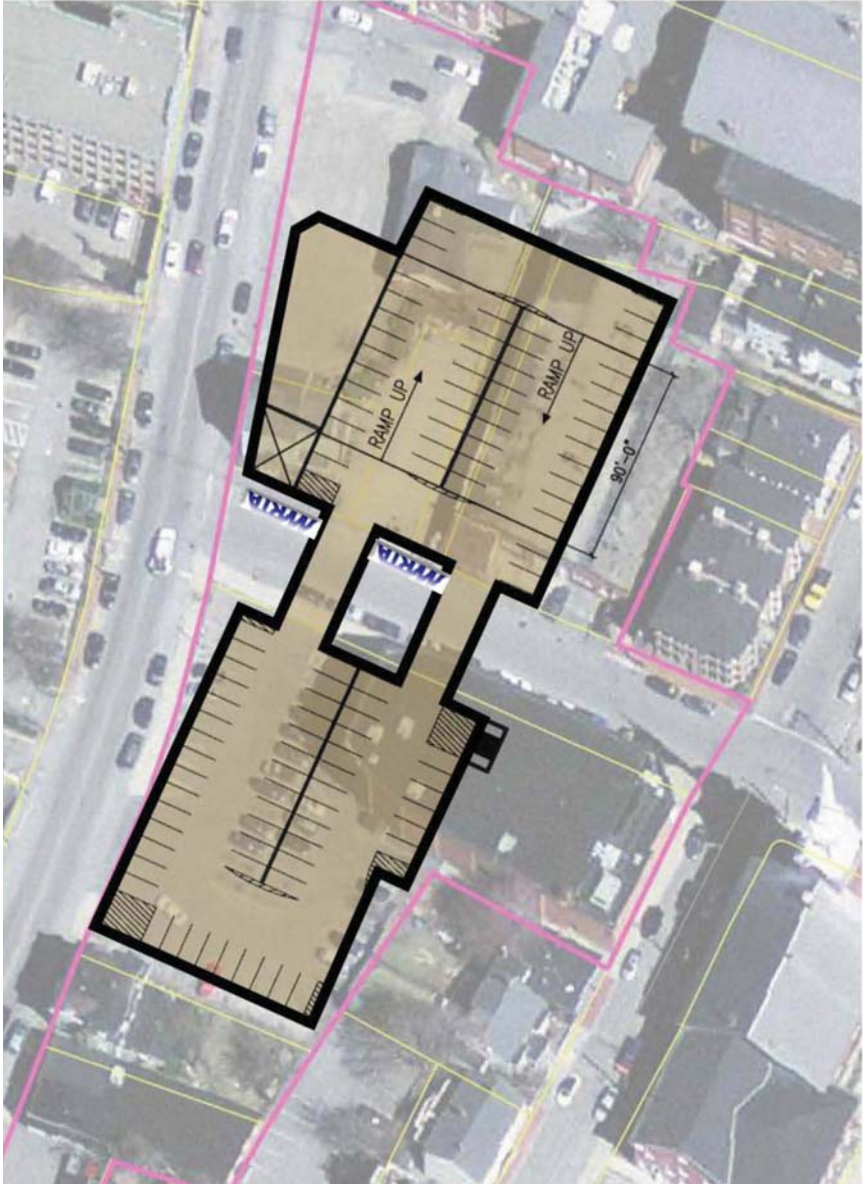
CAR COUNT		S.F.		EFF. %	
LEVEL	SPACES	EXISTING (0)	NEW SURFACE	75	
GARAGE ON GRADE		35	13,400	383	
SUPPORTED LEVELS					
1	51	17,750	348		
2	105	38,400	366		
3	105	38,400	366		
GARAGE		296	107,950	365	
TOTAL		321			
NET GAIN		371			

NOTE:
DOES NOT INCLUDE LOSS FOR
ACCESSIBLE SPACES.



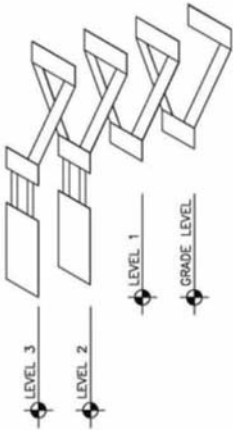
Intermodal Parking Facility
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Titcomb Street - Option B
Grade Level
Figure 7.22



CAR COUNT			
LEVEL	SPACES	S.F.	EFF. %
EXISTING (0)			
NEW SURFACE	25		
GARAGE ON GRADE	35	13,400	36.3
SUPPORTED LEVELS			
1	51	17,750	34.8
2	105	38,400	36.6
3	105	38,400	36.6
GARAGE	296	107,950	36.5
TOTAL	321		
NET GAIN	321		

NOTE:
DOES NOT INCLUDE LOSS FOR
ACCESSIBLE SPACES.





In addition to the perimeter treatment described in 7.4.2 under Titcomb Street – Option A, this option due to its configuration would include considerable wider landscape buffers for most of the Pleasant Street properties.

7.5.3 MVRTA Operations

The bus berths would be located on the east sidewalk of Titcomb Street with canopies provided for weather protection. This option would require a modification to the new Route 52 (described in Section 5.2). Route 52 would proceed onto Green Street from High Street as described in Section 5.2 and shown on Figures 5.6 and 5.7, but would turn left from Green Street onto Pleasant Street, right onto Titcomb Street and then right again onto Merrimac Street. This modification is shown on Figure 7.24.

7.5.4 Building Tenants and Building Appearance

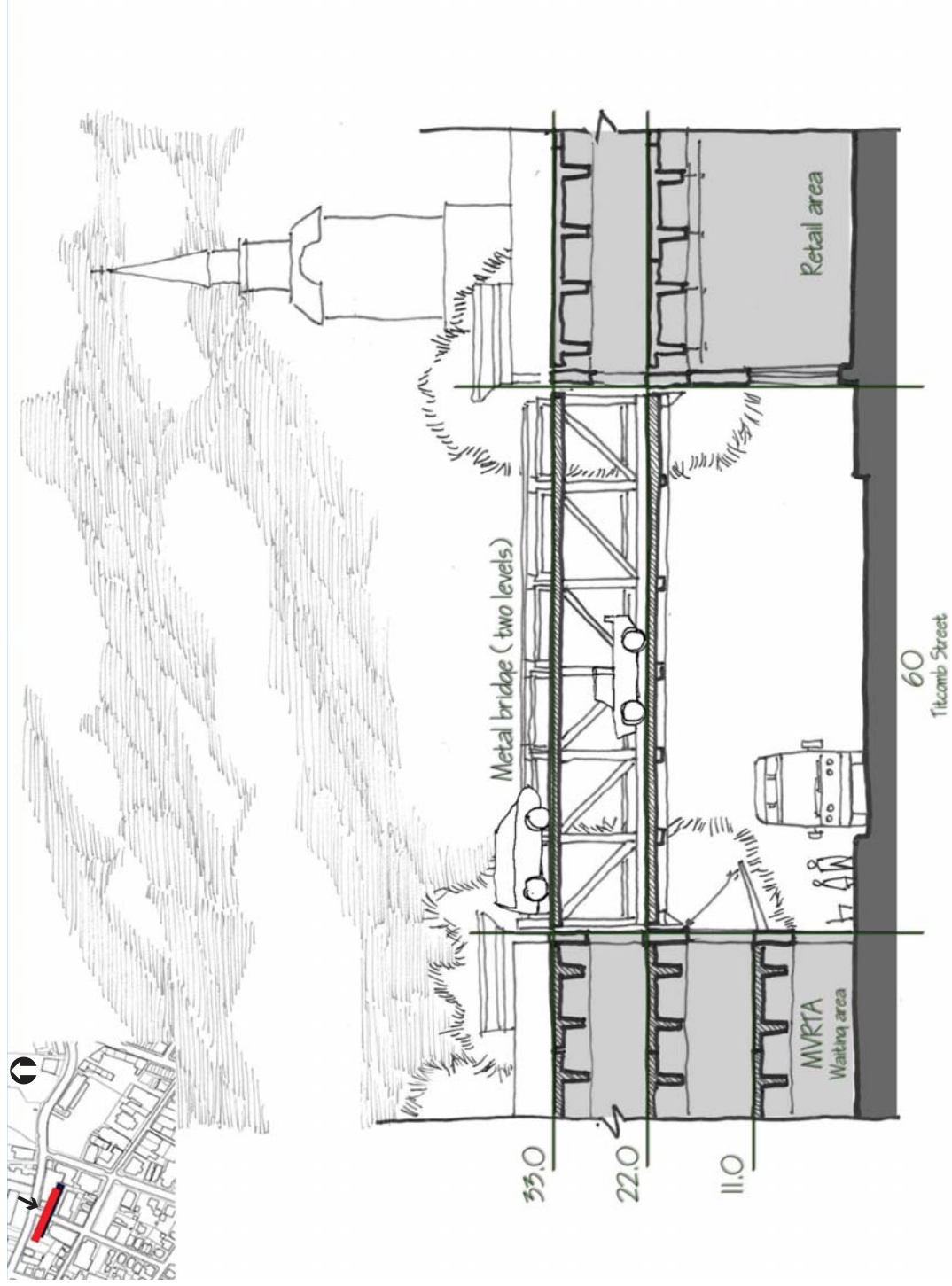
Facing Merrimac Street would be an area of approximately 8,500 square feet assigned to ground floor retail. Due to the four foot height differential between Merrimac Street and Titcomb Street and due to the vehicle clearance required under the bridges, the tenant space could become two stories, thus maximizing the economic benefit to the City and the value of the facility itself.

The building mass would be broken down into two parts, a decision that positively affects its perception from a pedestrian’s standpoint. The two parts are functionally connected with two “bridges,” each one accommodating traffic at the second and third parking levels, and with minimum of 16-foot vehicular clearance below them. A cross-section of this design is shown on Figure 7.25, and a rendering of the design is shown on Figure 7.26. The aesthetic treatment of these bridges is a considerable design task for the final stage of the project. Under this study, the approach of the team has turned to railroad imagery as a significant part of Newburyport’s past. The building façades can follow guidelines similar to Titcomb Street – Option A.

7.5.5 Property Lines and Required Takings

Table 7.3 summarizes the area of each of the parcels which comprise the Titcomb Street site that would be required to implement Titcomb Street – Option B. Of the 93,500 square feet that comprise the existing site, it is estimated that approximately 70,800 square feet would be required.

Two new parcels could be created as part of this option as shown on Figure 7.24. The parcel on Pleasant Street would have approximately 5,000 square feet and the parcel on Merrimac Street would have approximately 6,000 square feet. The MVRTA could sell or lease these parcels.



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Titcomb Street - Option B

Cross-Section

Figure 7.25

Table 7.3 Titcomb Street – Option B Property Requirements

Address	Map/ Lot	Area	Current Land Use	Area Required for Titcomb Street – Option A
49-57 Merrimac St.	47-10	17,995 s.f.	Gas Station (no active use)	17,995 s.f.
85-87 Merrimac St.	47-39	7,350 s.f.	Commercial (bridal shop)	None
81-83 Merrimac St.	47-38	4,700 s.f.	2 Family	4,700 s.f.
90 Pleasant St.	47-34	31,910 s.f.	Health Club	31,910 s.f.
1 Titcomb St.	47-15	3,110 s.f.	3 Apartments	3,110 s.f.
5-7 Titcomb St.	47-16	3,431 s.f.	Driveway easement	None – easement would remain
9-11 Titcomb St.	47-17	13,077 s.f.	Garage (no active use)	13,077 s.f.
Titcomb St.	-	11,900 s.f.+/-	Roadway right of way	None
Total		93,473 s.f.		70,792+/-

7.6 Construction Cost Estimates

Study phase construction cost estimates for the four options under consideration for the Intermodal Parking Facility have been prepared. Estimates include a construction cost for the parking areas (i.e. structured and surface parking areas) and a separate cost for retail areas. For each option, the total project cost is the sum of these two estimates. Three cost estimates were prepared for each option of which two were developed on a per square foot basis (high and low) and one of which was developed on a per space basis. The construction cost estimates per square foot were based on the following assumptions:

1. The estimate is in present day (2010) dollars
2. All work to be performed first (day) shift with no provisions for scheduled overtime
3. No restricted access to work zones
4. Construction work to be performed on a continuous basis with no stoppage.
5. For the Titcomb Street. site, a lump sum cost is included for "Beneficial Use Determination." This amount, provided by Tetra Tech Rizzo, is to cover evaluation of demolished material from the buildings demolition for suitable re-use.
6. No alternate parking would be provided during construction of the new facility at Green Street
7. Deep foundations would be used for the new structure(s)
8. Utility connections are nearby
9. Unit costs include General Conditions and Contractor Mark-ups (such as overhead and profit)
10. Contingency of 25 percent to allow for the uncertainty associated with the degree of design and scope definition. The expectation is that the design developed would be within the cost limits of this contingency.
11. Escalation is not included, as the projected construction schedule and duration have not been determined

A potential low cost was estimated to show the possible price range that can be expected dependent on market conditions. This low price variation was developed using recent bid results for several parking garages. These feasibility study level estimates represent a reasonable opinion of the fair cost of construction. It is not a prediction of the successful bid.

The cost per space estimate falls between the high and low estimates developed on a per square foot basis and is used for cost comparison in this study. Table 7.4 provides a summary of the cost estimates for the four design options, the cost per parking space and the cost per net increase in parking spaces. The detail cost estimates are provided in Appendix C.

Table 7.4 Construction Cost Summary

Description	Green Street Option A	Green Street Option B	Titcomb Street Option A	Titcomb Street Option B
Site Work	\$2,630,000	\$2,976,000	\$2,214,000	\$2,335,000
Office Space	\$456,000	\$456,000	\$456,000	\$1,506,000
<u>Garage Structure Estimate Based on S.F. Costs</u>				
Garage (high estimate)	\$14,635,000	\$10,008,000	\$10,599,000	\$9,713,000
Garage (low estimate)	\$9,516,000	\$6,244,000	\$8,990,000	\$7,422,000
Total Project (High Estimate)	\$17,721,000	\$13,440,000	\$13,269,000	\$13,554,000
Total Project (Low Estimate)	\$12,602,000	\$9,676,000	\$11,660,000	\$11,263,000
<u>Garage Structure Estimate Based on per Space Cost</u>				
Garage	\$11,614,000	\$7,468,000	\$10,030,000	\$7,759,000
Total Project	\$14,700,000	\$10,900,000	\$12,700,000	\$11,600,000
Total Project - Used for Project Analysis	\$14,700,000	\$10,900,000	\$12,700,000	\$11,600,000
Cost per Parking Space	\$34,989	\$28,505	\$56,966	\$63,176
Cost per Net Increase in Parking Space	\$62,069	\$53,982	\$56,966	\$63,176

8.0 Impact Analysis

This section briefly describes the impact of the project on view corridors, nearby historical properties, adjacent neighborhoods, waterfront areas, natural resources, traffic operations, parking supply, transit operations and environmental justice populations. The analyses provided within this chapter is not intended to meet the requirements of an Environmental Assessment, but rather to provide the reader with an introductory understanding of project related impacts.

8.1 Visual

The size of the proposed Intermodal Parking Facility exceeds the volume of large buildings in the downtown. Architectural design strategies, such as breaking up the façade plane or variations in the use of materials, would be required in order to introduce a smaller scale, more human and familiar as seen throughout downtown Newburyport. Architectural design and detailing of the facility's façade would meet the Secretary of the Interior's Standards.

Trees and vegetation in landscaped areas would conceal facades with utilitarian use and with fewer openings. Elevation differences at both sites would result in the need for retaining walls. Each of the design options aims to minimize the visual effect of retaining walls. Specifically for each option, visual impacts may include:

8.1.1 Green Street – Option A

The facility footprint would block the north/south view corridor from Unicorn Street to Merrimac Street and the waterfront area. Additionally, its length along the east-west axis exceeds 400 feet and thus requires extensive architectural façade treatment to make it compatible with the surrounding historic environment. Mature trees located in the northwest corner of the site would be affected and would need to be replaced in other areas of the site.

8.1.2 Green Street – Option B

The facility footprint is located in such a way that the north/south Unicorn Street view corridor would not be affected. Similar to Option A, mature trees located in the northwest corner of the site would be affected and would need to be replaced in other areas of the site.

8.1.3 Titcomb Street – Option A

The facility location allows for the layout of an internal parking lot, which is an improvement compared to the existing vacant garage abutting Titcomb Street. The facility height is shorter than the 40-foot tall building on Pleasant Street (currently used as a health club).

8.1.4 Titcomb Street – Option B

The facility would have a “dual” footprint (one on the east and another on the west portion of the site) with bridges interconnecting the two facility volumes. To mitigate the impact of the facility to

abutting properties on Pleasant Street, landscaping buffer zones ranging from 5 to 40 feet in width would be designed. This condition would be an improvement over existing conditions, as those are noted under Titcomb Street – Option A. Retaining walls may be eliminated, as these wide landscaped zones can be sloped to make up for elevation differences.

8.2 Neighborhood

This section describes the neighborhood impacts in terms of air quality, noise and affected existing land uses (commercial and residential), development potential around each site and new open spaces designed as part of the project. Furthermore, these impacts are evaluated on the basis of the successful balance between built and un-built environment in downtown Newburyport.

Air Quality. The parking garage is proposed as an open parking structure with sufficient “Free Area” along the perimeter elevations to negate the need for carbon monoxide monitoring systems or ventilation fans as required by code for closed parking garages. This design practice has been utilized on significantly larger urban parking structures throughout the country, with nominal, if any impact on the air quality to adjacent occupied buildings.

Noise. Although the garage is proposed as an open parking structure, limiting the maximum size of patron vehicles to no larger than typical vans and SUV’s along with the confined traffic and circulation patterns which minimize the vehicular speed and, the inclusion of a perimeter bumper wall (code required minimum 42 inches height) all aid in limiting the sound of the traffic and impact to adjacent properties. Noise abatement can be further enhanced by limiting hours of operation, inclusion of speed bumps and the nesting of transit and monthly/reserved garage patrons. Generally, the walls and ceilings associated with parking garages tend to serve as a buffer and improve traffic noise abatement when compared to open parking lots.

Noise and light spillage from the interior of the parking portion of the facility towards residences, churches and parkland would follow applicable state and federal regulations requiring mitigation of the impact. One possible strategy could be the installation of thin-blade louvers at the wall openings to allow air to naturally ventilate the floors, while reducing the amount of noise and light that “spill” out.

The garage is recommended to be constructed on concrete foundations. Conventional spread footings can be constructed with typical excavation machinery and have little impact on adjacent structures. Driven piles do require special attention since the hammering of piles can result in vibrations. Special measures must be taken to ensure no resultant damage to adjoining structures is incurred. Precautions such as pre & post-documentation surveys of all adjacent structures, limiting the pile driving hammer size and continual monitoring of vibration with multiple sensors strategically located, all contribute to a proactive approach to negating the potential for damage due to this type construction. Once the garage is constructed the mass of the structure and the isolated foundation system negate the potential for any vibrations beyond the structure.

Development Potential – Green Street Site. The Green Street site is a city-owned open parking lot, and as such does not embody a mixed-use residential or a commercial development potential. Most of the abutting properties include historic buildings, which contribute to the Newburyport

Local Historic District with an established density and land uses. A facility built on Green Street would result in a loss of open space and would disrupt the successful balance of built and un-built space, more so in Option A than in Option B.

Development Potential – Titcomb Street Site. With the construction of facility, currently underdeveloped land would approach its potential. Specifically, those parcels that have not yet achieved a building density with viable ground floor land-uses would be developed as part of one mixed-use facility. The Titcomb Street location, due to its proximity to Waterfront West development project, presents opportunities for joint development between the public and private sectors, which could have a positive impact on adjacent parcels and lead to redevelopment to their full potential. General access to the Clipper City Rail Trail would be positively affected by the proximity of the facility to the path's terminus. Current paved areas for open parking would be converted to either building or landscaped/pervious space. The residential uses along Pleasant Street would be impacted due to added traffic to/from the facility.

Under Titcomb Street – Option B, the east portion of the building would be in close proximity to the Police Station, a condition which would require special mitigation and monitoring.

8.3 Waterfront

The project would have a positive impact on the Merrimack River waterfront area in downtown Newburyport. One of the primary goals of the project is to provide replacement parking for existing parking spaces located in the existing NRA parking lots which would be replaced by a waterfront park expansion project. The park expansion project would be difficult to construct without the parking spaces provided by the Intermodal Parking Facility.

8.4 Historical

The area of potential effect extends from the site perimeter to adjacent properties within one block distance. Historic buildings in these properties may require monitoring for vibration due to construction and for maintaining their structural integrity. New building construction would propose architectural styles and materials visually compatible with historic buildings. The selection of construction equipment would aim to avoid adverse effects on adjacent historic buildings as well as certain private yards that are part of the historic character definition. The contractor should be required to prepare a Preservation and Monitoring Plan, which at a minimum, would include archival documentation, existing conditions report, preservation treatments and monitoring responsibilities.

All design options include rooftop parking and thus require roof lights. With lighting and façade treatments compatible with adjacent historic buildings, the impacts to historical buildings in downtown would be minimal.

The list shown for each option is based on a Historic Survey of the City of Newburyport (posted in <http://www.cityofnewburyport.com/Planning/HistoricSurveys.html>) and is part of the Massachusetts Historical Commission's (MHC) statewide inventory. For the purposes of this

study, it is assumed that these properties meet the eligibility criteria for historical significance for listing as historic resources on local, state or federal registers.

8.4.1 Green Street Site

Due to its location, the proposed Intermodal Parking Facility affects a considerable percentage of the abutting and near buildings, some of which are most prominent in the downtown neighborhood. A historic consultant/conservator that meets the Secretary of Interior professional qualifications would be required to be part of the final design consultant team in order to recommend and specify mitigation and monitoring procedures that reduce historic impacts to a less-than-significant level.

By situating the building in the corner of Merrimac Street and Green Street, Option B completes the block and reconstitutes the original (pre 1970s) configuration of Green Street.

There are 11 historic properties affected by items listed under paragraph 8.4. These properties are:

- 4-8 Inn Street
- 12-16 Inn Street
- 24-26 Inn Street
- 42-50 Inn Street
- 16-20 Pleasant Street
- 24 Pleasant Street
- 26 Pleasant Street (First Religious Society church)
- 40-50 Pleasant Street
- 60 Pleasant Street (City Hall)
- 6 Green Street (Police Station)
- 15 Green Street (Strand Theater)

8.4.2 Titcomb Street Site

There are 11 historic properties affected by items listed under paragraph 8.4. These properties are:

- 40 Merrimac Street
- 43-47 Merrimac Street
- 44-46 Merrimac Street
- 81-83 Merrimac Street
- 85 Merrimac Street
- 61 Pleasant Street (Post Office)
- 68 Pleasant Street
- 72 Pleasant Street
- 74-76 Pleasant Street
- 1 Market Street
- 3 Market Street

8.5 Natural Resources

8.5.1 Aquifer Recharge/Groundwater Protection

The MassGIS Aquifers Datalayer (2007) and Public Water Supplies Datalayer (2009) indicate that the final two sites are not located in a public recharge area and no public drinking water supplies are located within 500 feet of the final two sites. Therefore, neither of the two sites would have any impact on aquifers or public drinking water supplies.

8.5.2 Wetland Resource Areas

Bank (310 CMR 10.54). The Merrimack River is located approximately 300 feet north of the final two sites. There would be no impact to Bank from development on either site.

Bordering Vegetated Wetland (310 CMR 10.55). There are no Bordering Vegetated Wetlands on either of the final two sites.

Land under Water Bodies/Waterways (310 CMR 10.56). The Merrimack River is located approximately 300 feet north of the final two sites. There would be no impact to Land under Water Bodies/Waterways from development on either site.

Bordering Land Subject to Flooding [(310 CMR 10.57(2)(a)(3)). The 100-year floodplain does not extend to either of the final two sites. There would be no impact to Bordering Land Subject to Flooding from development on either site.

Riverfront Area (310 CMR 10.58). Riverfront Area does not extend to either of the final two sites. There would be no impact to Riverfront Area from development on either site.

8.5.3 Endangered and Threatened Species

The presence or absence of endangered or threatened plant or animal species was documented based on a review of the Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife and Certified Vernal Pools data layers of MassGIS. Based on this review, neither of the final two sites is located within Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife. There would be no impact to Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife from development on either site.

8.5.4 Floodplains

The 100-year floodplain does not extend to either of the final two sites. There would be no impact to Bordering Land Subject to Flooding from development on either site.

8.5.5 Coastal Zone Management

Both of the final two sites are located within a regulated Coastal Zone Management Area. Any regulated expansion or development of either of the final two sites may require the preparation of a “consistency determination.” If the project actions within the coastal zone are consistent with the policies and programs of the state coastal zone management agency and local agencies charged with administering the program, the state will concur with the project determination.

8.6 Traffic

A traffic impact analysis was conducted for the four options and is provided in Appendix D. A briefly summary of the analysis is provided herein.

8.6.1 Study Area

The study area for the traffic impact analysis was defined based on discussions with Newburyport Town officials and the MVTRA and included the following intersections:

- Merrimac Street/Route 1 Southbound Ramps
- Merrimac Street/Route 1 Northbound Ramps
- Merrimac Street/Market Street
- Merrimac Street/Titcomb Street
- Merrimac Street/Green Street
- Pleasant Street/Titcomb Street
- Pleasant Street/Green Street

Impact analysis was also performed at the driveways that would serve the proposed parking facility at both sites. Under existing conditions, only site driveways currently active when the traffic counts were obtained were analyzed. These include three driveways serving the Green Street site and one driveway at the Titcomb Street site. These driveways are:

Green Street Site

- Green Street/Green Street Parking Lot Drive
- Merrimac Street/Green Street Parking Lot Drive
- Pleasant Street/Unicorn Street

Titcomb Street Site

- Merrimac Street/Health Club Driveway

8.6.2 Existing Conditions

Manual turning movement counts were conducted at the seven study area intersections and the four currently active site driveways. Turning movement counts were conducted on Thursday, August 13,

2009 and on Thursday, December 10, 2009. All count data was adjusted to estimate 2010 summer conditions.

The existing intersection geometries and peak hour traffic volumes were used to analyze the existing levels of service at the study intersections. The Green Street/Pleasant Street, Merrimac Street/Titcomb Street and Pleasant Street/Titcomb Street intersections operate at good levels of service during the weekday morning and afternoon peak hours. The Merrimac Street/Green Street intersection operates at LOS C during the morning peak hour and LOS E during the afternoon peak hour.

At the Route 1/Merrimac Street interchange, vehicles exiting from the ramps and turning left or continuing straight operate at Level of Service (LOS) E or F during the peak hours with average vehicle delays higher during the afternoon peak hour.

Merrimac Street at Market Street operates at LOS A. Market Street operates at LOS C during the morning peak hour and LOS F during the afternoon peak hour.

Analysis of the traffic movements at study area driveways shows that the operations are at LOS C or better all locations with two exceptions during the afternoon peak hour. At the Green Street Parking Lot Drive/Merrimac Street intersection the driveway right-turn movement experiences delays of 43 seconds and operates at LOS E. At the Health Club Drive/Merrimac Street intersection, vehicles exiting from the driveway operate at LOS D with 32 seconds of delay.

8.6.3 Future 2030 No-Build Traffic Volumes and Intersection Operations

Existing traffic volumes in the study area were projected to the year 2030 to represent a 20-year planning horizon, which is consistent with Federal Transit Authority guidelines. Future conditions were analyzed for the 2030 no-build condition (which assumes that the Intermodal Parking Facility is not constructed in downtown Newburyport).

The 2030 No-Build peak hour volumes include the 2010 peak hour volumes increased by 0.5 percent per year plus trips generated by the Waterfront West redevelopment project. With 20 years of traffic growth, average vehicle delays at the study area intersection are expected to increase and in some locations level of service would degrade. Locations where operations are at LOS D or better under existing conditions and by 2030 would be at LOS E/F include:

Morning Peak Hour

- Merrimac Street/Market Street/Driveway – Market Street and Driveway approaches
- Merrimac Street/Titcomb Street – Titcomb Street approach

Afternoon Peak Hour

- Merrimac St./Route 1 Southbound Ramps – Rte 1 Southbound Ramp Through/Right Lane
- Merrimac Street/Titcomb Street – Titcomb Street approach
- Merrimac Street/Health Club Driveway – Health Club Driveway approach

8.6.4 Site Access

The following describes the proposed driveways for each of the design options.

Green Street – Option A. Under this option, two driveways would provide access to the main parking area including a driveway on Green Street and a driveway on Merrimac Street. The existing driveway on Green Street would be relocated approximately 30 feet to the north and would function as it currently does with only a right turn in and a right turn out. Similarly, the driveway on Merrimac Street would be relocated approximately 50 feet to the east and would allow only a right turn in and a right turn out. Access to the site via Unicorn Street would no longer be provided. Unicorn Street, under this option would be discontinued at the point where it currently enters the main Green Street lot.

MVRTA buses would be provided two berths on the south side of Merrimac Street between Green Street and the site driveway.

Green Street – Option B. The proposed driveways for Green Street – Option B are the same as described above for Option A except that Unicorn Street would not be discontinued and would provide full access to the site.

MVRTA buses would be provided two berths on the south side of Merrimac Street between Green Street and the site driveway.

Titcomb Street – Option A . Titcomb Street – Option A would require the closure of Titcomb Street between Pleasant Street and Merrimac Street. The site would be accessed by three driveways. The garage would have one driveway located on Merrimac Street located approximately 225 feet west of existing Titcomb Street. The surface parking lot would be serviced by two driveways: one on Merrimac Street, approximately 60 feet east of Titcomb Street and one on Pleasant Street. The Pleasant Street driveway would be located within the current Titcomb Street right of way, making a sharp turn as it connects to the parking lot.

MVRTA buses would be provided two berths on the south side of Merrimac Street between the garage and surface lot driveways.

Titcomb Street – Option B. The Titcomb Street – Option B garage would be provided two driveways: one on Merrimac Street and one on Titcomb Street. The Merrimac Street driveway would be located approximately 165 feet east of Titcomb Street and the Titcomb Street driveway would be located approximately 120 feet south of Merrimac Street. Opposite the Titcomb Street entrance to the garage would be a third driveway serving the surface parking lot.

MVRTA buses would be provided two berths on the east side of Titcomb Street.

8.6.5 Project Trip Generation

Table 8.1 provides a summary of the trip generation of the four options. The proposed facility would generate less than 60 new peak hour trips to/from downtown regardless of its location.

Titcomb Street – Option A would provide the greatest number of parking spaces and the largest retail area which results in the highest volume of new project related trips. It would generate approximately 32 trips during the morning peak hour and 59 trips during the afternoon peak hour. However, these “new” trips are more than off-set by trips related to the existing health club and apartment building. These existing uses, which would be removed if Titcomb Street – Option A is selected, generate approximately 71 trips during the morning peak hour and 60 trips during the afternoon peak hour. Thus, for Titcomb Street – Option A, the net change to downtown traffic is -39 trips for the morning peak hour and -1 trip during the afternoon peak hour. As a result of the existing trips eliminated at the Titcomb Street site, the Green Street – Option A, although a smaller facility, would generate a higher volume of new trips to/from the downtown area than the Titcomb Street site options.

Table 8.1 Trip Generation Summary

Description	Morning Peak Hour				Afternoon Peak Hour			
	Green Street Opt. A	Green Street Opt. B	Titcomb Street Opt. A	Titcomb Street Opt. B	Green Street Opt. A	Green Street Opt. B	Titcomb Street Opt. A	Titcomb Street Opt. B
New Project Related Trips (Transit, Carpool, Rail Trail, Retail)	29	29	32	32	58	25	59	50
Existing Site Trips Remaining	125	125	0	0	356	356	0	0
Existing Site Trips Removed	<u>0</u>	<u>0</u>	<u>-71</u>	<u>-71</u>	<u>0</u>	<u>0</u>	<u>-60</u>	<u>-60</u>
Site Trips to/from Downtown Newburyport	154	154	-39	-39	414	381	-1	-10
Redistributed Trips to Site from NRA lots	<u>60</u>	<u>54</u>	<u>63</u>	<u>63</u>	<u>135</u>	<u>116</u>	<u>143</u>	<u>143</u>
Total Trips at Site Driveways	214	208	95	95	549	497	202	193

8.6.6 Project Trip Distribution

The distribution of project related trips through the study intersections was based on an understanding of the one-way travel patterns in downtown, analysis of existing weekday peak hour traffic volumes at the key gateways to downtown and traffic entering/exiting the existing Green Street parking lot driveways. The generalized distribution shown in Table 8.2 was used to distribute new project trips, remove existing site trips as required and to redistribute existing trips from the NRA parking lots to the Green Street and Titcomb Street sites.

Table 8.2 Generalized Trip Distribution (Downtown Newburyport)

Approach	Inbound	Outbound
Route 1 (North)	10%	10%
Route 1 (South)	5%	5%
Merrimac Street (East)	30%	30%
Merrimac Street (West)	25%	45%
Green Street	20%	0%
Pleasant Street	10%	0%
Titcomb Street	0%	10%
Total	100%	100%

8.6.7 Future 2030 Build Traffic Volumes and Intersection Operations

Table 8.3 provides a summary of the total entering traffic volumes for each of the study intersections for the 2030 build condition as well as the difference in volume between the 2030 no-build and 2030 build conditions. At the study area intersections (not including site driveway intersections), the proposed facility, regardless of its location, would increase traffic levels during the morning peak hour by less than 30 trips an hour and in the afternoon peak hour by less than 60 trips an hour over no-build conditions.

As discussed above, the larger Titcomb Street options generate fewer net new trips to/from downtown than the smaller Green Street options as existing uses on the Titcomb Street property would be removed as a result of development on that site. Thus, the study area intersections (not including site driveway intersections) generally show that selection of Green Street – Option A would result in higher increases in traffic levels at the study area intersections.

Table 8.4 summarizes the results of intersection capacity analyses for the 2010 existing, 2030 no-build and 2030 build morning and afternoon peak hour conditions. Traffic operations are not expected to significantly change at any of the study area intersections as a result of implementation of any of the four options. No design options cause a new LOS E/F condition. The following provides a summary of traffic operations at the various site driveway intersections for each option:

Green Street – Option A Driveway Intersections. Traffic operations at the three site driveways would be at LOS C or better with the exception of the right turn movement from the Green Street driveway onto Merrimac Street during the afternoon peak hour. During this hour, the driveway currently operations at LOS E with 43 seconds of delay, is anticipated to operate at LOS F under no-build conditions with 76 seconds of delay and at LOS F under build conditions with 169 seconds of delay. However, the volume to capacity ratio indicates that the driveway is over capacity by only one percent.

Green Street – Option B Driveway Intersections. Similar to Option A, the only traffic movement at the site driveways which is anticipated to operate at LOS F is the right turn from the site driveway onto Merrimac Street during the afternoon peak hour. However, the volume to capacity ratio for this movement is 0.71 indicating reserve capacity and the average vehicle delay is 98 seconds.

Titcomb Street – Option A Driveway Intersections. Traffic operations at the site driveways are at LOS D or better during the morning peak hour. However, the structured parking garage driveway and surface parking lot driveway approaches to Merrimac Street would both operate at LOS F during the afternoon peak hour. Traffic volumes on Merrimac Street by 2030, adjacent to this site would be approximately 1,500 per hour, making a left turn from the site driveways difficult.

The structured parking garage driveway approach is approximately six percent over capacity. The conceptual design for this option indicates a single lane on the driveway approach. As the design is advanced, separate left and right turn lanes should be considered. With a two-lane approach, vehicle queues in the garage would be minimized and the 43 right turning vehicles would not be obstructed by 53 left turning vehicles during the afternoon peak hour.

Although the 16 vehicles projected to exit from the surface parking lot driveway during the afternoon peak hour would experience an average delay of 50 seconds, the volume to capacity ratio for the driveway approach is 0.18 indicating that one approach lane is sufficient.

Titcomb Street – Option B Driveway Intersections. Traffic operations at the three site driveways operate at LOS C or better during the morning peak hour. During the afternoon peak hour, the structured parking facility driveway approach to Merrimac Street would operate at LOS F with approximately 58 seconds of average delay. The volume to capacity ratio for the driveway is 0.44 indicating that the single lane approach is sufficient.

Table 8.3 Traffic Volume Summary

Location	2030		Green St. Option A		Green St. Option B		Titcomb St. Option A		Titcomb St. Option B	
	No-Build	Diff.	2030 Build	Diff.	2030 Build	Diff.	2030 Build	Diff.	2030 Build	Diff.
MORNING PEAK HOUR										
<u>Study Intersections</u>										
Merrimack St & Rte. 1 SB Ramps/Winter St	1,331	13	1,344	13	1,344	13	1,307	-24	1,307	-24
Merrimack St & Rte. 1 NB Ramps/Summer St	1,409	15	1,423	15	1,423	15	1,376	-33	1,376	-33
Merrimack St & Market St	1,314	15	1,329	15	1,329	15	1,310	-3	1,281	-33
Merrimack St & Titcomb St	1,155	19	1,174	19	1,168	14	1,093	-62	1,163	8
Merrimack St & Green St.	1,279	0	1,280	0	1,280	1	1,287	8	1,254	-25
Pleasant St & Titcomb St	229	2	231	2	231	1	108	-121	237	8
Pleasant St & Green St.	360	28	388	28	379	20	370	10	370	10
<u>Green Street Site Driveway Intersections</u>										
Green St. Lot Drive & Green St.	284	49	333	49	314	30	319	35	284	0
Merrimack St & Green St. Lot Drive	1,085	15	1,100	15	1,101	16	1,086	1	1,086	1
Pleasant St & Unicorn St.	143	17	160	17	166	23	148	5	148	5
<u>Titcomb Street Site Driveway Intersections</u>										
Merrimack St & Titcomb Opt A Drive	1,173	15	1,188	15	1,188	15	1,139	-34	1,124	-49
Merrimack St & Titcomb Opt B Drive	1,067	19	1,086	19	1,081	14	1,093	26	1,080	13
Titcomb Opt B Drive & Titcomb St	123	5	128	5	122	-1	1	-123	164	41
AFTERNOON PEAK HOUR										
<u>Study Intersections</u>										
Merrimack St & Rte. 1 SB Ramps/Winter St	1,714	23	1,737	23	1,725	10	1,710	-5	1,706	-8
Merrimack St & Rte. 1 NB Ramps/Summer St	1,951	28	1,979	28	1,964	13	1,944	-7	1,940	-11
Merrimack St & Market St	1,856	28	1,884	28	1,869	13	1,872	16	1,842	-14
Merrimack St & Titcomb St	1,626	54	1,680	54	1,636	10	1,528	-98	1,659	33
Merrimack St & Green St.	1,735	19	1,755	19	1,728	-7	1,734	-2	1,698	-37
Pleasant St & Titcomb St	370	8	378	8	375	5	219	-151	387	18
Pleasant St & Green St.	559	24	582	24	586	27	569	11	568	9
<u>Green Street Site Driveway Intersections</u>										
Green St. Lot Drive & Green St.	469	119	588	119	531	63	510	41	465	-3
Merrimack St & Green St. Lot Drive	1,436	26	1,462	26	1,449	13	1,441	5	1,438	1
Pleasant St & Unicorn St.	236	9	245	9	271	35	242	6	242	6
<u>Titcomb Street Site Driveway Intersections</u>										
Merrimack St & Titcomb Opt B Drive	1,506	54	1,559	54	1,516	10	1,541	35	1,538	32
Titcomb Opt B Drive & Titcomb St	158	26	184	26	155	-3	4	-153	256	98
Merrimack St & Titcomb Opt A Drive	1,630	28	1,658	28	1,643	13	1,615	-16	1,600	-30

Table 8.4 Intersection Capacity Analyses Summary

Location	Peak Hour	2010 Existing		2030 No-Build		2030 Build Green St. Option A		2030 Build Green St. Option B		2030 Build Titcomb St. Option A		2030 Build Titcomb St. Option B	
		v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
<i>Signalized Intersections</i>													
Merrimac St/Green St	AM PM	0.66 1.02	23.6 67.2	C E	0.79 1.57	30.6 >120	C F	0.74 1.16	27.9 115.7	C F	0.74 1.21	27.6 >120	C F
Green St/Pleasant St	AM PM	0.15 0.24	10.0 9.8	A A	0.18 0.29	9.7 10.1	A B	0.19 0.31	9.3 10.6	A B	0.18 0.28	9.4 10.0	A A
<i>Unsignalized Intersections</i>													
Merrimac Street/Route 1 Southbound Ramps													
Merrimac Street WB LT	AM PM	0.06 0.13	9.2 9.5	A A	0.07 0.16	9.6 10.2	A B	0.07 0.16	9.6 10.3	A B	0.07 0.16	9.5 10.2	A B
Route 1 SB LT	AM PM	0.98 1.59	103.2 >120	F F	1.40 2.79	>120 >120	F F	1.44 2.86	>120 >120	F F	1.33 2.75	>120 >120	F F
Route 1 SB TH/RT	AM PM	0.33 0.56	17.9 30.0	C D	0.43 0.83	22.8 65.7	C F	0.44 0.84	23.2 68.5	C F	0.42 0.83	22.0 65.0	C F
Merrimac Street/Route 1 Northbound Ramps													
Merrimac Street EBLT	AM PM	0.09 0.20	8.6 11.0	A B	0.11 0.25	9.0 12.1	A B	0.11 0.26	9.0 12.4	A B	0.11 0.26	9.0 12.2	A B
Route 1 NB LT	AM PM	0.38 1.12	46.1 >120	E F	0.60 2.03	84.8 >120	F F	0.61 2.21	87.2 >120	F F	0.56 2.06	75.2 >120	F F
Route 1 NB TH	AM PM	0.43 2.25	49.8 >120	E F	0.66 4.01	94.0 >120	F F	0.67 4.38	96.2 >120	F F	0.62 4.08	83.0 >120	F F
Route 1 NB RT	AM PM	0.24 0.26	15.4 15.5	C C	0.31 0.37	17.7 19.4	C C	0.31 0.37	18.0 19.5	C C	0.27 0.35	16.8 18.8	C C
Merrimac Street/Market Street													
Merrimac Street EBLT	AM PM	0.02 0.08	0.5 2.0	A A	0.04 0.21	1.1 5.8	A A	0.04 0.21	1.1 5.9	A A	0.04 0.21	1.1 5.9	A A
Merrimac Street WB LT	AM PM	0.01 0.01	0.2 0.3	A A	0.01 0.01	0.3 0.4	A A	0.01 0.01	0.3 0.4	A A	0.01 0.04	1.4 1.2	A A
Market Street NB	AM PM	0.20 0.92	23.8 >120	C F	0.34 4.34	38.4 >120	E F	0.34 4.69	39.5 >120	E F	0.34 4.73	38.6 >120	E F
Market Street SB	AM PM	0.08 0.37	23.0 53.9	C F	0.74 7.15	91.5 >120	F F	0.76 7.82	96.3 >120	F F	0.76 7.55	96.7 >120	F F
Merrimac Street/Titcomb Street													
Merrimac Street WB LT	AM PM	0.03 0.02	1.1 0.6	A A	0.04 0.03	1.2 1.0	A A	0.04 0.03	1.2 0.9	A A	- -	- -	A A
Titcomb Street NB	AM PM	0.13 0.14	27.5 29.2	D D	0.22 0.93	39.2 >120	E F	0.22 0.91	40.0 >120	E F	- -	- -	E F
Pleasant Street/Titcomb Street													
Pleasant Street WB LT/TH	AM PM	0.10 0.22	9.5 10.3	A B	0.12 0.26	9.7 10.9	A B	0.12 0.27	9.8 10.9	A B	0.11 0.21	9.6 9.6	A A
Pleasant Street WB TH/RT	AM PM	0.04 0.06	9.0 9.2	A A	0.05 0.07	9.1 9.4	A A	0.05 0.07	9.1 9.3	A A	0.02 0.03	9.6 9.2	A A

Table 8.4 is continued on the next page

Table 8.4 Intersection Capacity Analyses Summary (Continued)

Location <i>Site Driveways</i>	Peak Hour	2010 Existing		2030 No-Build		2030 Build Green St. Option A		2030 Build Green St. Option B		2030 Build Titcomb St. Option A		2030 Build Titcomb St. Option B	
		v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	Location	Hour	v/c ¹	Delay ²	LOS	Location
Green Street/Green Street Parking Lot Drive Green St Lot Drive WB RT	AM	0.02	10.0	A	0.03	10.1	B	0.06	10.5	B	0.05	10.4	B
	PM	0.17	11.4	B	0.18	11.7	B	0.32	13.3	B	0.26	12.5	B
Merrimac Street/Green Street Parking Lot Drive Merrimac Street WB LT	AM	0.02	0.6	A	0.02	0.7	A	0.02	0.7	A	0.02	0.7	A
	PM	0.02	0.7	A	0.03	1.0	A	0.03	1.0	A	0.03	1.0	A
Green St Lot Drive NB RT	AM	0.04	16.6	C	0.06	19.9	C	0.11	21.0	C	0.08	20.7	C
	PM	0.35	42.5	E	0.52	75.6	F	1.01	>120	F	0.71	98.3	F
Pleasant Street/Unicorn Street Drive NB LT	AM	0.01	10.3	B	0.01	10.5	B	0.01	10.7	B	0.01	10.7	B
	PM	0.01	12.0	B	0.01	12.4	B	0.01	12.3	B	0.02	13.1	B
Unicorn Street SB RT	AM	0.01	9.7	A	0.01	9.8	A	0.01	9.9	A	0.02	9.9	A
	PM	0.07	11.7	B	0.08	12.0	B	0.04	12.1	B	0.11	12.4	B
Merrimac Street/Health Club Drive Garage Driveway Merrimac Street WB LT	AM	Merrimac St./Health Club Dr. 0.00	0.1	A	Merrimac St./Health Club Dr. 0.00	0.1	A	Merrimac St./Health Club Dr. 0.00	0.1	A	Merrimac St./Health Club Dr. 0.00	0.1	A
	PM	0.01	0.2	A	0.01	0.2	A	0.01	0.2	A	0.01	0.2	A
Option A Drive NB	AM	0.08	18.0	C	0.12	22.5	C	0.12	22.8	C	0.12	22.8	C
	PM	0.14	32.1	D	0.25	53.6	F	0.28	61.3	F	0.28	60.7	F
Merrimac Street/Option A Retail/Option B Garage Driveway (6) Merrimac Street WB LT	AM	Merrimac St./Titcomb St. Opt A Garage Drive			Merrimac St./Titcomb St. Opt A Retail Drive			Merrimac St./Titcomb St. Opt A Garage Drive			Merrimac St./Titcomb St. Opt A Retail Drive		
	PM												
Option A/Option B Drive NB	AM												
	PM												
Titcomb Street/Option B Driveways Titcomb Street NB	AM												
	PM												
Titcomb Street SB	AM												
	PM												
Option B Retail Drive EB	AM												
	PM												
Option B Garage Driveway WB	AM												
	PM												

¹LOS= Level of Service, ²Delay = Average delay expressed in seconds per vehicle, ³v/c = volume-to-capacity ratio

8.7 Parking

8.7.1 Parking Supply

The objectives of the proposed facility are to encourage use of public transit and to provide replacement parking for the proposed Waterfront Park Expansion project. The project would provide between 261 and 354 new spaces depending on the option selected. Table 8.5 summarizes the project's parking impact to each site.

Table 8.5 On-Site Parking Supply Summary

	Green Street Option A	Green Street Option B	Titcomb Street Option A	Titcomb Street Option B
Existing Site				
Existing Public Spaces	202	202	0	0
Proposed Site				
Public Use	463	428	323	296
Restricted to On-Site Retail Use	<u>0</u>	<u>0</u>	<u>31</u>	<u>25</u>
Total	463	428	354	321
Net Increase On-Site	261	226	354	321

The Titcomb Street design options would have an impact to existing on-street parking spaces. On-street spaces would be removed to accommodate bus turns (discussed below in Section 8.8) and also to accommodate site access and bus berths. Table 8.6 provides an estimate of the impact to on-street parking which would result from the Titcomb Street design options. In Titcomb Street Option A, Titcomb Street is closed and the approximately 16 existing on-street parking spaces would be removed. In total, the Titcomb Street Option A would require the removal of approximately 26 on-street parking spaces.

In Titcomb Street Option B Titcomb Street remains open. It total nine on-street parking spaces are lost as result of this option.

Table 8.6 Project Impact to On-Street Parking

Street	Titcomb Street – Option A			Titcomb Street – Option B		
	Site Access/ Berths	Bus Turns	Total	Site Access/ Berths	Bus Turns	Total
Merrimac Street	-5	-1	-6	-1	0	-1
Titcomb Street	-16	0	-16	-4	-1	+2
Pleasant Street	0	-4	-4	0	-3	-3
Total	-21	-5	-26	-5	-4	-9

Downtown Newburyport is anticipated to lose approximately 235 parking spaces when a significant portion of the existing NRA parking lots are used to expand the existing waterfront park on the Merrimack River. Therefore, the net increase in parking supply to downtown Newburyport is the total new public spaces provided by the facility, less the spaces lost on street to accommodate bus berths, site access and bus turns and less the spaces lost on the waterfront. Table

8.7 summarizes the total impact on downtown Newburyport parking supply for each option. As seen in Table 8.7 the two Titcomb Street options would more than replace the spaces lost to the Waterfront Park Expansion and would have a net increase of approximately 77 to 93 spaces. Green Street Option A would provide a net increase of approximately 26 spaces. Green Street Option B is nine spaces short of replacing all of the parking spaces lost to the Waterfront Park Expansion project.

Table 8.7 Summary of Parking Supply in Downtown

	Green Street Option A	Green Street Option B	Titcomb Street Option A	Titcomb Street Option B
<u>Project</u>				
Net Increase On-Site	261	226	354	321
<u>Impact to On-Street Parking</u>	<u>0</u>	<u>0</u>	<u>-26</u>	<u>-9</u>
Total	261	226	328	312
<u>Non-Project</u>				
Waterfront Park Expansion	-235	-235	-235	-235
Total	+26	-9	+93	+77

8.7.2 Parking Demand

By 2030 parking demand in downtown Newburyport is expected to increase as a result of the proposed Intermodal Parking Facility and the Clipper City Rail Trail. Parking demand associated with the project is related to increased MVRTA ridership, increased carpooling, and retail space proposed under three of the design options. Table 8.8 summarizes the project's impact on parking demand in downtown as well the total increase in parking demand anticipated for 2030. For a detailed description of parking demand calculations used to estimate the size of the proposed facility refer to Section 6.0.

Table 8.8 Summary of Parking Demand in Downtown

	Green Street – Option A	Green Street – Option B	Titcomb Street – Option A	Titcomb Street – Option B
<u>Project</u>				
MVRTA	20	20	20	20
Carpools	15	15	15	15
<u>On-Site Retail</u>	<u>37</u>	<u>0</u>	<u>35</u>	<u>24</u>
Total	72	35	70	59
<u>Non-Project</u>				
<u>Clipper City Rail Trail</u>	<u>5</u>	<u>5</u>	<u>10</u>	<u>10</u>
Total	5	5	10	10
Total Increase in Parking Demand	77	40	80	69
<u>10% Additional Practical Capacity*</u>	<u>31</u>	<u>28</u>	<u>32</u>	<u>30</u>
Total	108	68	112	99

10% applied to 235 replacement spaces as well as project demand and non-project demand.

8.7.3 Summary

Table 8.9 provides a comparison of the change to parking supply anticipated by 2030 in downtown Newburyport to the anticipated increase in parking demand for 2030.

Table 8.9 Summary of Parking in Downtown

	Green Street – Option A	Green Street – Option B	Titcomb Street – Option A	Titcomb Street – Option B
Net Increase to Parking Supply	+26	-9	+93	+77
Total Increase in Parking Demand	108	68	112	99
Shortfall	-82	-77	-19	-22

The Green Street site is located approximately 800 feet west of Market Square, the main shopping/destination area in downtown. It is also located directly across Merrimac Street from the West NRA parking lot, one of the parking lots that would be replaced by the proposed Intermodal Parking Facility. However, as seen in Table 8.9, neither Green Street option would be able to accommodate the increased demand for parking in 2030. In fact, Green Street - Option B would not provide sufficient parking to replace all of the spaces lost as a result of the Waterfront Parking Expansion project.

The Titcomb Street site is approximately twice the distance to Market Square than the Green Street site and approximately 800 feet west of the West NRA parking lot. However, the Titcomb Street site is located directly across from the Waterfront West redevelopment project that may be constructed by 2030. As noted in Table 8.8, although the Titcomb Street options also do not totally meet the demand for parking in downtown, they are within approximately 20 spaces, significantly closer to meeting the demand than the Green Street options.

In conclusion, the Titcomb Street design options would have a more positive impact on the parking supply in downtown Newburyport than those presented for the Green Street site. The Titcomb Street site is also located closer to a potentially large redevelopment project. The Green Street design options would provide less parking and are short approximately 80 spaces of meeting the future parking requirements for the downtown core. However, the Green Street site is closer to the existing downtown commercial center and the parking spaces at the NRA lots which would be replaced by the facility.

8.8 Public Transit

General. The proposed Intermodal Parking Facility is anticipated to positively impact public transit in downtown Newburyport. The project would provide parking, an MVRTA office, protected waiting areas, seating and other transit passenger amenities. This project may also include a modification to the MVRTA Route 51 bus. The existing Route 51 bus connects downtown Newburyport to other towns in the region and provides limited service to the Newburyport MBTA Commuter Rail facility.

The project assumes that Route 51 would be separated into two routes. Existing Route 51 would connect downtown Haverhill to the new Transportation Center proposed in downtown Amesbury

and would no longer continue into Newburyport. A second route, designated as Route 52, would provide service between the Amesbury Transportation Center and downtown Newburyport. Passengers traveling between Haverhill and Newburyport would transfer between Route 51 and Route 52 at the new Amesbury Transportation Center. Route 52 would provide regular service to the MBTA Commuter Rail Facility and would service bus stops on its route at an interval of approximately 60 minutes, a 10-minute improvement on the existing Route 51 service. A detailed description of Route 52 is provided in Section 5.2.

As a result of this improvement, the projected 2030 Route 52 daily ridership originating at the proposed Intermodal Parking Facility is 762 passenger trips, representing an increase of 387 passenger trips over existing conditions.

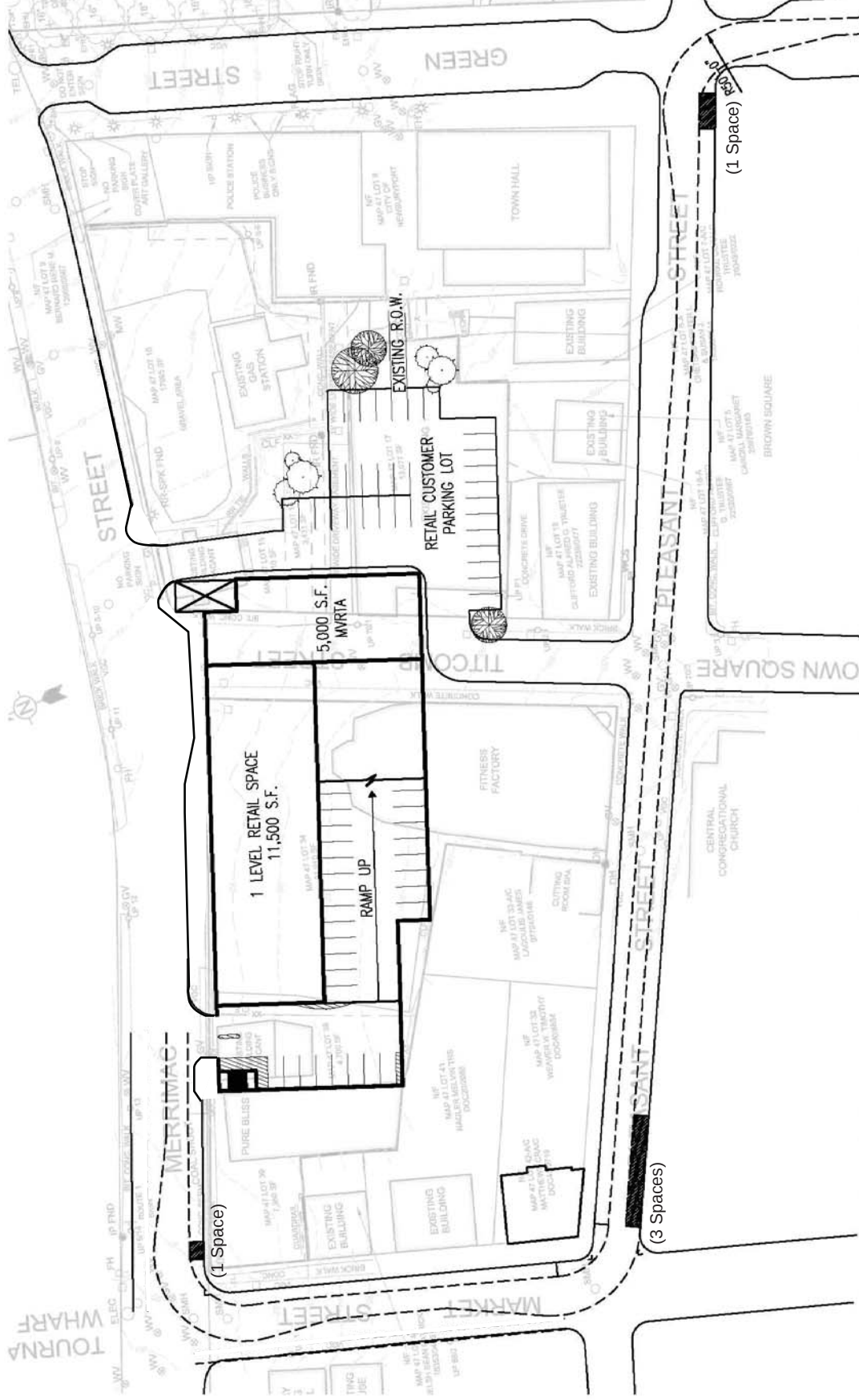
Green Street Option A and B. Route 52 as described in Section 5.2 would service the Green Street design options. There would be no impact to the proposed Route 52.

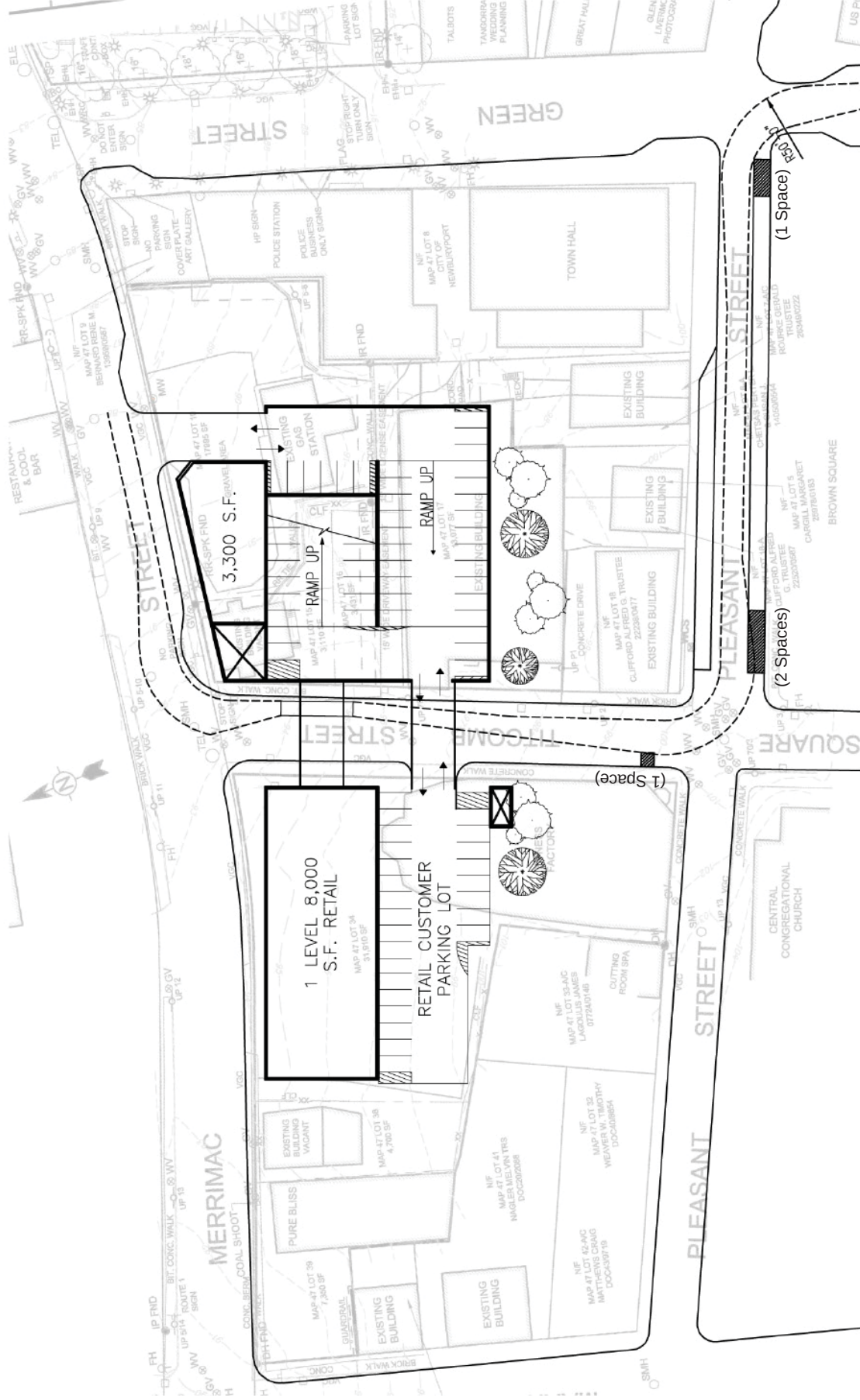
Titcomb Street Option A. Under Titcomb Street Option A, the MVRTA Route 52 bus, as presented in Section 5.2, would require modification to service the berths on Merrimac Street, located west of Green Street. The bus would enter downtown via Green Street as currently anticipated, but would turn left onto Pleasant Street, turn right from Pleasant Street onto Market Street and finally turn right from Market Street onto Merrimac Street and finally enter the bus berths. These modifications to Route 52 are shown on Figure 7.19 in Section 7.0. Figure 8.1 depicts the turning path for each of these turns. As seen on the figure, approximately five on-street parking spaces may need to be removed to accommodate these turning maneuvers. These include approximately four on-street parking spaces on the south side of Pleasant Street and one on-street parking space on the south side of Merrimac Street. The additional turns and approximately 1,300 feet of added travel distance amounts to approximately two minutes of additional travel time (compared to the Green Street Options).

Titcomb Street Option B. Under Titcomb Street Option B, the MVRTA Route 52 bus as presented in Section 5.2 would require modification to service the berths on Titcomb Street. The the bus would enter downtown via Green Street as currently anticipated, but would turn left onto Pleasant Street and then turn right from Pleasant Street onto Titcomb Street and finally enter the bus berths. When the buses exit the berths, they would turn right from Titcomb Street onto Merrimac Street. These modifications to Route 52 are shown on Figure 7.24 in Section 7.0. Figure 8.2 depicts the turning path for each of these turns. As seen on the figure, approximately three on-street parking spaces on the south side of Pleasant Street and one on-street parking space on the west side of Titcomb Street may need to be removed to accommodate the bus pathway. The two additional turns and approximately 600 feet of added travel distance amount to approximately one minute of additional travel time (compared to the Green Street options).

8.9 Environmental Justice

Federal law requires observance of Title VI of the 1964 Civil Rights Act and Executive Order 12898, which govern impacts of transportation programs and projects in “Environmental Justice populations,” or neighborhoods with high minority, non-English-speaking, low-income and foreign-born populations. Such areas are also the focus of the Executive Office of Environmental Affairs Environmental Justice (EJ) Policy, which was developed to use state resources to ensure





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Titcomb Street - Option B
MVRTA Bus Path

that EJ populations receive a strong voice in environmental decision-making. A principle of Environmental Justice is to avoid any disproportionately high adverse impacts on minority or low-income populations. A project that has disproportionately high impacts on minority or low-income populations would raise Environmental Justice concerns.

In the Newburyport Intermodal Parking Facility project, the population in the project area is relatively homogeneous with a small percentage of minorities and a median income somewhat higher than that of the state as a whole. None of the sites would have a disproportionate affect on a minority or low-income population. The Federal Executive Order 12898 on Environmental Justice, issued in 1994, defines the population of an area as a minority population when the total percentage of minority residents is more than 50 percent. The federal policy does not explicitly define “low income.” Using data from the 2000 U.S. Census for the census tract in the project area, no minority or low-income populations have been identified that would be adversely affected by the proposed project.

State policy on environmental justice was enunciated in the “*Environmental Justice Policy of the Executive Office of Environmental Affairs*” (2002) to support the State’s *Community Preservation Initiative*. The policy defines populations with median household income at or below 65 percent of the State median income as environmental justice populations. Neighborhoods with 25 percent minority, foreign-born or lacking proficiency in English are covered by the policy.

Using data from the U.S. Census for the census tract in the project area as shown in Table 8.10, no minority or low-income populations have been identified that would be adversely affected by development of either of the proposed sites. The minority population is a relatively small component of the total population in the census tract—approximately 2.4 percent. The median household income in the census tract is somewhat higher than the median state income and the percent of the population below the poverty line is relatively low (less than five percent).

Table 8.10 Project Area Demographics

Parameter	Census Tract 2683 - Essex County
Total Population	4,147
Total Minority Population ¹	98
Minority Percentage	2.36 percent
Median Household Income ²	\$52,193
Median State Household Income ²	\$50,502
Percentage of State Median Income	103 percent
Percent Below Poverty Level	4.90 percent

Source: 2000 U.S. Census

¹Total population minus “white alone”

²Income in 1999 Dollars

9.0 Real Estate Assessment

9.1 Introduction

A real estate appraisal has been prepared for both the Green Street and Titcomb Street sites and is contained in Appendix E Intermodal Parking Facility – Market Value Assessment and Rental Value of Potential Retail Space. The appraisal provides both a determination of land value and an estimate of the value of rental space which several of the design options provide. A brief summary of the appraisal is provided herein.

9.2 Site Descriptions

The Green Street site consists of a 95,832+/- square foot site located at the corner of Merrimac Street and Green Street with additional street frontage on Pleasant Street and pedestrian access on the right of way known as Inn Street. Access to Pleasant Street is over a right of way known as Unicorn Street. The Green Street site is wholly owned by the City of Newburyport and is currently used as a surface parking lot serving the businesses and institutions of downtown Newburyport.

The Titcomb Street site is located on the south side of Merrimac Street with a lesser amount of frontage on Pleasant Street. The site consists of three components, two of which are privately held. The largest part of the site consists of six parcels of land owned by New England Development in several different real estate trusts all of which have the entity called Newburyport Manager LLC as Trustee. The six parcels are separated into three distinct areas by Titcomb Street as well as by a small right of way leading from Titcomb Street to the rear of the Newburyport Police Station. Together, the six properties contain 65,578 square feet of land improved by five buildings. For the purposes of this analysis, the property has been appraised as a vacant site available for sale as a single unit.

The second privately held portion of the Titcomb Street site consists of a 17,995 square foot site owned by Anchor Fuels LLC. It is improved by a former gas station building. Like the New England Development holdings, the site is appraised as if vacant.

The Titcomb Street site also includes the fee interest in Titcomb Street between Merrimac Street and Pleasant Street as well as the fee interest in the portion of the right of way from Titcomb Street to the rear of the Newburyport Police Station. While the proposed Titcomb Street site includes this land, the scope of work in this appraisal did not include the valuation of this property and its mention in the appraisal is only for setting forth the context of the overall Titcomb Street site.

9.3 Land Value

The value of the land was based on the Highest and Best Use that would produce the greatest net return to the land and the improved property. For both sites, the Highest and Best Use was determined to be either residential or commercial development when market conditions improve.

The market value of the sites was based on a Sales Comparison Approach to Value. This approach is a comparative process whereby various sales have been directly compared to the property under study. It is based on the principle of substitution which states that a knowledgeable buyer will not pay more for a property than what other like properties are transacting at on the market or that are available for sale on the present real estate market.

Subject to the Extraordinary Assumptions and Hypothetical Conditions provided in the appraisal report in Appendix E, value conclusions were reached for each of the three sites as of April 12, 2010 and are summarized in Table 9.1. The Value of the 95,832 square foot Green Street site owned by the City of Newburyport is determined to be \$5,270,000. The value of the privately held portions of the Titcomb Street site are \$1,170,000 for the 17,995 square foot Anchor Fuels LLC property and \$3,610,000 for the combined value of the six properties of New England Development.

Table 9.1 Land Value

Site	Area	Owner	Estimated Value
Green Street	95,832 s.f.	City of Newburyport	\$5,270,000
<u>Titcomb Street</u>			
Gas Station	17,995 s.f.	Anchor Fuels LLC	\$1,170,000
New England Dev.	63,578 s.f.	Newburyport Manager LLC	<u>\$3,610,000</u>
Total			\$4,780,000

9.4 Rental Area Value

The second portion of the appraisal study was to conduct a market study of retail space in downtown Newburyport and to determine the potential value of rental space provided in three of four options under consideration for the proposed Intermodal Parking Facility.

Of the four potential facility designs, three included retail space in blocks ranging from 3,300 square feet to 11,500 square feet. After a review of rental rates in downtown Newburyport, which range from a low of \$15/square foot per year to a high of mid-\$40/square foot range, it was estimated that the retail space in the Intermodal Parking Facility would range from \$15/square foot to \$35/square foot depending on size, street frontage and configuration of the space. Table 9.2 provides a summary for each of the rental spaces of the estimated annual value per square foot.

Table 9.2 Rental Value

Rental Area	Low Value per s.f.	High Value per s.f.
Green St. Opt. A		
3,300 s.f. – Frontage on Inn Street	\$30.00	\$35.00
9,000 s.f. – Frontage on Merrimac Street	\$15.00	\$25.00
Titcomb Street Option A		
11,500 s.f. – Frontage on Merrimac Street	\$20.00	\$25.00
Titcomb Street – Option B		
8000 s.f. – Frontage on Merrimac Street	\$20.00	\$25.00
3,300 s.f. – Frontage on Merrimac Street	\$25.00	\$30.00

10.0 Financial Assessment

A total of four design options have been developed for an Intermodal Parking Facility in downtown Newburyport. Since the scale, scope and space capacity of each design option for the facility differs, so would the estimated annual operating cost and revenue generating potential for each option. Some operating costs which are directly tied to size, square footage, spaces and expected utilization differ with each option, while other operating costs that relate to the plan of operations and administration of the facility would be applicable to all the particular design options.

The revenue generating potential of each design concept would be a function of the rate schedule and the expected utilization and space capacity of each facility. Since the Green Street and Titcomb Street sites are a block apart and both offer practically the same level of convenience in terms of proximity to downtown work and shopping destinations, the main difference in the revenue generating potential is in the space capacity of the various design options for the facility.

10.1 Plan of Operations

Each of the design options for the proposed Intermodal Parking Facility are different, but the basic plan proposed for operating the facility would be the same no matter which facility design is chosen. For this analysis, it is assumed that the MVRTA would outsource the daily operations and maintenance of the facility to a private-sector property management company.

The property management company would be responsible for sales, processing, accounting and reporting of all monthly and daily parking revenue, processing invoiced accounts, and contracting with third party service providers for specialty services (i.e. powerwashing, sweeping, glass cleaning, waste collection, parking equipment maintenance, etc.).

The facility would be accessible to the general public seven days a week and 24 hour per day. However, it is assumed that the facility would only be manned between the hours of 6:00 a.m. and 8:00 p.m. Monday through Thursday, between 6:00 a.m. and midnight on Fridays, between 8:00 a.m. and midnight on Saturdays and between 10:00 a.m. and 10:00 p.m. on Sundays. Table 10.1 provides a breakdown of the man-hours and wage rates assumed for the facility.

Table 10.1 Proposed Staffing Plan for the Intermodal Facility

Facility Staff	Schedule	Hours	Rate/Hour	Days	Wages
1 Property Manager FT	(Mon-Fri 6 a.m. – 2 p.m.)	8	\$15.00	260	\$31,200
2 Property Manager FT	(Mon-Fri 2 p.m. – 8 p.m.)	6	\$12.00	260	\$18,700
3 Property Manager PT	(Fri 8 p.m. – 12 midnight)	4	\$12.00	52	\$2,500
2 Property Manager FT	(Sat 8 a.m. – 4 p.m.)	8	\$12.00	52	\$5,000
4 Property Manager PT	(Sat 4 p.m. – 12 midnight)	8	\$12.00	52	\$5,000
3 Property Manager PT	(Sun 10 a.m. – 4 p.m.)	6	\$12.00	52	\$3,700
4 Property Manager PT	(Sun 4 p.m. – 10 p.m.)	6	\$12.00	52	\$3,700
Total Annual Hours & Wages		5,096			\$69,800

A combination of two full-time and two part-time property facility attendants would annually spend approximately 5,000 hours at the facility. The responsibilities of the property manager would include customer assistance, general maintenance, basic grounds keeping, equipment servicing and limited parking regulation enforcement.

It is assumed that the parking garage would service primarily monthly permit holders and daily transient parkers, with special event parkers being served on a limited basis. Monthly contract parkers would be issued reusable access cards to enter and exit the gated facility. Transient parkers would have to accept a time stamped parking ticket from an in-lane ticket dispensing machine to open the access gates and enter the facility. To exit the facility, the transient parkers would have to pay for their parking time at free standing Pay-on-Foot revenue collection machines that would be strategically located at the main pedestrian access points to the facility. After completing the payment transaction at the Pay-on-Foot station, the transient parker would have a short grace period to leave the facility by inserting their processed parking ticket into an in-lane exit verifier machine which would open the facility's exit gates. The Pay-on-Foot machines to be located in the garage should be configured to accept cash, coin and credit cards payments.

It is assumed that the spaces in the surface parking lot area(s) to be developed in conjunction with the varied parking garage facility options would be equipped with a Pay-by-Space revenue collection machine. The Pay-by-Space machines to be located in the surface parking lot(s) should be configured to accept cash, coin and credit card payments.

Prepaid Smart (value encoded) Cards could also be offered as an optional form of payment at either or both the Pay-on-Foot machines in the garage and the Pay-by-Space machines in the lot(s). These smart cards could be purchased by anyone who might find value in having a reused parking payment card rather than having to pay with cash, coin or credit card.

The establishment of a parking validation program would need to be created since it is anticipated that tenants which occupy the rentable space in three of the four facility design options would require a way to provide free parking to their customers. In order for such a program to work effectively and without undermining the revenue generating potential of the project, the customers of the retail space tenants would need to be directed to park inside the garage rather than in the surface parking lot(s), which is the case of the Titcomb Street site. Retail customers would park in the garage and obtain a validated parking ticket from the retail establishment they patronize to receive credit for the full or partial payment of their parking charge. The validated ticket would be inserted into the Pay-on Foot revenue collection machine inside the garage. While the actual value of validation tickets would have to be negotiated with the retail tenants it would be important to establish program terms that would discourage abusive actions by the retail tenants and/or their customers that would unduly reduce the overall parking revenue generated by the project.

10.2 Probable Annual Operating Expenses

The estimates of the annual operating costs for the proposed Intermodal Parking Facility are premised on the aforementioned plan of operations, which applies to all the facility design options, and the varied physical characteristics (i.e. structure and lot area square footage, space

count, site area, number of access lanes) of each conceptual design option. Customary line items and the associated operating expenditures noted for this intermodal facility project are reflective of the prevailing parking industry pricing by service and material providers in the greater New England area. Based on the layouts and the assumed plan of operations for the proposed facilities, Table 10.2 shows the initial annual operating costs for the Intermodal Parking Facility, depending on the chosen conceptual design options for the project. Annual operating expenses for the facility are expected to range between \$256,000 for the Titcomb Street Option B option to \$304,000 for the Green Street Option B option. These cost estimates are inclusive of the direct operating costs for the facility and an annual contribution to a capital repair and replacement fund to pay for major repairs that would eventually be required in the future. The contributions to the reserve fund equate to \$100 per garage space and a \$1.00 per square foot of surface lot area to be contributed on an annual basis.

Table 10.2 Estimated Expenses for Facility Options

	Green St. Option A	Green St. Option B	Titcomb St. Option A	Titcomb St. Option B
Garage Spaces	446	299	323	296
Surface Spaces	17	129	31	25
Estimate of 1st Full Year Annual Operating Costs				
Salaries & Wages	\$69,800	\$69,800	\$69,800	\$69,800
Vacation Accrual	\$2,800	\$2,800	\$2,800	\$2,800
Payroll Taxes	\$5,600	\$5,600	\$5,600	\$5,600
Workers' Comp	\$4,900	\$4,900	\$4,900	\$4,900
Health & Welfare	\$12,000	\$12,000	\$12,000	\$12,000
Uniforms & Laundry	\$600	\$600	\$600	\$600
Insurance – PL/PD	\$9,300	\$8,600	\$7,100	\$6,400
Insurance – GKLL	\$9,300	\$8,600	\$7,100	\$6,400
Repairs & Maintenance	\$34,000	\$34,400	\$31,600	\$31,900
Utilities (electric, water & telephone)	\$37,300	\$38,800	\$29,400	\$30,300
Rubbish, Sweeping, Power Washing, Snow Removal	\$22,200	\$18,500	\$18,800	\$17,900
Signs	\$300	\$300	\$300	\$300
Materials, Office Supplies & Postage	\$1,800	\$1,800	\$1,800	\$1,800
Forms & Printing (tickets, invoices etc.)	\$5,500	\$3,600	\$0	\$3,600
Advertising	\$0	\$0	\$0	\$0
Security	\$0	\$0	\$0	\$0
Miscellaneous	\$900	\$900	\$900	\$900
Management Fee	\$12,000	\$12,000	\$12,000	\$12,000
Real Estate insurance	\$0	\$0	\$0	\$0
Administration & Accounting	\$5,000	\$5,000	\$5,000	\$5,000
Credit Card Processing Service Fees	\$7,200	\$7,200	\$7,200	\$7,200
SUBTOTAL DIRECT OPERATING EXPENSES	\$240,500	\$235,400	\$216,900	\$219,400
Garage Repair & Replacement Fund (\$100/Space)	\$44,600	\$29,900	\$32,300	\$29,600
<u>Lot Repair & Replacement Fund (\$1.00/SF)</u>	<u>\$5,100</u>	<u>\$38,700</u>	<u>\$9,300</u>	<u>\$7,500</u>
Annual Repair & Replacement Reserve Fund Contribution	\$49,700	\$68,600	\$41,600	\$37,100
Total Operating Expenses	\$290,200	\$304,000	\$258,500	\$256,500
Average Monthly Operating Cost	\$24,183	\$25,333	\$21,542	\$21,375
Average Cost per Space per Year	\$627	\$710	\$730	\$799
Average Cost per Space per Month	\$52	\$59	\$61	\$67

Note: These estimates of annual expenses are projected to be incurred in 2010, the first full year when the operations at the ramp are expected to stabilize.

10.3 Introduction of Pay-to-Parking Program in Downtown

The “*Downtown Newburyport Parking Planning Study*” completed in 2005 detailed a host of recommended changes to the City’s public parking program. Specifically, the plan provided recommended changes related to where on-street spaces should be permitted and what the parking time restriction on the spaces should be. The plan also recommended the expansion of the limited pay-to-park program that currently only applies to the NRA parking lots. In general, the plan recommended that fee collection equipment be installed at most of the City-owned off-street parking facilities in the downtown area and that the other lots be designated as fee based long-term monthly parking lots. However, this plan did not recommend charging fees for the use of legal on-street parking spaces.

If the City continues to allow free, but time limit enforced, parking on-street, it would be a challenge to get long-term parkers to pay to park at the proposed Intermodal Parking Facility. In fact, without the introduction of such an on- and off-street pay-to-park system in conjunction with the development of the Newburyport Intermodal Facility, the usage and revenue generating potential of the proposed parking facility would be seriously undermined. Many parkers would routinely opt to park at free on-street spaces and most would only pay to park at the proposed facility when free parking spaces are unavailable. For this reason it is important to note that the discussion which follows regarding the potential financial performance of the Newburyport Intermodal Facility is based on the assumption that the City of Newburyport would introduce and effectively manage a comprehensive pay parking program in the downtown area.

The assumed rate and fee structure for the City’s pay-to-park program would have to compliment the rate structure deemed to be most desirable for the proposed Intermodal Parking Facility. To this end, it has been assumed that the City would institute a \$0.50 per half hour rate for all the legal on-street parking spaces in the immediate vicinity of the new parking facility that have a one or two hour parking time limit. Additionally, it is assumed that the City would adopt a graduating rate schedule for its off-street parking lots including the remaining spaces at the Newburyport Redevelopment Agency parking lots. The rate scale should start at \$0.50 per half hour and graduate up to a maximum all-day charge of \$3.00 for transient parking transactions longer than 3 hours. Where monthly parkers need to be accommodated, it is assumed that the City would sell parking permits for approximately \$60.00 per month.

Although estimating the revenue generating potential of a comprehensive pay-to-park program of this nature is beyond the scope of this study, the City should recognize that the management of and revenue produced by such a comprehensive pay-to-park program would be crucial to the operations and financial performance of the Intermodal Parking Facility. If the City becomes a partner to the MVRTA in the development of the project, any net income generated by the pay to park program could possibly be used to partially contribute to funding the operations and maintenance of the new parking facility.

10.4 Revenue Generating Potential of the Proposed Facility

In formulating potential revenue projections for the Intermodal Parking Facility, details, findings and recommendations contained in the two earlier parking studies submitted to the City in 1998

and 2005 was relied upon. The first study, the *City of Newburyport Downtown Parking Study* (hereafter referred to as the “1998 Study”) was a comprehensive parking supply and demand study of 39 city blocks considered to be the retail district of downtown. The second study, the *Downtown Parking Planning Study* (hereafter referred to as the “2005 Study”) provided a blueprint for the implementation of an off-street paid parking program. Together, these two documents offered important background information and insights about the past and prevailing public parking dynamics in downtown Newburyport that helped to make what are believed to be reasonable preliminary estimates of the project revenue that might be produced by each of the design options for the new parking facility.

10.5 Facility Users and Utilization

The proposed development of an Intermodal Parking Facility at either the Green Street or the Titcomb Street sites would augment the available supply of public parking needed to serve downtown visitors, business patrons and employees. Presently, these parkers are heavily dependent upon the existence of free on-street parking and the usually free, City-owned, off-street parking lots on the waterfront north of Merrimac and Water Streets and at the Green Street parking lot.

The 1998 Study reported that there were 1,051 legal on-street parking spaces and 919 City-owned, off-street spaces in the retail district. While the count of on-street parking spaces remains relatively unchanged since 1998, the City’s plan to expand the Waterfront Park is expected to reduce the public parking supply in the area by approximately 235 spaces. The 1998 Study estimated that approximately 270 vehicles are usually parked at the waterfront lots during the weekday peak period and, at the time, approximately 180 of the parked vehicles belonged to transient or short-term parkers and approximately 90 of the parked vehicles belonged to long-term parkers (i.e. area employees). Assuming that these findings are still valid, it would be important for most if not all of the remaining 204 spaces retained at the Waterfront Park to be dedicated to serving short-term parkers rather than all day parkers. This would mean that, in theory, approximately 90 long-term parkers would be displaced by the Waterfront Park expansion project. Consequently, it is reasonable to assume that most of these displaced long-term parkers and perhaps some of the short-term parkers would likely become users of the new facility, particularly if the City initiates a comprehensive pay-to-park program covering the entire retail business district.

Most transient parking activity at the new facility is expected to correspond with normal business and shopping hours between 9:00 a.m. and 9:00 p.m., seven days a week, while long-term or employee parking activity at the new facility would mostly be limited to weekday business hours. Weekend usage of the new facility would be less than weekday as more convenient on-street parking spaces would likely be available. Periodic special events held downtown would also generate large numbers of parkers at the new facility.

10.6 Parking Demand Seasonality Assumption

The 1998 Study found that 40 percent of those individuals who parked in the NRA parking lots come to downtown Newburyport for the primary purpose of visiting and enjoying the amenities of the Boardwalk, the Waterfront Park or the other water-dependent activities nearby. Given the

seasonal orientation of these destinations, it is clear that some share of the parking demand during the peak season would be lost during the late fall, winter and early spring months. Therefore, the preliminary revenue projections produced for the Intermodal Parking Facility reflect a seasonal adjustment to the transient parking revenue projections. The adjustment reflects the assumption that transient parking demand during the daytime on weekdays from November through April (i.e. the off-season) would only be equal to approximately 75 percent of the demand captured during the warmer months of the year. For weekends and evenings, off-season transient parking revenue generation is assumed to be equal to 50 percent of the revenue captured during the warmer months of the year.

10.7 Assumed Parking Facility Rates

Given the previously discussed assumption that the City would establish a comprehensive pay-to-park program for on-street spaces and at City-owned off-street parking facilities, the assumed rate structure proposed for the new parking facility is shown in Table 10.3.

Table 10.3 Assumed Parking Garage Rates

Parking Rates	
Transient Parking	Rate
≤ 1hr.	\$1.50
1hr. – 2hrs.	\$2.00
2hrs. – 3hrs.	\$2.50
3hrs. – 4hrs.	\$3.00
≥ 4hrs.	\$3.50
Monthly Parking	
Permits	\$60.00
Special Event	
Flat Rate	\$3.00

10.8 Parking Validations for Customers of Retail Tenants

While often needed, improperly conceived parking validation programs can lead to operational and revenue accounting problems. Given the physical design of the parking facility options, the best arrangement for the managing a parking validation program for the retail tenants would be to confine the validation program users to the facility spaces inside the gated space garage. All who park inside the garage would pay their parking charge after rather than before they complete the parking stay. From an operational standpoint this approach would not require, or interfere with, the parking enforcement efforts that would be required in the surface lot(s) that would be equipped with Pay-by-Space revenue collection machines, but not gates.

To ensure that the validation program is properly controlled and appropriately targeted to serve just the just the customers of the retail tenants, it is suggested that the retail tenants assume some accountability for the amount of validated parking tickets they give out. This can be accomplished by making the credit value of the validated tickets equal to the cost of one hour of parking in the garage. Completely free parking validations for an unlimited timeframe should be

not permitted. Retail tenants should also be discouraged from abusing the discounted parking program. Such commercial shopping validation programs work best when retail tenants require customers to complete a minimum purchase to qualify for a discounted parking validation tickets. It is also suggested that retail tenants that want to participate in the validation be charged a nominal amount for every validated parking ticket they distribute to their customers. While there is a variety of ways the pricing arrangements for this type of validation program can be setup, no such terms have been assumed for this financial assessment of the proposed intermodal facility.

10.9 Parking Facility Users' Site Preference

Based on the findings and observations noted in the 1998 Study, it is assumed that with the substantial loss of NRA parking spaces as a result of the Waterfront Park Expansion project, displaced parkers would find a new facility at the Green Street site preferable to a new facility at the Titcomb Street site. The Green Street site is more centrally located and closer to the businesses and shops that line the State Street and Pleasant Street retail district. In addition, the site is within sight of the Firehouse Center (performance venue), is a short walk to Market Square and is across the street from City Hall and the Post Office. Although the Titcomb Street site is only one block to the west of the Green Street site, parking facility occupancy figures from the 1998 Study clearly reveal that the utilization of parking spaces to the west of Green Street were more than 14 percent lower than the spaces to the east of Green Street. This predicted site preference results in lower parking customer capture assumptions for the Titcomb Street site facility options.

10.10 Retail Space Rental Income

Three of the four conceptual design options for the intermodal facility include some rentable commercial space on the grade level. While some of the space is envisioned to be occupied by the MVRTA, it is assumed that the remainder of the space would be leased at prevailing market rental rates. Based on the per square footage rental rates presently being sought for existing commercial space in the heart of the Newburyport business district and provided by the real estate appraisal provided in Appendix E, it has been assumed that the rental space at the Green Street site could command between \$15 and \$35 per square foot, while the rental space at the Titcomb Street site could command between \$15 and \$30 per square foot. For the purposes of this assessment, the lower rent rate estimates made by the firm of Foster Appraisal and Consulting Company Inc. in April 2010 have been used. Table 10.4 provides a summary of the potential rental income by design option.

10.11 Parking Revenue Projections by Site and Facility Design Concept

It is important to stress that the revenue projections which follow for the proposed Intermodal Parking Facility are very preliminary and are intended to represent an initial order of magnitude measure of the revenue generating prospects of the project design options for the selected sites. The parking revenue sources consist of potential income from monthly, daily transient and special event parking that could conceivably be captured at the different sites by the different facility design schemes. The combined volume of monthly and transient vehicles projected to be

parked during the weekday peak period ranges between 65 percent and 70 percent of the each facility's

Table 10.4 Estimated Appraised Market Value of Project Retail Space

	Min Rental Value per s.f.	Max. Rental Value per s.f.	Min. Annual Revenue	Max. Annual Revenue
Green St. Opt. A				
3,300 s.f.	\$30.00	\$35.00	\$99,000	\$115,500
<u>9,000 s.f.</u>	\$15.00	\$25.00	<u>\$135,000</u>	<u>\$225,000</u>
Total			\$234,000	\$340,500
Green St. Opt. B				
0 s.f.				
Total			\$0	\$0
Titcomb St. Opt. A				
11,500 s.f.	\$15.00	\$25.00	<u>\$172,500</u>	<u>\$287,500</u>
Total			\$172,500	\$287,500
Titcomb St. Opt. B				
8,000 s.f.	\$20.00	\$25.00	\$160,000	\$200,000
<u>3,300 s.f.</u>	\$25.00	\$30.00	<u>\$82,500</u>	<u>\$99,000</u>
Total			\$242,500	\$299,000

space capacity. This degree of utilization is comparable to the overall percentage of space occupancy recorded in the 1998 Study for the whole of the downtown retail district. The rate schedule applied to each of the facility development options is the same and is presumed to match the City's pay-to-parking rate schedule for its other lots.

The majority of revenue is projected to be generated by monthly parking customers who are estimated to purchase approximately 200 permits at the Green Street site and approximately 150 permits at the Titcomb Street site. It is difficult to speculate on greater numbers of monthly permit sales at this time because the public's response to the City instituting a comprehensive on-street and off-street pay-to-park program is unpredictable. The current national economic crisis is causing the public to rethink a variety of budgeting decisions including those relating commuting to and parking for work. Monthly permit parkers would be expected to pay \$60 per month.

Transient parking revenue is derived by first estimating the number of customers expected to be parked in the facility at the peak demand period and then estimating the number of times that volume of parked vehicles would turnover during a given timeframe over a set number of days per year. Three different timeframes have been established for transient revenue generation: daytime on Monday through Friday between 7:00 a.m. and 6:00 p.m., Friday evenings between 6:00 p.m. and 12:00 midnight and all day on Saturdays and Sundays. The peak period transient parking volume during normal weekday business hours is expected to turn over two times, meaning if 75 transient vehicles are parked at the peak demand period, a total of 150 transient vehicles can be expected to park at the facility for the period.

The Green Street site is expected to capture approximately 200 transient parkers between 7:00 a.m. and 5:00 p.m., 102 transient parkers on Friday evenings and approximately 150 transient parkers on Saturdays and Sundays. The amount of transient parkers projected to be captured at

the Titcomb site during the same timeframes are 150, 60 and 100, respectively. Since the majority of transient parkers are expected to remain parked in the new facility between 1 and 2 hours on weekdays and 2-3 hours on weekends, average transient rates of \$2.00 and \$3.00 for the respective parking durations have been used as the multipliers.

The Newburyport Chamber of Commerce promotes several large downtown special events each year such as Yankee Homecoming, Springfest, the Riverfront Musicfest and the Santa Parade. When staging such events, it is not uncommon for the NRA parking lots to be used for other purposes rather than parking. Similarly, sometimes these community events require the banning of on-street parking on some streets. When these parking management actions are undertaken to stage such special events, the proposed intermodal facility can be expected to be well utilized. Therefore, the revenue projections reflect the expectation that the subject facility would fill to capacity and that at least 50 percent of the occupied spaces would turnover each day that these types of events are held. It is estimated that downtown special events would be scheduled at least 16 days each year.

Lastly, it is important to note that the revenue projections shown on Table 10.5 do not reflect annual revenue reductions that could result from the previously discussed discounted parking validation that might be created to serve the customers of the tenants that would occupy the retail space planned for three of the four intermodal facility design options.

Table 10.5 Annual Revenue Projections for Site Options

Item	Green Street Site – Option A							Green Street Site – Option B						
	463 Total Spaces (446 Garage/17 Surface)							428 Total Spaces (299 Garage/129 Surface)						
Revenue	Peak Hr Space Occ.	Daily Turn-over	Months/ Days	Parking Rate (Fixed/Avg.)	Seasonal Demand Adj.	Annual Revenue		Peak Hr Space Occ.	Daily Turn-over	Months/ Days	Parking Rate (Fixed/Avg.)	Seasonal Demand Adj.	Annual Revenue	
Parking Spaces														
Monthly Revenue	200	-----	12	\$60.00		\$144,000		200	-----	12	\$60.00		\$144,000	
Transient Revenue Weekdays M-F	100	2.0	250	\$2.00	75%	\$75,000		100	2.0	250	\$2.00	75%	\$75,000	
Transient Revenue Fri. Evening	85	1.2	52	\$2.00	50%	\$5,304		85	1.2	52	\$2.00	50%	\$5,304	
Transient Revenue Sat./Sun.	75	2.0	88	\$3.00	50%	\$19,800		75	2.0	88	\$3.00	50%	\$19,800	
<u>Special Event Revenue</u>	<u>463</u>	<u>1.5</u>	<u>16</u>	<u>\$3.00</u>		<u>\$33,336</u>		<u>428</u>	<u>1.5</u>	<u>16</u>	<u>\$3.00</u>		<u>\$30,816</u>	
Total						\$277,440							\$274,920	
Annual Gross Parking Revenue Per Space						\$599							\$642	
Retail Space														
Retail Unit 1		3,300	SF	\$30.00		\$99,000							\$0	
Retail Unit 2		9,000	SF	\$15.00		\$135,000							\$0	
Total						\$234,000							\$0	
Probable Annual Revenue						\$511,440							\$274,920	
Operating Expenses														
Probable Direct Annual Operating Expenses						\$240,500							\$235,400	
Annual Repair & Replacement Reserve Fund Contribution						\$49,700							\$68,600	
Probable Annual Expenses						\$290,200							\$304,000	
Probable Net Annual Income						\$221,240							(\$29,080)	

Table 10.5 is continued on the next page

Table 10.5Annual Revenue Projections for the Site Options – Continued

Revenue	Titcomb Street Site – Option A										Titcomb Street Site – Option B									
	354 Total Spaces (323 Garage/31 Surface)										321 Total Spaces (296 Garage/25 Surface)									
	Parking Spaces	Peak Hr Space Occ.	Daily Turn-over	Months/ Days	Parking Rate (Fixed/Avg.)	Seasonal Demand Adj.	Annual Revenue	Peak Hr Space Occ.	Daily Turn-over	Months/ Days	Parking Rate (Fixed/Avg.)	Seasonal Demand Adj.	Annual Revenue	Parking Spaces	Peak Hr Space Occ.	Daily Turn-over	Months/ Days	Parking Rate (Fixed/Avg.)	Seasonal Demand Adj.	Annual Revenue
Monthly Revenue		150	-----	12	\$60.00		\$108,000	150	-----	12	\$60.00		\$108,000		150	-----	12	\$60.00		\$108,000
Transient Revenue Weekdays M-F		75	2.0	250	\$2.00	75%	\$56,250	75	2.0	250	\$2.00	75%	\$56,250		75	2.0	250	\$2.00	75%	\$56,250
Transient Revenue Fri. Evening		50	1.2	52	\$2.00	50%	\$3,120	50	1.2	52	\$2.00	50%	\$3,120		50	1.2	52	\$2.00	50%	\$3,120
Transient Revenue Sat./Sun.		50	2.0	88	\$3.00	50%	\$13,200	50	2.0	88	\$3.00	50%	\$13,200		50	2.0	88	\$3.00	50%	\$13,200
Special Event Revenue		323	1.5	16	\$3.00		\$23,256	296	1.5	16	\$3.00		\$21,312		296	1.5	16	\$3.00		\$21,312
Total							\$203,826						\$201,882							\$201,882
Annual Gross Parking Revenue Per Space																				
Retail Space			GLA SF		Rent per s.f		Rental Revenue		GLA SF		Rent per s.f		Rental Revenue							
Retail Unit 1			11,500		\$15.00		\$172,500		3,300		\$25.00		\$82,500							
Retail Unit 2			-				\$0		8,000		\$20.00		\$160,000							
Total							\$172,500						\$242,500							
<i>Probable Annual Revenue</i>							<i>\$376,326</i>						<i>\$444,382</i>							
Operating Expenses																				
Probable Direct Annual Operating Expenses							\$216,900													\$219,400
Annual Repair & Replacement Reserve Fund Contribution							\$41,600						\$37,100							\$37,100
<i>Probable Annual Expenses</i>							<i>\$258,500</i>						<i>\$256,500</i>							<i>\$256,500</i>
Probable Net Annual Income							\$117,826						\$187,882							\$187,882

10.12 Financial Assessment Summary

The conceptual design options developed for the Green Street site can be expected to yield more parking revenue than the design options developed for the Titcomb Street site. The difference in parking revenue is primarily due to the number of spaces in each facility; however, the Green Street site is expected to attract more parkers based on its proximity to prime retail and institutional destinations in downtown.

Only Green Street – Option A is projected to have the potential to generate enough parking revenue to fully fund the direct operating expenses and to make the recommended contribution to a repair and replacement reserve fund. Commercial rental income for three of the four options could be significant, in fact the rental income for both Titcomb Street options could potentially exceed the parking revenue the options would generate and would create positive cash flow after the operating expenses and repair replacement reserves for the project are covered.

Table 10.6 Revenue & Expenses Summary for Project Options

	Green St. Option A	Green St. Option B	Titcomb St. Option A	Titcomb St. Option B
Revenue				
<u>Parking Spaces</u>				
Monthly Revenue	\$144,000	\$144,000	\$108,000	\$108,000
Transient Revenue Weekdays M-F	\$75,000	\$75,000	\$56,250	\$56,250
Transient Revenue Fri. Evening	\$5,304	\$5,304	\$3,120	\$3,120
Transient Revenue Sat./Sun.	\$19,800	\$19,800	\$13,200	\$13,200
<u>Special Event Revenue</u>	<u>\$33,336</u>	<u>\$30,816</u>	<u>\$23,256</u>	<u>\$21,312</u>
Total	\$277,440	\$274,920	\$203,826	\$201,882
<u>Retail Space</u>				
Retail Unit 1	\$99,000	\$0	\$172,500	\$82,500
<u>Retail Unit 2</u>	<u>\$135,000</u>	<u>\$0</u>	<u>\$0</u>	<u>\$160,000</u>
Total	\$234,000	\$0	\$172,500	\$242,500
Estimated Total Gross Project Income	\$511,440	\$274,920	\$376,326	\$444,382
<u>Operating Expenses</u>				
Probable Annual Expenses	\$240,500	\$235,400	\$216,900	\$219,400
<u>Annual Repair & Replacement Reserve Fund</u>	<u>\$49,700</u>	<u>\$68,600</u>	<u>\$41,600</u>	<u>\$37,100</u>
	\$290,200	\$304,000	\$258,500	\$256,500
Probable Net Annual Income	\$221,240	(\$29,080)	\$117,826	\$187,882

11.0 Final Site Selection

The public process and technical evaluation undertaken by the MVRTA to select a site for the Newburyport Intermodal Parking Facility was comprehensive, extending over a one-year period. As described in Section 3.0, the initial site selection process, commencing in June 2009, began by identifying ten initial sites which were narrowed to two final sites – the existing Green Street public parking lot and several privately held parcels on Titcomb Street that would be assembled to form the Titcomb Street site. This document has presented both the initial and final site selection processes, with the earlier sections describing how the two final sites were selected. The middle sections of this document summarized data related to the transit and parking components of the project and the last several sections have focused on a detailed comparison of the two final sites. The comparison for each site included a review of existing conditions (including a Phase I Site Assessment), a real estate appraisal, development of two conceptual design options and analysis of potential impacts related to each design option. Also, a detailed financial analysis was conducted for the four design options comparing potential operating costs to potential revenues. Table 11.1 provides a summary of this comparison.

The goals of the proposed Intermodal Parking Facility are to enhance MVRTA transit operations and to replace parking spaces lost as a result of a proposed waterfront park expansion project in downtown Newburyport. By providing convenient parking, transit passenger amenities, safe bus berths, the MVRTA goal of enhanced public transit in downtown Newburyport would be achieved regardless of the site selected. However, only the Titcomb Street site would fulfill the city's goal of providing new parking in downtown in sufficient quantity to replace spaces expected to be lost by the waterfront park project and spaces required to accommodate other future parking needs (demand from new retail space, new transit riders, the new Clipper Rail Trail, etc.).

The Green Street site is limited by city building height restrictions, sensitive view corridors and adjacent historically significant buildings. The Green Street site is further limited by the fact that the site currently provides approximately 200 public parking spaces, thus the net increase in parking spaces at this site is far less than would be realized at the Titcomb Street site. The two designs considered for the Green Street site were approximately 75 spaces short of meeting the site's requirement for approximately 340 new spaces. Conversely, the two Titcomb Street design options show that the Titcomb Street site could accommodate facilities which would provide that site's requirement for approximately 345 spaces.

Environmental impacts resulting from a structure at either site would be minimal with the exception of potential visual and historical impacts associated from a structure at Green Street.

Both sites are considered equally likely to have some level of underground contamination. Phase I Site Assessments conducted for each site recommend additional sub-surface investigation. Both sites are located in areas where light industrial uses have occurred in the past. A gas station was located on the Green Street site and an existing gas station (currently closed) is presently located on the Titcomb Street site.

Based on comments received at public meetings held on September 15, 2009 and on April 29, 2010 from Newburyport City Councilors and the public-at-large, it is clear that if an Intermodal Parking Facility is to be considered in downtown Newburyport, the preference is the Titcomb Street site. Moreover, the Mayor of Newburyport has also indicated a preference for the Titcomb Street site.

The building cost analysis (land acquisition, design/permitting/legal, construction) conducted for the four design options indicates that total costs are higher for the facilities considered for Titcomb Street (\$18,000,000 at Titcomb Street versus \$12,000,000 to \$16,000,000 at Green Street). This is primarily due to costs related to land acquisition of the Titcomb Street properties (\$3,600,000 to \$4,800,000). As the Green Street site is publically owned, there are no land acquisition costs associates with that site. Actual construction costs for the four design options range from approximately \$10,900,000 to \$14,700,000, with the two Titcomb Street options representing the mid-level facilities with costs at approximately \$12,000,000. The cost per net increase in parking space ranges from approximately \$54,000 to \$62,000 at Green Street and \$57,000 to \$63,000 at Titcomb Street.

The differential between annual operating and revenue projections for the four options show that Green Street – Option A would generate the highest “profit” for the MVRTA (\$221,000 per year); Green Street – Option B would operate at a loss; and a facility on Titcomb Street with approximately 11,000 square feet of retail space would generate a “profit” of between \$118,000 and \$188,000 per year. This analysis assumes that the City of Newburyport would institute a pay-to-park system for its existing on- and off-street parking supply prior to, or in conjunction with, the opening of the Intermodal Parking Facility. If a pay-to-park system is not implemented, the parking facility would not be expected to generate revenue for the MVRTA.

Given the City’s preference for the Titcomb Street site, the adequacy of the potential facility’s size and the projected annual revenue that could be expected from a facility located at the Titcomb Street site, the project team recommends that the MVRTA and City of Newburyport select the Titcomb Street site for implementation of an Intermodal Parking Facility.

Table 11.1 Site and Design Option Summary

	Green Street – Option A	Green Street – Option B	Titcomb Street – Option A	Titcomb Street – Option B
				
Existing Site				
Availability of land	Site is owned by city and is available	Site is owned by city and is available	Site consists of multiple privately held parcels with one owner	Site consists of multiple privately owned parcels with two owners
Area	2 acres +/-	2 acres +/-	2 acres +/-	2 acres +/-
Potential for hazardous waste	- Former machine shop was located on-site. - Used as lumber yard and laundry. - Gasoline station at corner of Unicorn and Merrimac Streets in 1961	- Former machine shop was located on-site. - Used as lumber yard and laundry. - Gasoline station at corner of Unicorn and Merrimac Streets in 1961	- 85 Merrimac St. has RTN 3-21816 which includes a deed restriction - former industrial uses - old trucking company garage on-site which may contain USTs	- Former Gibbs gas station has two DEP RTNs 3-24027 and 3-3593 - 85 Merrimac St. has RTN 3-21816 which includes a deed restriction - former industrial uses - old trucking company garage on-site which may contain USTs
Consistency with city policies	City does not support site for structured parking	City does not support site for structured parking	City supports development of site for structured parking	City supports development of site for structured parking

Table 11.1 is continued on the next page.

Table 11.1 Site and Design Option Summary (continued)

	Green Street – Option A	Green Street – Option B	Titcomb Street – Option A	Titcomb Street – Option B
				
Design				
Footprint	57,000 s.f.	28,500 s.f.	32,650 s.f.	38,400 s.f.
Height (max distance from site low point to top of parapet)	40 feet	40 feet	37 feet	37 feet
Number of structured levels	2	3	3.5	2 east of Titcomb St. and 3 west of Titcomb St.
Parking allowed on ramps	yes	no	yes	yes
Area of retail space	12,300 s.f.	0 s.f.	11,500 s.f.	11,300 s.f.
Area of MVRTA waiting area	1,000 s.f.	1,000 s.f.	5,000 s.f.	3,300 s.f.
Total parking spaces	463	428	323 + 31 for retail use	296 + 25 for retail use
Net increase in parking spaces	261	226	354	321
Facility efficiency	310 s.f./space	371 s.f./space	318 s.f./space	356 s.f./space
Strengthens/enhances area retail/residential/commercial development	- Provides additional parking to support existing retail. - Located on surface lot with 100% utilization.	- Provides additional parking to support existing retail. - Located on surface lot with 100% utilization.	- Would support multi-use development proposed on opposite side of Merrimac Street.	- Would support multi-use development proposed on opposite side of Merrimac Street.
Zoning limitations	None	None	None	None
Ability to permit	Difficult: There is significant local opposition to this site.	Less difficult: Smaller structure may reduce local opposition to this site.	Less difficult: Less impact to residential abutters	Less difficult: Few residential abutters oppose the facility at this site
Access/egress for cars/vans	Two access points: Green Street and Merrimac Street (Unicorn Street is dead-ended)	Three access points: Green Street, Merrimac Street and Unicorn Street	Three access points: two on Merrimac Street and one on Pleasant Street. Titcomb Street is discontinued.	Three access points: one on Merrimac Street and two on Titcomb Street

Table 11.1 is continued on the next page.

Table 11.1 Site and Design Option Summary (continued)

	Green Street – Option A	Green Street – Option B	Titcomb Street – Option A	Titcomb Street – Option B
				
Mets Parking Goal				
Demand for additional parking	312-343	275-303	315-347	304-334
Net Increase in parking spaces (including impact to on-street parking)	261	226	328	312
Net Increase - demand for additional parking	-82	-77	-19	-22
Meets parking goal	No	No	Yes	No
Mets MVRTA Goals				
Area of MVRTA waiting area	1,000 s.f.	1,000 s.f.	5,000 s.f.	3,300 s.f.
Access/egress for MVRTA buses	Two bus berths on Merrimac St.	Two bus berths on Merrimac St.	Two bus berths on Merrimac St.	Two bus berths on Titcomb St.
Adequately serves MVRTA bus routes	Yes	Yes	Yes with a change to route	Yes with a minor change to route
Environmental Impacts				
Visual	High	Moderate	Low	Low
Neighborhood	High	High	Low	Low
Waterfront	None	None	None	None
Historical	Moderate	Moderate	Low	Low
Wetlands	None	None	None	None
Aquifer	None	None	None	None
Traffic	Low	Low	Low	Low
Parking (existing)	High	High	None	None
Public Transit	None	None	Low	Low
Environmental justice	None	None	None	None

Table 11.1 is continued on the next page.

Table 11.1 Site and Design Option Summary (continued)

	Green Street – Option A	Green Street – Option B	Titcomb Street – Option A	Titcomb Street – Option B
				
Building Costs				
Land acquisition	\$0	\$0	\$3,600,000	\$4,800,000
Design/permit	\$1,500,000	\$1,300,000	\$2,100,000	\$2,300,000
Construction cost	\$14,700,000	\$10,900,000	\$12,700,000	\$11,600,000
Total project cost	\$16,200,000	\$12,200,000	\$18,400,000	\$18,700,000
Cost per parking space	\$34,989	\$28,505	\$56,966	\$63,176
Cost per net increase in spaces	\$62,069	\$53,982	\$56,966	\$63,176
Annual Costs				
Potential parking revenue	\$277,400	\$274,920	\$203,826	\$201,882
Potential retail space revenue	\$234,000	\$0	\$172,500	\$242,500
Total potential revenue	\$511,400	\$274,920	\$376,326	\$444,382
Operating costs	\$240,500	\$235,400	\$216,900	\$219,400
Repairs/replacement reserve	\$49,700	\$68,600	\$41,600	\$37,100
Annual costs	\$290,200	\$304,000	\$258,500	\$256,500
Net (revenue – cost)	\$221,240	(\$29,080)	\$117,826	\$187,882

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