Thompsonville Transit Center Feasibility Study Report

Prepared for

The Town of Enfield, Connecticut

and

Greater Hartford Transit District

March 2008

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

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EXECUTIVE SUMMARY

This report is the result of efforts by the Town of Enfield to establish the feasibility and funding eligibility for the construction of an intermodal transit facility, referred to in this document as the Thompsonville Transit Center. The report presents findings regarding site selection, transit demand, likely costs, and other considerations associated with constructing a bus intermodal facility at a location in Enfield that might take maximum future advantage of the Town's location along the proposed New Haven-Hartford-Springfield (NH-H-S) commuter rail line.

Enfield was recommended as a stop on the NH-H-S commuter rail service in recent planning conducted by the Connecticut Department of Transportation. The Town anticipates that the bus facility, coupled with the future train service, will serve as a catalyst for supporting redevelopment goals identified through its ongoing planning. The Feasibility Study summarized in this report identifies issues and obstacles, opportunities and schedule for the construction of an intermodal facility in Enfield.

The report concludes that there is an immediate demand for a bus intermodal center in Thompsonville Village, and that such a facility could be constructed at a cost that is consistent with other transit center projects around New England and elsewhere in the U.S. The report provides a representative layout for the Thompsonville Transit Center and recommends a phased approach to developing the facility as funding becomes available over the next several years.

1. INTRODUCTION

1.1 Project Background

The Town of Enfield has undertaken this Feasibility Study to establish the feasibility and funding eligibility for construction of an intermodal facility. The initial impetus for the study stems from the fact that the Town of Enfield was recommended as a stop on the planned New Haven-Hartford-Springfield (NH-H-S) commuter rail service. Specifically, a site in the Thompsonville Village area of Enfield was identified as a potential station location in the NH-H-S planning process. The Town hopes to capitalize on the future NH-H-S service by constructing an intermodal transit center in Thompsonville Village at a site near where the former historic train station was located. The new transit facility immediately will serve bus, paratransit, and other rubber-tired transit modes, and will do so in a way that would allow for a strong connection to the planned NH-H-S passenger rail service once it begins operations. The Town anticipates that the Thompsonville Transit Center – by itself at first, and especially when coupled with the later proposed train service – will serve as a catalyst for supporting redevelopment goals identified through the Town's ongoing planning.

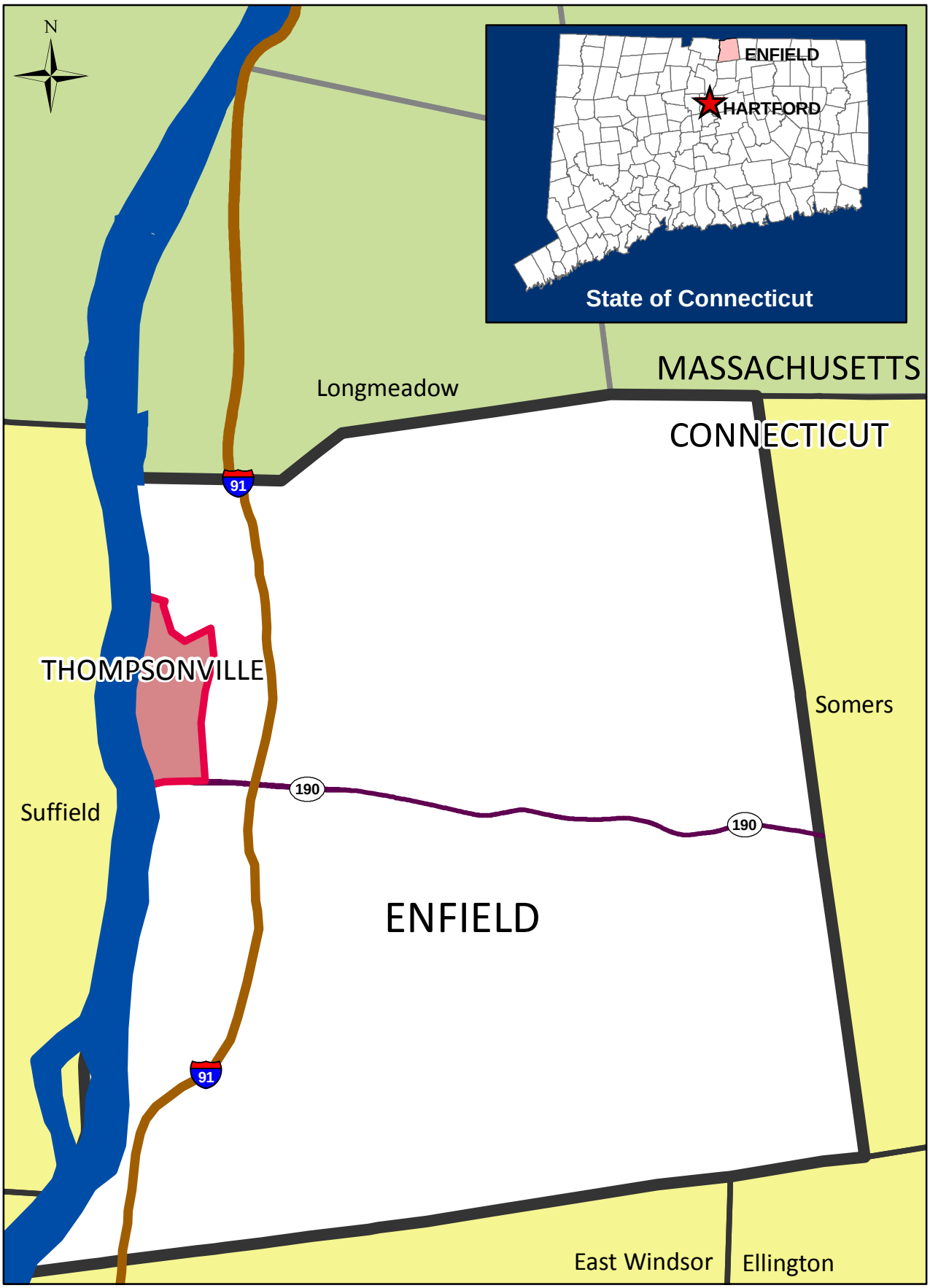
1.2 Overview of Feasibility Study

A team led by McMahon Associates, and including Baker/Wohl Architects (BWA) and Diversified Technology Consultants (DTC), was hired by the Town in 2008 to study the feasibility of building a transit center. The results of the study are presented in this report.

In conducting the Feasibility Study, the McMahon team worked with the Town and the Greater Hartford Transit District to evaluate the feasibility of the Thompsonville Transit Center (TTC) project. The work of the study involved identifying a set of site development options, evaluating these options, and confirming a potential transit center site development concept. As a result of the study, a concept plan for the transit center was developed at a level sufficient to allow the Town to advance the project into subsequent preliminary design, environmental permitting, and funding application stages.

1.3 Thompsonville Village

Thompsonville is a village within the Town of Enfield, CT. The village encompasses the majority of U.S. Census tracts 4806 and 4808. According to the 2000 U.S. Census, the population of this district was 8,125. The village was established in the mid-1800s and covers just over 2 square miles of land. The New Haven-Hartford Railroad tracks run through the village parallel and adjacent to the river. A map of the Thompsonville Village area is shown on the following page as **Figure 1: Thompsonville Village Map**.



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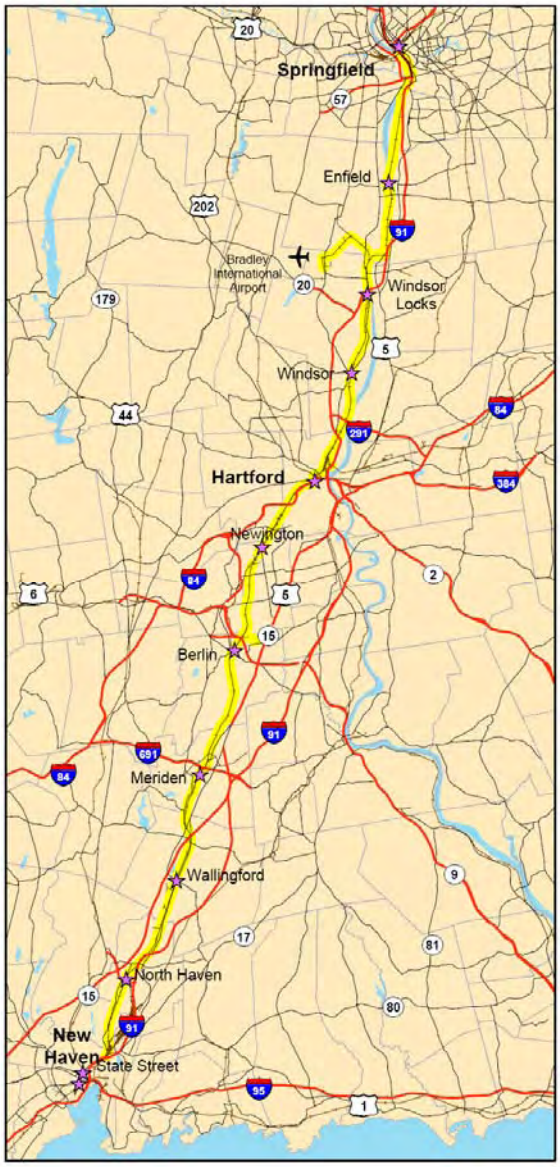
Thompsonville Intermodal Transit Center
Enfield, Connecticut
Figure X: Context Map

Thompsonville Village was for many years the site of a thriving industrial and residential community. The current Bigelow Commons apartment complex, located adjacent to the railroad tracks targeted for the NH-H-S rail service, is the site of the former carpet mill that was the town's primary business from the 1820s to the 1960s. After the mill went out of business, it became more necessary for residents to commute to other cities for work, and many other local businesses also began to close down. Recent revitalization strategies (such as the Bigelow Commons redevelopment project, re-landscaping of Fresh Water Pond, and the opening of the public boat launch) are beginning to turn that trend around. Thompsonville contains an historic commercial downtown area and dozens of blocks of traditional housing stock.

1.4 New Haven-Hartford-Springfield Commuter Rail Project



The original New Haven-Hartford line was constructed in the mid-1800s and served both passenger and freight service. Over the years, the majority of passenger service has been discontinued. At present, only limited Amtrak service utilizes the line. However, the Connecticut Department of Transportation (ConnDOT) is developing plans to restore commuter service along the line as part of the NH-H-S Commuter Rail Implementation Study initiative.

The Town of Enfield (and the Thompsonville Village site specifically) was recommended as one of three new stations proposed in ConnDOT's 2005 NH-H-S Study. The NH-H-S Study anticipated an approximately $300 million capital cost to upgrade the existing rail line, purchase rolling stock, build new stations and a maintenance facility. ConnDOT is currently conducting an Environmental Assessment (EA) for the project, which recent estimates state should be completed in 2010. The EA constitutes an initial, critical step towards implementation, but many subsequent steps remain, including preliminary design, final design and construction. Funding for these future steps has not been identified yet.

On the originally proposed schedule, construction for the transit center could begin as early as the end of 2008. However, since the report's release, only the Environmental Assessment is currently underway. The entire NH-H-S project is therefore advancing at a slower pace that was initially anticipated. At present, construction for the commuter rail line is set to begin no earlier than 2013, with operation beginning in 2016 at the earliest.

1.5 Available Funding for Thompsonville Transit Center

There is $3.1 million in funding currently available for the project. According to the Capitol Region Council of Governments 2007 TIP, $1,931,000 of FTA funds will be granted to the Thompsonville Transit Center project. These funds fall under the category of FTA Section 5309 "Bus and Bus-Related Facility" earmarks. This category applies to the purchase of buses as well as to the construction of intermodal terminals, park-and-ride stations, and passenger amenities such as passenger shelters and bus stop signs. This means that the currently available funds can only be used on elements of the TTC that serve bus passengers. The Feasibility Study therefore only addresses service to bus and other rubber tired transit service. While the conceptual designs addressed in the study specifically allow for future incorporation into a bus/rail intermodal facility, only bus-related improvements are addressed at this time.

2. SITE SELECTION

Although the Thompsonville Village location was identified as a rail station in ConnDOT's NH-H-S planning. Because the NH-H-S initiative did not make a detailed evaluation of possible station locations for Enfield, this Feasibility Study examined whether there might be any potentially better locations to choose. A three step process was used to analyze potential transit hub locations. First, the study team developed specific screening criteria to be utilized in evaluating potential sites, then likely sites were identified, and finally the sites were evaluated in accordance with the screening criteria, leading to the selection of a preferred location for the transit center.

2.1 Screening Criteria

The study team developed a comprehensive list of screening criteria for use in evaluating potential sites. These criteria were as follows:

Available Space – The Enfield region, particularly along the rail line, is an historic one, with significant development making large swathes of open space with roadway access somewhat uncommon. In designing a multi-modal transit center, it is important to have at least some available space on both sides of the railroad track for the building facility and platform as well as for parking and internal circulation.

Population Density/TOD Potential—The Town would like the TTC to be an integrated transit hub with easy pedestrian access in order to support existing and encourage new Transit-Oriented Development (TOD). Existing pedestrian infrastructure, nearby baseline developmental density, and proximity to existing commercial centers are all features which contribute to a site's TOD potential.

Roadway Access – Prior to the commencement of the proposed Hartford Commuter Rail, the facility will serve primarily as a bus center and will need to be located within easy access of the major highway network. In addition, many of the park-and-ride commuters will be arriving via Route I-91 and State Route 5.

Compatible Land Use – The proposed TTC should be located in an area compatible with transit service. Transit facilities should not be isolated, and typically perform best within more densely built environments. Proximity to a mix of residential, retail and recreational uses should be evaluated in locating a transit center. As the TTC will most likely serve Enfield residents commuting to work, adjacency to large vacant or industrial areas is not desirable.

Proximity to Adjacent Proposed Stations – The NH-H-S planning effort proposed an ideal spacing between stations of approximately 5 miles, on the general principle that stations with a greater distance may miss potential ridership and stations closer together typically have decreased level of service due to increased travel times. It is therefore important to

examine the locations of other proposed stations in the area to ensure appropriate station placement.

Maximize Prior Public Investment – Locations where public funds have already been expended are good candidates for further development. It is likely that the effects of the different investments will build off of each other.

2.2 Location Alternatives

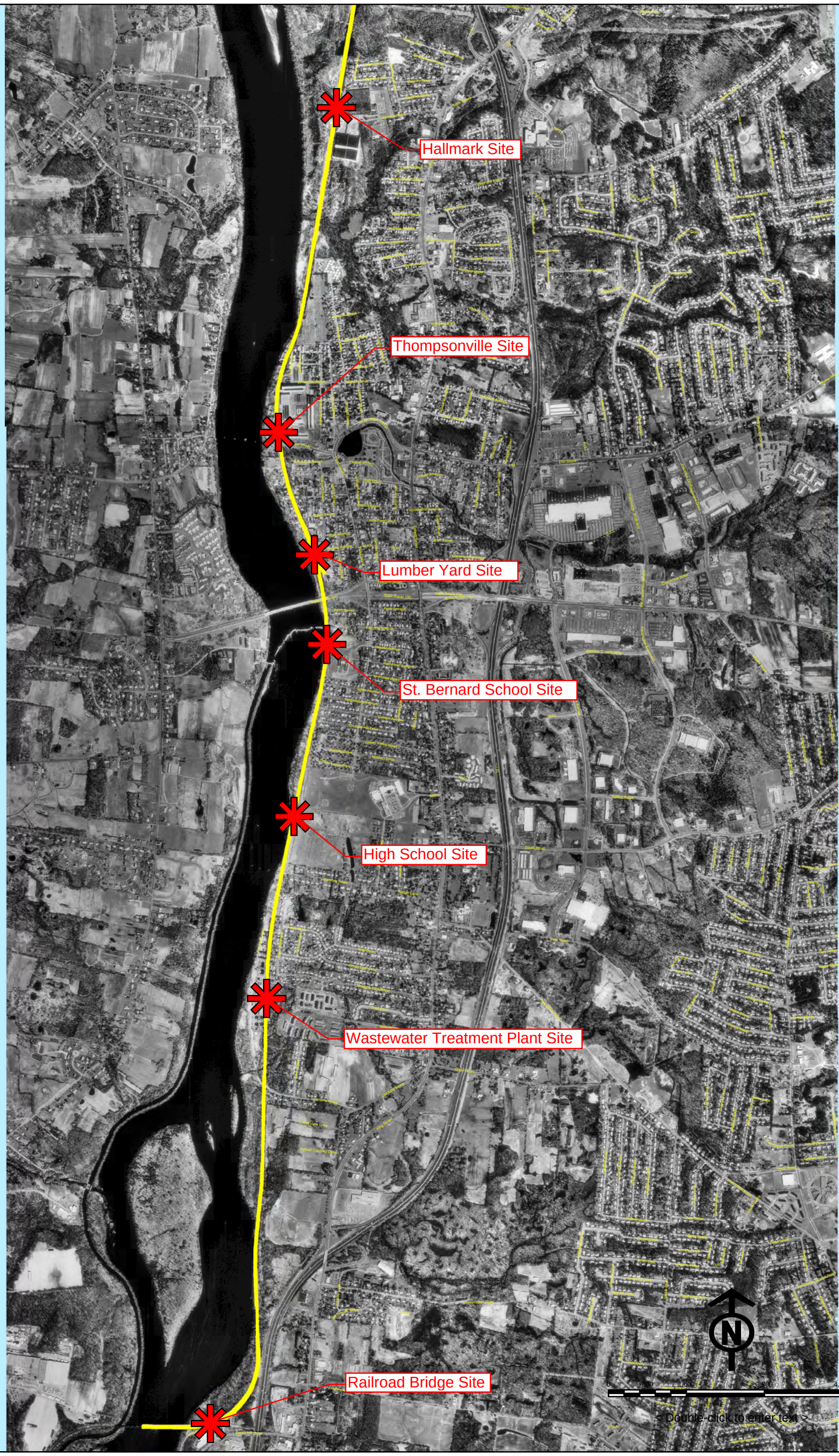
Figure 2: Potential Site Locations (on page 8) shows the potential locations under consideration for an intermodal facility in the Thompsonville/Enfield area. Following are brief descriptions of the potential transit center sites identified on that figure.

Former Hallmark Site – This former Hallmark facility was vacated by the company in the last year. The northernmost of the seven potential sites for the transit center, it is accessed from Route 5 (Enfield Street) to the east through a residential neighborhood, via Manning Road. While this site has plenty of land for parking and expansion, access to the tracks will require significant building demolition. Additionally the site has little potential for TOD or for further commercial development. The site has direct access to the interchange of I-91 and Route 5, but this access is through a residential area with maximum speed limit of 15 miles per hour.

Thompsonville Site – Located adjacent to the Bigelow Commons apartments, the site is comprised of the former Westfield Casket Company building and a decommissioned NEU Power Plant. This site can be reached from Main Street. A vehicular underpass also connects to the western side of the tracks and to North and South River Streets.

Lumber Yard – This site is the location of the Kelly Fradet lumber yard and hardware store which is still currently in operation. The business has been operating since the turn of the century. There is access to State Route 190 from Pearl Street by several local residential roads. Additionally, the far side of the tracks could potentially be reached by South River Street. This site has land available for parking and other infrastructure enhancements. It has a high TOD potential in terms of existing pedestrian and vehicular infrastructure. However, it is further from the Bigelow Commons complex, a significant source of density in the Thompsonville/Enfield area. In terms of access, there is no way to reach the west side of the railroad tracks. As with the Hallmark Site, the Lumber Yard is only accessible through a residential neighborhood. The streets are narrow and would need serious reconstructive efforts to be sufficient for a transit center's needs. Constructing the transit center at this location would also require displacing a currently-operating business, an expensive and legally complicated process and one which is counter to the Town's overall goals of sustaining the economic environment of the area.

Possible Station Sites



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St. Bernard School – This private religious institution situated in a residential neighborhood serves students in kindergarten through the twelfth grade. This location has access to both Route 5 and State Route 190 to the east and north. However, there is limited room and no access to the west of the railroad tracks. Space for parking and expansion is limited. As with the Hallmark Site and the Lumber Yard, St. Bernard School is located in the midst of a residential neighborhood. With little connective pedestrian infrastructure, there is limited TOD and commercial potential at this site. As with the Lumber Yard, locating the transit center at the site of St. Bernard School would require the displacement of a functioning organization.

Enfield High School – This site is the town's public high school. The site can be accessed by Route 5 through several residential streets. There is significant open space by this site to the east of the rail line. However, similar to St. Bernard School, there is limited room and no access to the west of the railroad tracks.

Sewage Plant – This site is the location Town's existing wastewater treatment plant. This location can be accessed from Route 5 from Bridge Lane and Old King Street. However, there is no access to the east side of the tracks. There is little land available for infrastructure parking and expansion. The surrounding area consists of low-density population, with limited possibility for TOD or commercial development. Constructing the TTC at this location would require the relocation of the sewage processing operations. Additionally, the site is close to the proposed Windsor Locks Station, further reducing its desirability for a transit center which would house the future commuter rail station.

Railroad Bridge – This site is located in a small parcel zoned for industrial use and near the East Windsor town line. It is situated near the I-95 and Route 5 interchange. There is no access to the west side of the tracks. This land is already devoted to transportation uses. However, there is very limited open space available at this site. It is isolated from other development, with little to no TOD or commercial development potential. In addition, as with the Sewage Plant, the site is close to the proposed Windsor Locks Station. This further reduces its suitability for a transit center which would house the future commuter rail station.

2.3 Site Evaluation and Selection

In cooperation with the Town and Greater Hartford Transit District, the McMahon team evaluated the seven sites described above – sites along the railroad in Enfield perceived as suitable for locating an intermodal center. Screening criteria were developed for comparison purposes that looked at availability of land, proximity to population, development potential, and consistency with ongoing planning and town goals.

Several sites were eliminated because they would replace active uses such as St. Bernard School and Enfield High School. Ultimately, the Thompsonville Site was seen as best suited due to its availability, surrounding population density, and historic location as the train

station. Adjacent to Bigelow Commons and Thompsonville Village Center, it best meets existing town plans, reinforces previous private investments such as Bigelow Commons, and has the greatest potential to spur further economic development.

Table 1: Enfield Station Site Screening Evaluation shown on the following page presents the relevant information for the potential sites in relation to the screening criteria. Additional comments for each site are provided in the matrix. Highlighted sections indicate key circumstances that cause a particular site to be unsuitable for selection under the corresponding evaluation criterion.

As **Table 1** indicates, based on the criteria established in the study, the Thompsonville Village site provides the most suitable location in Enfield to serve as the location for a transit center.

Table 1: Enfield Station Site Screening Evaluation

	Available Space	Population Density/ TOD Potential	Roadway Access	Compatible Land Use	Proximity to Adjacent Proposed Station	Maximize Prior Public Investment
Hallmark Site *This is the Hallmark facility which was recently (in the last year) vacated by the company*	• Plenty of parking and land for expansion. • Access to tracks will require building demolition	• Little TOD potential • Not much opportunity for further commercial development	• Close to I-91 Interchange with Route 5. • Site access only through sensitive residential area. • Existing 15 mph speed limit on access road.	• Industrial site currently accessed through a residential area.		
Thompsonville Village *Located near Bigelow Commons apartments, former Westfield Casket Company & NEU Power Plant*	• Open space available on both sides of track.	• TOD potential is high / existing pedestrian & service infrastructure in place • Town has an option on the Casket property	• Located on Main Street: a principal roadway with direct access to I-91. • Access to west side of railroad tracks is limited, but passable	• Located adjacent to the Thompsonville Village Center and adjacent to highest density residential development in Enfield.	• Is the proposed commuter rail station location for Enfield.	• Historic tax credits utilized to create Bigelow Commons development
Lumber Yard *Existing Kelly Fradet lumber yard and hardware store / use has be in place since the turn of the century*	• Available space for parking and infrastructure	• TOD potential is high / existing pedestrian & service infrastructure in place. • Less potential than Thompsonville Village site due to distance from densest population at Bigelow Commons.	• No access to west side of railroad track • Access to the site runs through a residential neighborhood • Surrounding streets are narrow / in need of reconstruction. • Residents on narrow streets would be impacted by increased traffic	• Located on the edge of Thompsonville Village area.		
St. Bernard School *Located at the site of a functioning private school*	• Limited land for parking	• Located in the middle of a residential neighborhood • Little potential for TOD./ No commercial potential	• Located near the Route 190, Route 5 & I-91 interchange • Access to the site runs through a residential neighborhood • No access to west side of tracks	• Catholic school grounds located in a residential neighborhood		
Enfield High School *Located at the site of a functioning public High school*	• Limited land for parking	• Located in the middle of a residential neighborhood • Little potential for TOD. No commercial potential	• Located near Route 5 • Access to the site runs through a residential neighborhood • No access to east side of tracks	• Town high school located in a residential neighborhood		
Sewage Plant *Site of Town's existing wastewater treatment plant*	• Limited land availability for infrastructure and parking	• Surrounding area is sparely populated • No TOD potential / No commercial potential	• Good access from Route 5 / Bridge Street is a main traffic artery • No access to the east side of tracks	• Active wastewater treatment plan	• Close to proposed Windsor Locks station	
Railroad Bridge *Site is located in a small Industrial zone near the East Windsor town line.*	• Small available open space	• Site is isolated away No TOD potential / limited commercial potential	• Located near the Route 5 & I-91 Interchange • No access to west side of tracks	• Transportation uses	• Close to proposed Windsor Locks station location	

3. EXISTING CONDITIONS

As noted previously, the Thompsonville Site selected above for the transit center is also the historic location of the rail station for Enfield.

3.1 Project Area

Situated at the intersection of River Street and Main Street, the proposed site is accessible to local and regional traffic and to the potential future passenger/commuter rail line. **Figure 3: Thompsonville and Surrounding Transportation Infrastructure** on page 15 depicts the location of the Thompsonville site in relation to the surrounding transportation infrastructure.

Town of Enfield – The town of Enfield, Connecticut is one of the northernmost in the state, bordering the state of Massachusetts. It is situated 8 miles south of Springfield, Massachusetts; 18 miles north of Hartford, Connecticut; and 57 miles north of New Haven, Connecticut. According to the Town's Economic Development webpage the population in 2007 was approximately 46,100. Enfield covers approximately 33 square miles.

As recorded by the Town's Economic Development Department, major industries include:

Establishments		**Employment**	
1. Services	41.1%	1. Trade	29.1%
2. Trade	26.5%	2. Services	26.6%
3. Construction and Mining	10.9%	3. Manufacturing	14.7%
4. Finance, Insurance, Real Estate	6.8%	4. Government	12.2%
5. Manufacturing	4.9%	5. Finance, Insurance, Real Estate	9.6%
6. Government	3.9%	6. Transportation and Utilities	3.6%
7. Transportation and Utilities	3.1%	7. Construction and Mining	3.5%
8. Agriculture	2.7%	8. Agriculture	0.7%

The heaviest industries are trade and services. Other major industries include construction and mining; finance, insurance, and real estate; government; and transportation and utilities. Agriculture makes up a small component of the Town's industry.

Thompsonville Village – Thompsonville is a village within the town of Enfield, established in the mid-1800s. The village encompasses the majority of U.S. Census tracts 4806 and 4808, an area that is bordered by the Connecticut River to the west, Bridge Lane to the south, I-91 to the east, and Grape Brook to the north. The New Haven-Hartford Railroad tracks run through the village parallel and adjacent to the river. Route I-91 also passes through the village from north to south, with several exits in Enfield. Area efforts have produced recent

revitalization strategies, such as the Bigelow Commons redevelopment project, re-landscaping of Fresh Water Pond, and the opening of the public boat launch. Thompsonville also contains an historic commercial downtown area and dozens of blocks of traditional housing stock.

Transit Center Site – **Figure 4: Thompsonville Transit Center Site** on page 16 shows the extent of the proposed site, which includes the Main Street and River Street rights-of-way and the properties directly northwest of the intersection.

3.2 Demographics

Population – According to the 2000 US Census, the population of Thompsonville was 8,125. Of the population, 90% identified themselves as White or Caucasian, 4% as Black or African American. The Hispanic or Latino population (of any race) comprises 4.7% of the population.

Housing – The occupancy rate for housing units in Thompsonville is 92%. Thirty-nine percent of occupied units were owner-occupied and 61% were rental units. Eight percent of housing units were vacant.

Workforce Participation – The percentage of people over the age of 16 in the labor force (65%) is about the same as the national average (64%). Seventy-eight percent of people were high school graduates or higher. The national percentage was 80%.

Income – In a generally wealthy state, Thompsonville is an area which is economically below the national average. The median household income in 1999 dollars was $39,154 compared to the national median of $41,994 and to the median income of Enfield, $52,810. In terms of poverty levels, Thompsonville fares better than the nation at large. Seven percent of families and 9% of individuals were living below the poverty level, just below the national (9% and 12%, respectively). However, significantly below the overall Town of Enfield (3% and 4%) averages.

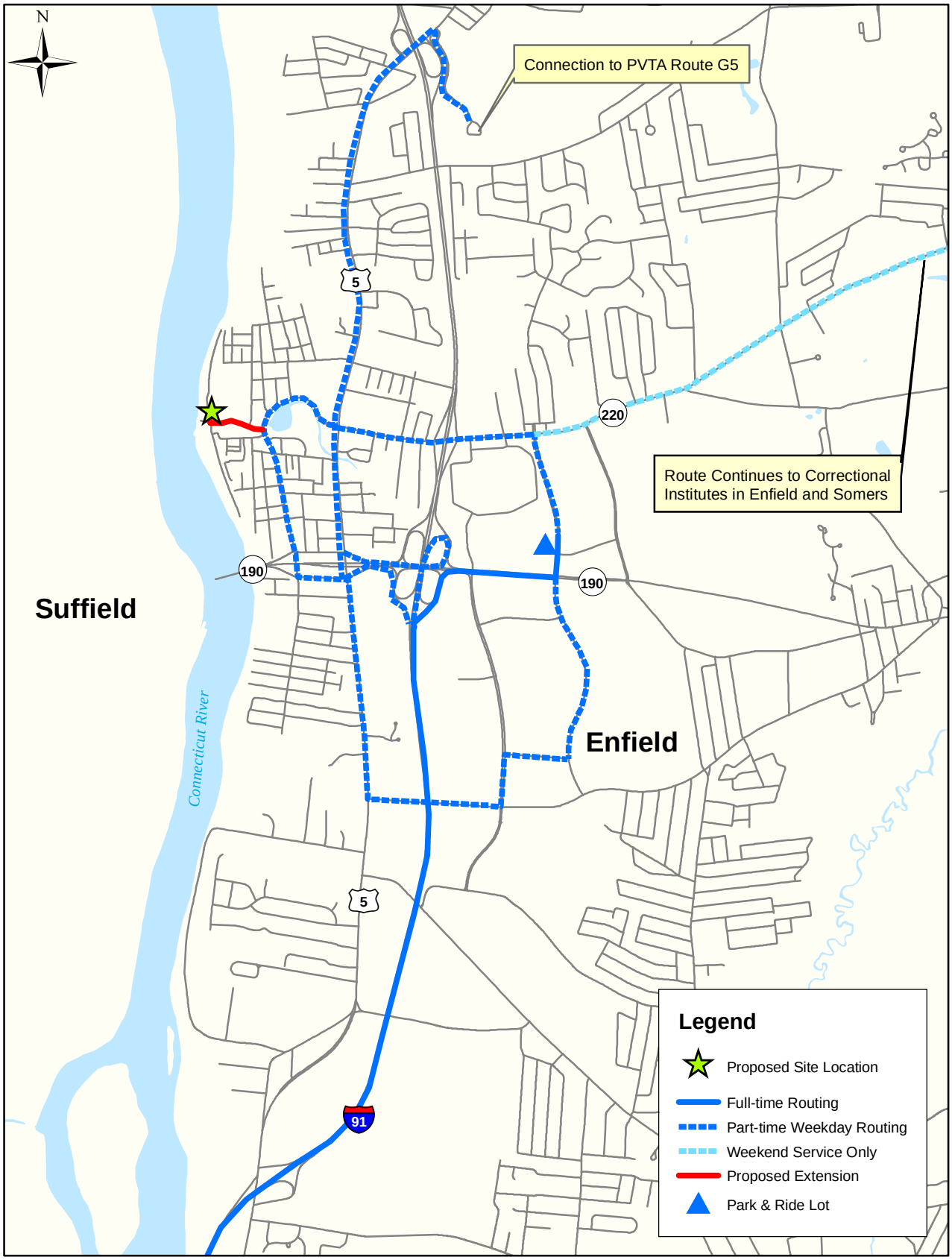
3.3 Site Ownership and Control

The proposed project site is actually comprised of a few different properties (see **Figure 5: Site Area Properties**). Property identification numbers referred to in the descriptions below are taken from the Enfield Town Assessor's Map 7. Ownership is as listed on the Town of Enfield's GIS database.

Casket Hardware Building – Lot 7-12, pictured at right, lies between the railroad tracks and North River Street. This 0.18-acre property is the location of the four-story historic building which served in the manufacture and sales of casket hardware through the 1900s. The building was constructed in 1893, and the

property is currently owned by Dow Mechanical Corporation. Building upon the success of historical renovations at Bigelow Commons and in keeping with the historic architecture of many of the remaining buildings in Thompsonville Village, many residents of the Town of Enfield prefers that the Casket Building be adapted for productive reuse.

Baker/Wohl Architects (BWA), as part of the project team, evaluated the adaptive reuse potential of the building. The building appears to be ideally situated to serve as part of the eventual build-out of the Thompsonville Transit Center, with additional space available for commercial or residential use. The building could also serve as an independent development in a revitalized Thompsonville Station Area. The reuse analysis showed that even though the structural integrity of the building is solid, rehabilitation costs are substantial due to the historic nature of the building, and current disuse. Adaptive reuse is both possible and desirable, but would likely require subsidization, especially when compared to new construction.



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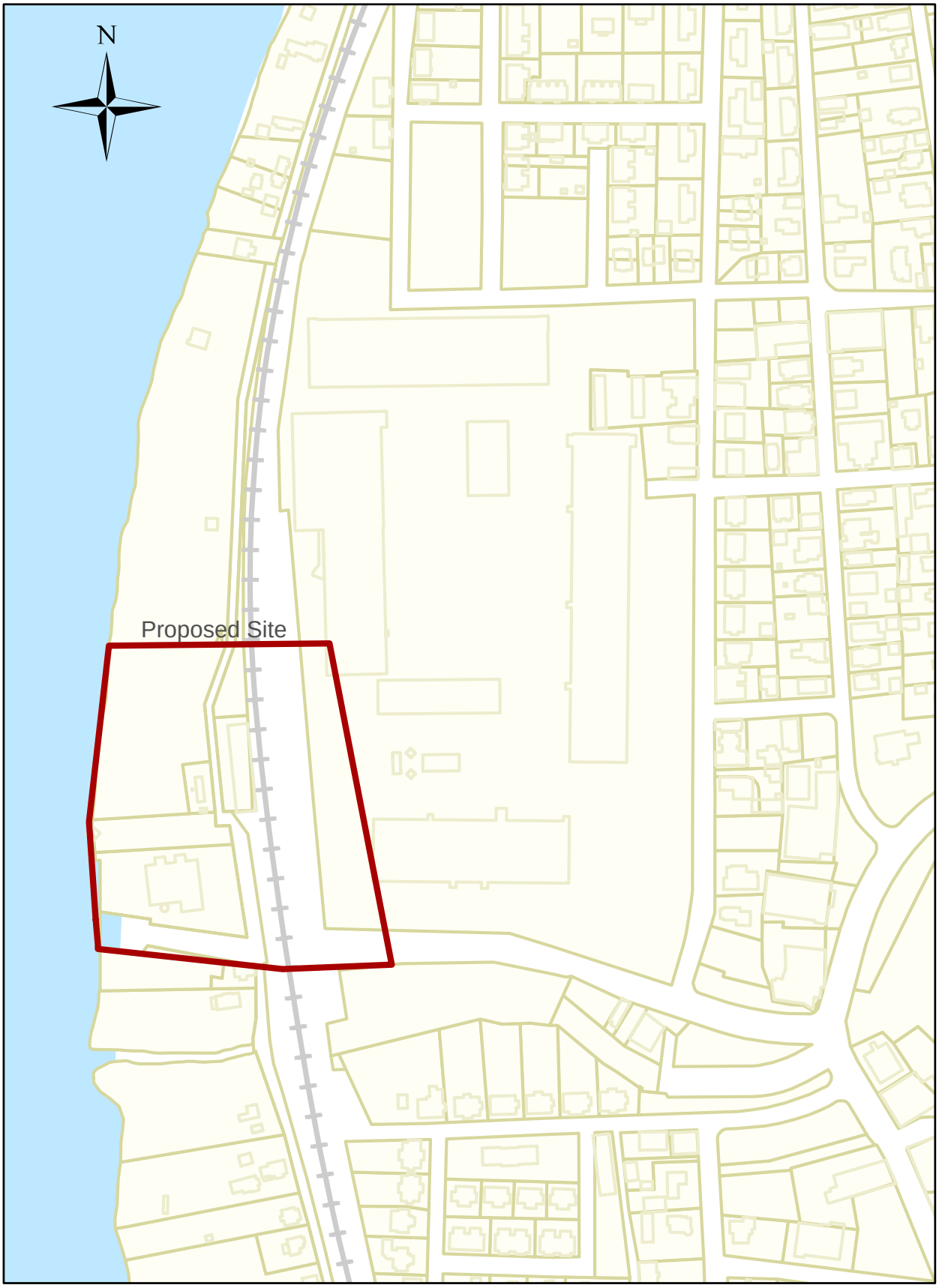
Thompsonville Transit Center
Enfield, Connecticut
Figure X: CT Transit Express Bus Routing



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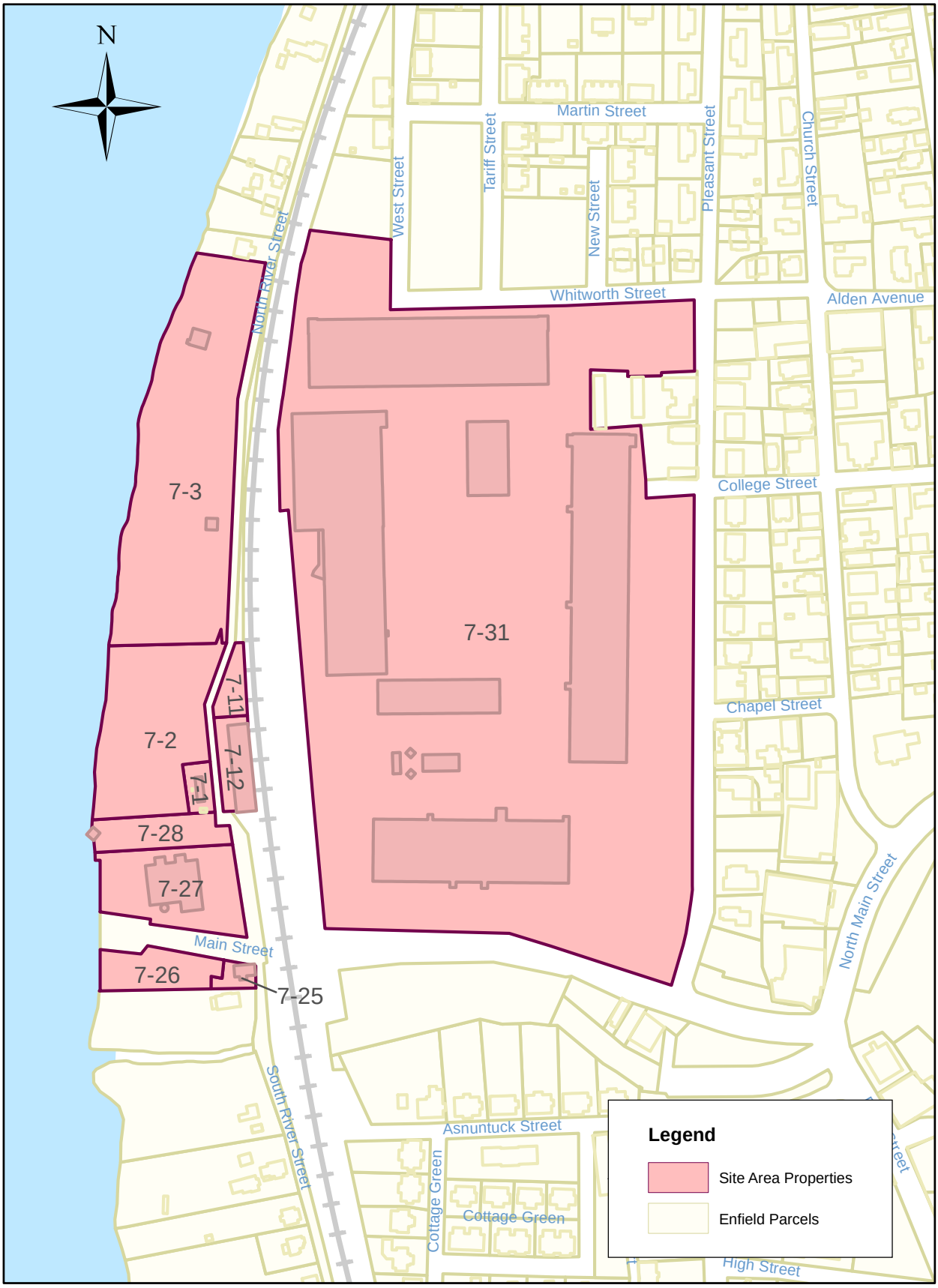
Thompsonville Intermodal Transit Center
Figure XX: Proposed Site



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Thompsonville Intermodal Transit Center
Figure XX: Site Area Properties

Connecticut Light and Power Properties – Lot 7-27 lies to the west of North River Street and north of Main Street. The 1.0-acre property contains a former power facility shown to the left (constructed in 1921), and is currently owned by Connecticut Light and Power Company. Across North River Street from the Casket Hardware building is Lot 7-1, a 0.12-acre property owned by Connecticut Light and Power (CL&P). It includes the single-story, operational utilities facility built in 1960, shown to the left. CL&P also owns a narrow strip of property (Lot 7-28) bordered by the Connecticut River and North River Street and directly south of the CL&P and Yankee Gas properties. This parcel covers 0.3 acres of vacant land.

Yankee Gas Property – To the north of the Casket Hardware property is a 0.1-acre, triangular parcel (Lot 7-11) of vacant land. The property is owned by Yankee Gas Services. Yankee Gas Services Company owns a 1.5-acre property (Lot 7-2) bordering the CL&P property to the north and the west. This property is currently vacant.

3.4 Adjacent Properties

Levitz Property – Among the other properties which border the site area is the Levitz property (Lot 7-3), a vacant 3.24-acre parcel to the north of the Yankee Gas property.

Bigelow Commons Property – The Bigelow Commons property (Lot 7-31**)** is located directly to the east of the railroad tracks. As mentioned earlier in this report, the Bigelow Commons development was an adaptive reuse of the retired carpet factory mill buildings. In addition to higher-end apartment units, the compound contains tennis courts, a swimming pool, and some mixed-use facilities in the northwest corner of the site.

The Bigelow Commons development is a successful example of creative reuse of historic buildings. The mill buildings themselves were converted to provide 471 units of 1- to 3-bedroom apartments, and the Bigelow Commons complex contains luxury amenities, including a swimming

pool and tennis courts. This adaptive reuse has proven to be an attractive option, as approximately 60% of Bigelow residents are long-term (3-5 years).

Cogtella Properties – The final two properties (Lot 7-25, shown to the right, and Lot 7-26) to the south of Main Street are owned by Stephen and Stanley/Caroline Cogtella.

3.5 Transportation Infrastructure

Rail Infrastructure – The railroad track parallels both River Street and the Connecticut River itself. Constructed beginning in the middle 1800s, the line was once double-tracked; however, the second set of tracks were removed in the 1980's after Amtrak scaled back service on the line. Only a single track remains in service.

The centerline of the existing track is approximately 18 to 20 feet from the edge of the Casket Hardware building at 33 North River Street (see **Figure 6: Track Clearances at Casket Building**). The difference in elevation between the top of the track and the second floor of the Casket building is approximately 3.5 feet. This is within a few inches vertically of what likely would be required to construct a future rail platform to access the second floor of the Casket Hardware building. **Figure 7: Platform Access at Casket Building** shows a cross-sectional view of the existing railroad tracks in relation to the Casket Hardware building.

Roadway Infrastructure – Main Street extends from the town center west towards the Connecticut River. It passes under the railroad line via a 28-foot-wide underpass. The clearance for the underpass is approximately 13 feet. **Figure 8: Main Street Viaduct Clearances** shows the dimensions of the underpass, oriented facing east.

Main Street previously continued across the river to Suffield. However, that bridge was dismantled circa 1971 due to safety and operational concerns. Currently Main Street is truncated in a dead end just west of River Street.

River Street (known as North River Street to the north of Main Street and South River Street to the south of Main Street) intersects with Main Street immediately to the west of the railway underpass. River Street extends approximately one half of a mile to the north and one half of a mile to the south of Main Street. The street terminates in a dead end in both directions.

Pedestrian Infrastructure – Main Street has sidewalks on both sides to the east of the viaduct retaining wall. On the north side of the street, where the retaining wall begins, there is no sidewalk, and sidewalk only exists along the south side of the street passing under the viaduct. No sidewalks or other pedestrian amenities exist on either side of North and South River Streets in the site area.

Bicycle Infrastructure – An existing bicycle path circulates the Freshwater Pond at the heart of Thompsonville. Additionally, there are plans to extend the Windsor Locks Canal Trail

north to Route 190 and then east along the bridge and across the river to Thompsonville. This trail would potentially connect to the existing path around the Freshwater Pond.

3.6 Environmental Conditions

As part of the study, McMahon's subconsultant, DTC, obtained the following information from a review of limited sources including historic Sanborn fire insurance maps, USGS historic topographic maps, and an electronic environmental database review. For all sites, except Parcel 1 (the Casket Building), a site visit has not yet been performed because permission to enter the properties has not been obtained from the property owners. A site visit for the Casket Building site was conducted on March 10, 2009. Results from that site visit are pending [3-25-2009]. Based on this available information, the following limited conclusions can be reached (by parcel):

Lot 7-12 The Casket Hardware Building site – Significant soil and groundwater contamination may be present due to the historic manufacturing operations.

Lot 7-1 Yankee Gas Metering Station site – Significant soil and groundwater contamination may be present due to the historic presence of a large bulk oil above-ground storage tank (AST).

Lot 7-2 Vacant Yankee property – Significant soil and groundwater contamination may be present due to the historic presence of a large bulk oil AST and the presence of an ice house.

Lot 7-27 Former CL&P Power Plant site – Significant soil and groundwater contamination may be present due to the historic presence of several gasoline USTs, operation of the site as a CL&P facility, and the historic presence of a large coal shed.

Lot 7-28 Vacant CL&P property – Significant soil and groundwater contamination may be present due to the historic presence of a large bulk oil AST and also an historic oil tank between approximately 1905 and 1912.

Additional studies will be needed as the project advances to assess the existence and level, if extant, of contamination of the project area parcels. However, since the proposed use of much of the site is for parking and transportation activities, it is assumed at this stage that much of the area can be capped, if necessary.

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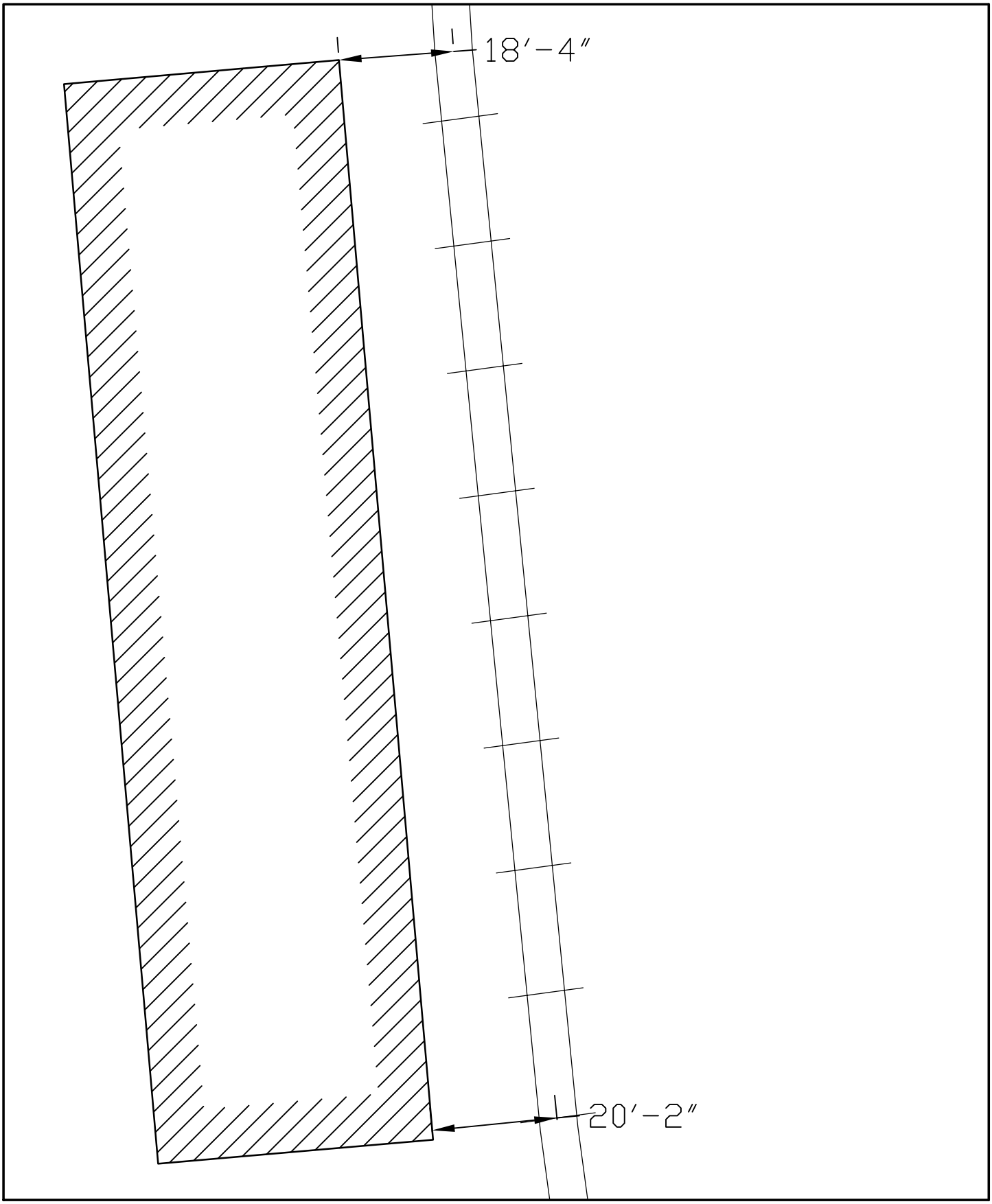

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FIGURE XX
Track Distance
Thompsonville Intermodal Center
ENFIELD, CT

J:\Analysis\Town of Enfield CT\Thompsonville Intermodal Center\Reference Information\Documents and Resources\Casket Elevation.dwg 55/08/06

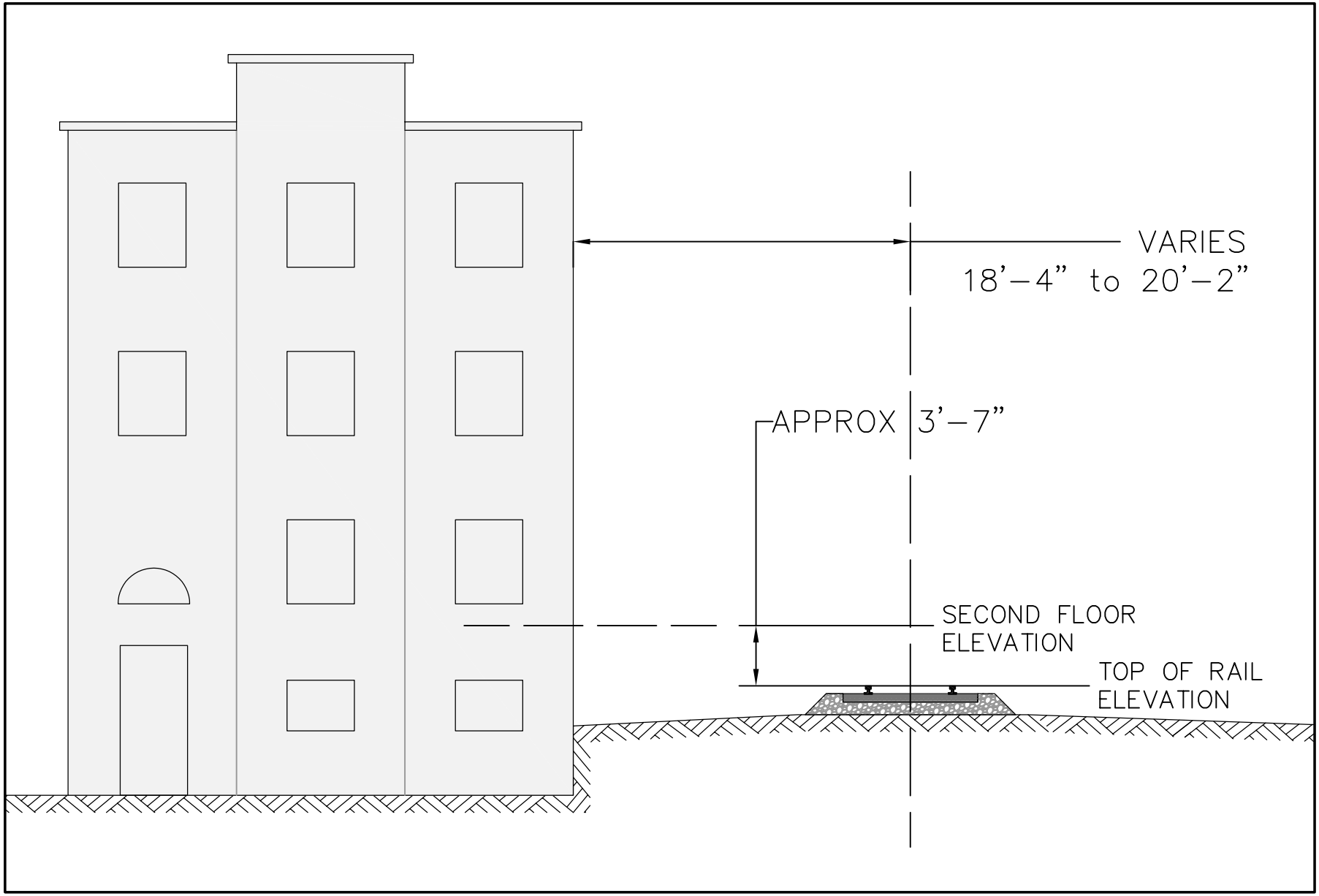

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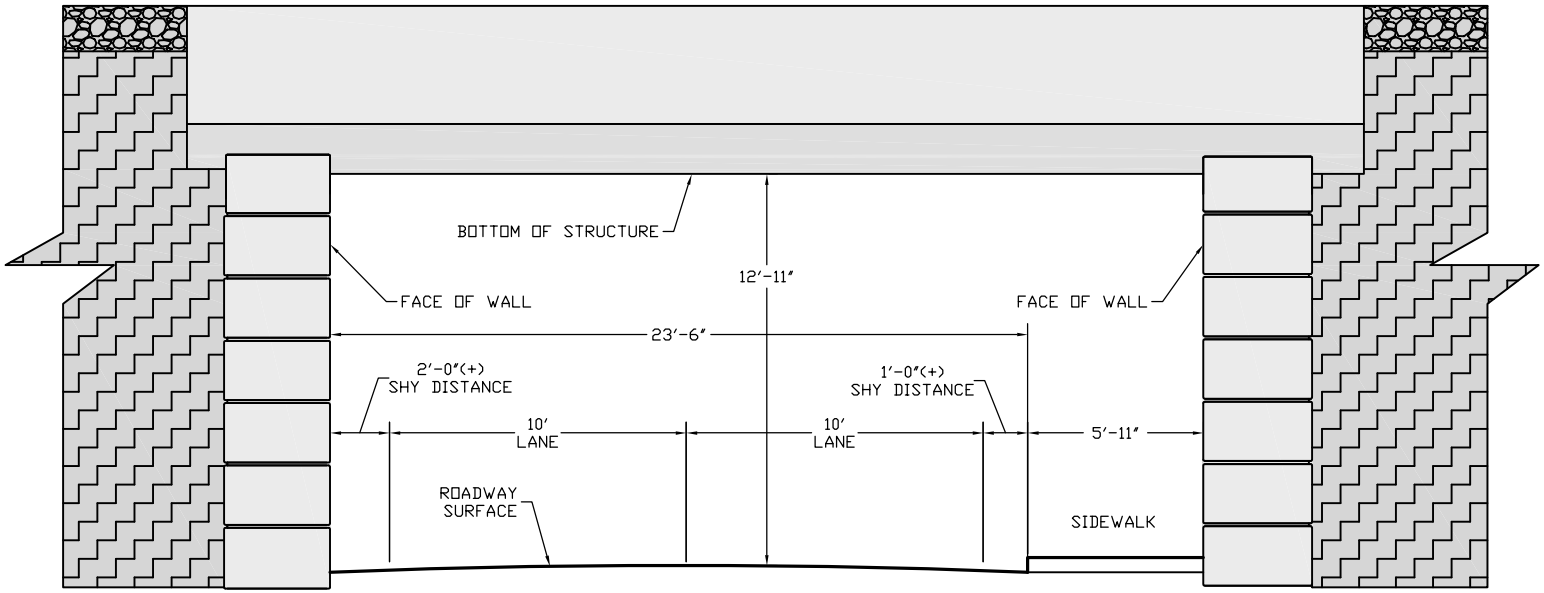
Figure XX
Rail Height at Former Casket Hardware Building
Thompsonville Intermodal Center
Thompsonville, Enfield, CT

J:\Analysis\Town of Enfield CT\Thompsonville Intermodal Center\Reference Information\Documents and Resources\Viaduct Clearings.dwg 19/08/06



AVAILABLE LANE WIDTH
(APPROXIMATE DIMENSIONS)

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Available Lane Width
Thompsonville Intermodal Center
Enfield, CT

3.8 Public Transportation Service

Enfield, and particularly the Thompsonville area, is currently underserved by public transportation. Thompsonville is the most densely populated section of Enfield. Furthermore, according to the 2000 census a substantial percentage of Thompsonville households do not have access to an automobile. These residents lack transit options, and therefore have limited access to jobs and services. Residents at Bigelow Commons also would benefit from adjacent transit service. According to Northland Investment Corporation, the property manager, 90% of Bigelow residents work in the Hartford or Springfield areas, yet less than 5% use the commuter bus.

The TTC has the potential serve as base for new service, particularly if the express CT Transit Route #5 to Hartford were extended to Thompsonville. The proposed NH-H-S would eliminate the CT-5 and be accompanied by additional feeder bus services. A transit facility focused on buses could serve this population today, and provide a mechanism to implement local service as well.

Existing Bus Service – Currently the Town of Enfield is served by the CT Transit Route #5, which is a commuter bus route to Hartford, carrying approximately 250 passengers daily round-trip for a total of 500 trips. While there are currently 20 inbound (to Hartford) buses on this route, only one stops in Thompsonville (at the intersection of Pearl and Franklin Streets). The remaining buses originate at the park-and-ride lot in Enfield on Freshwater Boulevard. Currently there are 22 outbound buses on Route #5, with three making the stop in Thompsonville. CT Transit route #5 provides service to Enfield on Saturdays, making a total of four stops at the Park and Ride lot on Freshwater Boulevard. The Saturday service is primarily focused on providing service from Hartford to five prisons in Enfield and Somers.

Preliminary discussions with ConnDOT indicated that, while they would not immediately plan to relocate the current park-and-ride location to the Thompsonville site, they would certainly consider making one additional stop in Thompsonville at the transit center as part of the express bus service.

Additionally, there is a connection between the CT Transit Route #5 and PVTA route G5. The two services meet at Mass Mutual in Enfield. The 7:55 and 4:55 buses provide a coordinated connection. In addition, the PVTA website indicates that the 6:50 bus may be held for a CT Transit connection if requested. On weekdays, eight buses are provided on the PVTA G5 route. On Saturdays, there are six buses.

Amtrak service is not currently provided in Enfield. Seven Amtrak trains travel southbound and seven travel northbound on the rail corridor on weekdays. On Fridays, Amtrak operates one addition northbound train. On weekends, eight southbound Amtrak trains and seven northbound trains are scheduled daily.

Past Bus Service – In about 2000, as part of the jobs access money, CT Transit extended a bus route that ran between Hartford and the Bradley International Airport in Windsor Locks to Enfield. In Enfield, the bus route served Thompsonville, City Hall, the shopping mall, and the Park and Ride lot. The service lasted about a year at the most and was discontinued because the ridership was very low. Additional bus service also used to be provided from Springfield by the PVTA.

Proposed Circulator Bus Service – A recent recommendation was made by CRCOG and the Town of Enfield to operate a deviated demand response circulator service for the town of Enfield. Due to funding constraints, the circulator service was not implemented this fiscal year, but transit officials will recommend introducing the service again this year. The planned service would have operated Monday to Saturday from 6:00 AM to 7:00 PM on one-hour headways. Routing for the service would start at the intersection of Pearl Street and Route 190 in Thompsonville, then proceed north on Pearl to North Main Street, follow North Main to the intersection with Route 5, turn left onto Route 5, with a stop at the employment center, and continuing north to Mass Mutual, serving employment locations along the way. Returning the bus would proceed south on Route 5 after Mass Mutual, turn left onto Elm Street (Route 220), and continue following Elm to Hazardville. It would then proceed left onto Route 190, and finally back to Thompsonville.

Proposed Passenger Rail Service – According to the NH-H-S Commuter Rail Line report, commuter service is proposed to be introduced in 2016 at the earliest. The potential future operations would provide service between New Haven and Springfield. Service would be bi-directional Monday through Friday with 30 minute headways during the peak hour schedule (providing at least 14 one-way trips). To achieve the recommended operations, 18 miles of double track would have to be added. The commuter rail service would supplement existing Amtrak service. The potential schedules presented in the final report show 30 minute headways during peak periods with the trains operated by both ConnDOT and Amtrak.

The recommendation is for commuter rail service to be provided at the nine existing Amtrak/Shore Line East Stations in addition to three new stations: North Haven, Newington, and Enfield. The new stations would have high level platforms, grade separated pedestrian crossings, and bike storage/racks. The proposed commuter rail service "would replace current Route 5/13 Enfield/Windsor Locks express service." There would be no need for this commuter bus service once the rail service begins.

3.9 Integration with Ongoing Initiatives

Enfield sees the Thompsonville Transit Center as a key step towards its ongoing plans for revitalization of the entire Thompsonville area. The TTC has been identified as part of and certainly supports many ongoing planning initiatives in which the Town is currently engaged. All planning and design for the TTC should be consistent with other Town plans

for the area including the Enfield Plan of Conservation & Development and the Thompsonville Revitalization Action Plan. Implementation of the TTC also supports a number of regional projects, including the NH-H-S passenger rail initiative, and could serve as an intermodal node on the expanding system of bicycle trails along the Connecticut River.

4. MARKET CONDITIONS

A targeted market analysis was conducted to determine the feasibility of locating a transit center at the Thompsonville site.

4.1 Travel Patterns

The proposed site for the transit center is located in Census Tract 4806. The data indicates that there were 2,299 residents who were part of the workforce in 2000. Tract-to-tract worker flow data was used to determine where these residents work. Of these residents, 31.1% work in Enfield, 11.6% work in Hartford, 5.8% work in Windsor, and 5.2% work in Bloomfield. An additional 5.0% work in Springfield, MA. Employment for residents of the town is generally focused in central and north-central Connecticut and roughly along I-91 corridor. This information can be seen in **Figure 9: Travel Patterns for Census Tract 4806**.

Breaking this down further, about 12% work in Tract 4808, which includes the mall, numerous retail plazas, and the existing Park and Ride lot on Freshwater Boulevard. About 6% work in Thompsonville. Four percent work in the tract comprising downtown Hartford. This information can be seen in **Figure 10: Travel Patterns for Census Tract 4806**. Currently the CT Transit Route #5 buses terminate in downtown Hartford. Eventually commuter rail would stop in downtown Hartford.

The existing Park and Ride lot is located in Census Tract 4808. A total of 2,273 residents were in the workforce in 2000. The 2000 Journey to work tract-to-tract worker flow data was used to determine the work trip patterns. Of these workforce residents, 16.7% work in the same tract that they live in (Tract 4808), where the mall and other retail plazas are located, 2.9% work in tract 4806, the study area, and 3.3% work in the downtown Hartford tract. The remainder works in other locations split by smaller percentages.

Upon comparing the workplace destinations of residents of Tracts 4806 and 4808, a couple trends can be noted. A higher percentage of people living in Tract 4806 (proposed intermodal site) work in Hartford than the people living in Tract 4808 (existing Park and Ride lot). (11.6% or 267 workers from Tract 4806 versus 7.1% or 161 workers from Tract 4808). Enfield overall employs approximately the same number of residents from both tracts – 715 from Tract 4806 and 799 residents from Tract 4808.

4.2 Potential Transit Ridership Market

Indicators of Transit Demand – As part of the study, McMahon performed a GIS-based demographic analysis of U.S. Census data for Enfield to identify the location of residents who would likely have an increased need for access to transit services. In particular, the analysis looked for areas in Enfield that had one or more of the following characteristics:

- High percentage of residents living below the poverty level
- Low per capita income

- Low median household income
- Percent of residents over age 65
- Percent of residents under age 18
- High population density
- Percentage of households not owning cars

These demographic characteristics are among those most highly correlated with an increased use of and need for transit service. **Figure 11: Transit Dependent Populations** shows the result of the analysis. In short, although census tracts with populations meeting individual instances of the above criteria exist at locations around town, they are most highly concentrated in the Thompsonville census tracts. Based on this analysis, the Thompsonville Village area demonstrates an immediate need for additional transit service, since it is only minimally served by the existing express bus service. This assertion is additionally borne out by daily observation of Thompsonville residents making their way on foot or on bicycle from Thompsonville Village across the I-91 interchanges to the most immediate employment opportunities in the mall area.

Transit Shed – Feasibility of the transit center was evaluated by examining the half-mile transit shed (see **Figure 12: Thompsonville Walk-up Transit Shed**). A similar process to the demarcation of the retail shed was performed to determine the transit shed for the proposed intermodal facility. This value is the number of households which would be within walking distance of the facility. The half-mile capture area was evaluated along the roadway network from the railroad overpass at Main Street and was found to contain 3,483 households.

According to the Census, there are approximately 2.2 people per household in Tract 4806. At this rate, the number of people in the 3,483 households within the transit shed would be comprised of approximately 7,663 individuals. According to the considerations discussed above, a substantial number of these individuals would be prospective transit riders.

CRCOG Human Services Transportation Planning – As part of an extensive planning process conducted in 2006 and 2007, the CRCOG Policy Board adopted the Locally Coordinated Human Services Transportation Plan in June of 2007. CRCOG's plan documents an entirely new approach to transit planning that requires an examination of the transportation needs of seniors, individuals with disabilities, and those with low income. The plan specifically identifies Enfield as follows:

- Transit service to Enfield for low-income populations – job related needs.
- Service from Enfield to Rockville hospital (dial a ride).
- Transit service to the Department of Labor in Enfield.
- The Thompsonville area of Enfield is home to many individuals (low-income and or disabled) who need transit service, especially to reach jobs in nearby suburban locations.

4.3 Residential Market

Recent Interest – Due to the current state of the U.S. economy there is currently little interest in new construction for residential development across the country. This is true in Connecticut, as elsewhere. However, as recently as 2006, Northland showed enough interest in expanding upon its current investments in Thompsonville (Bigelow Commons) to commission a study of potential redevelopment in the station area. **Figure 13: Recently Proposed Thompsonville Redevelopment Concept** reproduces one of the images from the 2006 Northland study. The image reproduced as **Figure 13** shows a potential buildout along the riverfront and back up Main Street to the center of Thompsonville Village. The fact that a private developer would invest resources in producing such a plan points to the possible future viability of station area development.

Pro-forma Analysis – As part of this study, BWA produced a cost estimate for construction of a riverfront residential development very similar to that depicted in **Figure 13**. The residential development project that BWA examined featured 150 apartment units at an estimated $40 million construction cost. McMahon then performed a "back of the envelope" pro-forma analysis of the BWA plan. The pro-forma analysis confirmed that the market costs are currently too high for constructing such a development when compared with existing rents at Bigelow Commons, even with consideration for possible tax abatements or other typical development incentives. However, as the economy recovers, and as the amenity of passenger rail comes on line, the viability of riverside apartments in the station area will increase.

4.4 Neighborhood Retail Market

There are plenty of retail choices west of I-91. However, local goals include increased walkup retail. By measuring one half mile along the roadway network from the intersection of Main Street and Pearl Street it was possible to estimate the retail shed for the downtown area. This is the number of households which are within walking distance. The number of households in the retail shed is estimated to be 2,111. According to common guidelines, approximately 2000 households within a walking distance are required to support one block of neighborhood retail. It would be possible, therefore, for this population to support an entire block of retail. See **Figure 14: Thompsonville Walk-up Retail Market**.

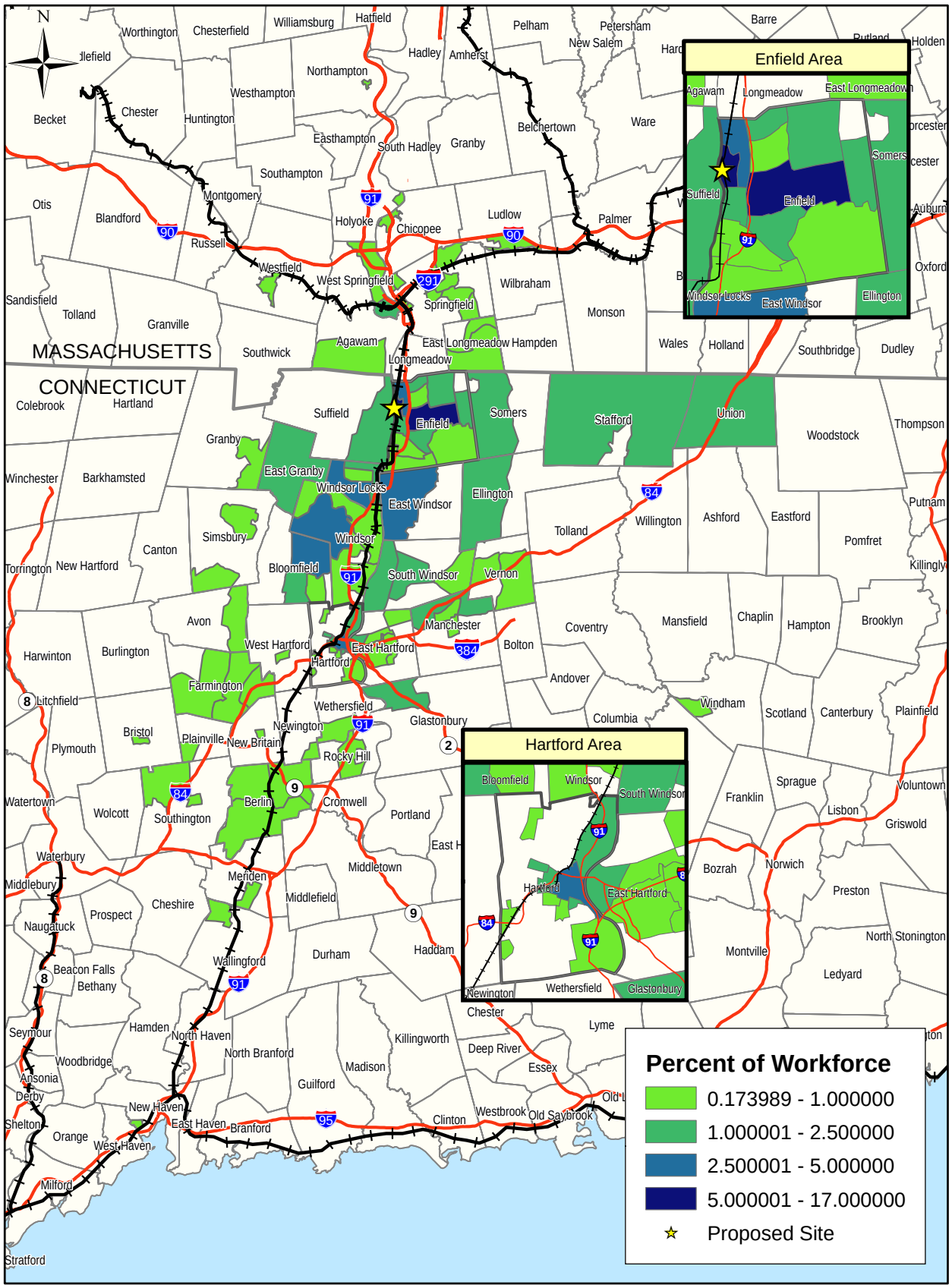
4.5 Office/Commercial Market

There is currently little market for office-related enterprises in the project area. Office buildings are already included as a component of Bigelow Commons, and many of those are remaining vacant. However, there is a strong possibility that this trend would change with the re-introduction of the commuter rail line, which would bring commuters (potential employees) directly through the corridor. In addition, the Town's marketing strategy

includes selling Thompsonville Village's historic and eclectic value, which is virtually non-existent east of Interstate-91.

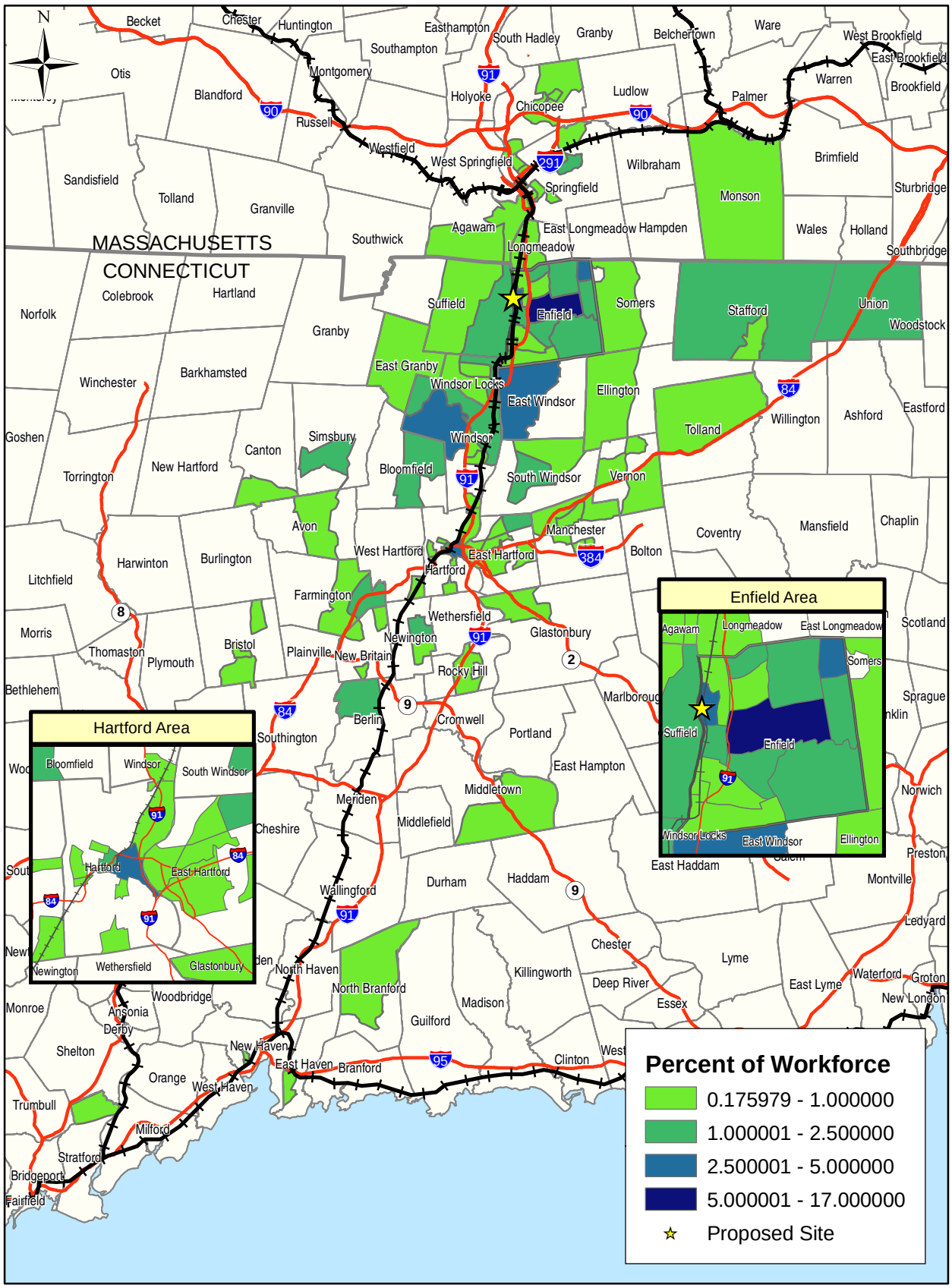
4.6 Other Market Considerations

It is also important to note that the Town of Enfield has established a Thompsonville Revitalization Strategy Committee, charged with developing and implementing a plan to restore this area as a residential, retail and commercial center for the Town and beyond. The Revitalization Committee meets regularly to establish a coordinated Vision and develop a detailed Action Plan to achieve it. Key elements of the plan will involve stabilizing the residential population, increasing commercial activity on "Main Street" and continuing historic preservation efforts. The TTC would further establish Thompsonville as a place to live, work and play, and re-establish the village as the historic heart of Enfield, by bringing in Enfield residents and outsiders alike.

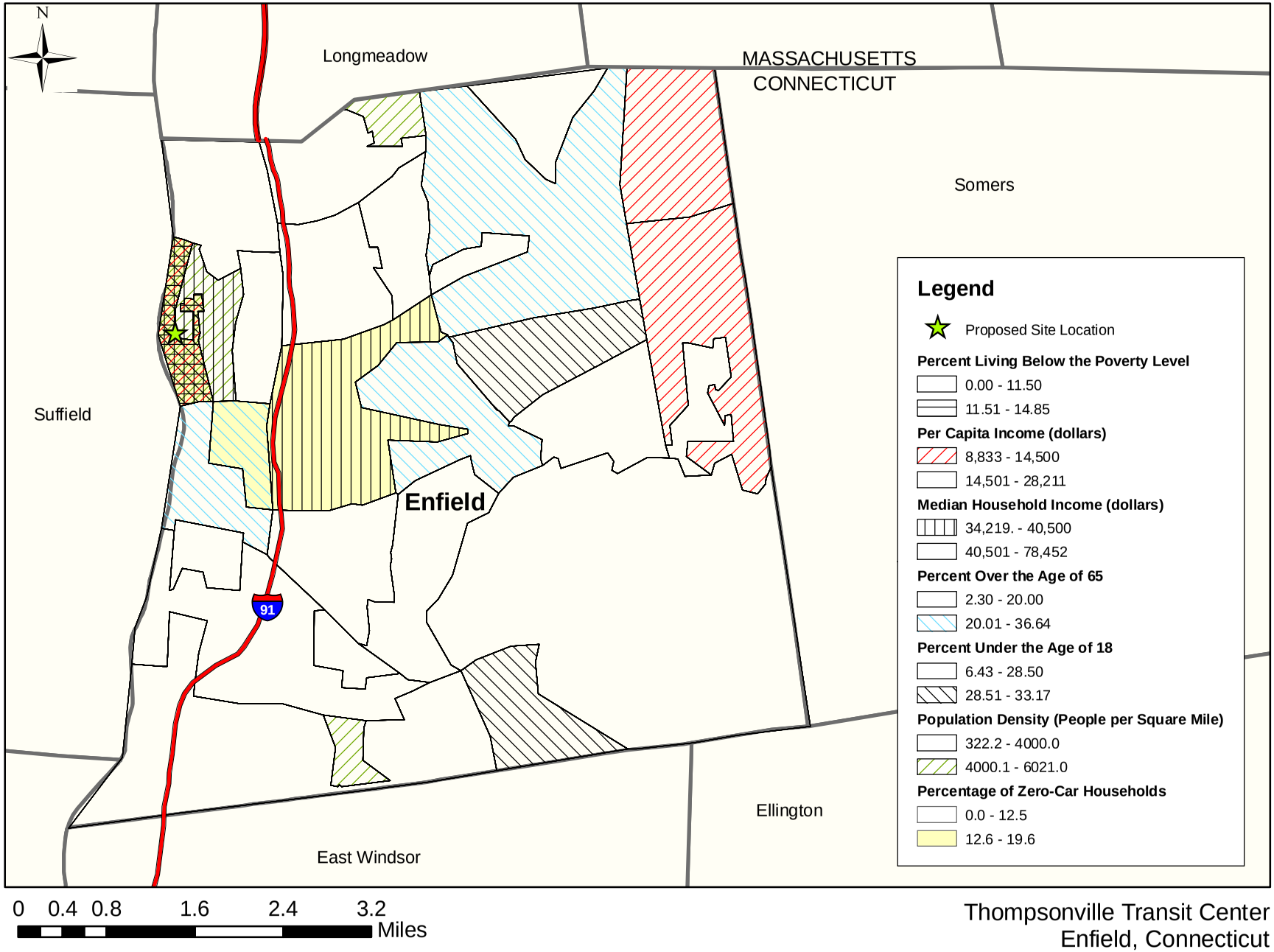


0 3 6 12 18 24 Miles

Thompsonville Intermodal Transit Center
Figure X: Tract Work Locations of Residents of Census Tract 4806

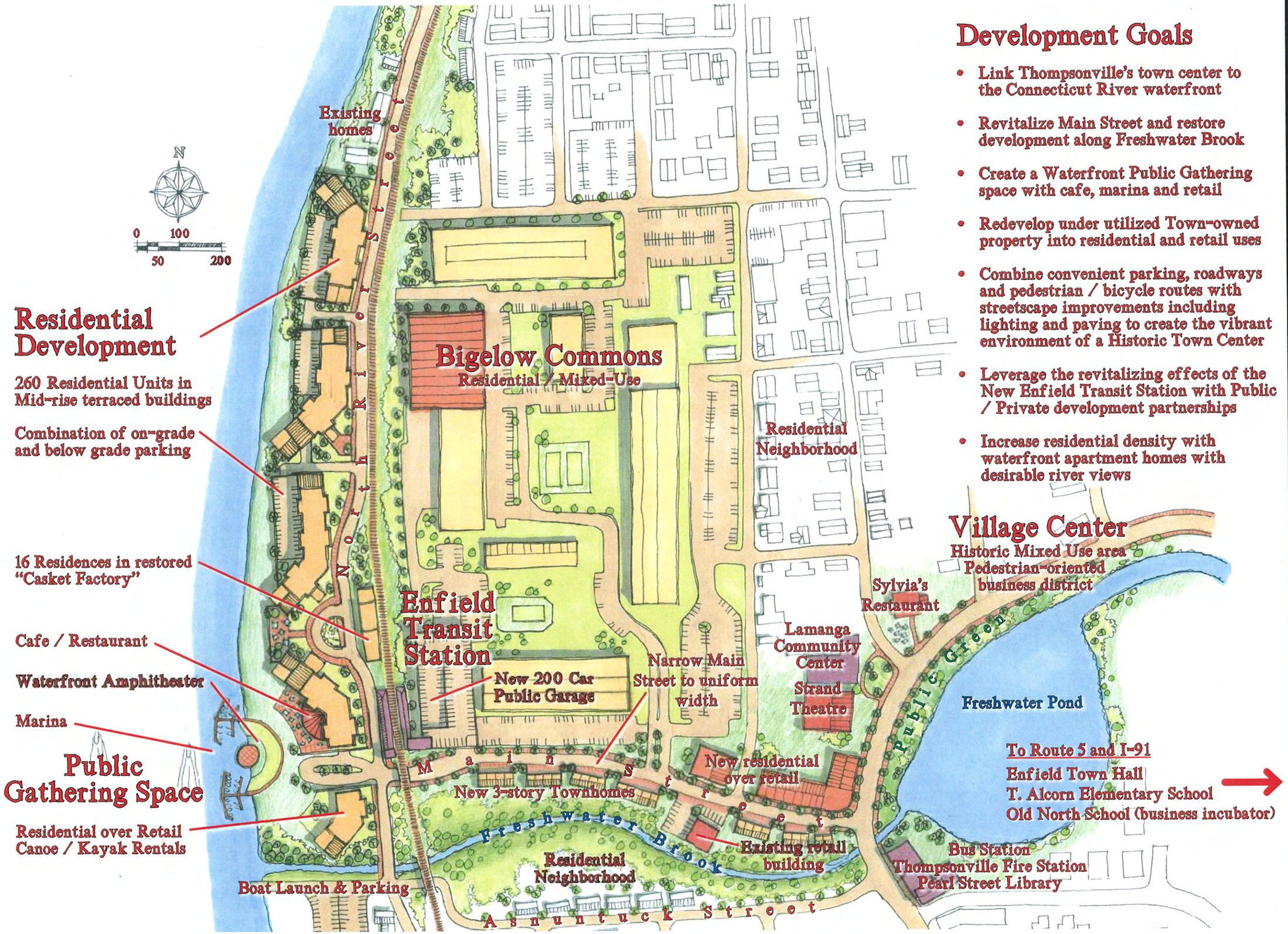


Thompsonville Intermodal Transit Center
Figure X: Tract Work Locations of Residents of Census Tract 4808



Thompsonville Transit Center
Enfield, Connecticut
Figure X: Transit Oriented Characteristics

Thompsonville Intermodal Transit Center
Enfield, Connecticut
Figure X: Half Mile Transit Walking Shed



Development Goals

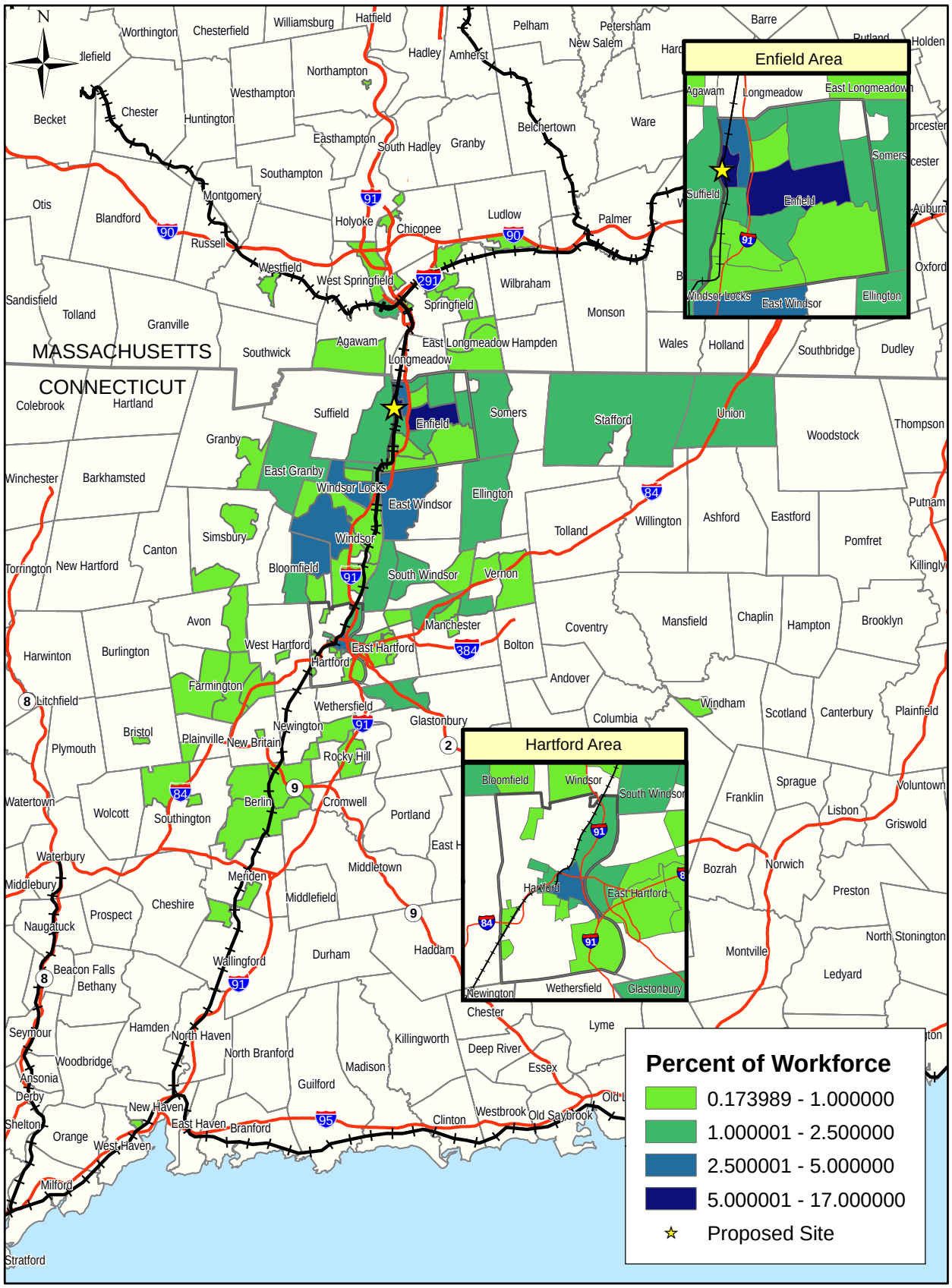
- Link Thompsonville's town center to the Connecticut River waterfront
- Revitalize Main Street and restore development along Freshwater Brook
- Create a Waterfront Public Gathering space with cafe, marina and retail
- Redevelop under utilized Town-owned property into residential and retail uses
- Combine convenient parking, roadways and pedestrian / bicycle routes with streetscape improvements including lighting and paving to create the vibrant environment of a Historic Town Center
- Leverage the revitalizing effects of the New Enfield Transit Station with Public / Private development partnerships
- Increase residential density with waterfront apartment homes with desirable river views

PCA ARCHITECTURE INTERIORS PLANNING

Northland Development - Enfield Housing
Enfield, Connecticut

November 6, 2006

Thompsonville Intermodal Transit Center
Enfield, Connecticut
Figure X: Half Mile Retail Walking Shed



0 3 6 12 18 24 Miles

Thompsonville Intermodal Transit Center
Figure X: Tract Work Locations of Residents of Census Tract 4806

5. CONCEPTUAL DESIGN

5.1 Design Criteria

It is important that any intermodal facility provide access to passengers arriving by automobile or foot, to buses, and to the proposed rail service.

The "sawtooth" berth was used for the conceptual designs. This shape enhances operations, as it allows buses to enter or exit the berth independent of the preceding and following buses. It also reduces potential conflicts between pedestrians and buses, as it separates passengers who are waiting. Additionally, the areas reserved for bus circulation must be designed in accordance with the maneuverability constraints (e.g. turning radii) of the buses in mind.

Concepts to the east of the railroad tracks were constrained by the existing Bigelow Commons development and by the Main Street underpass. These concepts were designed in existing parking and in the Town-owned right-of-way which currently runs parallel to the tracks.

Concepts to the west of the railroad tracks were constrained by the CL&P pumphouse structure, by the historical Casket Building, by the Cogtella properties to the south, and by steep elevation change to the west where the site area approaches the river. In addition, the Town would like to minimize parking facilities on the west side of the tracks to preserve the riverfront for more desirable development and open space opportunities.

Reducing the length of pedestrian trajectories was also taken into account, as well as the preservation of the functional purpose of existing automobile infrastructure.

5.2 Evaluation Criteria

The concepts were evaluated in terms of the following criteria:

Bus access and circulation – The Transit Center should be designed so as not to complicate the job of the bus operators. Superior access and circulation will improve overall transit service.

Automobile access and circulation – Particularly once the commuter rail service is restored, it will be important to provide smooth and direct circulation (within the Transit Center and in adjacent properties) for patrons who arrive by automobile.

Pedestrian access to village – For walk-up ridership, it is important to minimize the distance pedestrians must travel to important destinations.

Development potential – Include the ability of each concept to be integrated into and spur adjacent development. Layout, access, and land necessary for each alternative are factors that influence each alternative's potential.

Pedestrian/vehicle conflicts – Reducing this type of conflicts will reduce the need for pedestrians to cross into the path of moving traffic.

Passive surveillance – Also known as natural surveillance, this safety measure depends on the awareness and concern of people who already inhabit a space.

Visibility of bus service – Putting the bus service in a prominent location increases the visual presence and, therefore, the appeal of the service.

Bus facility parking – Parking demands arising from the bus service are expected to be minimal, somewhere between 20 and 40 spaces.

Traffic operations – It is important that the transit center operations not degrade the quality of existing traffic operations in the surrounding areas.

Incorporation of historic building – The Casket Building has been in existence for over a hundred years and is listed on the National Registrar of Historic Places. Finding a way to constructively reuse the edifice would aid in its preservation.

Construction cost – Construction costs include the expected fees for demolition of existing structures, sitework, paving and striping of busway and automobile facilities, building renovation, new building construction, pedestrian facilities, and landscaping.

Real estate acquisition and control – It is necessary to consider the cost of acquiring and maintaining the properties to be incorporated into the project.

Future commuter rail parking – In contrast to the bus service, the proposed rail service is predicted to require approximately significant parking, approximately 200 spaces. Current designs for the transit center should show flexibility for expansion of parking once the commuter rail line comes through.

Connections to Future Rail Platform – In the case that the entire transit center is not built at the same time, access/space should be preserved for rail platforms once the NH-H-S service begins.

5.3 Development of Alternate Concepts

A number of initial concepts were developed and evaluated against over a dozen criteria to explore the optimal way to locate the TTC in Thompsonville. Each concept was evaluated according to the above criteria. Developed concepts were for both the east and west side of the tracks to site the TTC.

River Side Concepts – These designs explored a transit center located to the west of the existing railroad tracks and to the north of Main Street. There is more land area available on the river side of the tracks. However, all traffic (bus and automobile) would be required to pass under the Main Street viaduct. A trial run of a standard CT Transit bus (right) showed ample headroom for these vehicles at the underpass.

Town Side Concepts – These designs explored a transit center located to the east of the existing railroad tracks and to the north of Main Street. These concepts tended to use land from the town's access street and from the parking lots to Bigelow Commons.

Comparison – **Table 2: East-West Site Comparison** on the following page presents a summary of the ways in which a "river side" or "town side" location might best address the evaluation criteria listed in Section 5.3 of this study. As further refinements were made, it became evident that the west side offered the greatest design flexibility and opportunity as well as greater potential to reuse the historic Casket Building. Though concepts continue to be refined, it was determined that the west side of the tracks was better suited to house the TTC.

5.4 Concept Selection

Of the concepts situated to the west of the tracks, one was ultimately selected as the most appropriate for the TTC's needs. This concept consists of a realignment of North River Street to accommodate three "sawtooth" bus berths, which are angled to facilitate bus circulation, to the south of the existing Casket Building. A cul-de-sac across the street from the Casket Building will be constructed to allow buses to turn around after picking up passengers and head back south on North River Street towards Main Street. The layout allows for future rail amenities, including a platform to the east of the Casket Building and potential reuse of that building as a rail facility.

The design also consists of parking south of the turnaround. However the operational CL&P metering station (Lot 7-1) will remain intact. Associated pedestrian improvements include the relocation of the Main Street sidewalk to the north side of the street at the location of the viaduct and a pedestrian underpass linking the access street west of the Bigelow Commons complex to the transit center. Crosswalks will connect the existing sidewalk by Bigelow Commons to the pedestrian underpass and the commuter parking to the transit center area, and a pedestrian zone will be constructed to the east of the bus berths. Additional sidewalks and crosswalks will also be located as necessary.

This design, depicted in **Figure 15: Thompsonville Transit Center Conceptual Design** on page 40, served as the basis of conceptual cost estimating for further development of the project.

Table 2: East – West Site Comparison

Evaluation Criteria	Favors River Side of Tracks (West)	Favors Town Side of Tracks (East)	Neutral
Bus access/circulation			X
Auto access/circulation within the Transit Center	X		
Auto access/circulation impacts to adjacent properties	X		
Pedestrian access to village		X	
Development potential	X		
Pedestrian/vehicle conflicts			X
Passive surveillance		X	
Visibility of bus service		X	
Bus Facility Parking	X		
Traffic Operations			X
Incorporation of Historic Building	X		
Construction Cost			X
Real estate acquisition and control	X		
Future Commuter Rail Parking	X		
Connections to Future Rail Platform	X		

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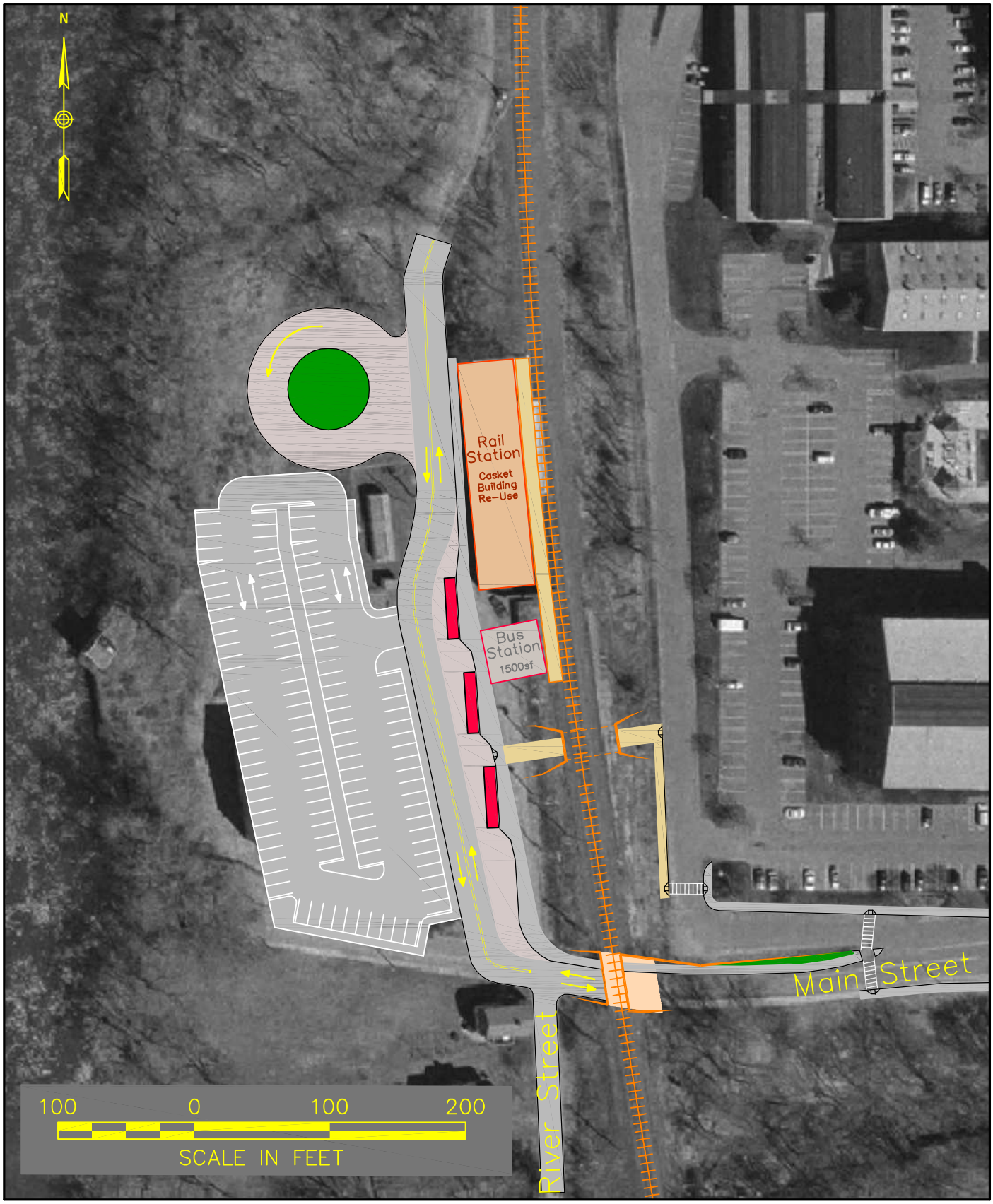

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DRAFT – For Internal Use Only
Full-Build – Rail Station
Thompsonville Intermodal Center
Thompsonville, Enfield, CT

6. COST ANALYSIS

The study team used the conceptual design developed as described above and illustrated in **Figure 15** as a basis for a conceptual cost estimate for the TTC. This initial, pre-design cost estimate was developed using judgment based on recent transit center projects in New England and around the country, and utilizing representative unit costs and quantities. The costs presented below are intended for use in evaluating reasonable expectations for the cost of the completed facility.

6.1 Construction Costs

Construction costs for the facility include all elements of the finished facility as fitted out for use as a bus transportation facility. Costs of rail platforms or fit out of the rail station anticipated in the Casket Building are specifically not included, as they do not meet the requirements of the Bus Facilities category of the funds that are currently available. Costs also do not include real estate acquisition, which would need to be negotiated with the landowners in question.

Table 3 below summarizes the identified construction costs, in 2008 dollars. Construction costs have not been escalated to any future year, since a timeline for construction has cannot been determined until additional design work is completed and project funding sources have been identified.

Table 3: Summary of Construction Costs

Site Preparation	$600,000
Utilities	$150,000
Transit Center Building	$3,600,000
Improved Pedestrian Access	$450,000
Roadway Reconstruction	$275,000
Busway Pavement	$250,000
Surface Parking	$500,000
Subtotal	**$5,825,000**
Incidentals & Contingency (30%)	$1,747,500
Construction Budget	**$7,572,500**

6.2 Design, Permitting, and Administrative Costs

Design, permitting, and administrative costs for transit center project typically run in the range of 40% of the construction cost. These costs include federal and state environmental permitting costs, design fees, design and construction oversight, grants reporting for federal grants, and other administrative costs. For the construction cost identified above, the design, permitting, and other administrative costs, figured as 40% of the construction costs would be: **$3,029,000.**

6.3 Project Budget

Based on these calculated above, the project budget should allow for at least **$10.6 million** ($7,572,500 + $3,029,000) for design and construction related activities. Note that this budget amount does not include real estate acquisition costs.

6.4 Comparison to Similar Projects Elsewhere

In order to put this $10.6 million cost estimate into perspective, this study examined recent transportation center projects of a similar scope to see how the TTC budget compares.

Eastland Transit Center – The Eastland transit center in Charlotte, NC is being constructed to serve as a hub for regional bus service. The Eastland project provides berthing for eight (8) buses and a small passenger building within an existing mall parking area. Since this project involves only a small building and no parking lot or roadway construction, it is considered comparable to, but smaller in scope than the TTC. Bid price for construction of the Eastland Transit Center was $2.6 million in 2006.

I-93 Exit 2 Bus Hub – The bus hub at Exit 2 on I-93 in Salem, NH also serves as a loading point for regional bus service. The Exit 2 Bus Hub includes a very small passenger building, parking for 470 cars, and a short section of access roadway. Although this project provides more parking than is anticipated for the TTC, building construction considerations are smaller, so it is considered a comparable project. The New Hampshire DOT cost report from 2008 for the Exit 2 Bus Hub lists the construction price for the project at $6.9 million.

Holyoke Multimodal Transportation Center – Closer to Enfield, the Holyoke Multimodal Transit Center is currently under construction just up the river in Holyoke, MA. The Holyoke facility includes construction of seven (7) bus berths and a small parking deck. Like the TTC, the Holyoke facility also includes renovations to an existing historic building. A 2005 construction cost estimate for the Holyoke Multimodal Transit Center was $6.0 millon.

Scelci Intermodal Transit Center – Also not far from Enfield is the Scelci Intermodal Transit Center in Pittsfield, MA. The Scelci center includes provisions for berthing eight (8) buses, at a new two-story building, with a basement that provides access to Amtrak trains. The project also includes a small parking deck. Construction cost for the Scelci center, when it

was completed in 2004 was $8.0 million. A similar project constructed today would likely be in the range of $10 million or more.

7. FOUR-PHASE APPROACH

Upon investigation of the costs required to complete the full project with all improvements including full intermodal facility with bus, rail, parking, and pedestrian amenities, it was determined that a phased approach would be the most effective use of the current funds. A phased approach would not require the immediate re-use of Casket Building, which may be expensive. Earlier phases consisting solely of bus service can be implemented quickly and relatively inexpensively, as they require less parking and thus less land area. The bus station/terminus can be built to accommodate future train station and would in fact help serve to solidify the Enfield/Thompsonville site as a station for the NH-H-S railway.

7.1 Phase I: Bus Station/Terminus

The aspects of Phase I can be seen in **Figure 16: Phase I Implementation** and include three bus berths, a "mini-hub" (climate-controlled passenger waiting area with basic amenities such as bathrooms and a kiosk for printed schedules), bus turnaround, parking, and realignment of North River Street. The mini-hub would be constructed directly south of the Casket Building. For a short-term, bus-only center, the project team projects only 40 spaces would be needed.

The CT Transit Route #5 commuter bus would make a stop at the proposed Phase I Center in addition to the local circulator route and, potentially, regional intercity buses.

7.2 Phase II: Pedestrian Underpass

Phase II, which is shown in **Figure 17: Phase II Implementation**, consists of the construction of a pedestrian underpass just south of the mini-hub center to connect the east side of the tracks (by Bigelow Commons) with the west side of the tracks. By driving a series of concrete box culverts underneath the existing tracks, it will be possible to construct the underpass without major disruption to the current rail service. An example is shown at right. Preliminary cost estimates for constructing the underpass indicate it would present a substantial savings when compared to the multi-million dollar costs typically associated with construction of a pedestrian overpass structure. Construction of the underpass is proposed as a second phase, however, to minimize construction costs for the initial phase of work.

7.3 Phase III: Partial Rail Service (potential)

The NH-H-S passenger rail service is estimated to start up in 2016 at the earliest. Enfield is proposed as one of the stops on that line. As can be seen in **Figure 18: Phase III**

Implementation, Phase III includes improvements aimed to accommodate the proposed rail service. This phase incorporates a full-length, high-level rail platform between the existing tracks and the Casket Building, as well as the conversion of the Casket Building into a full-service transit facility, from which there would be handicap access to the tracks. The upper floors would be retrofitted for mixed-use development.

BWA's assessment showed that the first floor could serve as the public entry and waiting area for Center, with direct access to buses. The second floor would house the train terminal and some retail space, while the upper two stories may be best suited for offices but have other use potential. It is important to note that this assessment is about function, and would require installation of an elevator, stairs and other accessibility elements, as well as substantial rehabilitation. The costs for these are approximately **$3.85 million**. Rehabilitation costs would substantively exceed costs of new construction, and a pro forma would show that expected rents would not cover costs, and thus would require subsidization. **Figure 19: Casket Building Reuse Concept** shows full plans of a possible configuration of the building reuse, as developed by BWA.

The TTC is intended to serve as both a local hub for the town and the main regional transit connection from Enfield to the Springfield, Hartford and New Haven markets. With local feeder buses limited, most are expected to drive to the TTC, especially after rail service begins. Thus significant parking is required to accommodate this demand. The NH-H-S Implementation Study proposed 175 parking spaces at Enfield, at a cost of $1.4 million for parking alone. As structured parking is expensive, and cost recovery would be minimal, surface parking is needed, which requires additional land and reduces development potential at the Site.

7.4 Phase IV: Full Rail Service (potential)

Eventually, it is proposed that double tracking be restored to the entire New Haven-Hartford-Springfield corridor. At this point, an additional passenger platform could be built to the east. The bridge over Main Street would also have to be upgraded for strength and width to carry both sets of tracks.

Phase IV also includes increased commuter parking, for a total of approximately 120 spaces to the west of the tracks and 40 spaces to the east. This future implementation phase is depicted in **Figure 20: Phase IV Implementation.**

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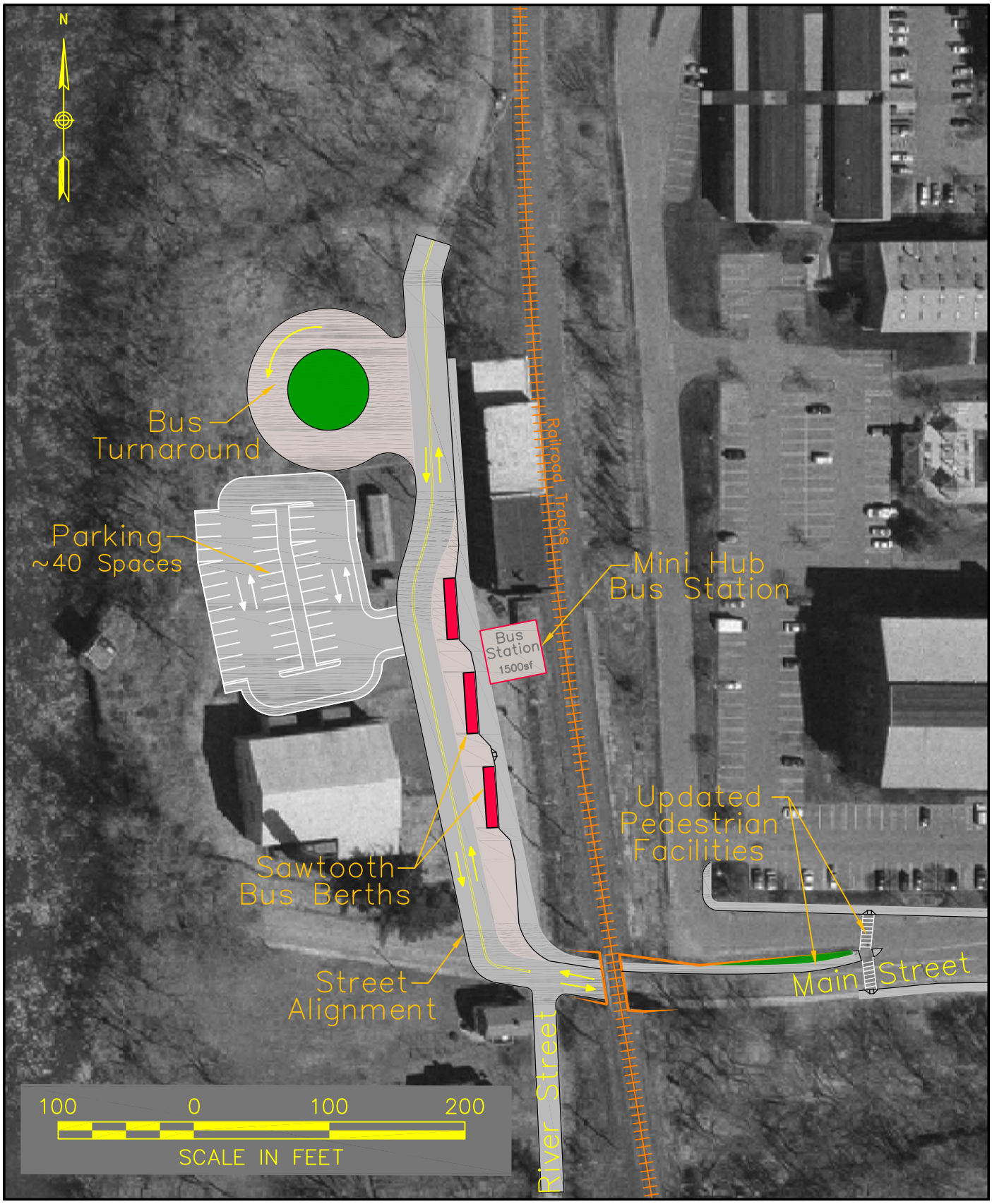

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Phase I – Bus Center/Terminus
Thompsonville Intermodal Center
Thompsonville, Enfield, CT

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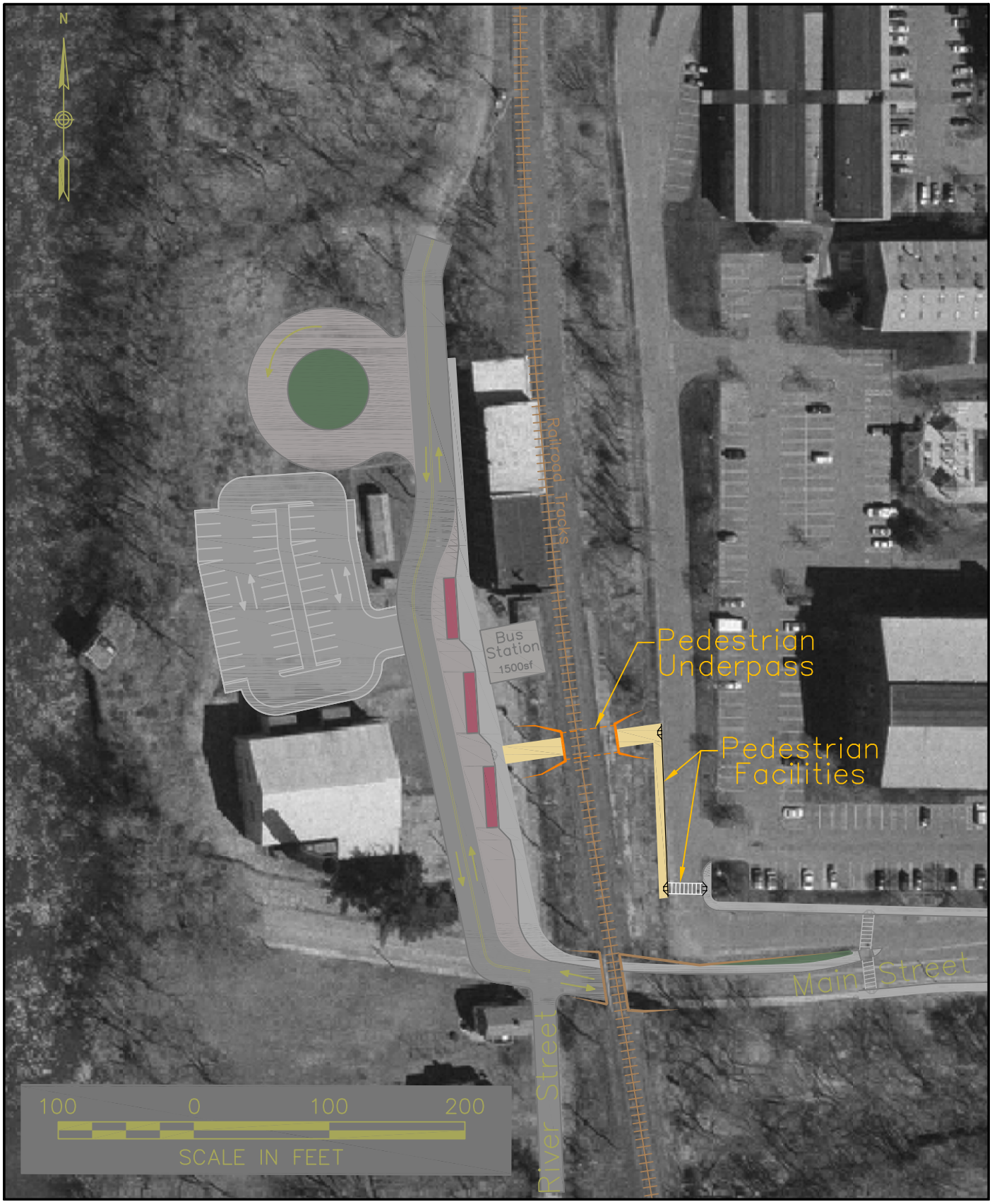

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Phase II – Pedestrian Underpass
Thompsonville Intermodal Center
Thompsonville, Enfield, CT

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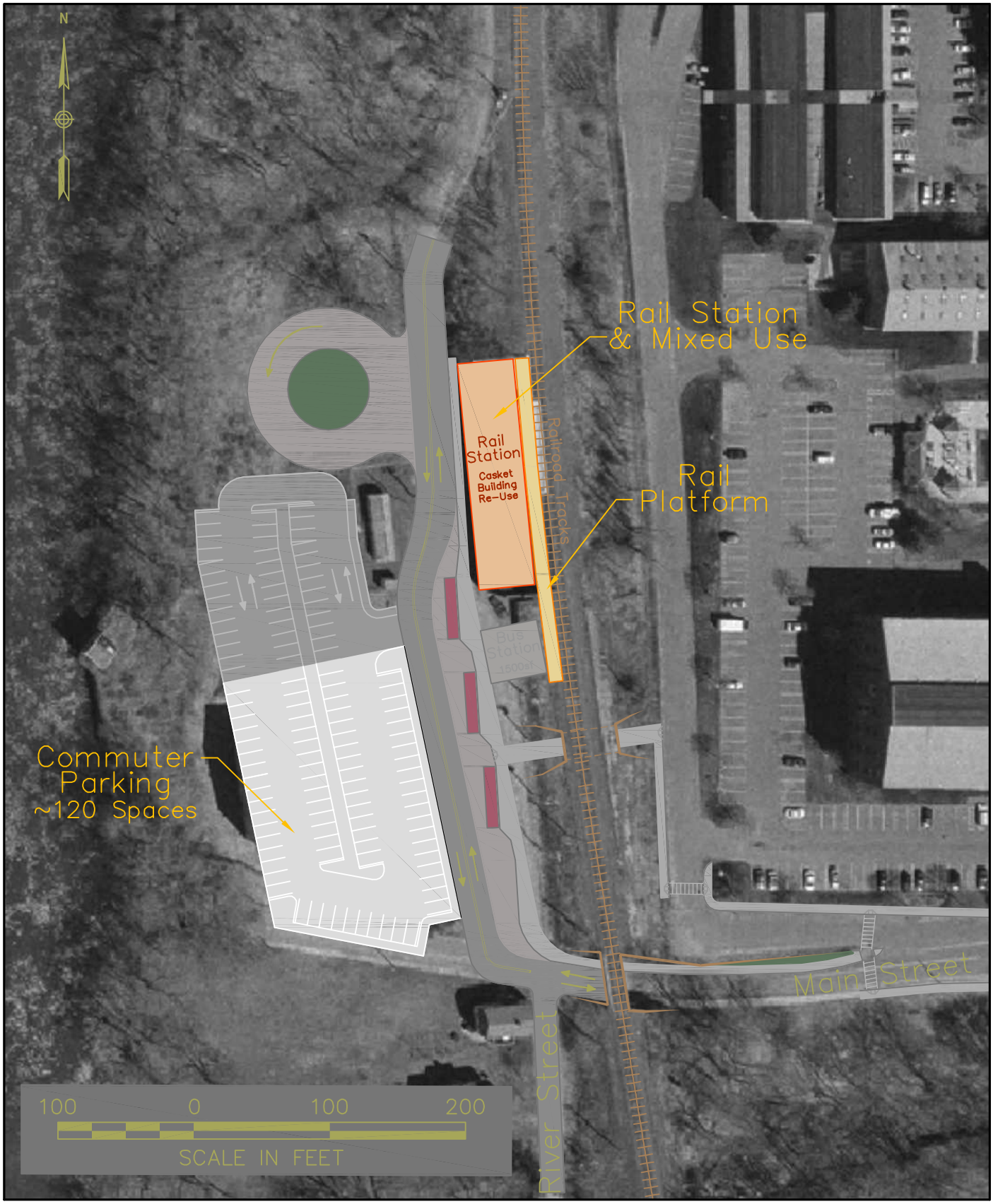

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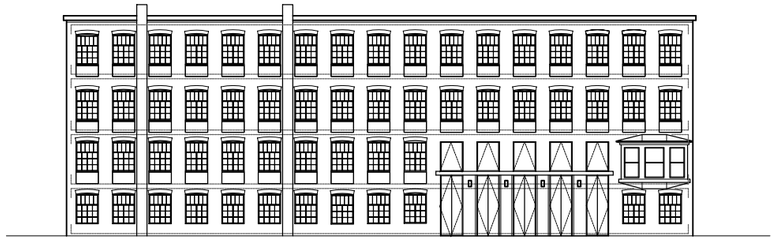
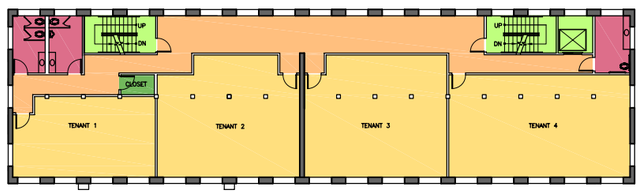
Phase III – Rail Station
Thompsonville Intermodal Center
Thompsonville, Enfield, CT



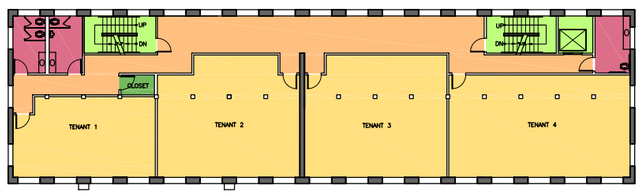
5 N.RIVER STREET ELEVATION
SCALE: 1/16"=1'-0"



NET SQ FT PER FUNCTION:

OFFICES INC.CORRIDOR	4,111
RESTROOMS	216
STAIRS AND ELEVATORS	315
NET FLOOR AREA	4,642 SQ FT
GROSS FLOOR AREA	5,248 SQ FT

4 FOURTH FLOOR
SCALE: 1/16"=1'-0"



NET SQ FT PER FUNCTION:

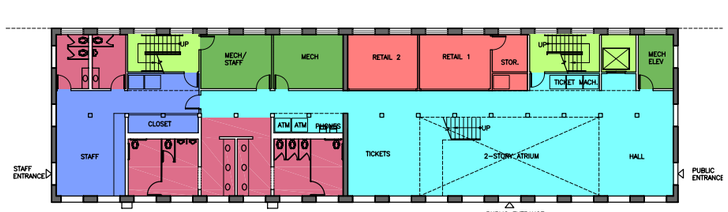
OFFICES INC.CORRIDOR	4,111
RESTROOMS	216
STAIRS AND ELEVATORS	315
NET FLOOR AREA	4,642 SQ FT
GROSS FLOOR AREA	5,248 SQ FT

3 THIRD FLOOR
SCALE: 1/16"=1'-0"

NET SQ FT PER FUNCTION:

TRAIN STATION - PUBLIC	1,300
TRAIN STATION - STAFF	204
RESTROOMS	263
RESTAURANT	1,900
STAIR AND ELEVATOR	315
NET FLOOR AREA	3,982 SQ FT
GROSS FLOOR AREA	5,266 SQ FT

2 SECOND FLOOR
SCALE: 1/16"=1'-0"

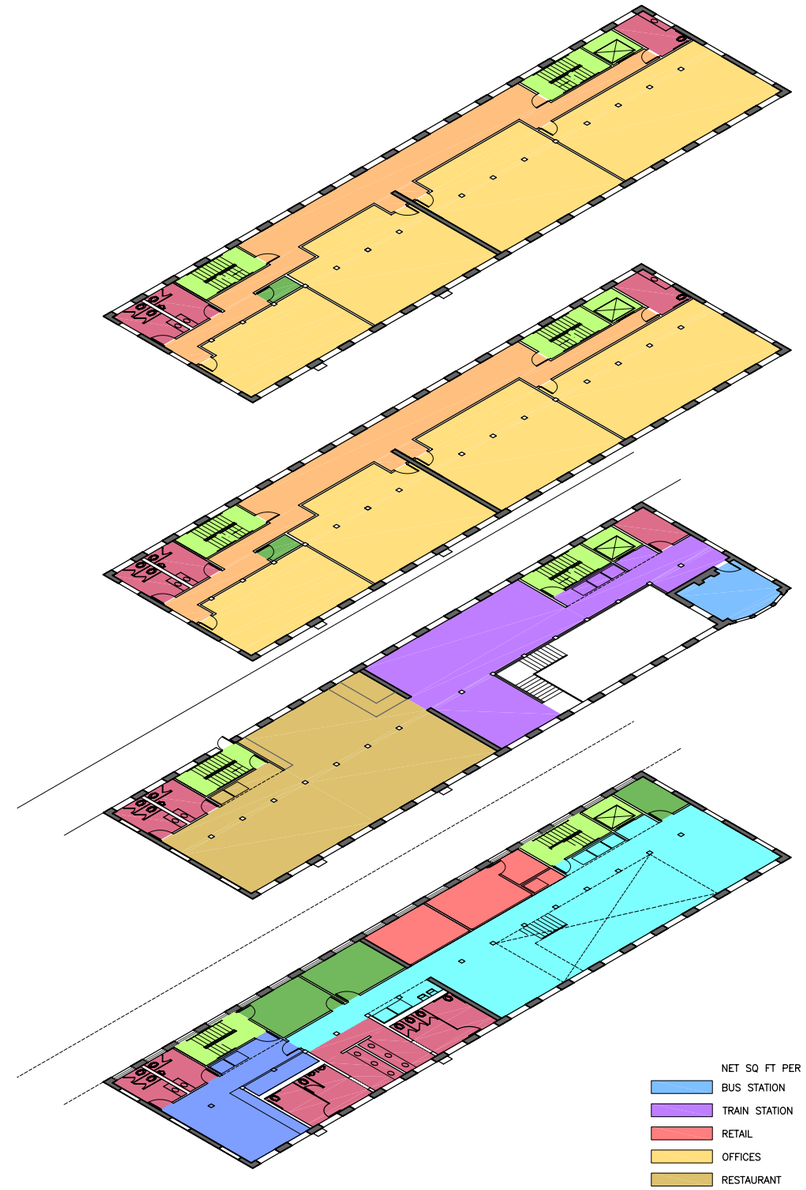


NET SQ FT PER FUNCTION:

BUS STATION - PUBLIC	1,983
BUS STATION - STAFF	560
RESTROOMS	639
MECHANICAL	365
STAIR AND ELEVATOR	315
RETAIL	479
NET FLOOR AREA	4,341 SQ FT
GROSS FLOOR AREA	5,248 SQ FT

TOTAL FLOOR AREA(NET)	17,607 SQ FT
TOTAL FLOOR AREA(GROSS)	20,992 SQ FT

1 FIRST FLOOR
SCALE: 1/16"=1'-0"



NET SQ FT PER FUNCTION:

BUS STATION	2,543 SQ FT
TRAIN STATION	1,504 SQ FT
RETAIL	479 SQ FT
OFFICES	8,222 SQ FT
RESTAURANT	1,900 SQ FT
STAIR AND ELEVATORS	1,260 SQ FT
RESTROOMS	1,334 SQ FT
MECHANICAL	365 SQ FT

ENFIELD INTERMODAL FACILITY

ENFIELD,CT

BWA

132 LINCOLN STREET, #4
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TEL: 617.350.7420
FAX: 617.350.5383

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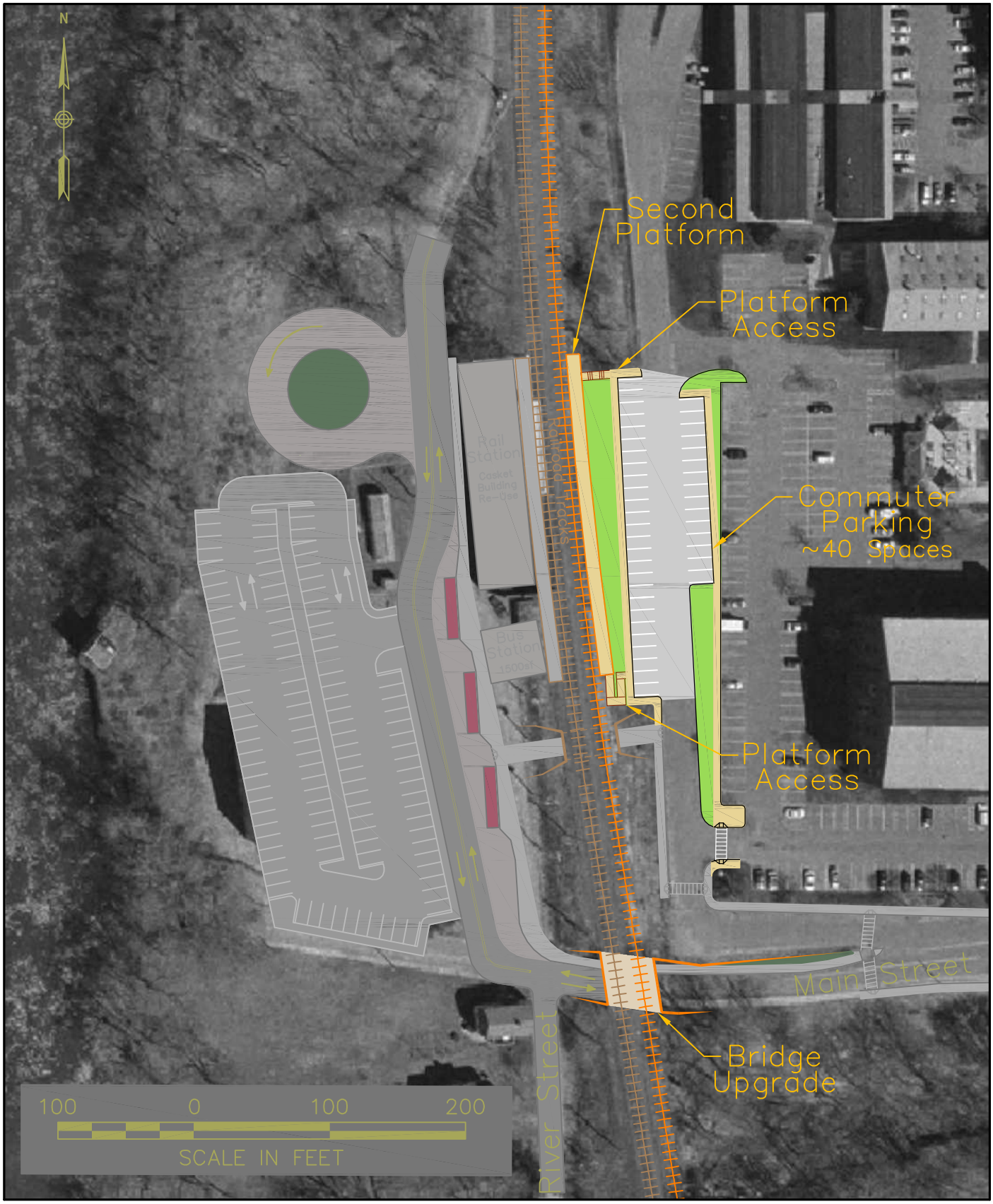

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Phase IV – Expanded Rail Service
Thompsonville Intermodal Center
Thompsonville, Enfield, CT

8. NEXT STEPS

The Feasibility Study work summarized in this report indicates an immediate need for the benefits the TTC could bring to Enfield and to Thompsonville Village in particular. If the Town and the Greater Hartford Transit District wish to continue efforts to develop the TTC, a number of specific "next steps" are in order for the near future. These important steps are outlined below.

Seek Additional Funding – The Town, in coordination with the GHTD and all interested parties, needs to seek additional funding for the TTC. The Feasibility Study identified that fact that full construction of the TTC will entail an expense greater than the currently available funding. There is enough funding to begin the next phases of design and environmental investigations to move the project forward and there likely is enough funding to begin initial project construction work. However, future stages of project implementation will require additional funding. This funding could come from a variety of familiar state and federal transportation funding sources, and might also include historic preservation funding, should the Town wish to continue to include the Casket Building as part of the completed project.

Solicit Designer Services – As noted above, current funding for the project is sufficient to continue advancing design and environmental documentation for the project. The Town should therefore work to solicit an architect/engineer (A/E) team to provide design services for the TTC. A key element to the design efforts will include be the A/E team's work with the Town to decide if, how, and when the Casket Building will be incorporated into the TTC project.

Complete Necessary Environmental Documentation – Either as an independent effort carried out by the Town and GHTD, or as part of the A/E design services noted above, the project should be advanced by completing necessary federal and state environmental impact assessment regulations. Because of the nature of the TTC project, it is believed that it should qualify for treatment for Categorical Exclusion status under federal regulations. Achieving Categorical Exclusion status would entail a completing and submitting a relatively brief checklist to the FTA for consideration by federal agencies

Initiate Local Planning and Zoning Changes – At the local level, the Town should continue to work to advance its ongoing planning activities, and consider adjustments to station area zoning necessary to support station area development. Planning efforts might include introduction of transit-oriented development zoning overlays around the TTC site, as well as consideration of future access and open space needs for development between the railroad tracks and the river.

Continued Coordination with Local Landowners – The Town will need to work closely with the owners of the Casket Building, as well as adjacent properties, especially the Northeast Utilities properties identified for use in developing the parking areas for the TTC. While

these owners have expressed a strong interest in working with the Town to advance the project, the Town will need to continue its efforts to engage, inform, and cooperate with these landowners to ensure project success. The Town will also need to work with residents and landowners along River Street to address access phasing for project construction activities.

Work to Continue Growth of Bus Service – The Town should continue to work with GHTD, CT Transit, CRCOG, ConnDOT, and all other transportation providers, as well as major regional employers, in efforts to promote and expand bus service to, from, and within Enfield, particularly in Thompsonville. This study has identified a strong need for additional transit service for residents of Thompsonville. Until the commuter rail service is up and running, buses provide the only transit option; once rail service begins, bus service will still fill an important role in feeding the passengers to the train station, as well as providing access to community resources and places of employment beyond walking distance of the TTC.

Support NH-H-S Planning – Finally, in order to maximize the benefits of the TTC to the Town and to the greater region, the Town, the GHTD and all interested parties should continue to advocate for ConnDOT in advancing the NH-H-S passenger rail initiative. While there is an immediate need for additional bus service to Thompsonville, passenger rail service will serve to multiply the return on investment in the TTC and other public and private investment that has been made in Thompsonville over the past two decades.

9. CONCLUSIONS

The report concludes that there is a high potential demand for a bus intermodal center in Thompsonville Village, and that such a facility could be constructed at a cost that is consistent with other transit center projects around New England and elsewhere in the U.S. The report provides a representative layout for the Thompsonville Transit Center and recommends a phased approach to developing the facility as funding becomes available over the next several years.