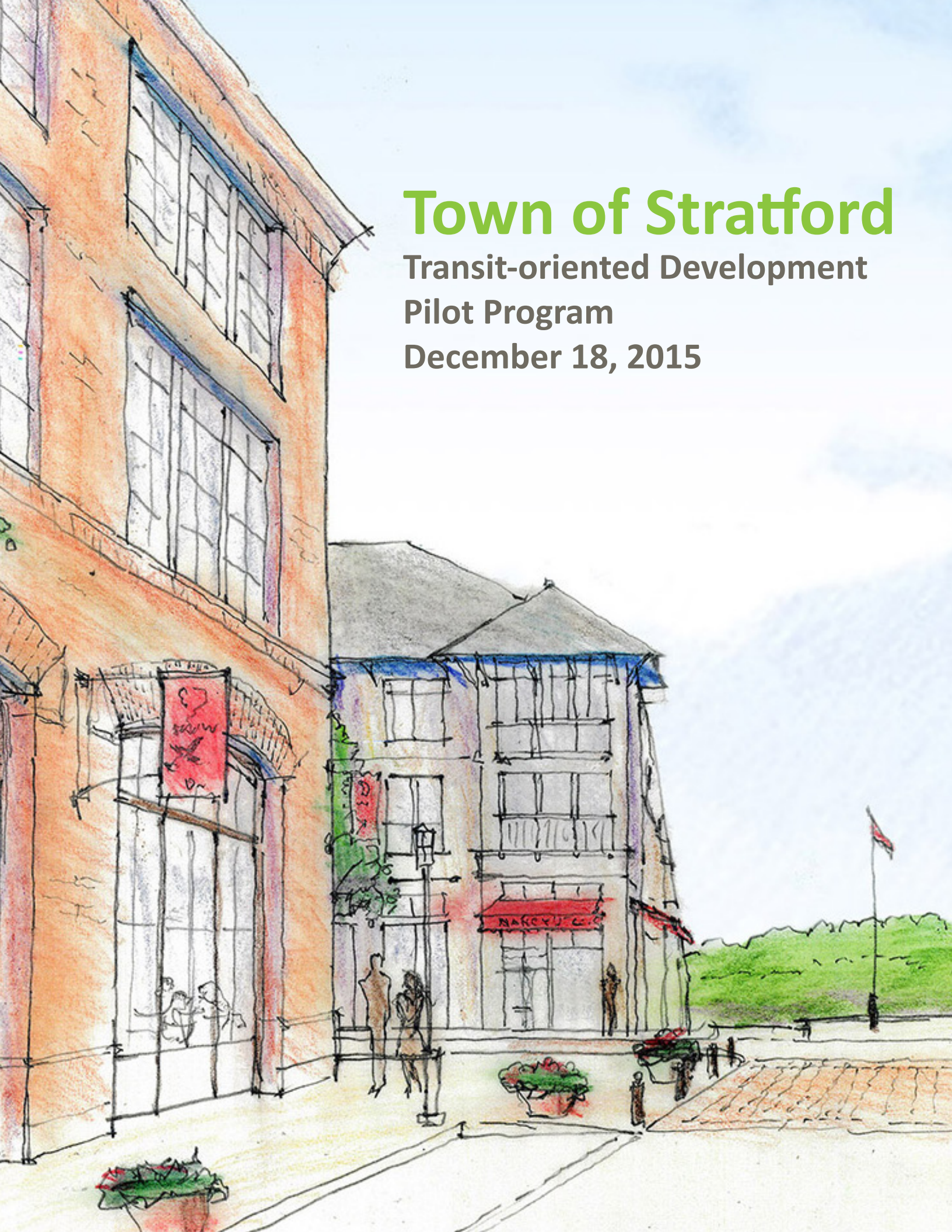
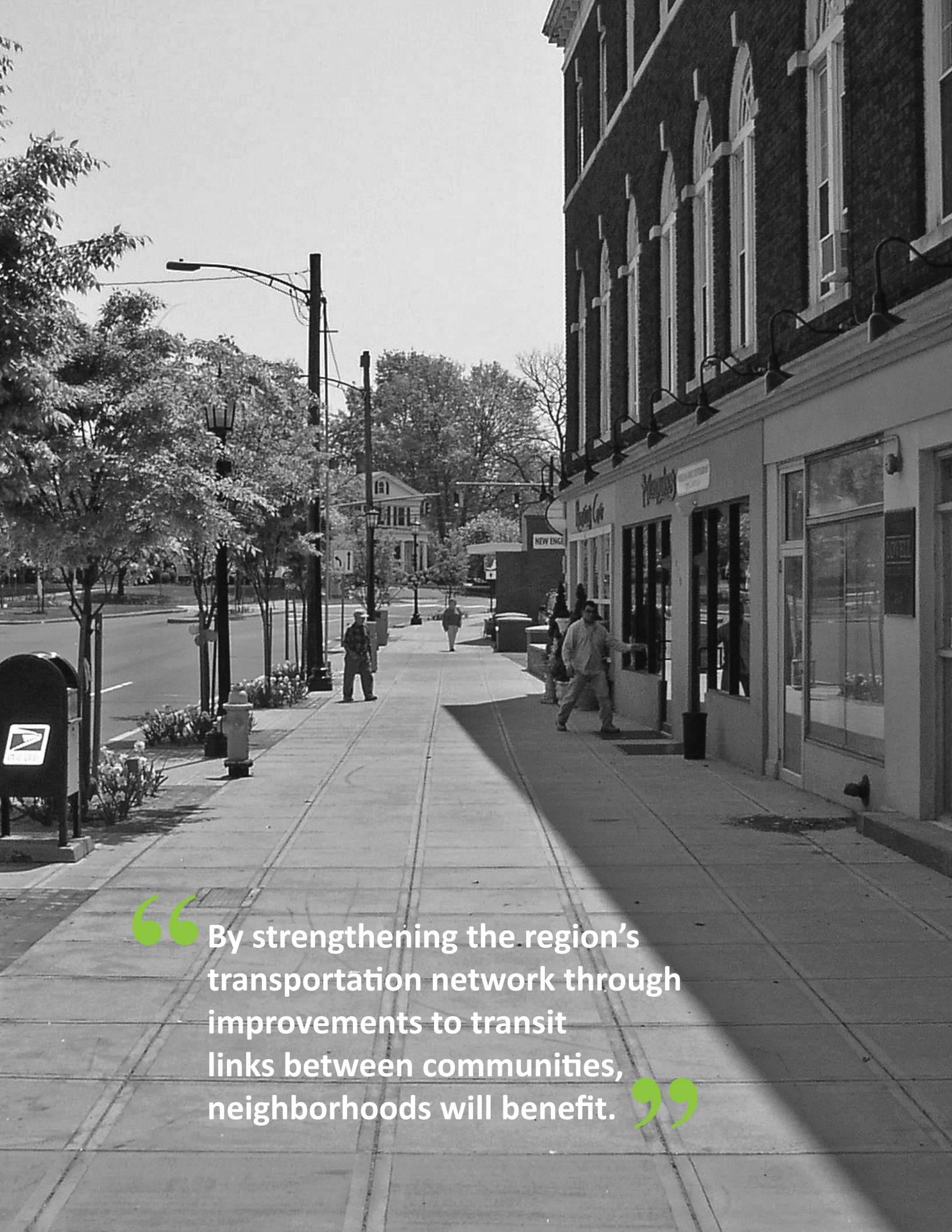
Town of Stratford

Transit-oriented Development Pilot Program

December 18, 2015





> By strengthening the region's transportation network through improvements to transit links between communities, neighborhoods will benefit.

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Executive Summary

OVERVIEW

This revitalization plan was developed through a partnership between the Town of Stratford, the Greater Bridgeport Regional Council (GBRC), Greater Bridgeport Transit (GBT), and consulting firm, Stantec. The goal of this plan is to identify strategies that will position Stratford Center to accommodate market driven growth and mixed use development. By prioritizing those areas with the greatest potential for transit oriented development (TOD) and identifying associated infrastructure investments, a strategy to revitalize Stratford Center was developed. This effort was informed by a thorough public outreach process and guidance from the TOD Advisory Committee. A TOD Overlay District and Design Guidelines, conceptual site plans, the identification of funding opportunities and a detailed market, financial, and feasibility analysis of mixed use development in Stratford Center were also produced through the revitalization plan. This plan is the next step in realizing TOD in Stratford Center, following Choices for Stratford (2010), the Plan of Conservation and Development updated in 2013, and the TOD Overlay District and Design Guidelines adopted by Stratford's Zoning Commission in 2015.

Transit Oriented Development is a pattern of urban planning in which land use and transit are designed to support each other. Buildings are organized in a compact manner near transit services to enable a larger portion of the population to access public transit. Current market conditions support this type of new investment and the new overlay

district provides a framework for mixed use development which will bring vibrancy to Stratford Center. However, like many communities along Metro North's New Haven rail line corridor, challenges are formidable. Although the economic potential of locations close to transit are tremendous, funding opportunities are limited and the initial investments necessary to create momentum for development must be strategically timed and placed. Contending with past land uses and environmental contamination continue to burden the Town. By identifying key areas for TOD- (mindful of cost, location and site condition) the Town will have a strategy to leverage future public and private sector investments.

STUDY AREA

The boundaries of the study area (*see Figure A*) are a ½- mile radius around the Stratford Railroad Station and covers an approximate ten-minute walking distance. The quarter mile radius represents a five-minute walking distance.

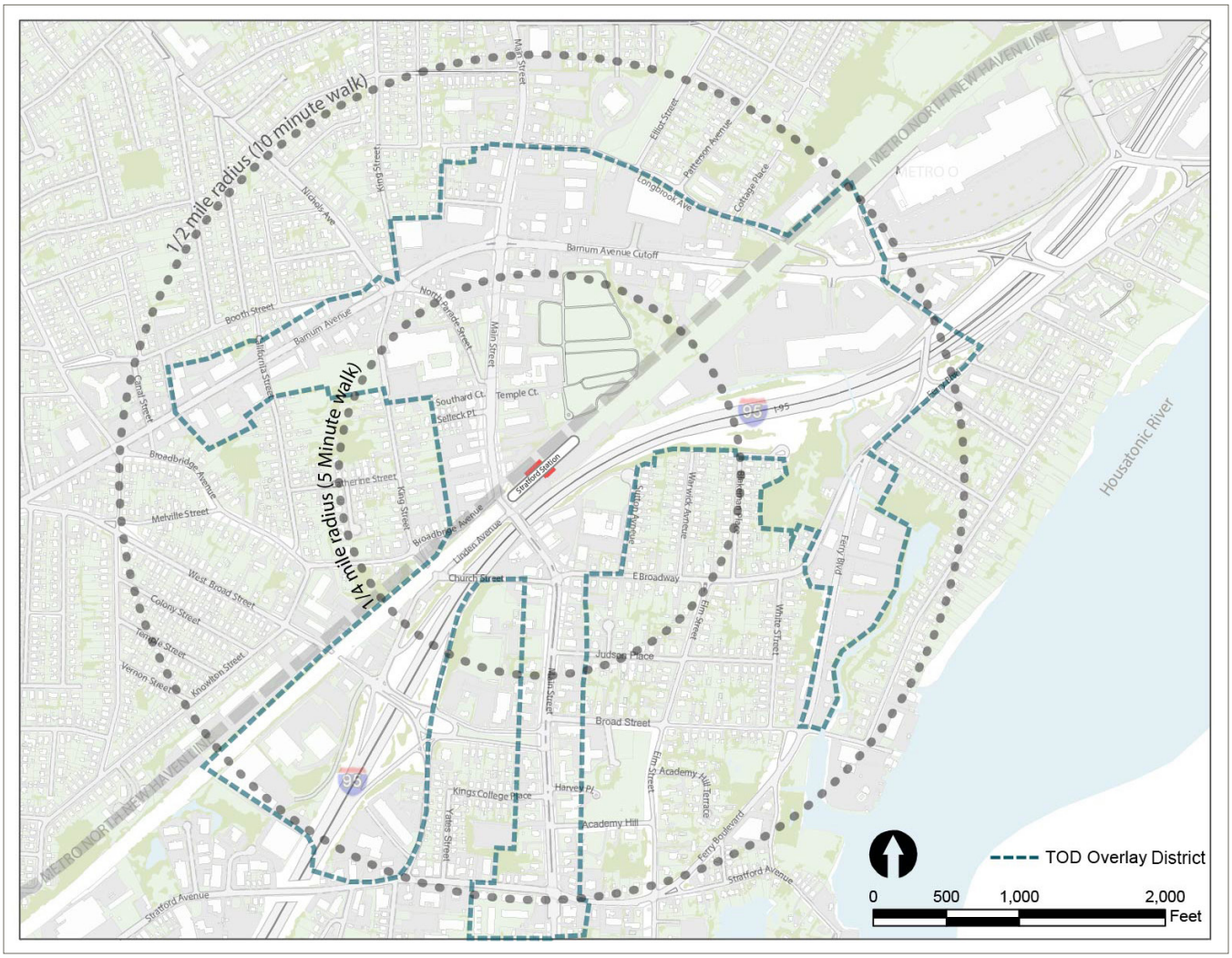

FIGURE A	STUDY AREA WITH WALK DISTANCES FROM STRATFORD RAILROAD STATION

Land use patterns within the study area are symptomatic of the historical development patterns of Stratford. There are a limited number of large parcels in the study area; most of these are located close to the rail line, I-95 and the Housatonic River. Small parcels (approximately ¼-acre or smaller) make up most of the study area. These parcels are primarily located along a patchwork of narrow streets that radiate from Stratford Center.

The housing stock is relatively homogeneous, dominated by single family housing with some duplexes and three-story walk-up apartments scattered throughout the study area. There are a few clusters of higher density residences, including several apartments or multi-story buildings, but only one is within walking distance to Stratford Center.

A number of brownfield sites are also located in the study area. Some of these properties have been capped and redeveloped with big box retail uses, while others have recently received clean-up funds. Although cleanup of these sites is favorable to future TOD in Stratford Center, limitations may exist for future residential development on some of these sites.

Vulnerability to flooding is another environmental concern. The study area is bisected by a FEMA designated floodplain with naturally occurring wetlands fronting the Housatonic River. The floodplain designation indicates a higher probability of flooding along the railroad and I-95 corridors, as well as along several creek channels in the western portion of Town Center.

Public land no longer required for its original purpose may also be positioned for reuse, potentially to catalyze development. Several parcels in the study area meet this definition, including the Center School site.

GOALS & OBJECTIVES

Throughout the development of the revitalization plan, community residents, stakeholders, and municipal representatives were engaged. Channels for public engagement included a workshop in April of 2014, a booth at the Stratford Main Street Festival in 2014, the website of the Greater Bridgeport Regional Council and the review process for the TOD Overlay District. Critical concerns shared with the study team throughout this timeframe included:

- Lack of parking;
- Traffic congestion;
- Lack of shopping;
- Noise and compromised aesthetics; and
- Pedestrian and vehicle conflicts.

Looking toward the future, participants favored the following:

- Improved public parking access and availability;
- Strengthened retail opportunities;
- Reduced pedestrian/vehicle conflicts and enhanced public safety;
- Allowing multi-story, mixed-use development (well-designed density); and
- Increased transit services.

The following goals were developed to address residents' concerns and future vision for the Town, as well as guidance from the TOD Advisory Committee:

1. Allow market driven growth in locations that are most conducive to new development and that support TOD;
2. Preserve historic character;
3. Broaden transportation alternatives and enhance public infrastructure to unlock private sector investment;
4. Allow for shared parking near the Stratford Railroad Station and convenient access to local service retail and businesses; and
5. Encourage the redevelopment of underutilized or obsolete areas such as brownfield sites and grow the grand list to reduce property tax burden on Stratford residents.

Using these goals as a guide, TOD objectives were identified. These objectives include an emphasis on mixed-use and pedestrian-oriented development, greater transit and active modes of transit, preservation of neighborhood characteristics, and an enabling TOD Overlay District.

MARKET ANALYSIS

Strategically located on the I-95, Route 8, and CT-15 (Merritt Parkway) corridors, and Long Island Sound, over 12.9 million square feet of commercial, industrial, retail, and office space is located in Stratford. Between 2012 and 2020, the Town's population is predicted to grow by 0.4% each year, slightly higher than Fairfield County's 0.3% and on par with the State. Stratford's portion of the Fairfield County office market is made up of 1.3 million square feet, and has greater availability (20%) than the sub-market average. Gross rents for office space in Stratford average to $18.26, lower than the County's Eastern sub-market of $21.56. Stratford's existing

downtown office space is located in older buildings and typically consists of small floor plates that cannot accommodate larger office users nor meet contemporary standards. Thus, rents in Stratford Center are usually between $12 - $14 per square foot.

An analysis of retail patterns in the Greater Bridgeport Region indicated that Stratford lacks retail services (or leakage) in a majority of industry types. Stratford retail rents average $14.12 per square foot for buildings under 40,000 square feet. Rents for larger buildings average to $17.87 per square foot. Newer retail developments have achieved higher rents that support the feasibility of new development. For example, a new complex on the corner of Main Street and Paradise Green Place rents for $25 per square foot.

Over the past five years, residential rents for multi-family housing units have increased from $1,200 to $1,600 per month (based on a blended average of studios through three bedroom units). Moreover, only a 3.3% vacancy is reported in the 451 units of total inventory in Stratford.

TRANSPORTATION NETWORK

The study area's road network was primarily established in the mid-19th century, with the exception of Barnum Avenue Cut-Off and I-95. These patterns of historic development have created a web-like road network through much of the study area and roads are undersized for current traffic volumes. Traffic congestion consistently occurs on Main Street, particularly during the evening peak hour in the Stratford Railroad Station vicinity. The width of Main Street under the Metro-North Railroad viaduct is constrained and limits the number of vehicular travel lanes. This limited width acts as a "choke- point" for vehicular traffic and transit service.

Greater Bridgeport Transit (GBT) currently operates five bus lines in the study area: the Coastal Link, Route 1, Route 10, Route 16, and Route 23. Service is limited at the Stratford Railroad Station and only a few transit corridors provide access to the Town overall. Bus stops are generally signed and accessible, though dedicated bus stopping zones are limited which creates challenges for boarding and alighting passengers as well as traffic flow. Evening bus operations are sometimes delayed due to traffic congestion on Main Street in Stratford Center. These delays may discourage public transit use.

Rail connections to Bridgeport, Norwalk, Stamford, New York City, and New Haven are provided by the Metro-North New Haven Line. Average weekday service includes 40 trains from NYC (northbound to New Haven) and 50 trains to NYC (southbound). The New Haven Line's ridership is estimated at 125,000 passengers on a typical weekday and 39 million passengers annually, ranking the corridor as the busiest rail line in the United States. The Town of Stratford could benefit greater from this passenger base.

The study area's sidewalk coverage provides basic connections between Stratford Center and surrounding neighborhoods. Commuters have the ability to walk to the Stratford Railroad Station from parking facilities and side-streets. However, gaps in sidewalk coverage exist in several locations and crosswalk locations are limited along some primary corridors. The Metro-North Railroad and Interstate I-95 viaducts divide Stratford Center and limit pedestrian connections to a few corridors. Underpasses at Main Street, King Street, West Broad Street, and Ferry Boulevard are the only connecting points for pedestrians and vehicles. Several large blocks have few or no internal paths or streets. In addition to these viaducts and large blocks, the width of some sections of Main Street and Barnum Avenue combined with insufficient crosswalk locations, and lengthy crosswalk distances encourage high vehicular speeds and compromise the pedestrian network in Stratford Center. These barriers to the pedestrian environment must be addressed to enhance walkability and cyclist safety in Stratford Center. These barriers have been identified in previous studies, such as the Stratford Pathways Study & Plan. Completed in 2008, the plan recommended bike lanes and shared-use paths to provide connections to Stratford Center and access to recreational areas, including the Housatonic Greenway.

TRANSIT-ORIENTED DEVELOPMENT PLAN

The recently approved TOD Overlay District and Design Guidelines provide a framework for development in Stratford Center. These regulations encourage development in the study area so that it is at a scale, density and aesthetic consistent with the community's vision for a vibrant and historic Stratford Center.

Sites that are well-positioned for redevelopment have been identified as catalyst sites. These sites may be eligible for funding and/or are situated in priority investment areas due to their location in Stratford Center and/or proximity to the TOD Overlay District. A number of smaller sites throughout Stratford Center also offer potential for redevelopment. In addition to catalyst sites, cluster areas that could benefit from infrastructure investments are also identified. Investment in public infrastructure improvements in these cluster areas have the potential to encourage private investment in the adaptive reuse of underutilized properties.

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WHAT IS TRANSIT-ORIENTED DEVELOPMENT (TOD)?

TOD is a pattern of urban planning in which land use and transit are designed to support each other. Buildings are organized in a compact manner near transit services to enable a larger portion of the population to access public transit. Since many commuter trips are to employment centers, TOD allows individuals access to a broad network of jobs, services, entertainment, and their place of residence without the need for car-based trips and their associated costs. Bicyclist amenities serve another vital benefit to TOD planning as multi-use paths and dedicated bicycle lanes allow people from even greater distances to access transit services and job centers efficiently and safely.

The intent of this strategy is to create cluster areas that will focus investment in public infrastructure and encourage private redevelopment. Rather than a piecemeal approach to redevelopment, this revitalization plan provides a comprehensive timeline that leverages public and private investment. Clusters include the following and are indicated in Figure B.

FIGURE B	STRATFORD CENTER TRANSIT ORIENTATED DEVELOPMENT (TOD)

Cluster A – The Stratford Center vicinity near the Stratford Railroad Station, with a focus on Main Street and the Center School site at 1000 East Broadway (one of three catalyst sites).

Cluster B – Along Barnum Avenue grouping in the 1000-1400 block extending to Main Street, then north and south along Main Street and east on Barnum Avenue Cut-Off.

Cluster C – On Barnum Avenue between King Street and Broadbridge Avenue outside of the TOD Overlay District.

Catalyst Sites – In addition to the Center School site, two additional catalyst sites that are distinct from the plan's TOD clusters were identified as critical to the revitalization of Stratford Center. These sites have strong prospects for remediation and are in close proximity to large retail sites. These include 576-600 East Broadway (a Superfund site) and 540 Longbrook Avenue.

ACTIVE MODES

Active mode improvements address safety and connectivity for pedestrians and cyclists. Around the Center School site and Stratford Railroad Station, existing rights-of-way (ROW) and pathways can be utilized to enhance connectivity for pedestrians and cyclists. These connections complement on-road facilities and will create a comprehensive network of alternate modes of travel in the Stratford Center vicinity.

Upgrades to the active modes network will support TOD in Stratford Center and include three pedestrian pathways, connectivity with the Housatonic Greenway and numerous on-road bicycle lanes.

PUBLIC TRANSIT

Concurrent to the development of the Revitalization Plan, Greater Bridgeport Transit and service stakeholders reviewed long-term service improvements. Recommendations included new or combined routes, Bus Rapid Transit (BRT), increased frequency of certain routes, service expansion to the Army Engine Plant and additional service at the Stratford Railroad station.

INFRASTRUCTURE IMPROVEMENTS

Public infrastructure investment will improve pedestrian safety and accessibility while reducing traffic congestion in Stratford Center. In addition to addressing the deficiencies identified by Stratford residents, the recommended infrastructure improvements will provide a framework for TOD in the study area. However, for actual redevelopment and revitalization to occur, private investment is critical.

Stratford residents have expressed dissatisfaction with the availability of parking, lack of shopping, and overall aesthetics in Stratford Center while expressing their support for mixed-use development. The recently approved TOD Overlay District will encourage private investment in high quality, aesthetically pleasing development consistent with the historic character of the area. Allowing for a mix of uses and increasing parking availability will address critical needs and spur investment in Stratford Center.

Infrastructure improvements to reduce traffic congestion and increase traffic capacity include lane realignments, bi-directional travel and signal optimization.

SUMMATION

The recommendations made in this plan can position Stratford Center to accommodate market driven growth and mixed use development in close proximity to transit. At the beginning of the study, the following three questions were posed:

1. What locations within Stratford Center will further TOD?
2. What infrastructure investments are needed?
3. What steps should be implemented to catalyze new development?

Through a thorough public outreach process, an analysis of existing conditions, the identification of TOD clusters and associated infrastructure improvements, conceptual site plans, and a detailed market, financial, and feasibility analysis, these questions were successfully addressed.

- TOD Clusters were identified within the study area;
- Specific investments are identified involving new transit, active modes, parking, and mixed-use development; and
- A TOD Overlay District and Design Guidelines were adopted and opportunities for public/private partnerships are conceptualized that will catalyze new development.

This plan will support the Town of Stratford as it looks to strengthen its downtown assets through a TOD strategy and the revitalization of Stratford Center.

1

- Project Overview
- Study Area
- Goals & Objectives
- Public Outreach

1 | Study Background

1.1 PROJECT OVERVIEW

This planning study was conducted in collaboration with the Town of Stratford, the Greater Bridgeport Regional Council (GBRC), and Greater Bridgeport Transit (GBT).

Transit-oriented development (TOD) shifts the focus from automobile-centric and low-density land uses toward public transit, high-occupancy vehicle, bicycle- and pedestrian-friendly, and mixed-use development patterns. In TOD districts, our transportation systems, the public realm, density, and a complementary mix of residential, office, and retail offerings encourage use of multi-modal transit alternatives and drive the viability of traditional downtown and neighborhood centers. The Town of Stratford is ideally suited to implement transit-oriented development strategies due to the proximity of local and regional transportation networks to infrastructure and existing development and new opportunities. The Town of Stratford benefits from affordable living costs, high quality of life, and proximity to vital employment centers in New York City and within the State of Connecticut making it well positioned to capitalize on state, federal and private sector investment that are necessary to create a vibrant TOD district.

The challenges facing local planning and economic development officials are daunting. Though the Greater Bridgeport Region has a rich industrial heritage built on precision instrumentation and aviation, these industries have diminished. The legacy of these past industries has resulted in numerous environmentally degraded sites in prime development locations. Changes in land use, development, demographics, and centers of employment have created vast opportunities to reshape the Region through adaptive re-use of brownfield sites and underutilized properties. Parcel development should be accompanied by the implementation of complete streets, the design of pedestrian and transit friendly spaces, along with other practices supportive of transit-oriented development. From a regional perspective, GBRC is in the process of drafting transit-oriented design guidelines that will help drive a wider development strategy around the region's transit stations to be linked through efficient transit corridors.

Securing funding and responding to community needs are vital to TOD implementation and the Town of Stratford has taken positive steps to facilitate progress. The Town of Stratford conducted two recent planning processes: Choices for Stratford (2010) and the Plan of Conservation and Development (2013). These plans set the stage for a newly adopted TOD Overlay District that has already generated new development in Stratford Center. The TOD Overlay District was formally adopted by the Zoning Commission on March 31, 2015 as a result of this study, enabling land use provisions and TOD design guidelines (see *Appendix A*).

The Town's strategy is focused on clusters of small lot development and several potential catalyst sites. With previous studies documenting the community's goals and TOD guidelines in place, the Town is poised to

implement critical infrastructure improvements that will unlock new development in high priority investment areas and reap the economic, aesthetic, and social benefits of managed TOD growth.

This study included the creation of a TOD ordinance and design guidelines, a general market assessment, and a TOD strategy for the area within a half-mile walking distance of the Stratford Railroad Station. The strategy consists of key roadway, transit, and active design infrastructure improvements borne by the public sector that will encourage further investment from the private sector to achieve a viable Stratford Center.

1.2 STUDY AREA

The study area consists of a half-mile radius around the Stratford Railroad Station, – essentially a ten-minute walking distance (see *Figure 1*) – with a quarter-mile radius representing a five-minute walking distance. For planning purposes, these are practice standards representing distances that people are willing to walk to gain access to services, a downtown, or a transit connection. There are clearly exceptions; for instance, access to high

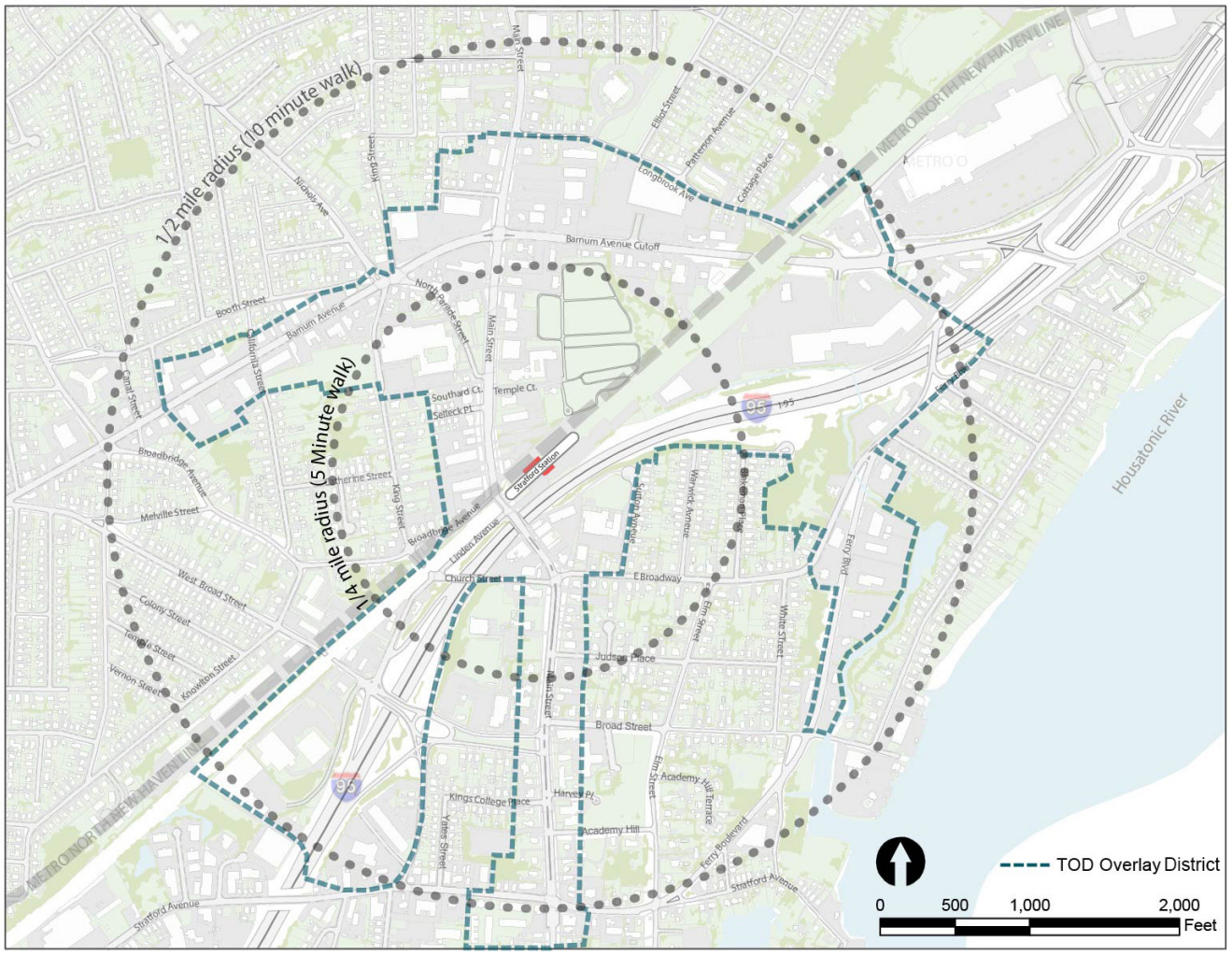


FIGURE 1	STUDY AREA WITH WALK DISTANCES FROM STRATFORD RAILROAD STATION

quality transit service and the condition of connecting corridors extends the distance that people are willing to walk beyond these five- and ten-minute walk sheds.

1.3 GOALS & OBJECTIVES

With a new TOD Overlay District, the Town of Stratford and the GBRC began to focus on the development potential within a half-mile walking distance of the Stratford Railroad Station. This included determining infrastructure improvements, priority investment areas, and an implementation strategy to achieve a more vibrant Stratford Center.

The study goals and objectives were initiated by the Town of Stratford and subsequently refined upon further evaluation of the study area's physical attributes and input from stakeholders and community residents. Key goals are as follows:

- Allow market driven growth in locations that are most conducive to new development and that support the principles of TOD;
- Preserve historic character;
- Broaden transportation alternatives and enhance public infrastructure to unlock private sector investment;
- Allow for shared parking near the Stratford Railroad Station and convenient access to local service retail and businesses; and
- Encourage the redevelopment of underutilized or obsolete areas such as brownfield sites and grow the grand list to reduce the property tax burden on Stratford residents.

Using these goals as a guide, specific TOD objectives were developed including:

- Emphasis on mixed-use and pedestrian-oriented development with a range of housing options in proximity to the Stratford Railroad Station which will encourage generational diversity and less reliance on personal vehicle use;
- Creating an environment that encourages walking, bicycling, and transit use by locating multiple destinations and trip purposes within a quarter- and half- mile of each other;
- Facilitating the adaptive re-use of existing buildings and infill development and ensuring that any new development is consistent with and enhances the nearby streetscape and the community's historic character; and
- Providing zoning provisions that allow desired development within the TOD Overlay District.

This study addresses three questions, now pertinent as key regulations are in place that will shape Stratford Center in the years to come. These include:

1. **What locations (priority areas) within Stratford Center will further TOD?**
2. **What infrastructure investments will encourage and support new development and/or adaptive re-use in these priority areas?**
3. **What steps should be implemented to catalyze new development?**

1.4 PUBLIC OUTREACH

The outreach process included internal discussions with the Town of Stratford, Greater Bridgeport Regional Council (GBRC), and Greater Bridgeport Transit (GBT); outreach to the general public; and direction and input from a TOD Advisory Committee. The TOD Advisory Committee included the following participants:

TOD ADVISORY COMMITTEE

- Ms. Jeanne Collier, Board of Zoning Appeals
- Ms. Mary Dean, Chamber of Commerce, Executive Director
- Mr. David Fuller, Zoning Commission Chairman
- Ms. Karen Kaiser, Director of Economic Development
- Ms. Amy Knorr, Supervisor of Economic Development
- Mr. Gary Lorentson, Planning and Zoning Administrator
- Mr. Christopher Silhavey, Planning Commission Representative
- Mr. Tony Smith, Zoning Commission Representative
- Mr. Joe Vecsey, Planning Commission Representative

TOWN OF STRATFORD

- Ms. Karen Kaiser, Director of Economic Development
- Ms. Amy Knorr, Supervisor of Economic Development
- Mr. Gary Lorentson, Planning & Zoning Administrator

GREATER BRIDGEPORT REGIONAL COUNCIL (GBRC)

- Mr. Brian T. Bidolli, Executive Director
- Mr. Patrick Carleton, Regional Planner
- Ms. Linda Colello, Finance Director
- Mr. Matt Fulda, Regional Planner
- Mr. Mark Hoover, GIS Specialist
- Mr. Mark Goetz, Sr., Transportation Planner/ GIS Director
- Ms. Colleen Kelleher, Administrative Services Manager
- Mr. George Obeng, GIS Technician
- Ms. Meghan A. Sloan, Senior Transportation Planner

GREATER BRIDGEPORT TRANSIT (GBT)

- Mr. Douglas C.Holcomb, Chief Executive Officer
- Mr. Steve Demichele, Manager of Planning and Service Development

STANTEC

- Mr. Gary Sorge, Senior Principal
- Mr. Marc Wouters, Senior Associate
- Mr. Louis Luglio, Transportation Lead/Project Manager
- Mr. Matthew Maher, Traffic Engineer
- Ms. Michelle Orfield, Transit Planner
- Mr. Graeme Masterton, Transit Planner/ Project Manager

BFJ PLANNING

- Mr. Frank Fish, Principal
- Ms. Susan Favate, Senior Associate

HR&A

- Mr. Shuprotim Bhaumik, Partner
- Mr. Kumar Kintala, Principal
- Mr. Jordan Hare, Senior Analyst

The TOD Advisory Committee met at four progress meetings (March 27, April 10, May 6, and July 16, 2014) and provided feedback on the following topics specific to the preparation of a new TOD Overlay District for the Town of Stratford:

- Proposed zoning guidelines;
- Mitigation strategies to accommodate future growth within the identified TOD area;
- Zoning concepts for a new TOD ordinance; and
- A final ordinance.

In addition to the TOD Advisory Committee meetings, a series of weekly technical review meetings were scheduled with the GBRC, GBT, and Town of Stratford staff.

PUBLIC ENGAGEMENT

There were three main channels for public engagement including:

- The continuously updated Greater Bridgeport Regional Council (GBRC) website (http://www.gbrct.org/projects/land-use/tod);
- The Stratford Main Street Festival; and
- The planning and zoning review process for the Town's new TOD Overlay Distict.

At the Main Street Festival, the Town of Stratford and the project team shared an information kiosk with display boards and conducted a brief pedestrian survey to gain feedback regarding Stratford Center enhancement needs. The public survey (see *Figure 2*) revealed residents' greatest concerns for the study area, including:

- Lack of parking;
- Traffic congestion;
- Lack of shopping;
- Noise/aesthetics; and
- Pedestrian and vehicle conflicts.

When asked about the future needs of Stratford Center and where the focus of any new development should be, participants favored the following (see *Figure 3*):

- Improved public parking access and availability;
- Strengthened retail opportunities;
- Reduced pedestrian/vehicle conflicts and enhanced public safety;
- Allowing multi-story mixed-use development (well-designed density); and
- Increased transit services.

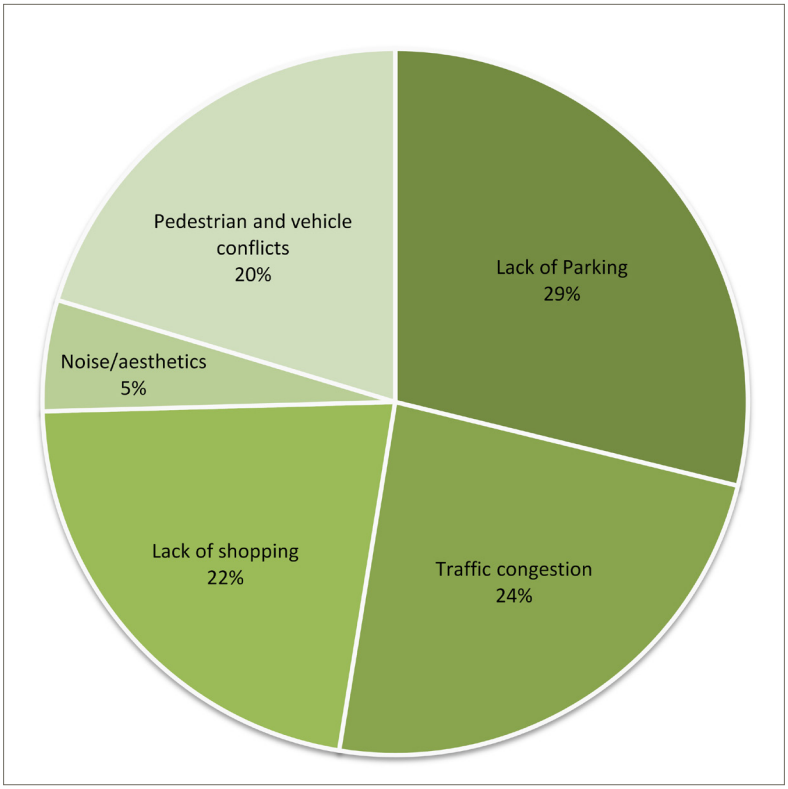


FIGURE 2 | PRIMARY COMMUNITY CONCERNS

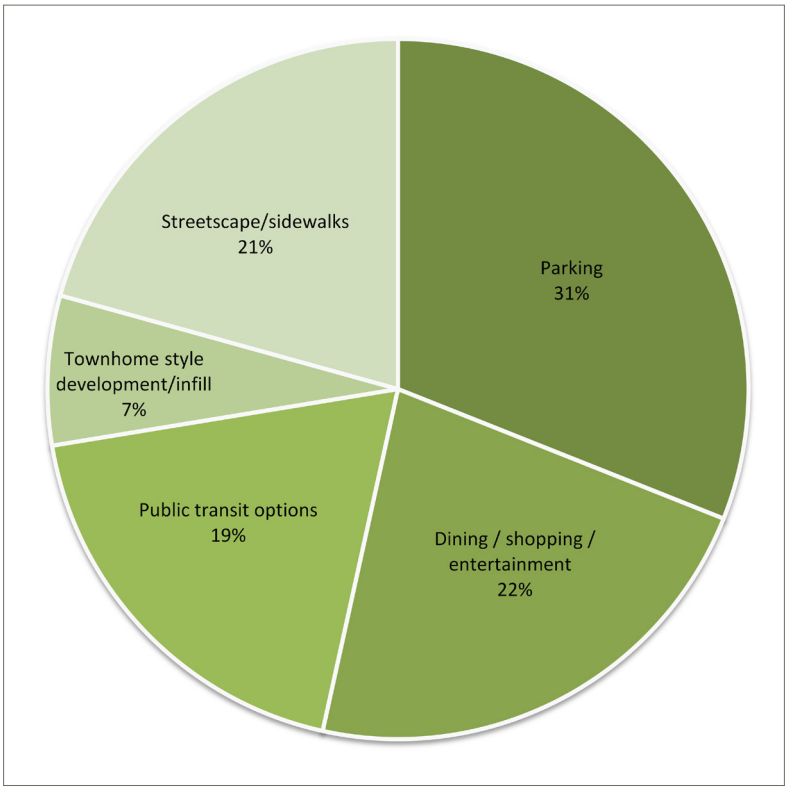


FIGURE 3 | PRIMARY COMMUNITY NEEDS

2

- Setting the Stage
- The Transportation Network

2| Existing Conditions

2.1 SETTING THE STAGE

Stratford was settled in 1639. Since that time, Main Street has been a focus of commerce and development punctuated by the commercial districts of Paradise Green and Stratford Center. Stratford Center had major developments in the early twentieth century including the Tuttle Block built near the Stratford Railroad Station (circa 1911), the Lovell building (circa 1919), and the Stratford Theater (circa 1924). In the early 20th Century, town hall was completed with a post office, police department, court room, and meeting halls.

Historically, Stratford was a place of commerce, growth, and progressive schooling that is still prevalent in the community today. Major industrial activities sustained Stratford during the Depression but as manufacturing declined throughout Fairfield County thereafter, so did some of the larger industries in town. Large vacant parcels within the TOD Overlay District and south of the study area are reminders of lost industry; they're now positioned for redevelopment and adaptive re-use.

From a historical perspective, the study area includes some of the oldest neighborhoods in Stratford. The Academy Hill District, to the south of the Stratford Railroad Station, includes several eighteenth century structures. The rail line was established in the late nineteenth and early twentieth centuries just to the north of the Academy Hill District along Main Street. This was the original downtown retail center.

Stratford Center contains a diverse set of land uses and building types, from the historic district with mature shade trees and steeples peering above, to low-rise, nondescript structures with flat roofs. From the charming and historic character of the Stratford Railroad Station vicinity to the bland character of Barnum Avenue and the super-blocks north and east of the municipal center, the study area lacks the cohesiveness and scale often associated with a successful TOD.

In 1956, Interstate 95 was constructed through Stratford Center almost parallel and in close proximity to the railroad line. The construction of Interstate 95 and the previously constructed Metro-North Railroad viaduct limit connectivity between the northern and southern portions of the study area—namely between the historic district and the Post Road (Barnum Avenue/Route 1) that runs parallel to Interstate 95 to the north. North-south travel access within Stratford Center is restricted to the West Broad Street, Church Street, Main Street, and Ferry Boulevard underpasses, some of which lack pedestrian-friendly amenities. Due in part to viaduct construction, auto-oriented retail growth occurred in subsequent years along Barnum Avenue in the far reaches of the defined TOD study area, rather than less auto-dependent infill development within Stratford Center.

2.1.1 POPULATION STATISTICS

According to Choices for Stratford, the population in Stratford grew modestly from 49,976 to 51,145 between the years 2000-2010 and has since stabilized at 51,384 in 2014. In 2014, Stratford's population by race (see *Figure 4*) was 76% white, 14% black or African American, 13% Hispanic or Latino, 6% multiple races or other, 2% Asian, and less than 1% American Indian (*Source: suburbanstats.org*). The breakdown has changed slightly since 2008, seeing a 3.3% reduction in the white population and a 1.4% increase in the black or African American cohort (*Source: Choices for Stratford*). By gender, females comprise 53% of the population. The median age is high compared to neighboring towns at 42 with only 11,140 persons under the age of 18. Given the median age, it is not surprising that the average household size is two residents. Of the 20,095 households in Stratford, 13,614 are considered family led homes with 5,477 single person households (*Source: Suburbanstats.org*). The high median age of the Town of Stratford suggests that significant residential turnover may be on the horizon, with trends indicating an influx of residents more likely to seek public transit as a means of travel.

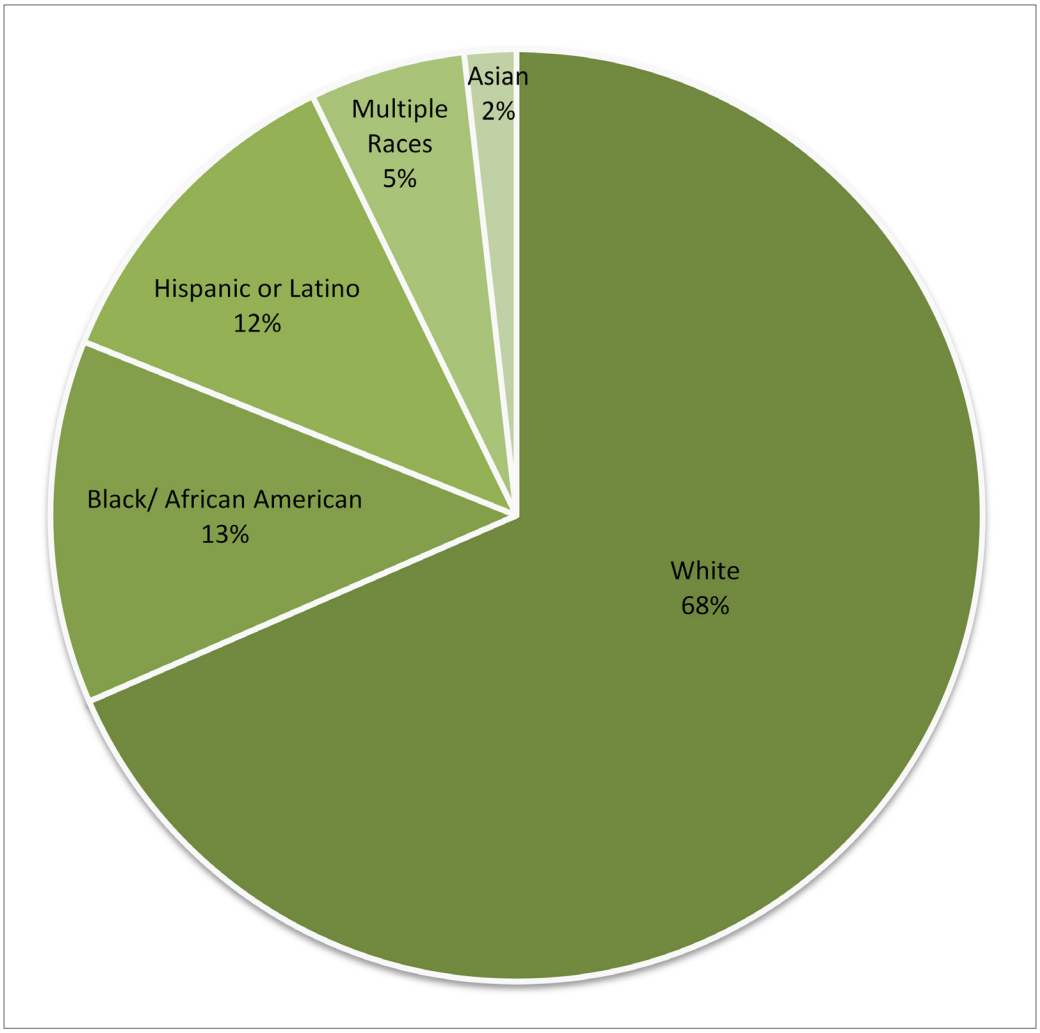


FIGURE 4	TOWN OF STRATFORD DEMOGRAPHICS (2014)

2.1.2 LAND USE PATTERNS

Land use patterns within the study area reflect the historic development patterns of Stratford. There are a limited number of large parcels in the study area and those that exist are located close to the railroad line and the Housatonic River. The majority of the study area is made up of narrow parcels (approximately ⅓-acre in land area or smaller) radiating out from key intersections at Main Street/East Broadway and Main Street/Barnum Avenue and from narrow streets that intersect these main thoroughfares. Many small parcels lie outside the TOD Overlay District, in primarily residential areas, creating a densely populated perimeter that may support a more vibrant Stratford Center.

Figure 5 illustrates the predominance of small lots in the study area (indicated in yellow) with the remaining land encompassing industrial or retail space along with schools, civic buildings, and parks. Parcels close to the Stratford Railroad Station are typically less than one acre in size, limiting future development to renovations, additions, and small scale in-fill structures. Larger parcels are located further from the Stratford Railroad Station to the east along Barnum Avenue. One of the largest single parcels, located just south of the Stratford Railroad Station and Interstate 95, is the Stratford-owned Center School site (see *Figure 5*). The Center School site is approximately three acres in land area and currently contains former school buildings. The site is within a five-minute walking distance to the railroad station making it an ideal location for transit-oriented development.

Current land-use patterns suggest that TOD, along with brownfield development, may best occur in clusters rather than a more traditional amalgamation of sites by a single developer. The cluster concept is examined further in this study.

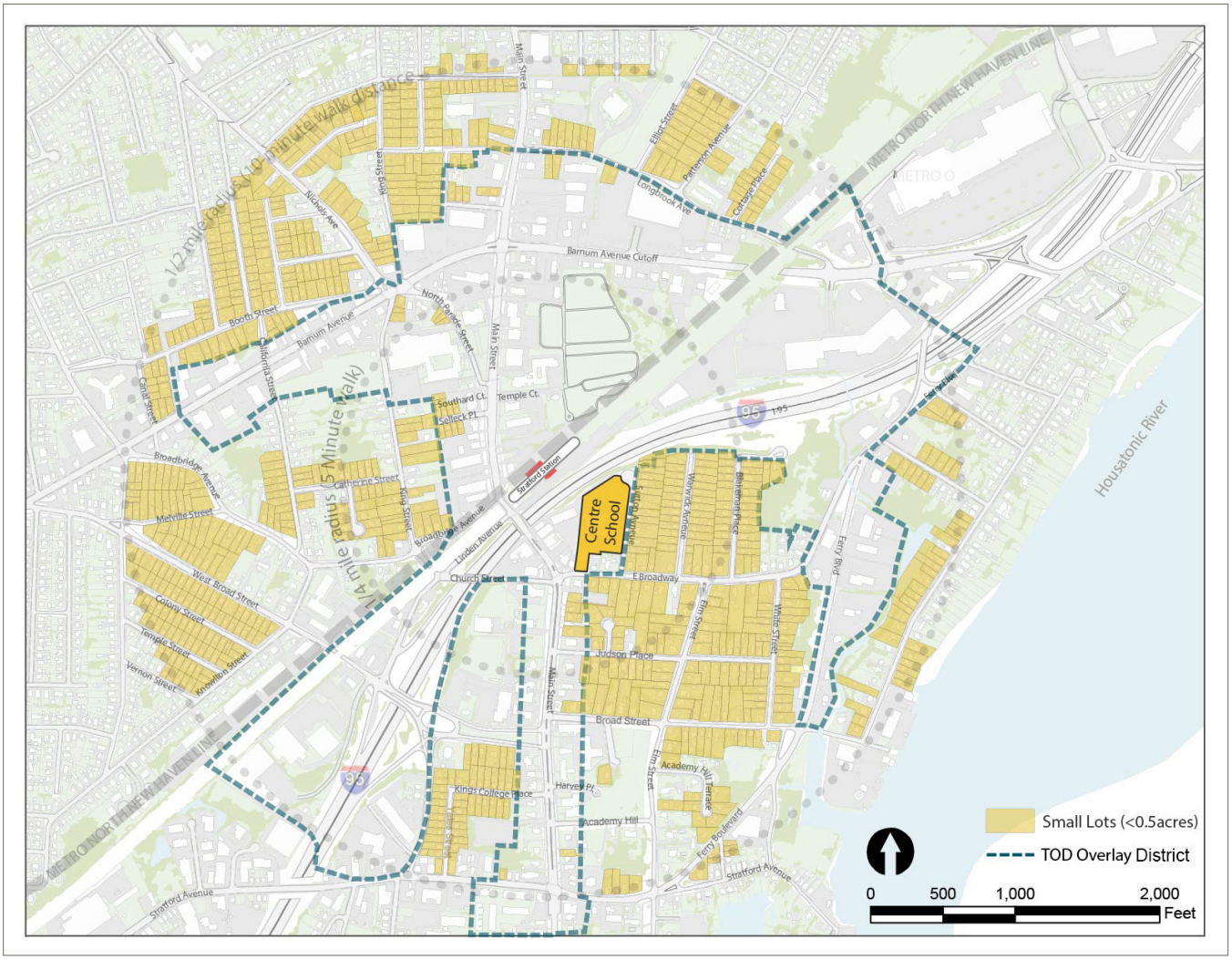


FIGURE 5 | CLUSTERS OF SMALL LOTS IN THE STRATFORD CENTER VICINITY

The housing stock is relatively homogeneous, dominated by single-family housing with duplexes and three-story walk-up apartments scattered around the study area. There are a few groupings of higher density residences including several apartments or multi-story buildings, but only one is within walking distance to Stratford Center. *Figure 6* illustrates the clusters of two-family houses (yellow highlight) that are evenly dispersed throughout the area and apartments (green highlight) which are sparse in number. TOD relies upon higher density—currently lacking in Stratford Center—to provide sufficient support for services such as restaurants, grocery stores, and neighborhood shops. Existing pockets of density (apartments, duplexes, walk-ups) can be connected through infill of additional residential uses, stores, and services within and outside Stratford Center. Zoning will maintain the single-family environment for the majority of the study area, whereas the new TOD Overlay District will permit increased density that conforms to newly adapted development and design guidelines. To reinforce a primary goal, land-use should encourage foot traffic with less reliance on personal vehicles.

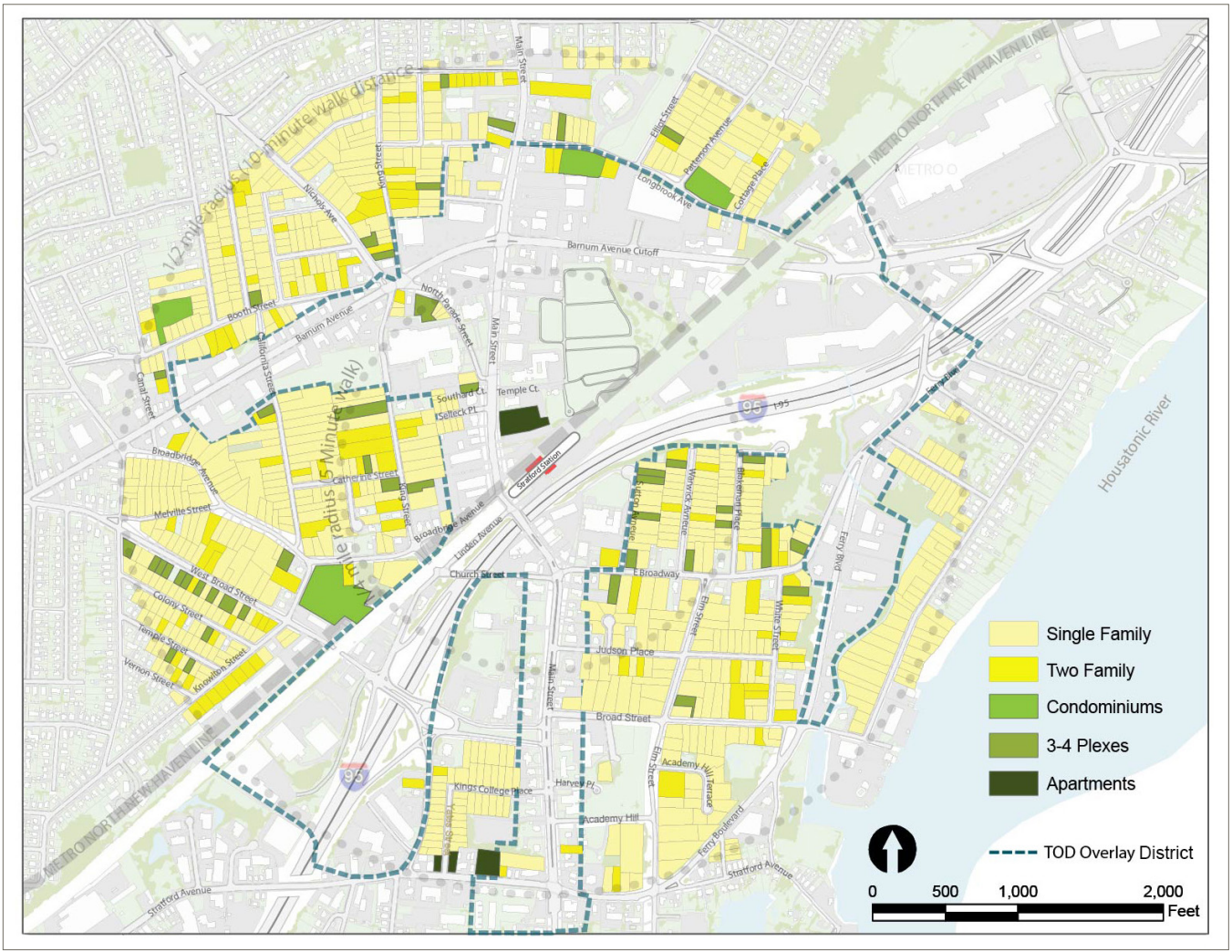


FIGURE 6 | HOUSING TYPES

2.1.3 ENVIRONMENTAL CHALLENGES

There are a number of environmental conditions within the study area (see *Figure 7*) and throughout Stratford that could adversely impact future transit-oriented development. Tidal and inland wetlands that are subject to flooding are highly regulated and restricted and the town's industrial past has left a legacy of environmental contamination that compromises development opportunity.

Stratford Center is vulnerable to flooding. The study area is bisected by FEMA-designated flood zones with naturally occurring wetlands fronting the Housatonic River. Though typically created for insurance purposes, these zones indicate an increased probability of regular flooding alongside the railroad lines and I-95 as well as along several creek channels in the western portion of the study area. Flood zones could become an issue to future TOD and the Town of Stratford may need to prioritize mitigation strategies to decrease potential flood hazards. This may impact some potential development sites or require some physical changes to sites to reduce the risk of flooding.

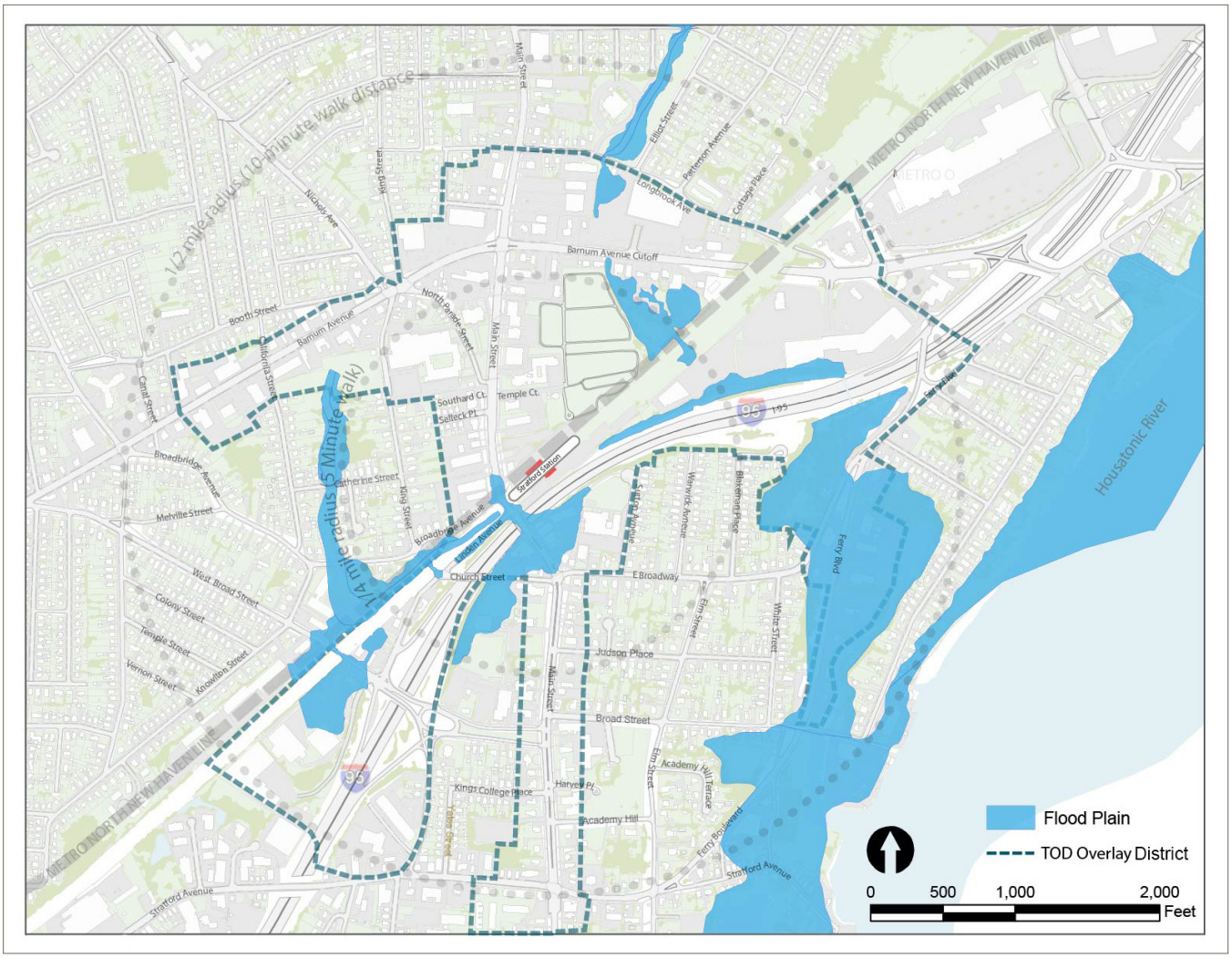


FIGURE 7 | FLOOD PLAINS EXTENTS (STRATFORD CENTER)

Within recent years, a number of designated brownfield sites have been capped and developed with car-dependent uses. Development on other sites, though possible, have limitations pertaining to future residential uses. Previously developed brownfield sites include, large suburban retail developments on the eastern end of Barnum Avenue where limitations include, but are not limited to, restrictions on residential uses and construction and excavation procedures. There are smaller properties in the study area that could be redeveloped but have existing uses that may require future assessment and site remediation.

2.1.4 PUBLIC LAND

Public land (see *Figure 8*) includes schools, parks, municipal properties and sidewalks. Public land that is no longer required for its original purpose may be adapted to a higher and better use, especially if it is situated within Stratford Center. Within the study area there are four properties that meet this definition. These include:

- Stratford High School in the northwest portion of the study area;
- The former Center School site in Stratford Center;
- The Stratford Police Station; and
- Sterling Park.

Each may contribute to the vibrancy of Stratford Center or provide a means to enhance public space and pedestrian connectivity within the district.

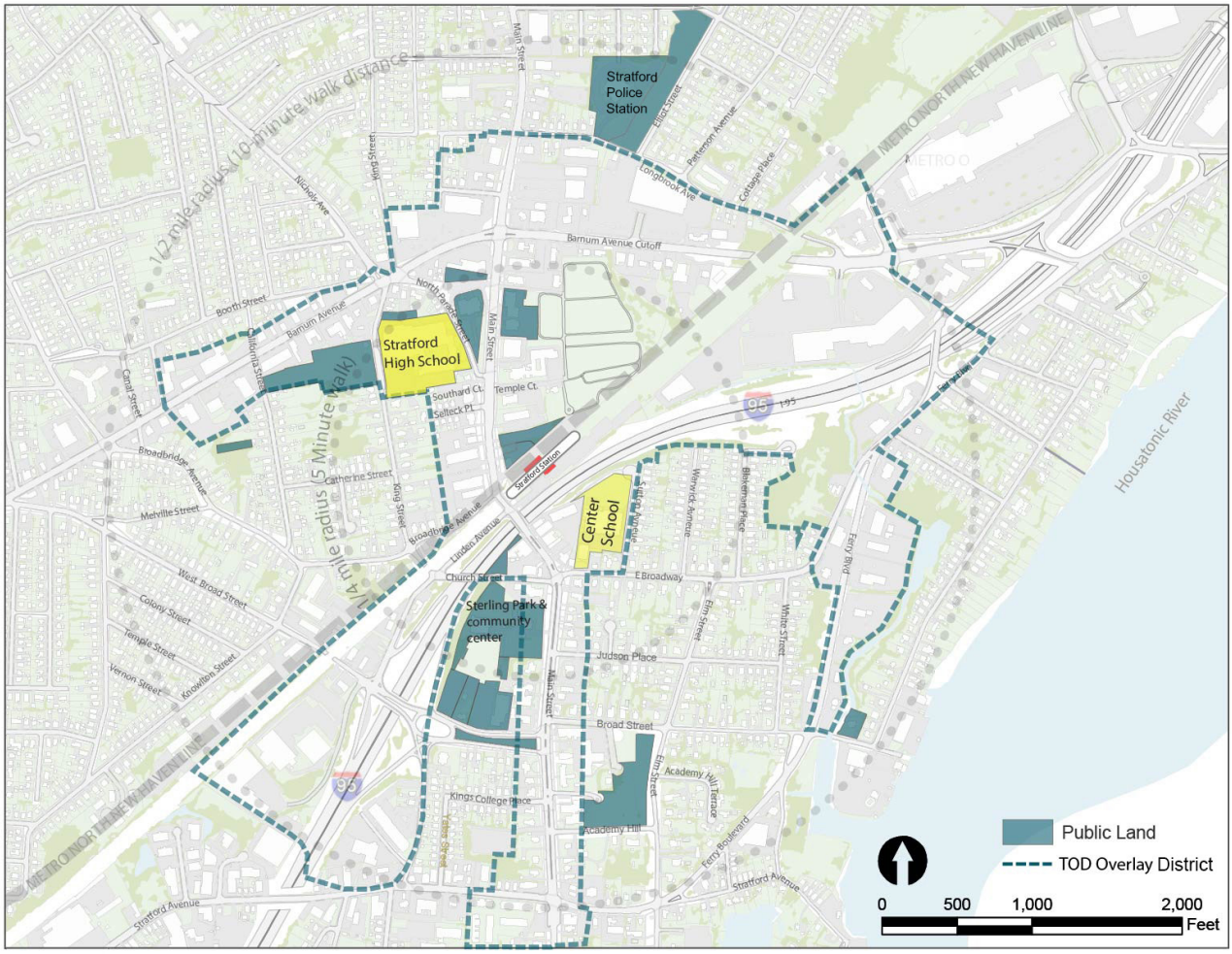


FIGURE 8 | PUBLIC LAND

2.1.5 ZONING

Until adaption of the TOD Overlay District, most zoning ordinances in Stratford were restrictive in use, permitting all commercial activities or all residential activities, with little or no mixing of the two. This resulted in completely separate commercial and residential areas with commercial uses along the major transportation corridors and residential uses limited to secondary and tertiary streets. The type of mixed-use development necessary for TOD implementation is not permitted in most of the existing zones. Initial Transit-Centered Development (TCD) zoning regulations were adopted in 2011 and focused on permitting more residential uses in the study area and relaxing parking ratios for residential uses. While the regulations have resulted in one development thus far (the 128-unit, 1111 Stratford Avenue apartment complex) there are several provisions that have limited its use.

The original TCD regulations were administered via a floating zone, rather than an overlay zone, requiring developers to apply for a zoning change rather than offering a choice between utilizing an underlay and overlay zone. The minimum lot size requirement of three acres significantly restricted the number of available parcels and did not promote smaller-scale infill development and redevelopment. The greatest opportunity for transit-oriented development lies heavily in the abundant small parcels located throughout the study area, most of which were not eligible for this zone because there was never intent to develop these smaller sites. There are numerous smaller parcels that are residential or commercial in use that lie within the new TOD Overlay District (see *Figure 9*) that have potential for development based on the new regulations.

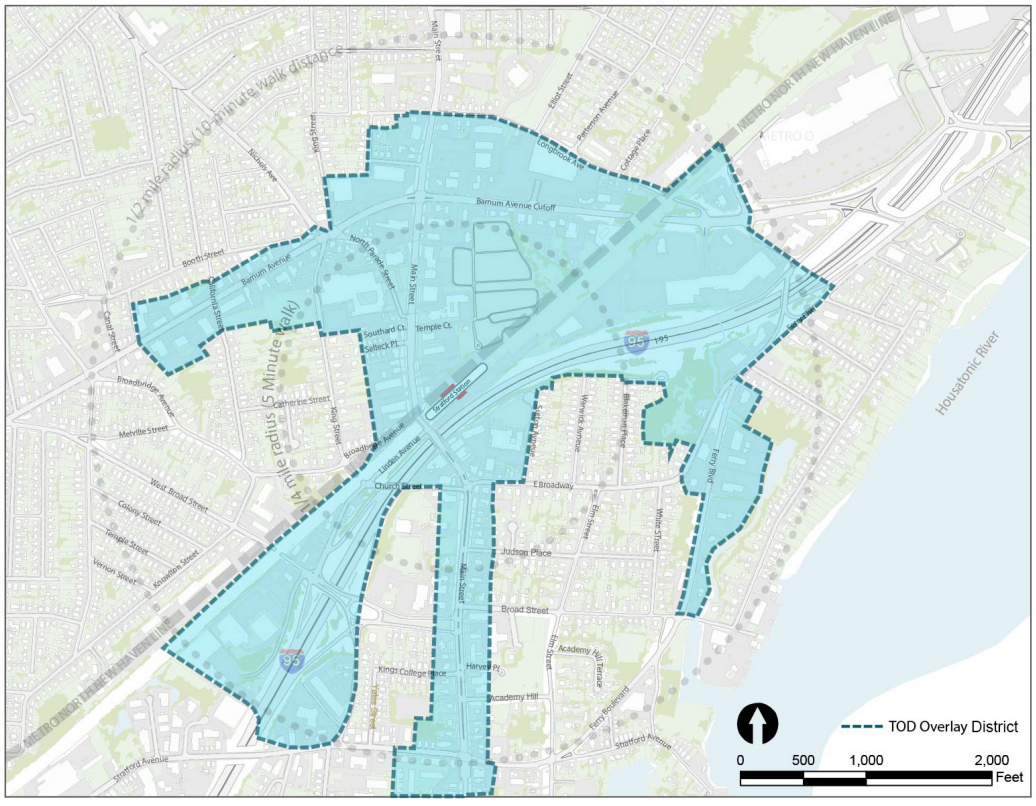


FIGURE 9 | TOD OVERLAY DISTRICT

The new TOD Overlay District and design guidelines were adopted by the Town of Stratford in March, 2015 and they reflect the goals of the 2014 Plan of Conservation and Development (POCD). This ordinance will encourage and shape private sector development and provide greater clarity to the land use review process. The new district has already gleaned positive results for the Town, as applications for new development in Stratford Center have been submitted to the Town's planning department.

2.1.6 MARKET ANALYSIS

Stratford contains over 12,900,000 square feet of commercial, industrial, retail, and office space and is strategically located on the I-95, Route 8, and CT-15 (Merritt Parkway) corridors and Long Island Sound. A major access point includes the Stratford Metro-North Railroad station and, less so, the Sikorsky Memorial Airport.

Manufacturing operations in Stratford are the main economic driver comprising 34% of the town's work force, more than any other business sector. Several large corporations, such as Sikorsky Aircraft, the UPS Customer Center, William B. Meyer Inc., and Ashcroft Inc. form the base for this employment sector within Stratford. (*Source: Stratford CT CERC Town Profile 2014*).

Population growth from 2012 to 2020 is predicted at 0.4% per year, slightly higher than Fairfield County's 0.3% and on par with the State's total of 0.4%. In the third quarter of 2014, Fairfield County's unemployment rate dropped below its previous low point of 5.5% in 2010 to 5.4%. This decline reversed the trend of increases experienced since June of 2014 and remains lower than the State's average unemployment rate of 5.9% at this time (*Source: Colliers International Fairfield County Market Report 2014*).

The Stratford portion of the office market contains 1.3 million square feet and has greater availability (20%) than the sub-market average (*Source: Costar Properties Office Space Analytics Report for Stratford, CT 5/5/15*). It should be noted that a small number of large employers dominate the Stratford office market and are located in office parks.

Gross rents for office space in Stratford are only $18.26 per square-foot on average, lower than Fairfield County's eastern sub-market at $21.56 (*Source: Costar Properties Office Space Property Report for Stratford, CT 5/5/15*). Furthermore, existing downtown office spaces that are located in older buildings with small floor plans that cannot meet contemporary standards tend to command lower rents at $12 - $14 per square-foot (*Source: Town of Stratford list of available retail and office space; Loopnet online listing service*). Downtown Stratford is not perceived in the marketplace as a first-class office location and there is already significant vacancy.

2.1.7 THE RETAIL LANDSCAPE

Current local retail or office opportunities within the study area are focused on Stratford Center along Main Street north and south of the railroad line and along Barnum Avenue and Barnum Avenue Cutoff. There are also small commercial sites on Ferry Road, single-site uses in the south and southwest sectors of the study area, as well as two large commercial sites that are sandwiched between I-95 and the Metro- North Railroad lines (see *Figure 10*). The Main Street businesses are located within a short walk of the Stratford Railroad Station however there is limited visitation by Metro-North users as evidenced during interviews of local business owners conducted in January 2014. The interview respondents stated that retail is supported mainly by auto visitation with very little pedestrian traffic.

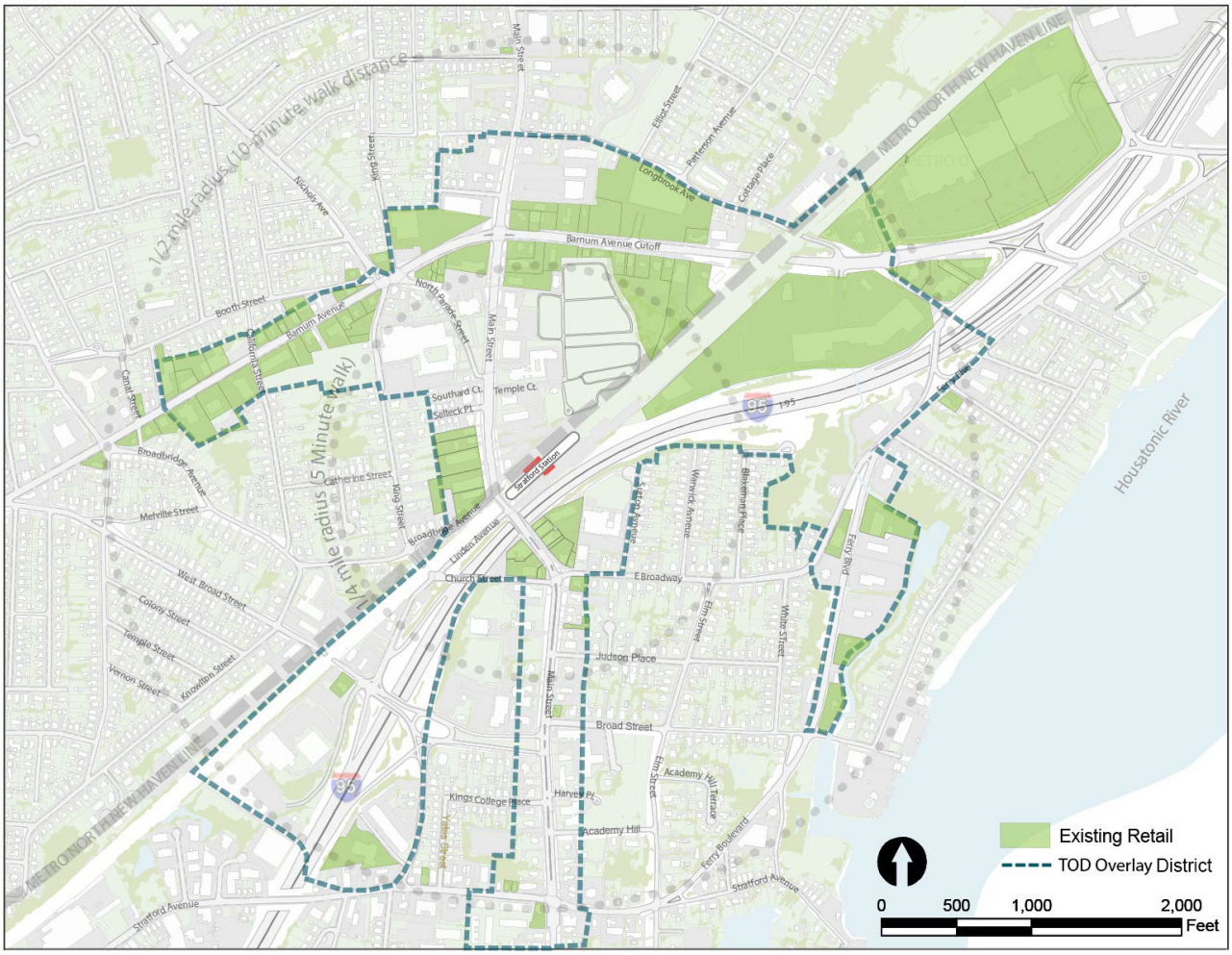


FIGURE 10	EXISTING RETAIL

An analysis conducted for the GBRC in 2014 examined the amount of service/business opportunity that exists within the study area that could be translated into transit-oriented development opportunities. As shown in *Figure 11*, Stratford suffers from a lack of services (or leakage) in the majority of industry types with an excess in only six sectors. The lack of services in Stratford Center reinforces the car-based development currently seen along Barnum Avenue and the suburban residential areas of Stratford. The implementation of TOD strategies will facilitate the shift to pedestrian-based retail development allowing commercial developers to respond to the current leakage of retail sales from Stratford to neighboring communities.

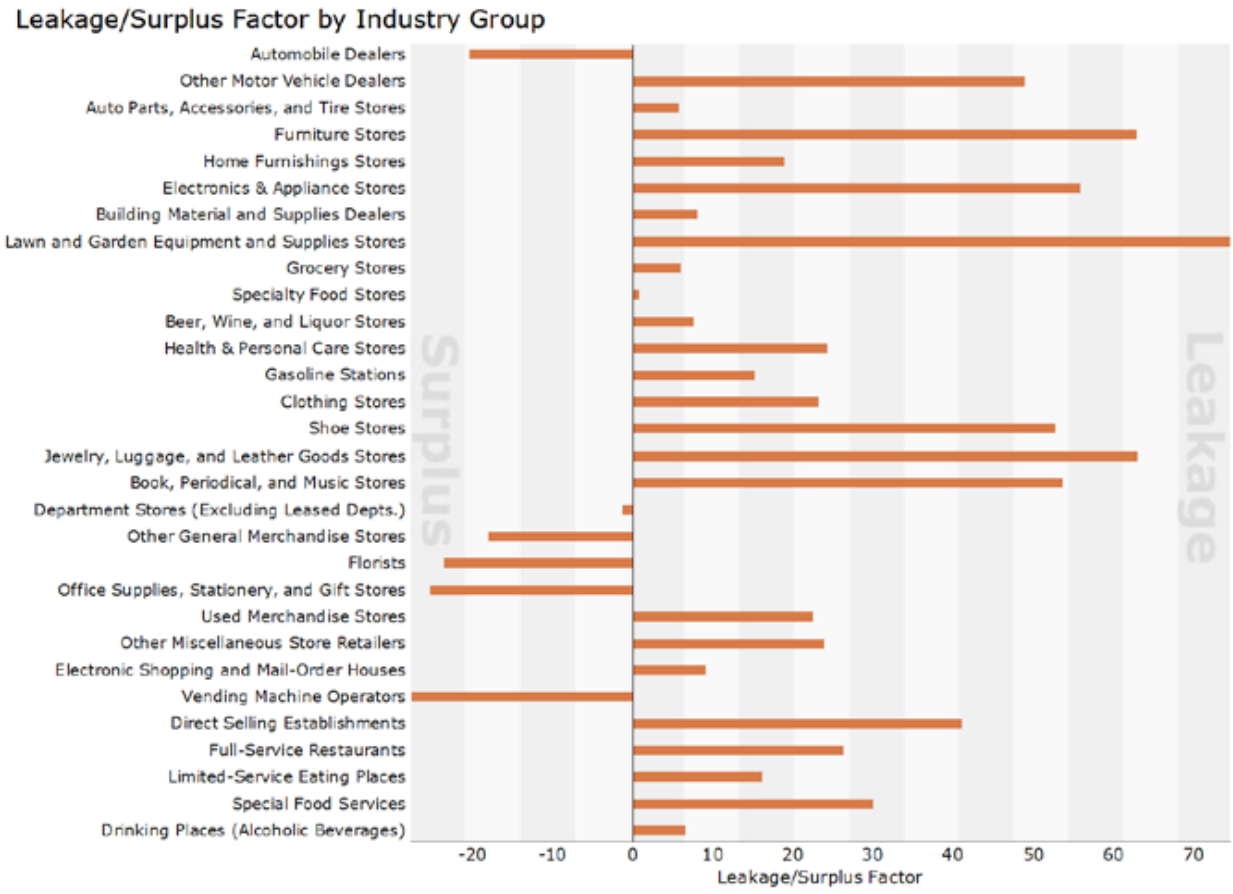


FIGURE 11 | TOWN OF STRATFORD RETAIL LEAKAGE/SURPLUS

There are six retail strip centers in Stratford containing big box- or grocery-anchored retail, five of which are within a mile or two of the Stratford Railroad Station. These centers draw consumers away from the downtown because of their convenience and ease of parking. Major retailers such as Walmart, Staples, Home Depot, and Burlington Coat Factory, along with area grocers, generate retail spending outside of the Stratford Center area. The Center and area around the Stratford Railroad Station provide space for smaller retailers, restaurants, and services.

Current retail rents are marginal in their ability to support new commercial development. Stratford retail rents average $14.12 per square foot for buildings less than 40,000 square feet with a relatively low availability of 7.5% and $17.87 per square foot for larger, big box stores with a slightly higher availability rate of 8%. These averages are based on a triple net lease structure where the tenant is responsible for paying their share of tax and operating costs separately (*Source: Costar Properties retail analytics report for Stratford, CT 5/5/15*).

Newer retail developments are achieving higher rents that can support new development. For example, a newly developed complex on the corner of Main Street and Paradise Green Place rents for $25 per square foot on a triple net basis. The potential for additional Main Street and surrounding development is limited by the lack of availability in this area. For example, out of nine current retail listings of available space in Stratford, only four are located in stand-alone locations on Main Street, Barnum Avenue, or other locations within half- mile of the Metro-North Railroad station (*Source: Loopnet online listing service as of 5/4/15 for Stratford, CT*).

2.1.8 THE RESIDENTIAL MARKET

Effective rents for multi-family housing units have increased from $1,200 to $1,600 over the past five years (based on a blended average of studios through three bedroom units) and a positive 12-month absorption of 209 units in the past 12 months (*Source: Costar Properties Multi-family Property Analytics Report for Stratford, CT 5/5/15*).

Along the Metro-North New Haven Line, residential demand has continued to grow in markets such as Stamford and New Haven, with mixed-use areas near mass transit that includes housing, retail, and restaurants increasing in popularity. With the adoption of the TOD Overlay District and design guidelines in Stratford, the study area footprint can capitalize on this increasing demand. Currently one new apartment complex has been developed within walking distance of the Stratford Railroad Station. This 128-unit complex at 1111 Stratford Avenue was reported to have no vacancy as of May 2015 with a rental rate average of $1,508 per month. Moreover, in the 451 units of total inventory in Stratford only a 3.3% vacancy is reported. This is a strong indicator of the desire for residents to live within close proximity of the Stratford Railroad Station and that additional residential units likely could be supported (*Source: Costar Properties, Stratford, CT Inventory Report*).

2.2 THE TRANSPORTATION NETWORK

2.2.1 THE ROAD NETWORK

Stratford Center is a major hub for local and regional transportation activity, playing a central role in the future economic viability of the study area and the town. Major area roadways include Main Street (Route 113), Barnum Avenue (Route 1), and Stratford Avenue (Route 130). Main Street is a major north-south corridor through the center of town with one lane in each direction. It connects the northern and southern residential neighborhoods of Stratford to Stratford Center. Barnum Avenue is a major east-west commercial corridor along the northern portion of the study area. Stratford Avenue is at the southern portion of the study area and travels through areas with industrial uses, retail, and residential apartments.

The existing road network through the study area has been in place since at least the mid-19th century, with the exception of the Barnum Avenue Cutoff and I-95. The existing road network is based on historic cart trails oriented towards central meeting places. Reliance on historical movement patterns has created a web-like road network through much of the study area. Furthermore, much of the infrastructure was based on antiquated technologies resulting in many of today's constraints. For example, the railroad underpass height clearances at Main Street were designed for horse and carriage rather than today's automobiles. Similarly, the rights-of-way are based on historic development patterns where passage was the main consideration, with low volumes rather than the current higher volumes, larger vehicles, and curbside parking. While these rights-of-way help define the charm of the historical district, they also serve to constrain the transportation network's ability to cope with congestion.

The transportation network is more than a collection of roads—it is the availability of multiple modes of travel within and outside of Stratford Center. It encompasses the pedestrian environment (sidewalks, paths, walkways), cycling (bike paths, dedicated bike lanes, cycle-friendly traffic signals), transit services (the amount of service, the routing of services, and the infrastructure to access transit), and the automobile. TOD tends to focus on alternate modes such as walking, cycling, and transit as the preferred mobility option, but the provision of parking and a smooth flowing traffic network clearly provide value.

ROAD NETWORK CONSTRAINTS

Traffic congestion is consistently noted on Main Street, particularly during the PM peak hour in the vicinity of the Stratford Railroad Station. The Main Street passage under the Metro-North Railroad viaduct is constrained in width and limits the number of vehicular travel lanes under the railroad line, acting as a "choke point" for vehicular traffic (see *Photos 1 & 2*). As a result, significant queuing and congestion is seen along Main Street on the northbound and southbound approaches to the Metro-North overpass.

PHOTO 1	MAIN STREET UNDERPASS (VIEW SOUTH)

PHOTO 2	MAIN STREET AT BROADWAY (VIEW NORTH)

Northbound and southbound queues observed on Main Street typically start during the evening commute when outbound trains discharge passengers commuting back from employment centers. At times, these queues block side streets and driveways trying to enter the flow of Main Street traffic. Failing movements exist at the Main Street intersections with the Stratford Railroad Station parking driveways. Minor points of congestion were also observed along Barnum Avenue in the vicinity of Main Street and West Broad Street at the intersection with Linden Avenue.

Detailed analysis of the study area was undertaken through a traffic model to understand the capacity of the roadways and intersections and determine where and when levels of service were below LOS D (i.e. approaching unacceptable levels of congestion and delay). The following intersections were found to be operating at a level of service below acceptable levels (see *Figure 12* or *Appendix B* for more information on traffic modeling):

- Barnum Avenue at King Street/Nichols Avenue/ Essex Place;
- Northbound King Street approaching the station operates at LOS E during both peak periods;
- Southbound Nichols Avenue shared through/ right-turn group operates at LOS E during the AM peak hour;
- Main Street northbound to the station parking driveway;
- The Stratford Railroad Station parking area driveway in-bound left-turn movement from Main Street operates at LOS F during both AM and PM peak hours; and
- Main Street and Linden Avenue exiting from the station parking.

LEVEL OF SERVICE

LOS D This approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.

LOS E This cannot be described by speed alone, but represents operations at even lower operating speeds than in Level D, with volumes at or near the capacity of the highway. At capacity, speeds are typically, but not always, in the neighborhood of 25 mph; flow is unstable, and there may be stoppages of momentary duration.

LOS F This describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. The section under study will be serving as a storage area during parts or all of the peak hour. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.

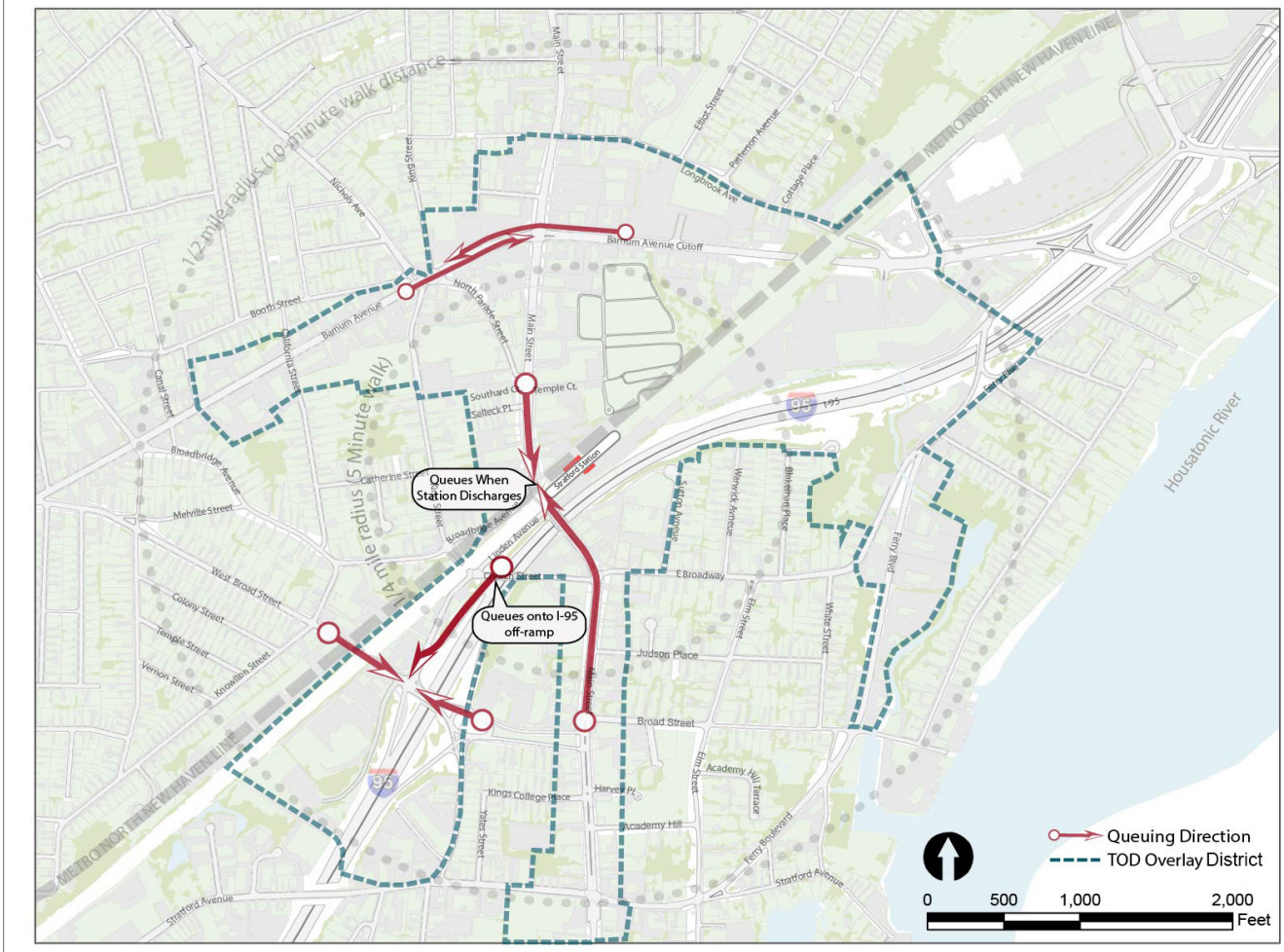


FIGURE 12 | OBSERVED CONGESTION AREAS DURING PM PEAK HOUR

2.2.2 TRANSIT SERVICE

Greater Bridgeport Transit (GBT) currently operates the following five bus lines through the study area: Coastal Link, Route 1, Route 10, Route 16, and Route 23 (See *Figure 13*). The Coastal Link is a major regional bus route connecting Norwalk, Fairfield, Bridgeport, Stratford, and Milford and travels through the center of the study area connecting to the Stratford Railroad Station. The Coastal Link bus route has a 20-minute peak service frequency. Route 1 travels between Downtown Bridgeport and The Dock Shopping Center with no service to Stratford Station and has a 30-minute frequency. Route 10 provides a second connection (along with the Coastal Link) from Stratford to Downtown Bridgeport with 30-minute peak and 60-minute off-peak service, however service does not directly connect to the Stratford Railroad Station. Route 16 has very limited service (8 trips per day) and connects the Town of Stratford (as well as the railroad station) with Trumbull Corporate Park. Route 23 has limited peak trips connecting Stratford to Derby and Bridgeport, however the service does connect to the Stratford Railroad Station. Overall, the current system provides limited service to the railroad station and corridors that connect to Stratford Center.

Bus stops are generally signed and accessible, however they are rarely separated from parking through dedicated bus stopping zones. This can create challenges for boarding and alighting including congestion of traffic lanes and rider discomfort. Conversely, evening bus operations can be delayed at times due to traffic congestion on Main Street in Stratford Center. A detailed review of bus service to Stratford Center and recommendations for future service enhancements is provided separately.

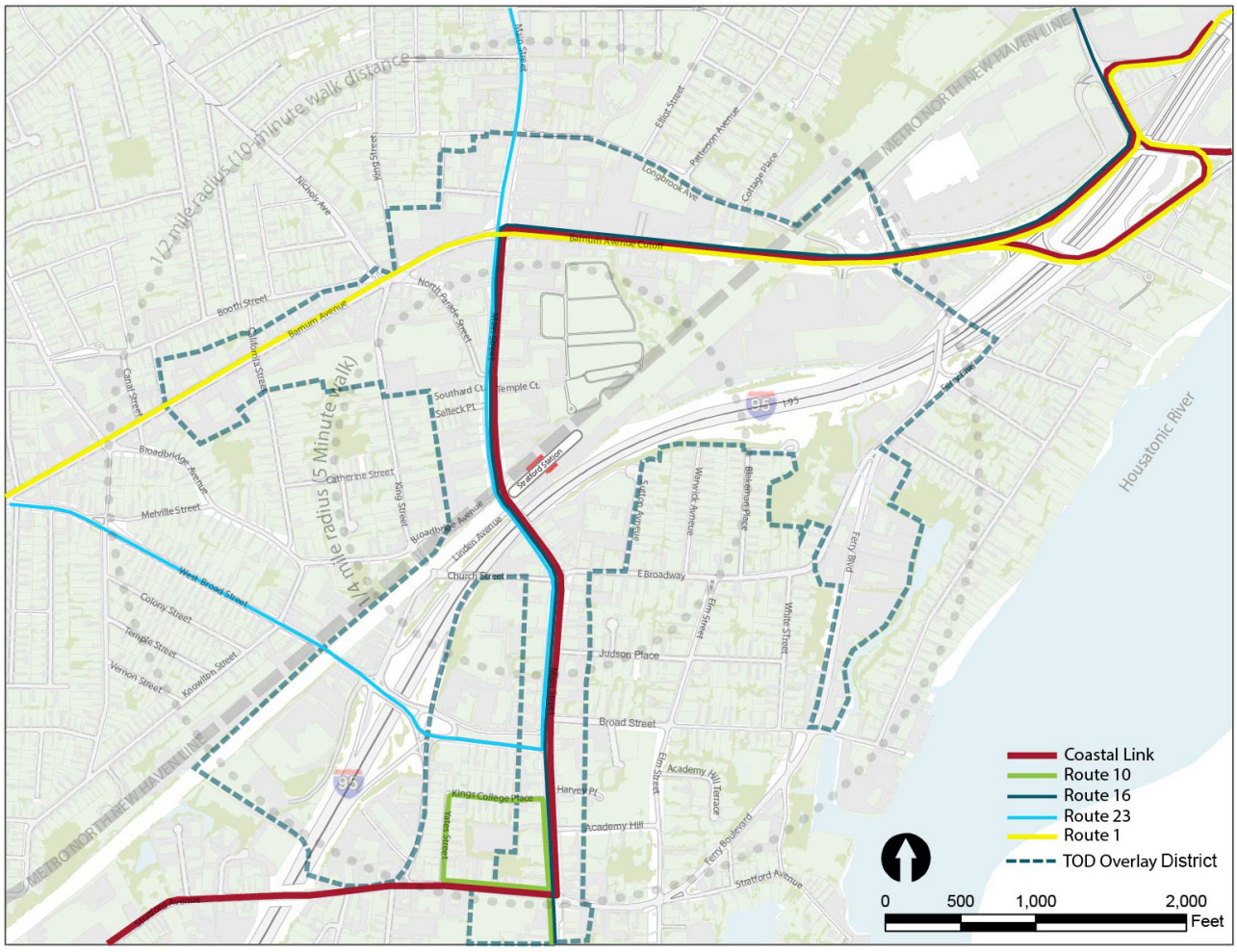


FIGURE 13 | EXISTING BUS TRANSIT SERVICE

When existing passengers' movements are compared to future key development areas, there are some notable gaps in the transit system. These gaps provide key input into the creation of the future transit system. The future transit network must accommodate today's passengers and service future development areas such as Stratford Center.

Figures 14 - 16 illustrate the heaviest boarding patterns within the GBT system including corridors such as Barnum Avenue, East Main Street, Main Street, Park Avenue, Central Avenue, and the University of Bridgeport vicinity. The activity within Stratford is largely confined to Barnum Avenue, Barnum Avenue Cutoff, and Woodend Road.

Mid-day boardings on the routes show similar patterns during the morning peak boardings but at lower volumes. This is partially due to the change in service levels outside peak periods. The evening alighting (or people getting off the bus) patterns tend to be the reverse of the morning peak boardings though Stratford as a destination does not appear to rank highly.

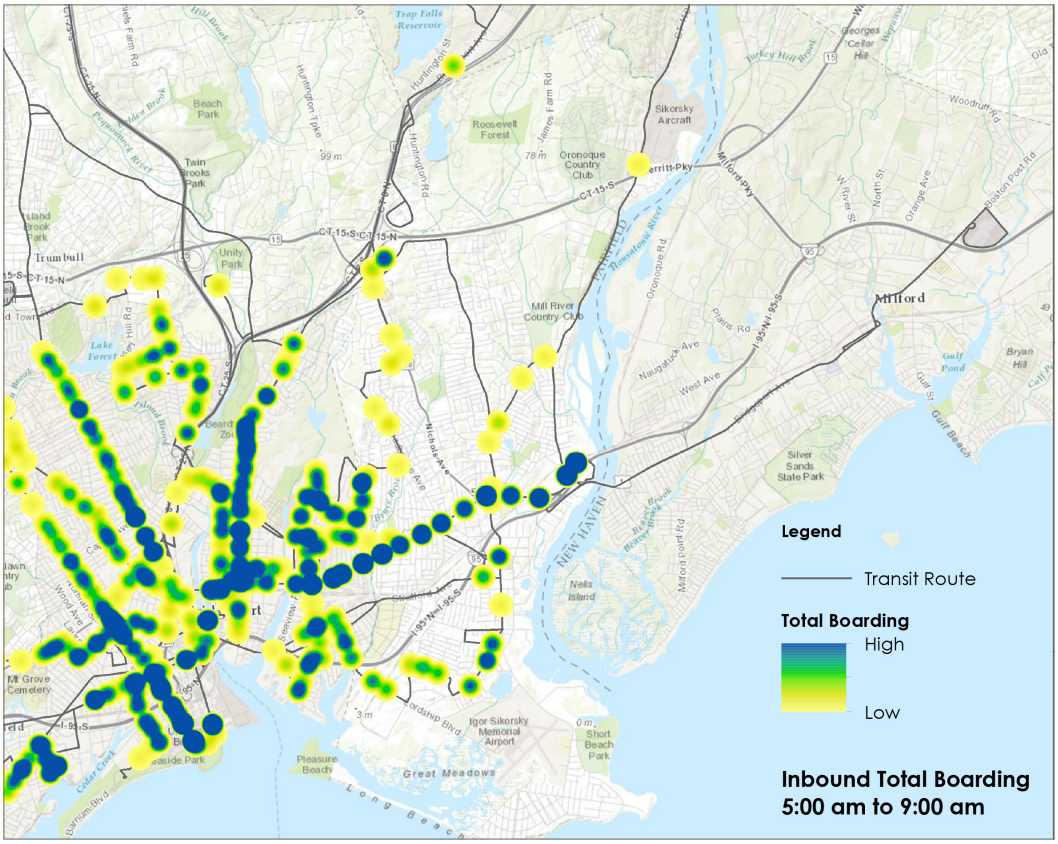


FIGURE 14	AM BOARDINGS TOWARDS DOWNTOWN BRIDGEPORT TRANSIT CENTER

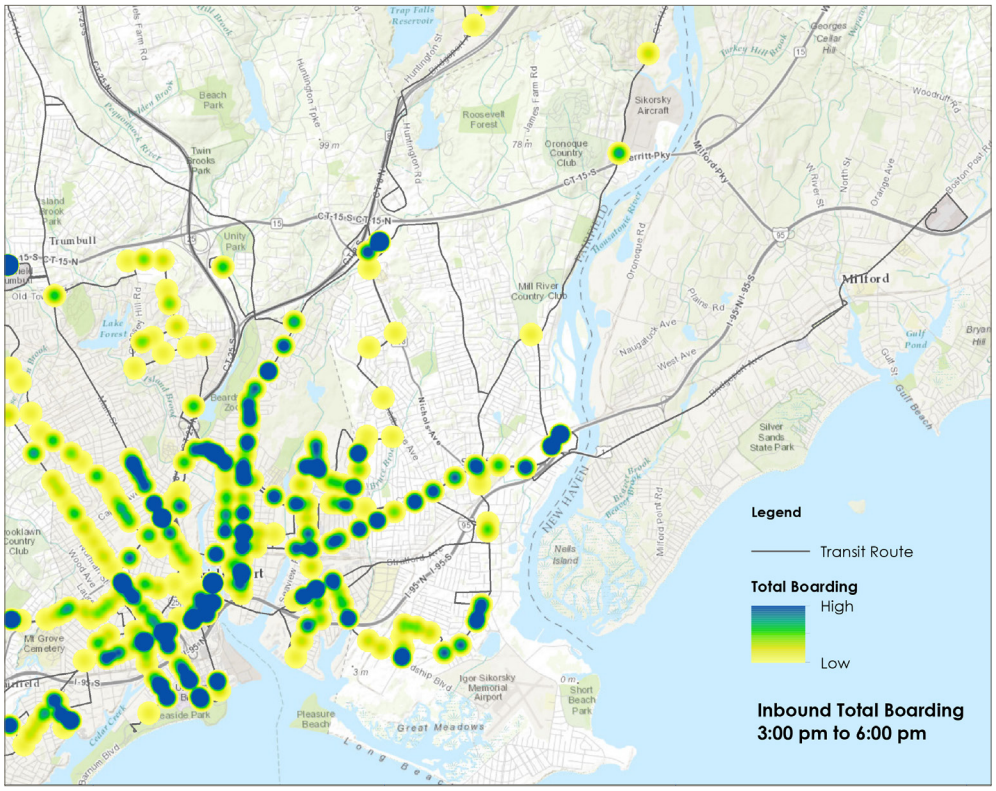


FIGURE 15	MID-DAY BOARDINGS TO DOWNTOWN BRIDGEPORT TRANSIT CENTER

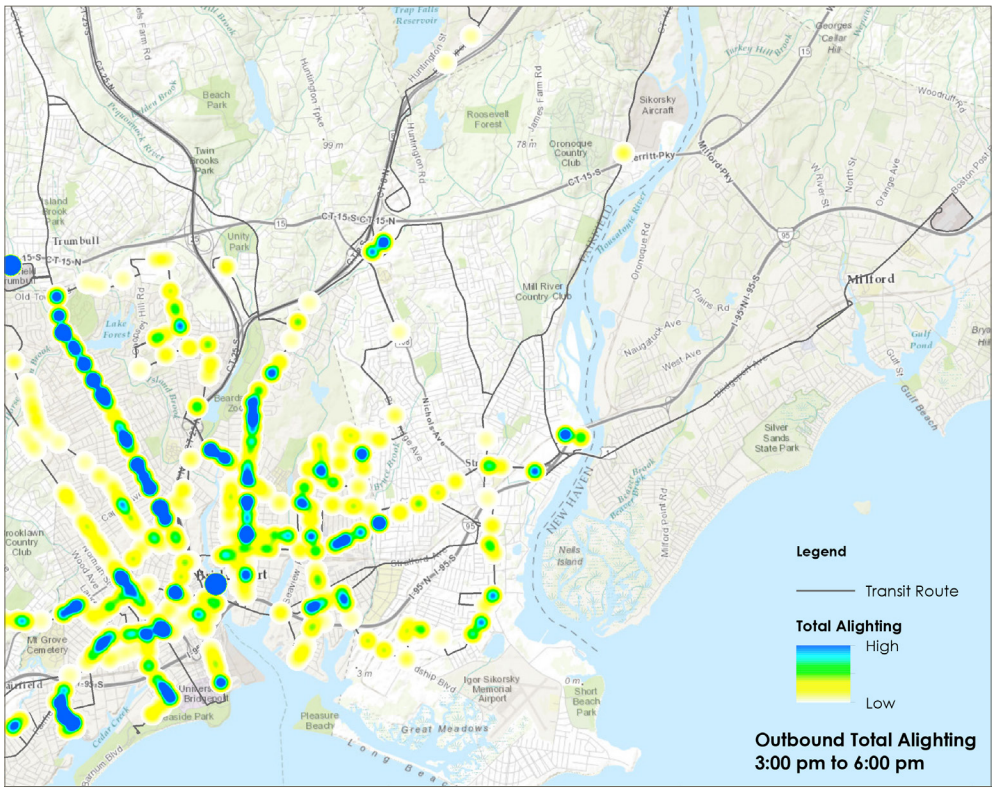


FIGURE 16	PM ALIGHTINGS LEAVING DOWNTOWN BRIDGEPORT TRANSIT CENTER

2.2.3 RAIL SYSTEM

Rail connections to Bridgeport, Norwalk, Stamford, New York City, and New Haven, provided by the Metro-North New Haven Line, are important to the economic growth of Stratford. *Figure 17* shows the relationship between the Stratford Railroad Station to the other stations. Average weekday service includes approximately 40 trains from NYC (northbound to New Haven) and 50 trains to NYC (southbound). The New Haven Line's ridership is currently estimated at 125,000 passengers during a typical weekday and 39 million annual passengers and ranks as the busiest rail line in the United States.

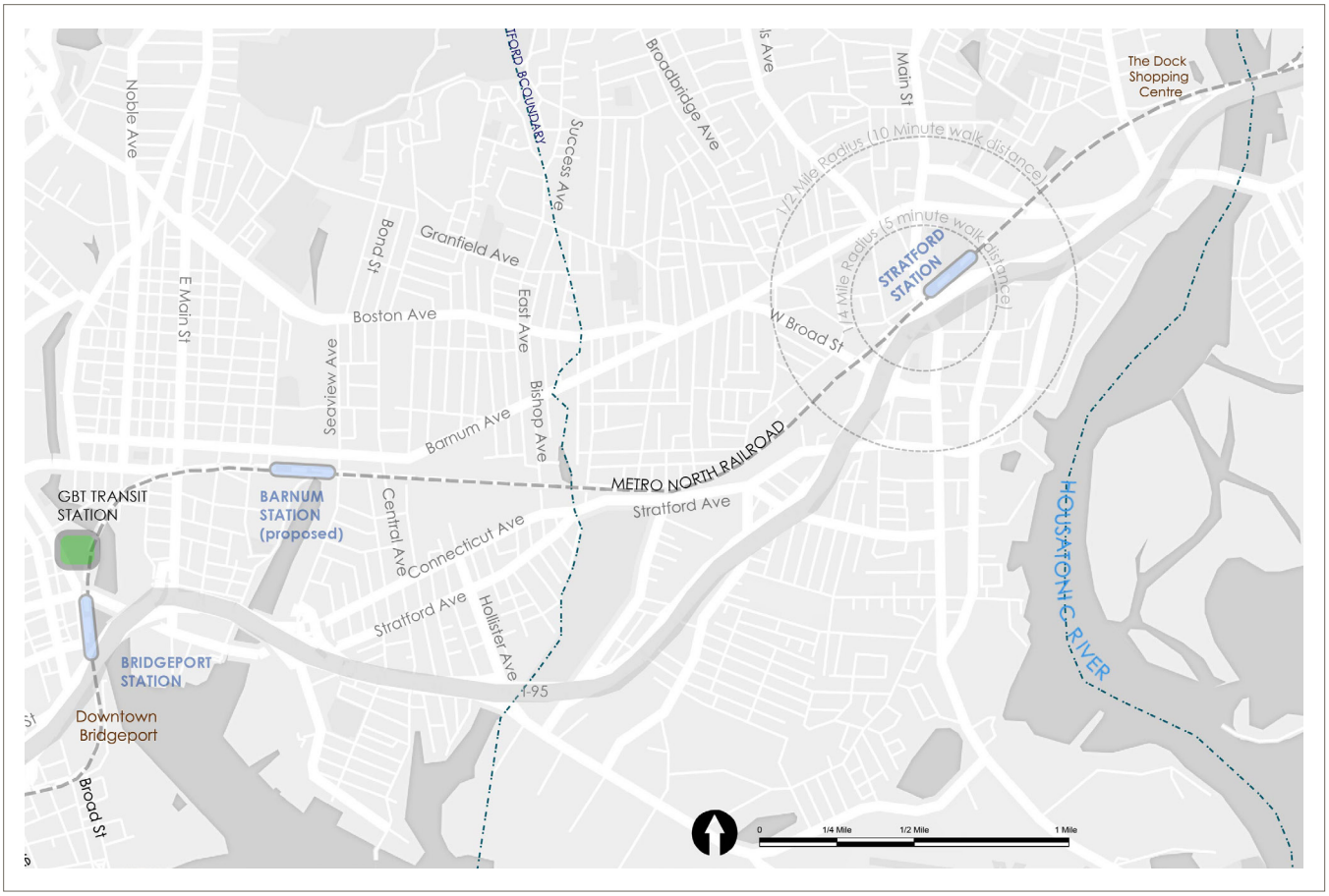


FIGURE 17	METRO-NORTH RAILROAD (REGIONAL RAIL SERVICE)

Passengers primarily access the railroad station by automobile creating high demand for Stratford Center parking and increasing congestion on Main Street. As a result, parking supply for commuters is commonly cited as a deficiency. Although additional parking is currently being provided on the northern side of the Stratford Railroad Station, further improvements will be needed to accommodate existing commuter and local business needs. There is a wait list of approximately 700 people for commuter parking spaces at the Stratford Railroad Station (see *Photos 3 & 4*).

PHOTO 3	SOUTHBOUND TRAIN (TO NYC) & PARKING

PHOTO 4	NORTHBOUND (TO NEW HAVEN) PARKING

A survey of registered users of Stratford's Railroad Station parking shows that the majority of customers are located in northern Stratford. The Lordship area, at the south end of Main Street near Long Island Sound, also has a significant number of customers. Non-Stratford residents from Shelton, Derby, and Milford also use these parking lots. Notably, there are few registered users within the Stratford Center area.

The waiting list for Stratford Railroad Station parking permits greatly exceeds the available parking supply (the red dots in *Figure 18*) reflecting a similar locational pattern to the survey of current users. The goal of TOD is to attract a portion of the transit users to live in close proximity to the Stratford Railroad Station and help sustain the commercial viability of the area. Creating residential opportunities close to the Stratford Railroad Station along with additional off-street parking could alleviate both the excess demand for parking and the need to drive to access the station.

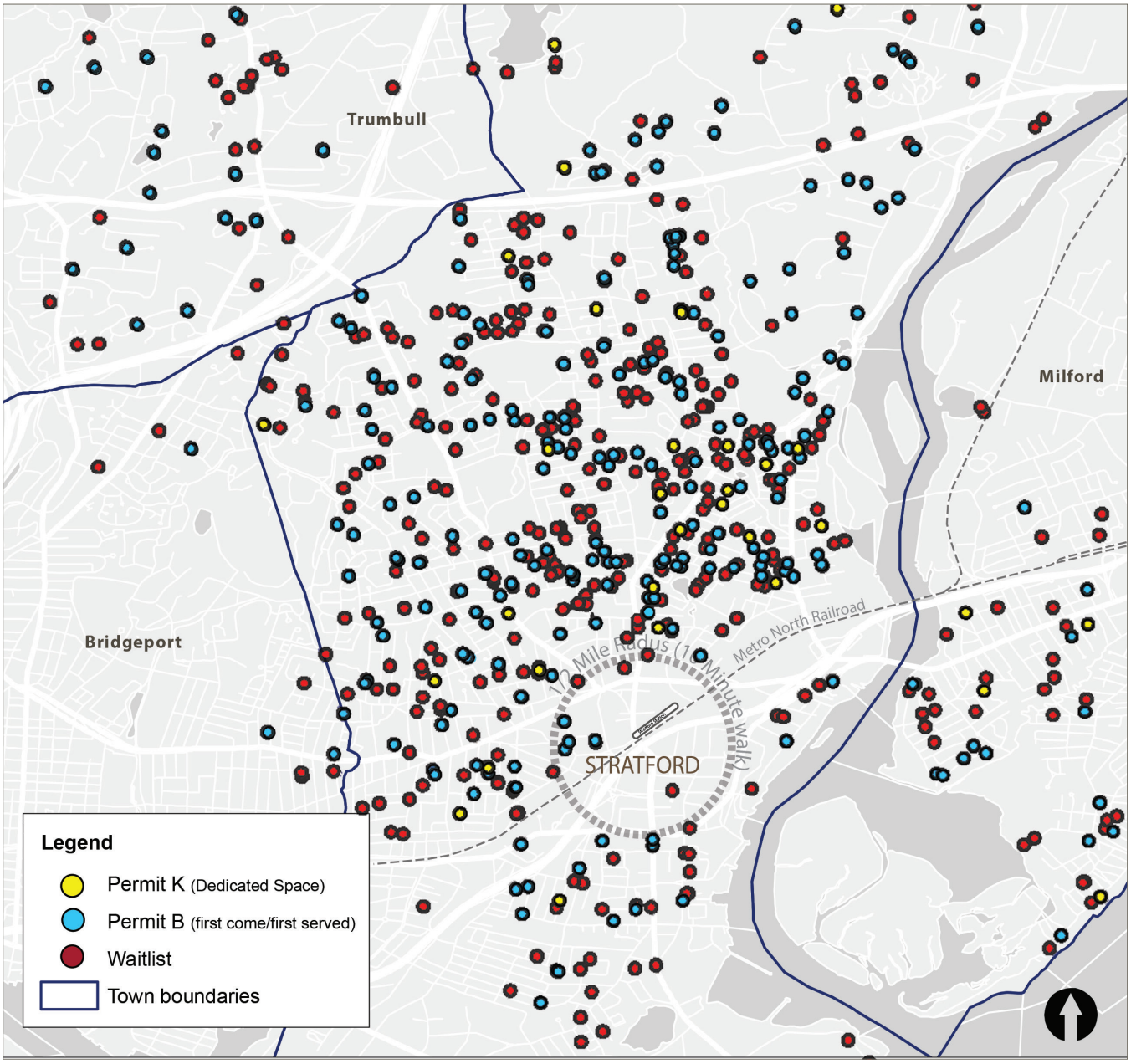


FIGURE 18 | COMMUTER PARKING BY PLACE OF RESIDENCE & PERMIT TYPE

2.2.4 PEDESTRIAN ENVIRONMENT

Pedestrian circulation plays a central role in TOD planning. Stratford Center's current sidewalk coverage provides basic connections between the downtown area and the surrounding neighborhoods and allows commuters to walk to the Stratford Railroad station. Recent renovations to existing sidewalks include upgrades from asphalt to concrete surfacing, however gaps in sidewalk coverage remain and additional crosswalks along primary corridors are needed. During the course of this study, stakeholders identified deficient sidewalk networks and aesthetics as a deterrent to the use of public transit.

The wide cross-sections of Main Street and Barnum Avenue (see *Photo 5*), the low frequency of crosswalk locations, and extended crosswalk distances encourage high vehicular speeds and discourage pedestrian activity. As seen in *Figure 19*, conflicts between pedestrians and vehicles along Main Street and Barnum Avenue have resulted in numerous incidents over a two-year period. However, recent striping improvements have reduced

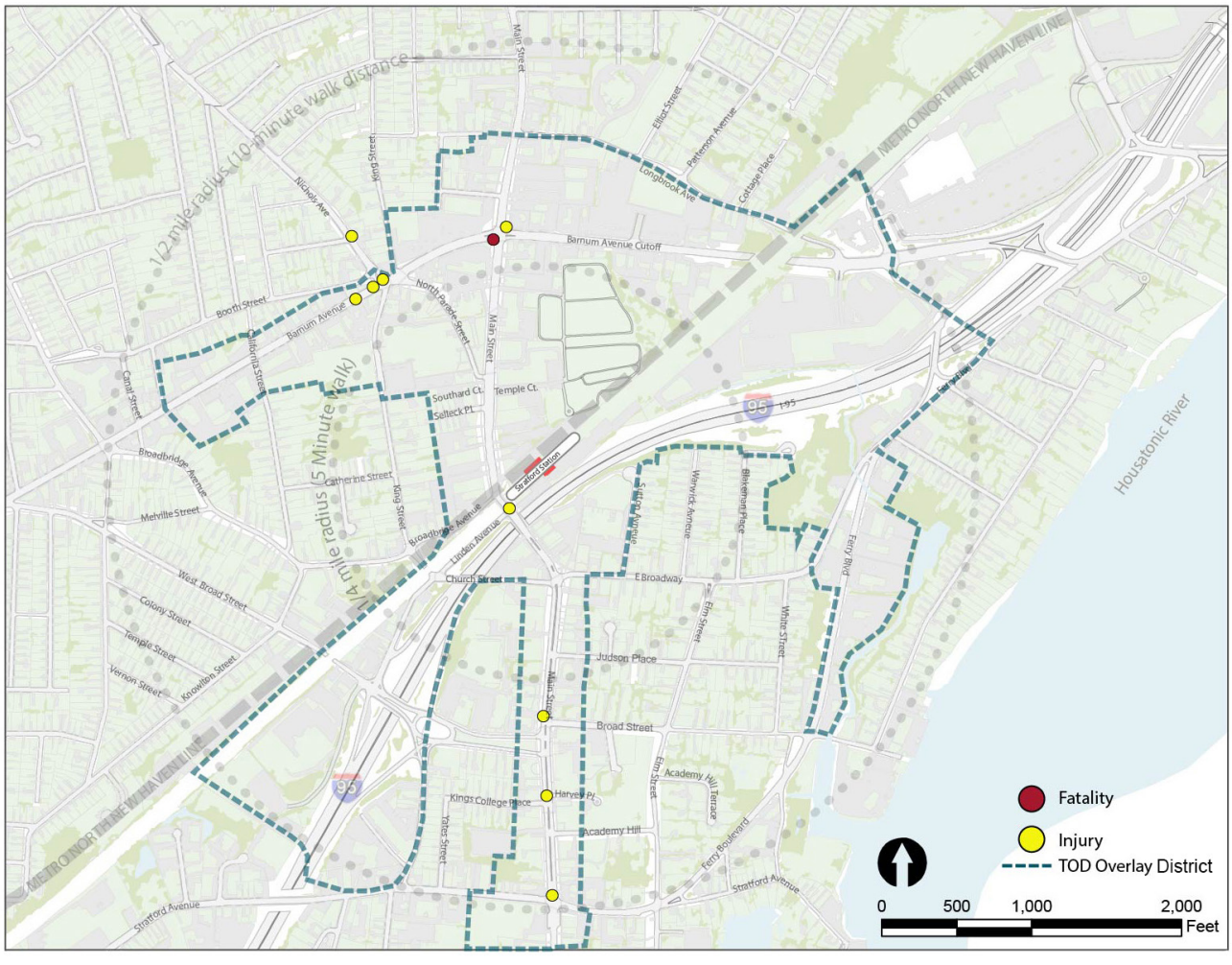


FIGURE 19 | RECORDED PEDESTRIAN/AUTO COLLISION LOCATIONS

lane widths and increased shoulder widths to reduce pedestrian exposure to traffic (see *Photo 6*). On Barnum Avenue (see *Photo 7*), there are non-continuous sidewalks east of Main Street which result in pedestrians using road shoulders to access businesses. West of Main Street, sidewalks on Barnum Avenue are continuous on both sides of the road, however they are frequently interrupted with curb cuts that provide driveway access to off-street parking.

PHOTO 5	BARNUM AVENUE LOOKING EAST AT KING STREET

PHOTO 6	BARNUM AVENUE NEAR MAIN STREET

PHOTO 7	DISCONTINUOUS SIDEWALK ON BARNUM AVENUE

Main Street provides landscaped pedestrian paths both north and south of the downtown area (see *Photo 8 and 9*). Adequate sidewalk coverage is provided on both sides of the street but the conditions vary and are in need of upgrade. Portions of Main Street are also very difficult for pedestrians to cross due to the wide road cross section and relatively high vehicle speeds.

PHOTO 8	MAIN STREET SIDEWALKS NORTH OF STRATFORD RAILROAD STATION

PHOTO 9	MAIN STREET SIDEWALKS AT STRATFORD RAILROAD STATION

The greatest impediments to pedestrian circulation are the Metro-North Railroad and Interstate 95 viaducts that divide the northern and southern portions of the study area and limit pedestrian connections. Four underpasses at Main Street, King Street, West Broad Street, and Ferry Boulevard are the only connecting points for pedestrian and vehicular modes of travel (see *Figure 20*). These connectors, particularly at Ferry Boulevard, lack amenities that would make them more appealing to pedestrians. Additionally there are several large blocks within Stratford Center with few or no internal paths or streets. These blocks are referred to as “super blocks” and force circuitous and lengthy walking routes. These include the Union Cemetery and Center School blocks and the parcels bounded by Main Street and King Street.

Restricted connectivity created by the super blocks and the Metro-North Railroad/I-95 corridors limit the walkable area to only a portion of the theoretical 10-minute walk shed as shown in *Figure 20*. Residential density within Stratford Center is relatively low as municipal, commercial, and institutional uses are most prevalent, including large single-story structures with large at-grade parking facilities. This condition places greater emphasis on a well planned pedestrian network to connect outer residential neighborhoods to Stratford Center through these properties. Finding ways to enhance the north-south connectivity will increase the range of TOD impact. Improvements to Exit 33 on I-95 may provide opportunities to alter traffic patterns as will the improvement of both walking and cycling movements through Stratford Center. Pedestrian links to Stratford Center (see *Photo 10*) may be significantly upgraded with improved lighting and access paths through existing parking areas.

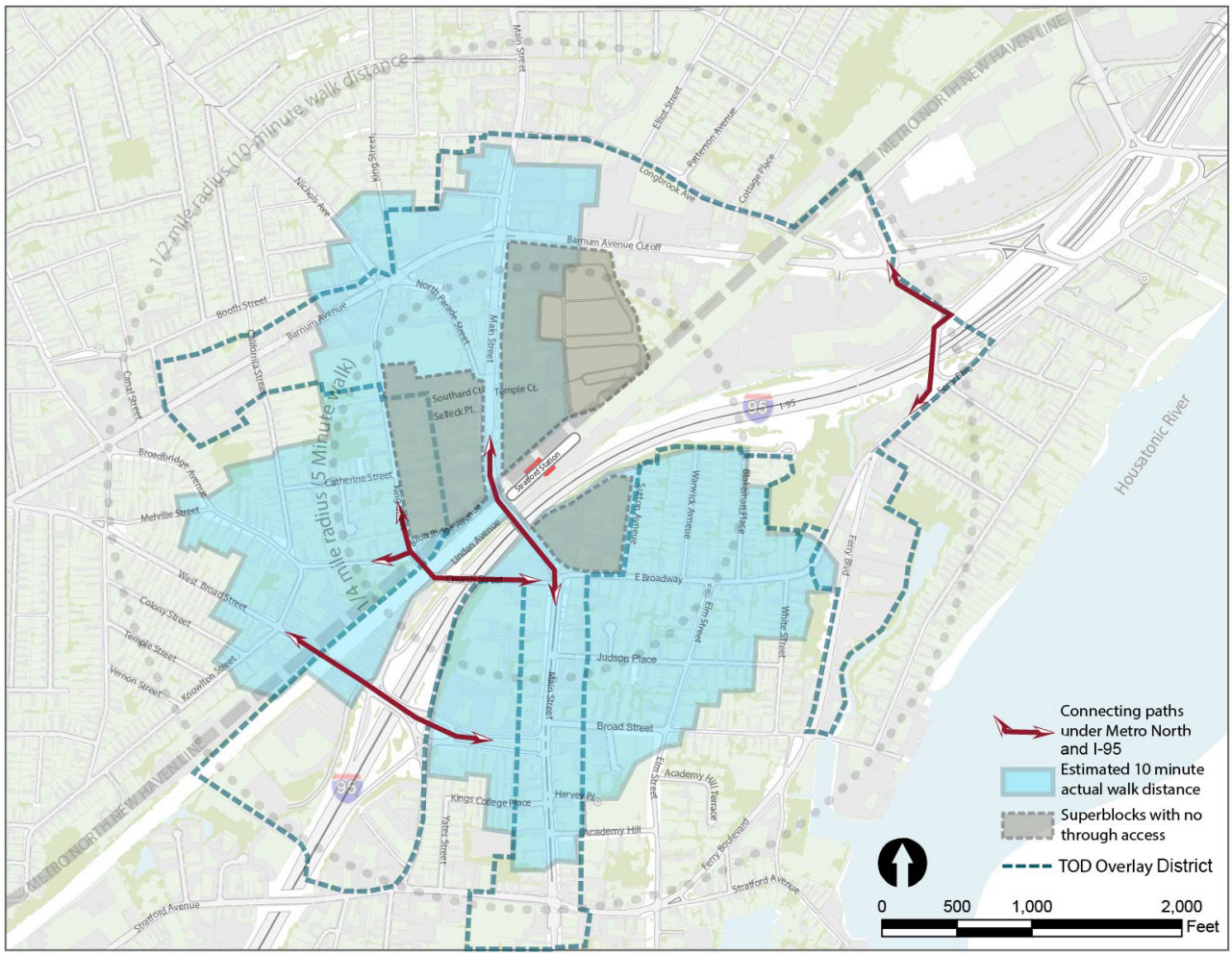


FIGURE 20	ESTIMATED WALK DISTANCE (RADIUS) FROM STRATFORD CENTER VERSUS ACTUAL WALK DISTANCE (STREET GEOMETRY)

PHOTO 10	VETERANS & BARNUM AVENUE CUT-OFF LINK FROM NORTHBOUND (TO NEW HAVEN) STATION PARKING

2.2.5 CYCLING NETWORK

Previous studies, such as the Stratford Pathways Study & Plan, recommend bike lanes and shared-use paths to provide additional options for Stratford Center connections while simultaneously providing access to recreational areas. One of the main elements of this network is the Housatonic Greenway. Currently there is little dedicated bike infrastructure in the study area and study stakeholders have indicated a need for additional bicycling infrastructure for residents and commuters. *Figure 21* illustrates a critical north-south bicycle route with regional connection points within and on the periphery of the study area.

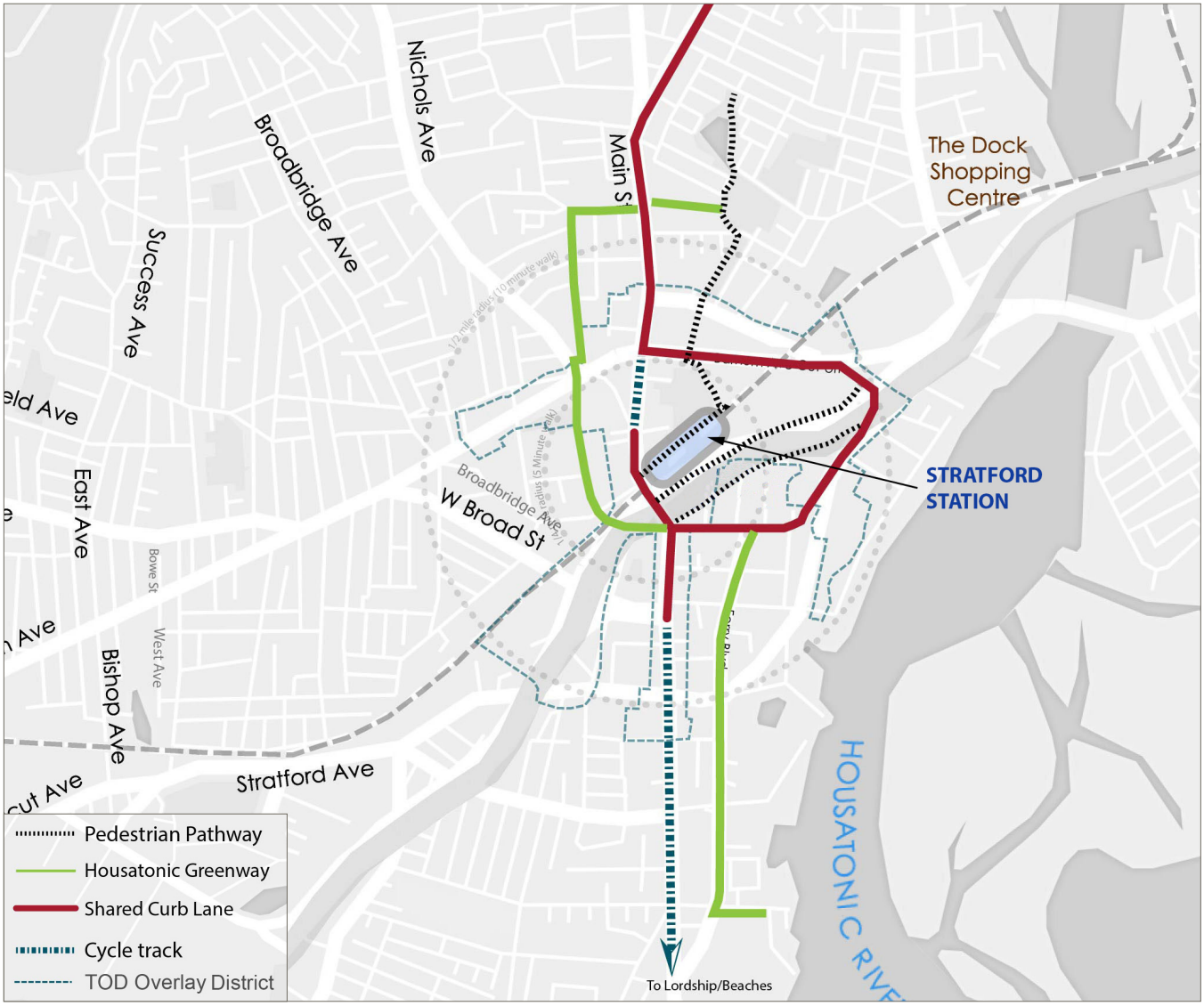


FIGURE 21 | STRATFORD CENTER PROPOSED BIKE AND PEDESTRIAN ROUTES

The Stratford Plan of Conservation and Development recognized the lack of walking and cycling facilities within the Town of Stratford. Although two sections of the Housatonic Greenway have been completed, additional infrastructure improvements are necessary to link the Greenway and Stratford Center. The plan also identified the need for bicycle amenities extending north to Paradise Green and south to the Army Engine Plant site. The southern connection could then be extended to connect to Lordship and the Town's coastal waterfront.

Similar to the pedestrian network, the cycling network is also compromised by the I-95 and Metro-North Railroad viaducts. This study identifies an active modes overlay to create a Stratford Center loop that utilizes key links through the viaducts and intersects with new and existing pathways for greater town-wide and town-center connectivity.

3

- Why Stratford Center? Why now?
- Transit-Orientated Development Defined
- TOD Overlay District
- TOD Precedents
- Stratford TOD Design Guidelines

3| Framework for Investment

3.1 WHY STRATFORD CENTER? WHY NOW?

This study continues the preparation for new and desirable development for Stratford Center. Since 2010, critical steps have been taken to encourage mixed-use development in Stratford Center. Critical infrastructure needs must now be identified to encourage public and private investment in Stratford Center.

3.2 TRANSIT-ORIENTED DEVELOPMENT DEFINED

This study investigates the opportunity to implement transit-oriented development in Stratford Center. TOD is a pattern of urban planning in which land uses and transit access are designed to support each other. Transit is often referred to as an “interrupted pedestrian journey”; therefore the facilities at either end of the journey are critical in creating support for both the urban environment and the use of transit within a TOD. Buildings are compactly organized near a transit hub or along a transit corridor to enable a larger portion of the population to utilize transit.

Pedestrian-oriented design of the area enables easy access for residents and businesses to and from the transit stops. Businesses typically benefit from the pedestrian activity around a transit stop if they are within a 5-minute walking distance of the stop (about a quarter mile), and residential uses can access transit easily if they are within a 10-minute walk (about a half mile) of the stop. The concentration of activity around a major transit stop can support local businesses and create centers of activity and vitality. TOD allows access to a broad network of jobs without the need for a personal vehicle as the primary source of transportation, reducing the number of employment related commuter trips. Pedestrian-oriented strategies that support TOD include sidewalks, high quality streetscapes, and buildings that are oriented to sidewalks. Streets should include traffic-calming measures to slow the speed of traffic and to increase pedestrian safety.

Bicycle amenities serve another vital component in TOD planning. Bicycle connections in the form of multi-use paths and dedicated lanes allow people from even greater distances to access transit services. Bicycle parking facilities at transit stations are important infrastructure considerations and may include secure racks or bicycle garages. These facilities encourage active lifestyles and are a source of easily accessible recreation. Encouraging bicycle use also helps to resolve the problem known commonly as the “last mile solution” - getting people to embrace alternatives to the personal automobile for the last connection between transit and their destination.

3.3 TOD OVERLAY DISTRICT

An ordinance for a TOD Overlay District was approved by the Town of Stratford's Zoning Commission on March 31, 2015. The purposes of the TOD Overlay District are to encourage pedestrian-oriented development, reduce auto dependency, and support a range of housing options while maintaining the existing historic character of Stratford Center. As an Overlay District, development as a TOD is voluntary—a property is not automatically subject to the TOD Overlay provisions. A property owner or developer may renovate a property under the provisions of the underlying zone or may utilize the provisions of the TOD Overlay District through the Special Case approval process. Any parcel wholly or partially within the zone's boundary is eligible for the designation.

Design guidelines include building types oriented to pedestrian scale, the use of visually interesting, high quality building materials, and comprehensive signage plans. Architectural details and design elements that avoid large monotonous building mass by dividing facades into the appearance of multiple storefronts are encouraged. Infill development should emulate the height, look, and feel of adjacent structures to further support the creation of a village-type atmosphere. The TOD Overlay District will guide the future development of Stratford Center and be consistent with the Town's vision and goals. The ordinance is discussed in greater detail herein.

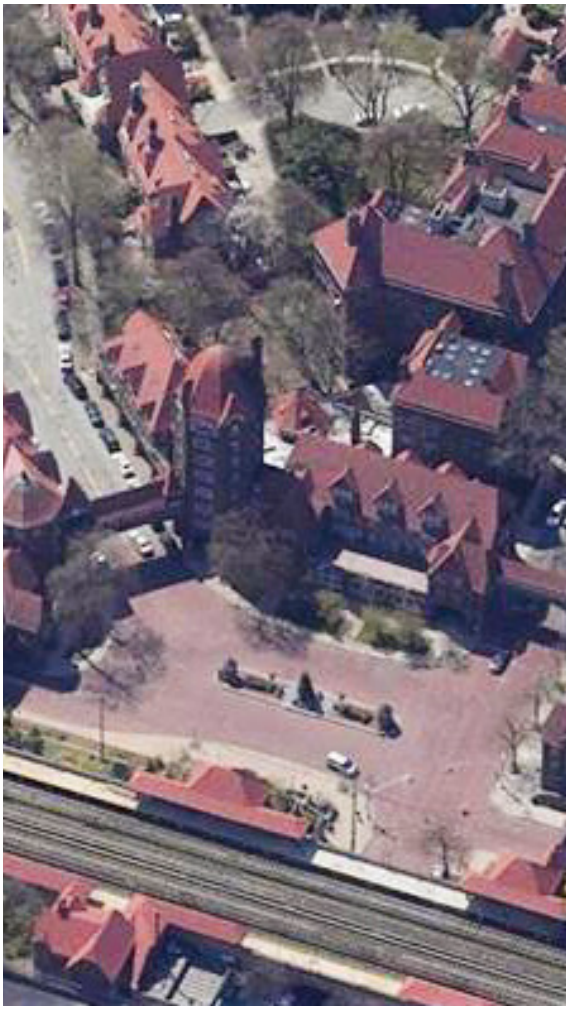
3.4 TOD PRECEDENTS

ORENCO STATION

Orenco Station is a new mixed-use community in a suburban area, built along a new light rail line connected to the City of Portland, Oregon. The light rail connection allows residents to commute to employment opportunities within Portland, which enabled compact residential development within walking distance to the new rail station. The residential development offers a variety of housing choices including apartments, town houses, and compact single-family detached housing. There is also a small mixed-use area with retail on the ground floor and apartments above. The retail area is designed as a pedestrian-oriented main street with apartments on upper floors. The entire area is designed with walkable streets to facilitate access to the station and to create a strong neighborhood character.

FOREST HILLS

The Forest Hills station has a public square with small shops and offices. There are apartments above the shops and on adjacent streets. In order to allow the maximum number of individuals to have easy access to transit, the community's tallest structures are located close to the station. Streets transition to attached housing including townhouse-type layouts and duplexes. The streets, sidewalks, and front yards are designed throughout the area to encourage walking and pedestrian comfort. As a testament to its enduring community-oriented design, it was named Best Community in 2007 by Cottage Living Magazine, over 100 years after its inception.



WYANDANCH RISING

Babylon, New York recently undertook a process to create a large TOD development adjacent to Long Island Railroad's Wyandanch Station. The plan contains linear greenways that expand outward from a central plaza that will connect housing, retail services, and municipal services. The town controls 80% of the first phase (approximately 40 acres with a goal to create up to 1,050 new dwelling units along with office, retail, and civic space). The total project is anticipated to be up to 100 acres in area.

This project has parallels to Stratford with a focus on a railroad station that was surrounded by a large number of brownfield sites and a 5-lane suburban arterial cutting through the site. Wyandanch has greater challenges, however, as an area of significant decline with no public water or sewer access. The goal will be to create a walkable community with an emphasis on active transportation modes through improved infrastructure for walking and cycling along with reductions in road capacity (*Source: Long Island Press.com*).

3.5 STRATFORD TOD DESIGN GUIDELINES

With a population of 51,000 residents, the Town of Stratford can support its own vibrant TOD—offering a traditional and walkable New England-style village. The location of a major regional commuter railroad station in the center of town, potential for strategic infill development, large potential catalyst sites, public support, and a town moving forward with the logistics to allow change all combine to foster TOD. The recently approved TOD Overlay District and Design Guidelines, adopted by the Town of Stratford's Planning Commission and Zoning Commission, provide a framework for the development of those parcels, emphasizing the vital role that Stratford Center plays in the economic and social future of Stratford.

The Zoning Regulations and Design Guidelines describe the general disposition of buildings on a property, parking, and streetscape improvements. The guidelines are intended to promote a cooperative and creative approach to design between the Town and the development community that serves as a basis for dialogue during the site development approval process. Some of these guidelines are highlighted in this section; the full ordinance is included in *Appendix A*.

3.5.1 ARCHITECTURE

Buildings should avoid uniform massing and the appearance of large mundane building blocks through the use of articulation and materials to resemble an assemblage of smaller structures. Materials and massing for new infill buildings should reflect and be compatible with the historic architecture throughout Stratford Center. Blank walls facing a public street or right-of-way are discouraged, with ground floor facades having a minimum of 50% clear window area (see *Photo 11*). The building height adjacent to the Stratford Railroad Station would increase from 45 feet to 60 feet with a set back from neighborhood streets for an appropriate transition.

PHOTO 11	GROUND FLOOR RETAIL FACADES

3.5.2 STREETSCAPE

The network of streets in Stratford Center is a modified grid with several radial focal points resulting from three centuries of development. Within this grid, the streetscape defines the space where building facades, the public realm, and pedestrian and vehicular corridors join. The pedestrian network is given priority by reducing curb cuts on sidewalks through the use of alternate access points. Main entrances to buildings are connected by sidewalks and enhanced by open space and landscaping (see *Photo 12*). Surface parking is located to the rear of buildings, rather than in front, and off-street shared parking is encouraged in order to accommodate both commuter needs as well as commercial customers. A resident's access to transit service is greatly enhanced by quality sidewalk conditions and lighting. Streetscape guidelines must support these principles and interconnected walking and cycling networks.

PHOTO 12	INVITING SIDEWALK WITH AMENITIES AND CURB-SIDE PARKING

MAIN STREET & BARNUM AVENUE

Three basic configurations should be considered for streetscape design along Main Street and Barnum Avenue. Each is intended to optimize right-of-way utilization for the benefit of pedestrians, transit, vehicles, and businesses.

Narrow Frontage: 11-foot wide frontage creates a 7-foot wide sidewalk with street furniture in a 4-foot strip that acts as a buffer to the roadway and can be fitted with trees and amenities. *Figure 22* illustrates a typical street cross section.

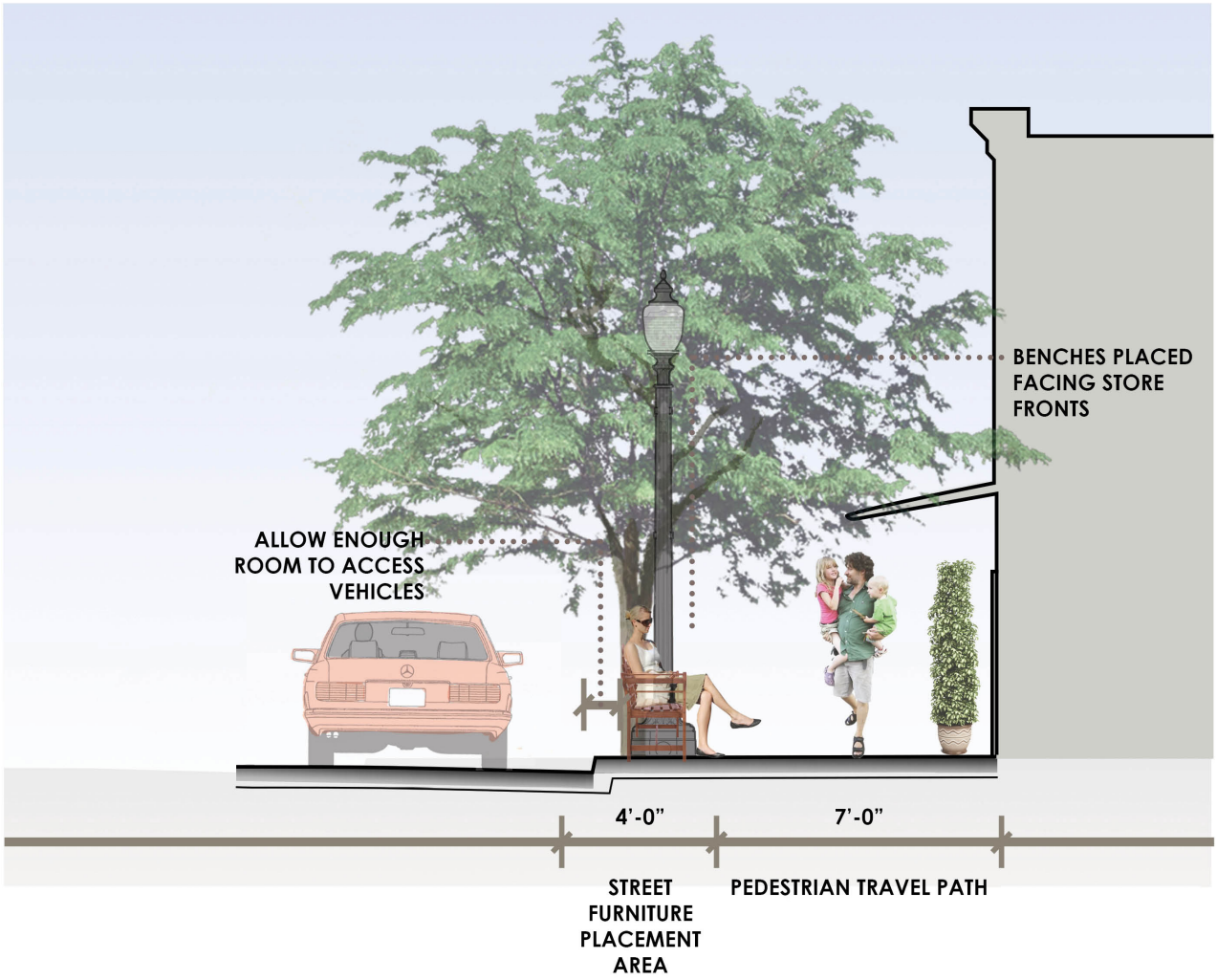


FIGURE 22 | NARROW SIDEWALK SECTION SUITABLE FOR DOWNTOWN RETAIL

Wide Frontage (Retail Location): 19-foot wide frontage in retail areas that allows a wider boulevard section (increased to 6 feet) with seating areas, patios, and store displays as illustrated in *Figure 23*.

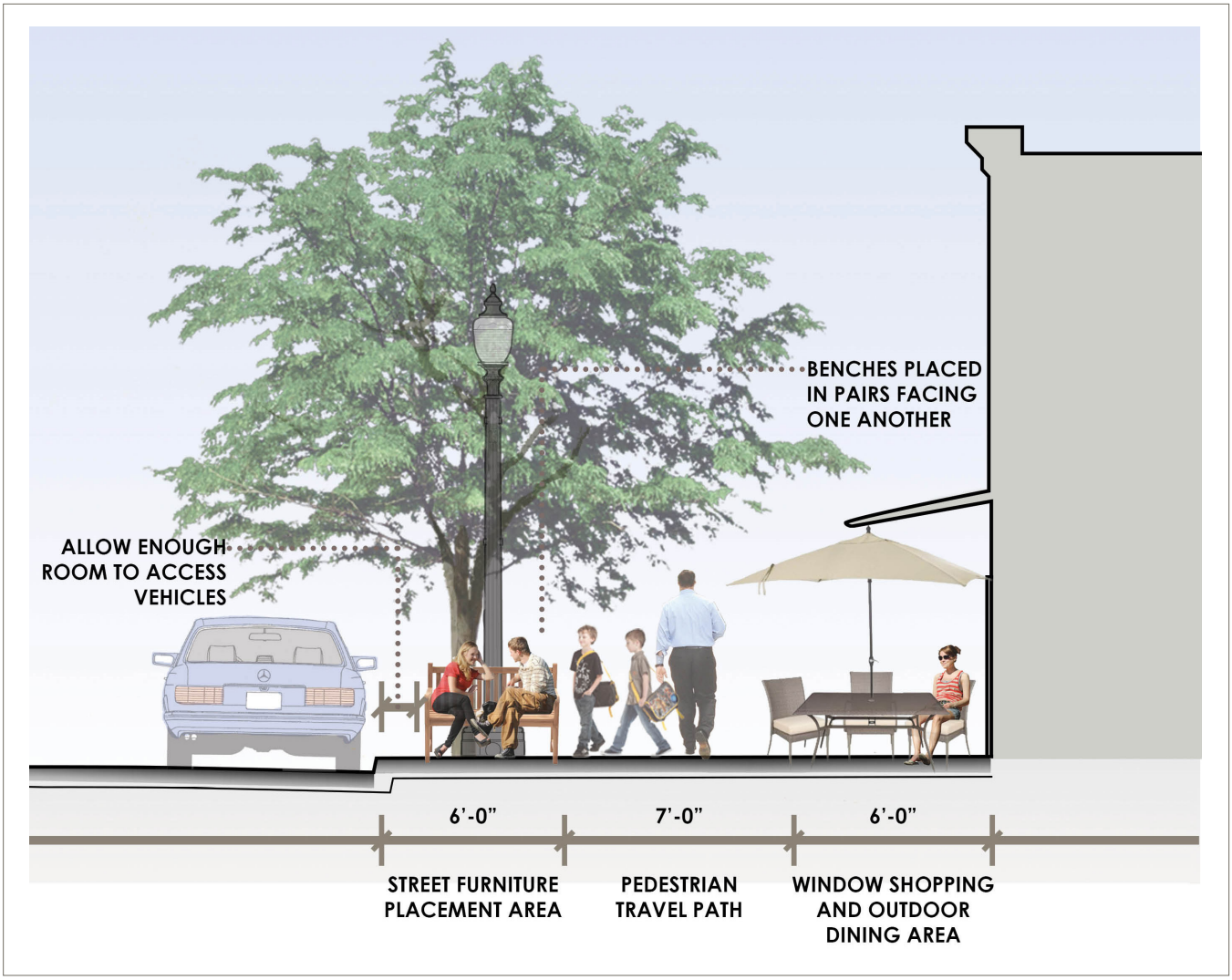


FIGURE 23 | WIDE SIDEWALK SECTION SUITABLE FOR DOWNTOWN RETAIL

Wide Frontage (Non-Retail Location): In areas where there is no retail, civic landscaping can be used to augment an extra-wide sidewalk area as illustrated in *Figure 24*.

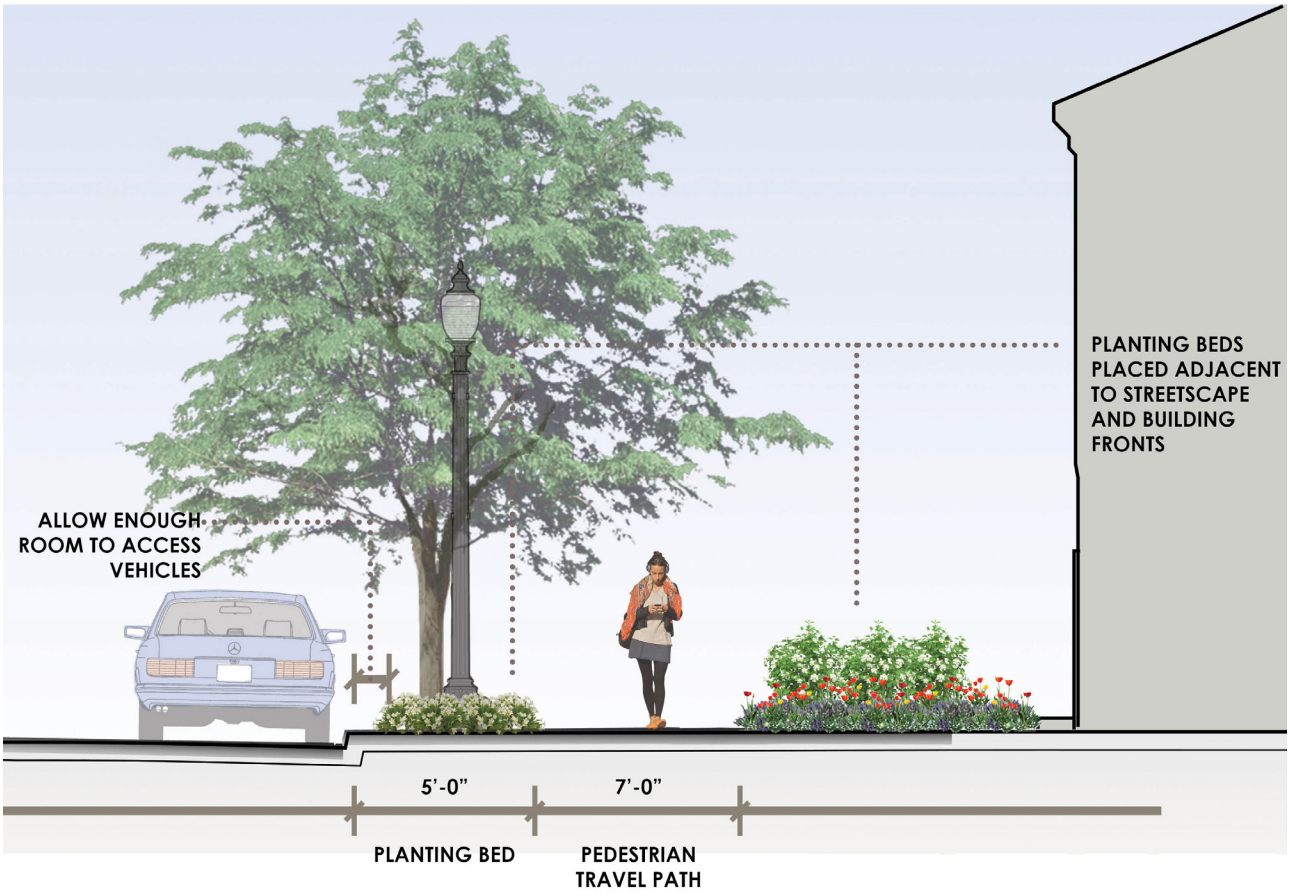


FIGURE 24 | WIDE SIDEWALK SUITABLE FOR NON-RETAIL AREAS


Reality Cafe
Phone

4

- TOD Clusters
- TOD Enabling Infrastructure Improvements
- Catalyst Sites
- Brownfield Sites
- Implementation Timeline

4| Implementing TOD in Stratford

Stratford has recently completed a number of plans including the Stratford Transit Centered Development Feasibility Study and the Plan of Conservation and Development (POCD), as well as the recently-adopted TOD Overlay District all of which prepare the Town of Stratford to begin TOD implementation in Stratford Center. In order to optimize implementation, the project team has identified three TOD Cluster areas for investment to further revitalize Stratford Center. In addition to the three TOD clusters, three potential catalyst sites have been identified which may be used to initiate development momentum and attract future private investment.

4.1 TOD CLUSTERS

The three TOD clusters were identified to provide a framework to the Town of Stratford as future public and private investment opportunities materialize. The intent is to direct development towards specific areas to promote TOD and catalyze future development. All three clusters are within the 10-minute walkshed of Stratford Center (see *Figure 25*) and are identified as follows.

1

STRATFORD CENTER CLUSTER (CLUSTER A)

This cluster includes the area immediately surrounding the Stratford Railroad Station, focusing on Main Street north and south of the rail viaduct.

2

BARNUM AVENUE/ MAIN STREET CLUSTER (CLUSTER B)

This cluster includes the 1000-1100 Block of Barnum Avenue, Main Street north and south of Barnum Avenue, and the western portion of the Barnum Avenue Cut-off.

3

WEST BARNUM AVENUE CLUSTER (CLUSTER C)

This cluster is further afield, encompassing the portion of Barnum Avenue from King Street to Broadbridge Avenue.

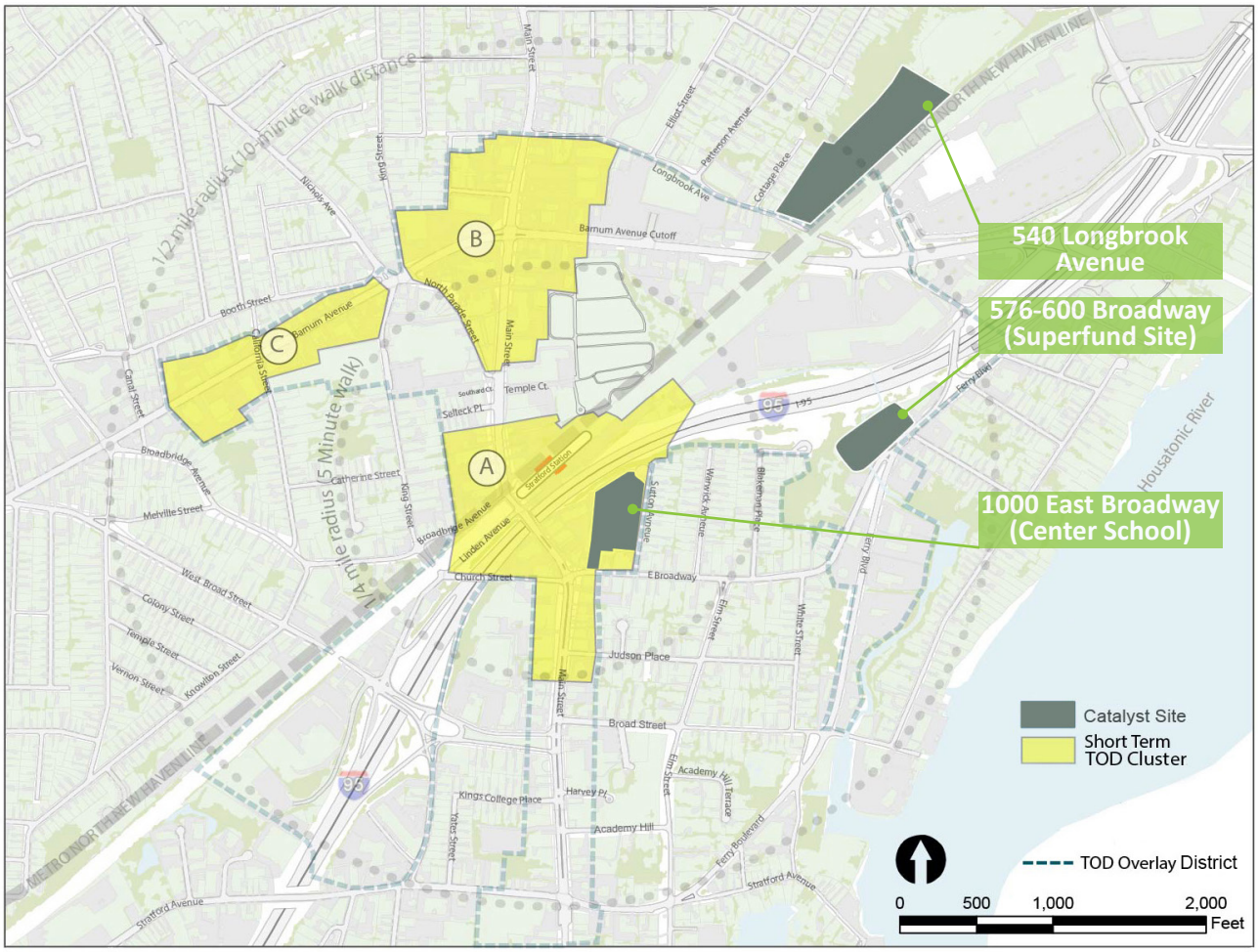


FIGURE 25 | SHORT-TERM TOD CLUSTER AND CATALYST SITES

In addition to parcel development, TOD cannot be fully implemented without significant investment to the transportation network. To that end, each TOD cluster contains public infrastructure investment recommendations that will be leveraged to unlock private investment and further area development. The TOD clusters target high priority areas where current and future land use patterns, proximity to services, and development potential combine to create optimal TOD conditions. The intent of the cluster identification is to establish priority areas for public sector investment that will increase property values, encourage private investment, and establish a vibrant Stratford Center and TOD district in proximity to the Stratford Railroad Station.

4.2 TOD ENABLING INFRASTRUCTURE IMPROVEMENTS

As previously mentioned, fully developed TOD requires investment and upgrading of the transportation infrastructure network. The associated infrastructure improvements include upgrades to the road network, incorporation of traffic calming measures, pedestrian friendly streetscapes, improved sidewalks and crosswalks, and the installation of bicycle amenities. The concept of complete streets addresses all the aforementioned infrastructure improvements as a holistic approach to re-engineering the street network.

Through the prioritization of TOD clusters it is expected that transportation infrastructure improvements will be initiated within the identified clusters and associated corridors. Improving the transportation network for both vehicles and pedestrians is necessary to attract private investment in TOD areas. These network enhancements, including bicycle/pedestrian amenities, are part of the public domain and as such, improvements will require funding through public investment. The Town of Stratford has already secured State funding for a Complete Streets Improvement Plan for the study area. This plan will identify complete street improvements and assist the Town in pursuing construction funding for implementation.

4.3 CATALYST SITES

Along with TOD clusters, this study identifies potential catalyst sites that may be used to initiate TOD and stimulate future private investment. These are sites that have already secured, or may be eligible for, public funding and are either publicly owned or owned by principals who have expressed a desire to redevelop in accordance with TOD priorities. These sites include 540 Longbrook Avenue, 1000 East Broadway and 576-600 Broadway (Superfund Site) and are depicted in Figure 25. There are also a number of smaller sites that offer potential for redevelopment and are strategically located in close proximity to the Stratford Rail Station or the major intersection of Main Street and Barnum Avenue. Determination of these sites included a general assessment of any known contamination and hazards, the extent of encumbrances, TOD potential, and the potential availability of funding.

A key catalyst site includes, the town-owned Center School site that may provide an opportunity for TOD. The Center School site is approximately 3-acres in area, located within a 5-minute walk to the Stratford Railroad Station, and already programmed for publicly funded remediation work. To assess development potential, a market analysis was conducted for the Center School site to inform the feasibility of TOD and off-street parking capacity. The market analysis will be presented later in this plan, but it should be noted that this is a conceptual analysis and there are no formal development plans for this property.

4.4 BROWNFIELD SITES

Stratford's industrial past has created a legacy of contamination which is identified as a potential barrier to revitalization of the study area. There are numerous brownfield properties in Stratford with many already in the process of assessment and remediation. A number of the identified sites are within or in very close proximity to the previously identified TOD clusters. Once remediated, the sites within the study area will offer excellent TOD potential due to their proximity to the Stratford Railroad Station and relatively large surface areas. Furthermore, future infrastructure investments will greatly increase the current value and development potential of these brownfield sites as the modernization of the infrastructure network is a key factor in attracting private investment.

4.5 IMPLEMENTATION TIMELINE

The TOD plan emphasizes the evaluation of potential redevelopment and the prospective time-frame for implementation. In order to attract investment within the study area, the timing of publicly funded parcel development and infrastructure improvements must generate the necessary interest and leverage private investment. The overarching intent is to prioritize TOD cluster development as well as the accompanying infrastructure improvements such that public funding is used as a catalyst for additional private investment. This plan focuses on three conceptual time frames:

- Short-Term – Implemented within 0-3 years
- Mid-Term – Implemented within 3-10 years
- Long-Term – Implemented within 10 years

As illustrated in *Figure 26*, short-term implementation coincides with the previously identified TOD clusters and is focused within the TOD Overlay District. The medium- and long-term development time-frames are situated on the periphery or outside of the overlay district and require substantial growth emanating from the Stratford Railroad Station before their development potential can be realized. Furthermore, while this study recommendations focus on Stratford Center, it is important to note that actual implementation must be complementary to development throughout the region as market conditions allow.

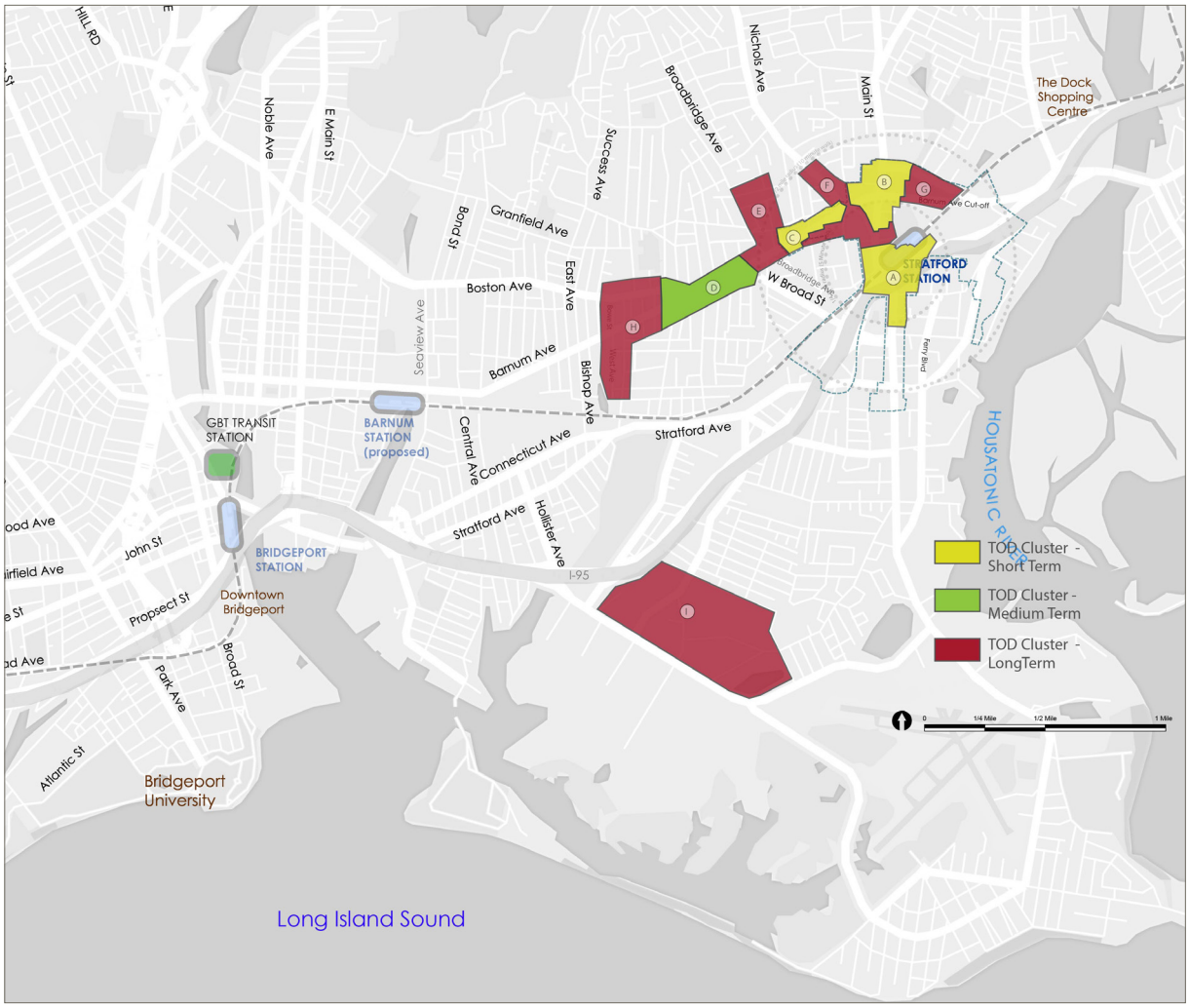


FIGURE 26	SHORT, MEDIUM AND LONG-TERM TOD CLUSTERS

4.5.1 SHORT-TERM STRATEGY (0-3 YEAR HORIZON)

As shown previously in *Figures 25 and 26*, the TOD clusters and related infrastructure improvements discussed in Section 5.0 are categorized in this short-term development group. Two brownfield catalyst sites (540 Longbrook Avenue and 570-600 Broadway), separate from the TOD clusters, have also been included based on the anticipated timing of remediation work and their proximity to the Stratford Railroad Station and larger retail sites.

4.5.2 MID-TERM STRATEGY (3-10 YEAR HORIZON)

The goal of the mid-term plan is to create an additional TOD cluster along Barnum Avenue heading west towards the City of Bridgeport. This grouping features a 1.5-acre parcel on Barnum Avenue that may potentially act as an additional catalyst site to development clusters on Barnum Avenue between Boston Avenue and West Broad Street.

4.5.3 LONG-TERM STRATEGY (10+ YEAR HORIZON)

The long-term development plan is essentially an infill development strategy between the short- and medium-term development areas to create a contiguous TOD zone along Barnum Avenue and Barnum Avenue Cutoff. *Figure 27* show the location of potential development for the 10-year and beyond time horizon.

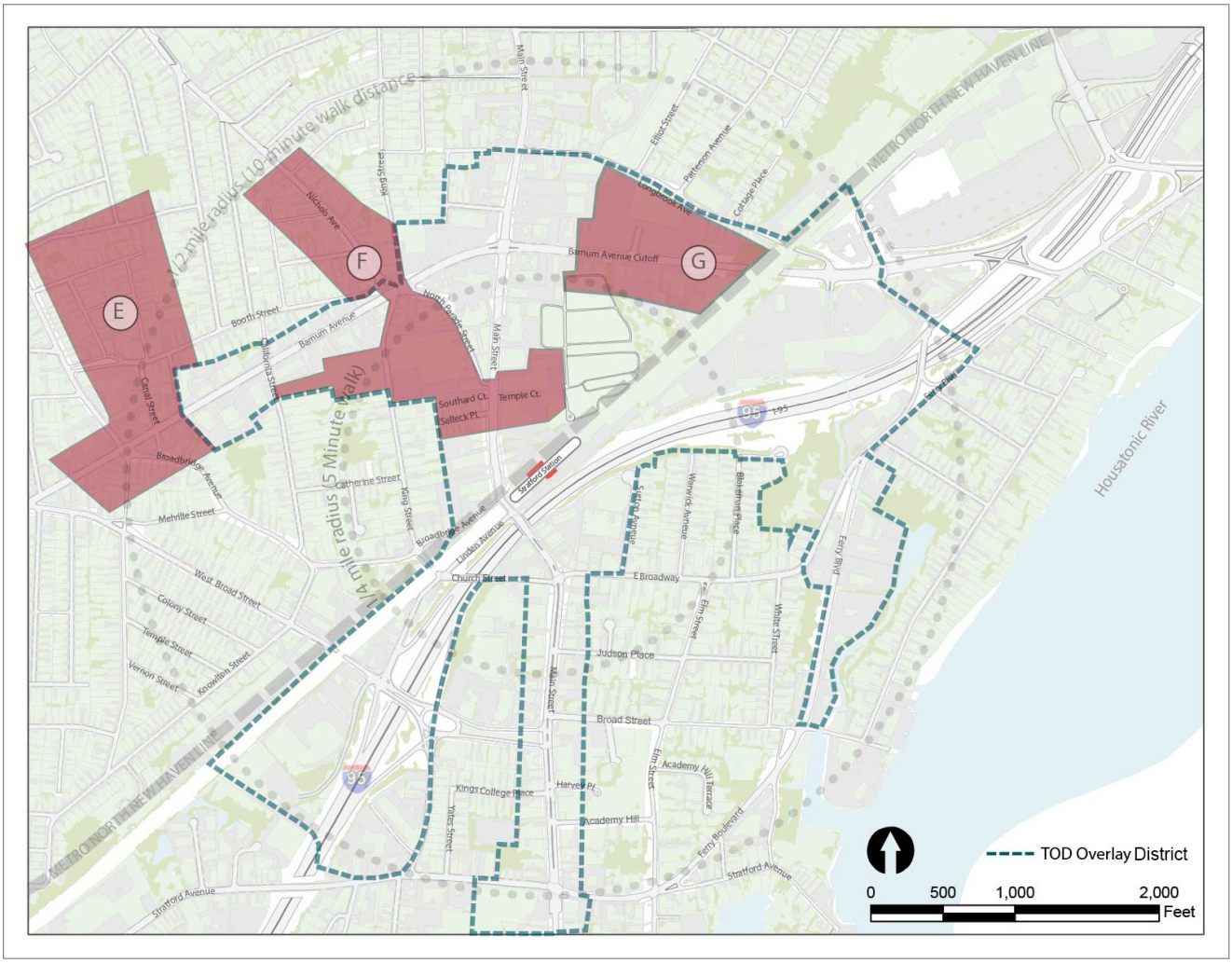


FIGURE 27 | LONG-TERM CLUSTERS WITHIN THE TOD OVERLAY DISTRICT


gbt
GREATER
BRIDGEPORT
TRANSIT
333-3031
BUS STOP
www.gobbt.com
ROUTES
1
CL
16
U-HAUL
$19.95

5

- Public Investment
- Street Network
- Corridor Based Infrastructure Improvements
- Traffic Calming
- Transit
- Active Modes

5 | Infrastructure

Infrastructure includes existing pedestrian, bicycle, transit, and vehicular networks in Stratford Center. Strategies to capitalize on assets and to address known deficiencies are identified herein.

The horizon year of 2040 was selected for the study area traffic model and traffic volumes were forecast to match the GBRC's regional population projection for the same time-frame. The model reflects background traffic growth and new traffic generated by projected development. To accurately plan for future changes in traffic patterns and roadway infrastructure, a number of transportation improvement projects were incorporated into the model.

5.1 PUBLIC INVESTMENT

Public investment is required for upgrading critical roadways, streetscapes, transit facilities, and amenities to assist in unlocking development opportunities for private property owners. The infrastructure investments will assist in fully realizing the land use potential of currently underutilized properties. These improvements will be complemented by the already adopted TOD Overlay District to create a thriving Stratford Center with desired tax revenue increases for the town.

5.2 STREET NETWORK

The following improvement recommendations are vital to accommodate the associated vehicular and pedestrian traffic growth and sustain a vibrant Stratford Center. Recommended improvements range from low cost interventions, such as lane demarcation, to higher cost roadway and pedestrian way reconstruction.

A complete streets approach to roadways emphasizes efficient street networks, wide sidewalks, and dedicated space for cyclists and transit. A primary goal of this approach is to reduce the speed of traffic and create a safer environment for bicyclists, pedestrians, and transit patrons. It complements the TOD Overlay District as well, creating more pedestrian-friendly and walkable neighborhoods. The need for phasing of implementation is likely, yet it is important that each incremental improvement remain focused on achieving successful complete streets. *Figure 28* and street cross sections shown here, illustrate potential improvements, including simple streetscape amenities with parallel parking added to support retail, dedicated bike lanes, and utility and roadway modifications.

Vehicle circulation improvements should be implemented in conjunction with future development for Stratford Center parcels. The intent of these improvements, for example, is to redirect traffic from the Metro-North Railroad Overpass "choke point" and increase utilization at the Main Street and East Broadway/Church Street intersection, where capacity is available. Many of these recommendations are low-cost and do not require expanded pavement widths or costly right-of-way acquisition. They entail new signage, striping, and signal

optimization to improve roadway capacity and alleviate study area traffic congestion. Signal timing adjustments would support and sustain acceptable traffic operations at most study area intersections in the 2040 traffic model. With future development, greater levels of congestion are projected on Main Street between Barnum Avenue and West Broad Street, especially during the evening peak hour, yet improvements may be made to mitigate these conditions.

5.3 CORRIDOR BASED INFRASTRUCTURE IMPROVEMENTS

5.3.1 INTRODUCTION

To address the cost of public infrastructure improvements and to sustain a capital investment program, improvements should be completed in phases as growth in Stratford Center progresses. The infrastructure strategies described in the sections below, align improvements with TOD clusters discussed previously. Projected costs, responsible parties, funding sources, right-of-way acquisition needs, and an anticipated timeline for transportation improvements are identified. Establishing an implementation strategy for the public sector, minimizing uncertainty, and devising a feasible path for new development are the primary purposes of this section.

The focus of infrastructure improvements will be centered on the TOD clusters with recommendations for each cluster to enhance pedestrian safety, reduce congestion, and create more favorable conditions to attract private development. There are a total of four improvement corridor sections within the three TOD clusters, with the Stratford Center cluster containing two corridor sections and a single corridor section for each of the two remaining clusters. The corridors are as follows and illustrated in *Figure 28*:

- Stratford Center Corridor Section 1: Main Street from Linden Avenue to North Parade Street including Broadbridge Avenue and the entrance to the New York bound parking area for the Stratford Railroad;
- Stratford Center Corridor Section 2: Main Street from Judson Place to the I-95 underpass and along Church Street/East Broadway from the intersection at Linden Avenue to Sutton Place;
- Barnum Avenue/Main Street Corridor Section 3: Main Street from North Parade Street to Curtis Street and intersection of Main Street and Barnum Avenue/Barnum Avenue Cutoff; and
- West Barnum Avenue Corridor Section 4: Barnum Avenue toward Boston Avenue/Barnum Avenue Intersection.

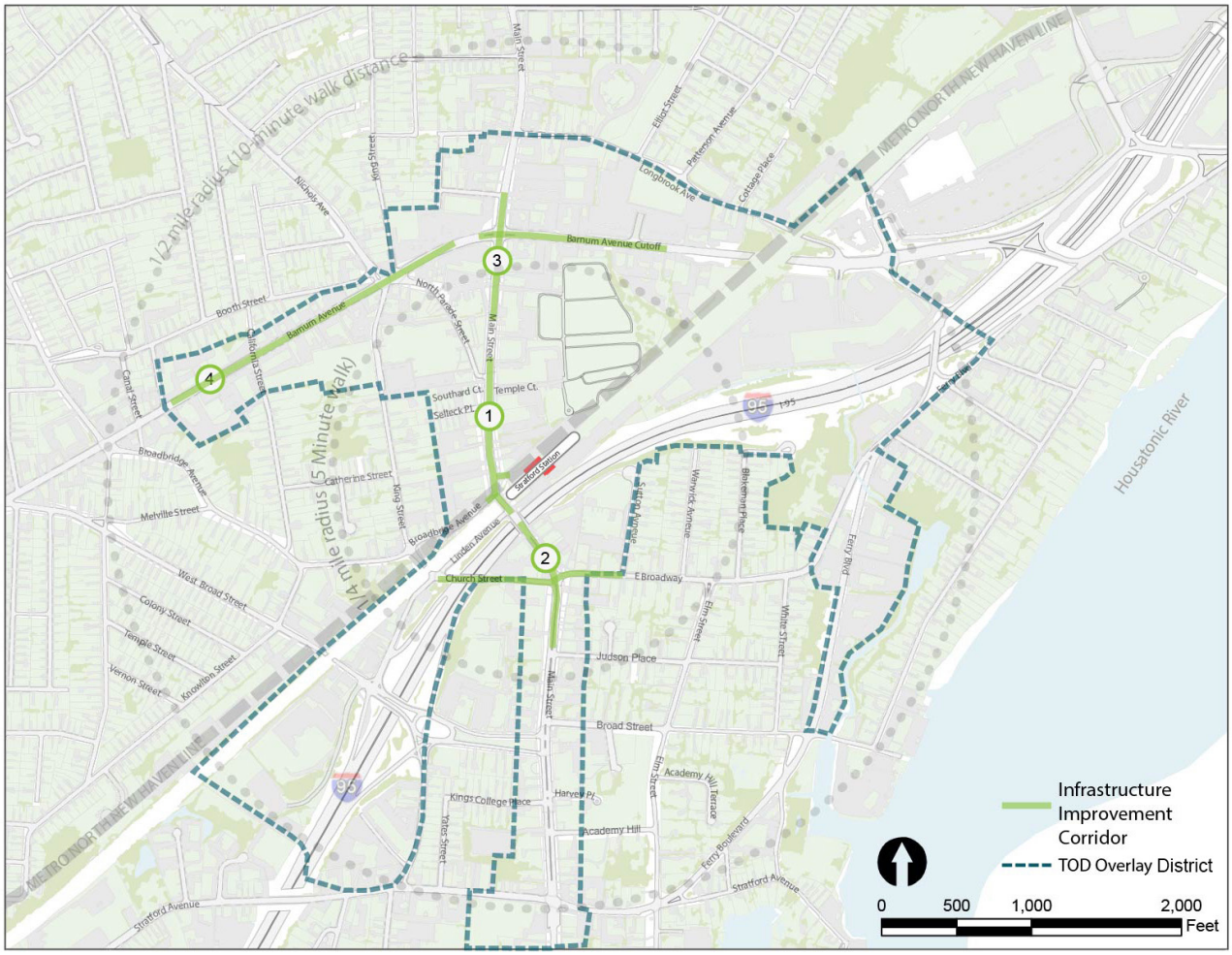


FIGURE 28 | INFRASTRUCTURE IMPROVEMENT CORRIDORS (SECTIONS 1-4)

5.3.2 STRATFORD CENTER CORRIDOR SECTION 1

SOUTHARD COURT TO THE METRO NORTH RAILROAD VIADUCT (ROADWAY IMPROVEMENTS)

Study area stakeholders have cited high vehicle speeds on Main Street and the need to improve pedestrian safety. Phasing in retrofit improvements on Main Street (see *Figure 29*) between the Barnum Avenue and Broadbridge Avenue intersections (an area one-third mile in length) would address some of these concerns. The first phase would include lower cost components such as roadside plantings in amenity strips and pavement striping. Higher cost improvements, such as mountable curbs and street lighting, would be implemented in later phases. These improvements are also proposed to create a greater sense of place on Main Street while maintaining clear access to fire and emergency service centers.

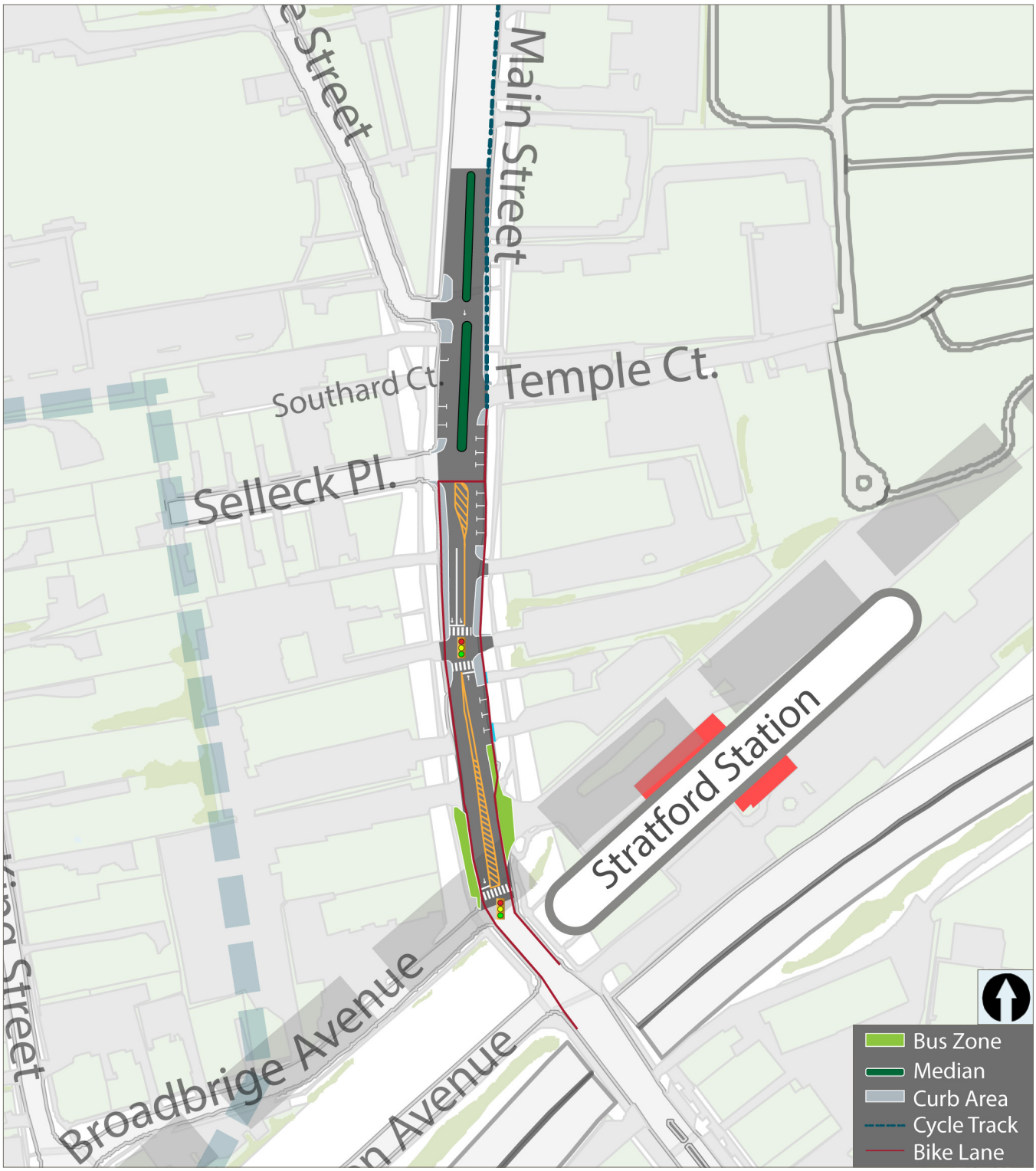


FIGURE 29 | INFRASTRUCTURE IMPROVEMENT CORRIDOR SECTION 1

The Main Street roadbed width varies from 66 feet at Southard Court (north of the Metro-North Railroad viaduct and just south of Parade Street) to only 48 feet immediately north of the Metro-North Railroad viaduct. Despite the wide roadbed, only one excessively wide vehicular travel lane is provided in each direction. These widths encourage higher vehicle speeds. As shown in *Figure 30*, 6-foot wide sidewalks with 14- to 15-foot wide lawn strips (and increasing) are located on both sides of Main Street at Southard Court. Farther south at the southbound Stratford Railroad Station parking driveway, 6-foot wide sidewalks and 13-foot wide grass buffer areas are located on either side of Main Street.

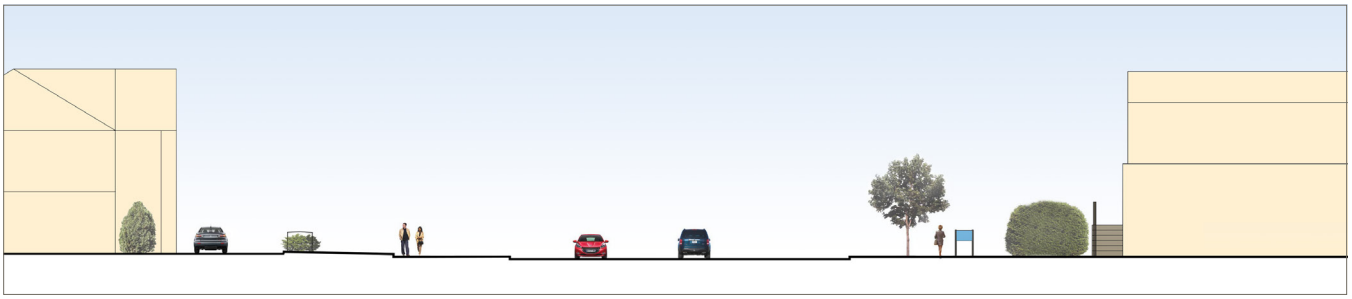


FIGURE 30 | CORRIDOR SECTION 1 - EXISTING CONDITIONS AT MAIN STREET AT SOUTHARD COURT

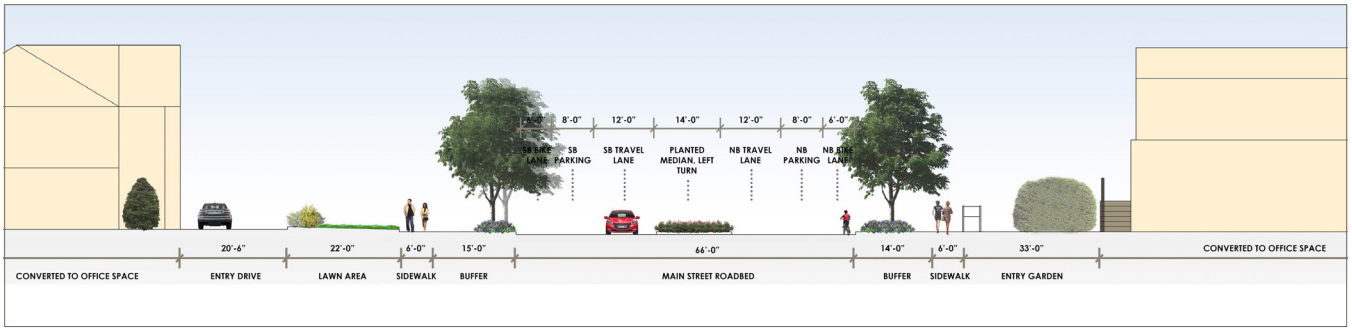


FIGURE 31 | CORRIDOR SECTION 1 - PROPOSED CROSS-SECTION OF MAIN STREET AT SOUTHARD COURT

For Main Street north of the Stratford Railroad Station (*Figure 32*), vehicular travel lanes can be narrowed to a 12-foot width with 5- to 6-foot bike lanes on both sides and a 14-foot median. The median could be striped or planted to provide an area of refuge to pedestrians at crosswalks. At intersections, the median would open up for dedicated left-turn lanes.

At the widest sections of Main Street, the remaining roadbed may accommodate 8-foot parallel parking lanes with 6-foot wide bike lanes on both sides of the street. Up to 30 parking spaces could be provided by the parking lanes. At Main Street intersections with Broadbridge and Barnum Avenues, the parking lanes would end and a dedicated right turn lane would be provided. Bike lanes could extend north of Barnum Avenue to Paradise Green. Where parallel parking and bike lanes are accommodated side-by-side, bike lanes would be located between the parking lane and sidewalks. The parking lane would provide protection to cyclists from vehicular traffic and driver side doors.

In combination with select curb extensions on Main Street, dedicated bicycle lanes would change the profile of the road and reduce vehicular speeds. Bicycle facilities along Main Street continuing north to Barnum Avenue Cut-off would create a critical non-motorized link to Stratford Center and other active modes, described below, and establish a desirable streetscape character similar to the existing character of Main Street south of the railroad viaduct.

In sections of Main Street with adequate width to accommodate parallel parking lanes, curb extensions at crosswalks would create breaks in the parking lanes and reduce pedestrian crossing distances. The extensions may have the added benefit of supporting bus transit as the breaks could be used to delineate bus pullouts to allow continuous traffic flow while a bus is boarding or alighting. However, pullouts in urban areas may cause delays for buses re-entering the traffic stream. Operators have been observed keeping the tail of the bus in the travel lane in order to ensure they can easily pull back into traffic. Transit agency policy would determine whether pullouts or curb extensions are the preferred method.

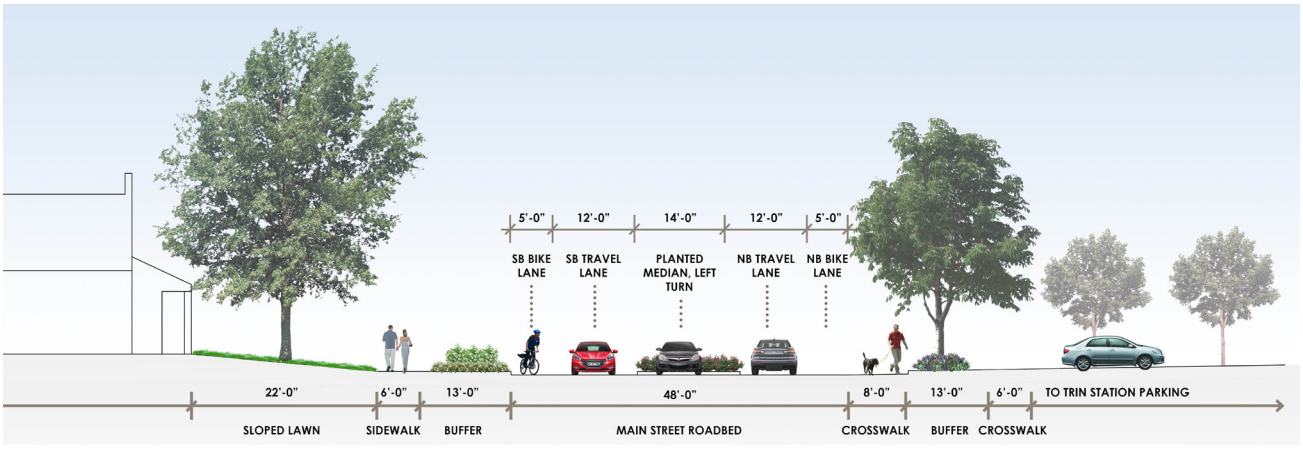


FIGURE 32 | INFRASTRUCTURE IMPROVEMENT CORRIDOR SECTION 1

The relocated inbound station driveway (completed in 2014) allows for a new signalized intersection to permit multiple vehicles to exit the station parking area in the evening peak hour and left turns from south-bound Main Street into the station parking area in the morning peak hour.

INTERSECTION OF INBOUND STATION DRIVEWAY & MAIN STREET

The inbound station driveway intersection with Main Street was recently relocated father north from the train station when the parking area was expanded (see *Photo 13*). Since the inbound station driveway was operating poorly before the parking area expansion, the increase in traffic from the driveway will exacerbate the poor performance. Installation of a traffic signal would improve the operation of the intersection.

A signalized intersection with a 90-second cycle length and semi-actuated operation coordinated with adjacent Main Street intersections would address additional volume at this intersection. When redesigning the intersection for signalization, curb radii should be tightened and crosswalks appropriately placed and delineated.

PHOTO 13	NORTH PARKING AT STRATFORD RAILROAD STATION

INTERSECTION OF BROADBRIDGE AVENUE & MAIN STREET

The Broadbridge Avenue intersection with Main Street experiences vehicular congestion due to the narrow Main Street/Metro-North Railroad viaduct underpass located just to the south of the intersection. Adjustment of the signal operations at this intersection and coordinated with operations at the Linden Avenue intersection would maximize the capacity of this important intersection.

LINDEN AVENUE AND MAIN STREET

The Linden Avenue intersection with Main Street experiences vehicular congestion with the narrow Main Street/ Metro-North Railroad viaduct underpass located just north of the intersection. In order to maximize the capacity

of this important intersection, signal operations here and at Broadbridge Avenue that tie into this signal must be adjusted and coordinated. To further reduce delays, a traffic control device could be put in place to prohibit both northbound and southbound left-turns from Main Street.

5.3.3 STRATFORD CENTER CORRIDOR SECTION 2

INTERSECTION OF EAST BROADWAY AND MAIN STREET

If two-way traffic flow is established on Church Street, the Main Street and East Broadway intersection located immediately east of Church Street would need to be modified to support westbound traffic onto Church Street. These movements include left-turns from northbound traffic on Main Street, right-turns from southbound traffic on Main Street, and through traffic traveling westbound from East Broadway onto Church Street. Intersection modifications include lane configuration striping, new signal heads and mast arms, and modifications to the

FIGURE 33 | INFRASTRUCTURE IMPROVEMENT CORRIDOR SECTION 2

curbed median on the northbound Main Street approach. The northbound Main Street approach will need to be reconfigured within existing roadbed limits to provide a left-turn bay and a shared through/right lane. No additional intersection approach lanes are needed.

ONE-WAY TO TWO-WAY TRAFFIC OPERATION AT CHURCH STREET

Church Street is currently a one-way street with two parking lanes and has eastbound traffic moving toward Main Street. Left-turn prohibitions at the Linden Avenue intersection would create a need for a roadway connection from Stratford Center to residential neighborhoods northwest of the I-95 viaduct, necessitating a westbound lane on Church Street. The conversion of Church Street from one-way to two-way traffic would provide this missing connection.

The roadbed width on Church Street is approximately 30 feet, sufficient for two-way traffic flow and one parking lane. The displacement of one of the existing parking lanes will provide room for two way traffic. The 23 on-street parking spaces that would be displaced could be accommodated by 30 new on-street parking spaces created on Main Street between Linden Avenue and Barnum Ave. Double-yellow line striping, a westbound stop bar at the Linden Avenue and Church Street intersection, and street signage are necessary to accommodate two-way traffic flow on Church Street.

INTERSECTION OF SUTTON AVENUE AND EAST BROADWAY

With potential redevelopment of the Center School site, ingress and egress traffic from the site would increase at the East Broadway and Sutton Avenue intersection. Since the left-turn volume onto Sutton Avenue would increase, the eastbound left-turn bay from East Broadway should be striped to add capacity for the left-turn bay and allow eastbound through traffic.

WEST BROAD STREET IMPROVEMENTS

This CTDOT project is currently in the design phase. The purposes of these improvements are to reduce congestion along West Broad Street and alleviate mainline queuing from the I-95/Interchange 32 southbound off-ramp. The following impacts are anticipated:

- Improvements to the West Broad Street and Linden Street/I-95 southbound on-ramp intersection;
- A lengthened left-turn lane on the southbound Linden Street approach;
- The addition of a dedicated right-turn lane on the westbound West Broad Street approach;
- Reconfiguration of the eastbound West Broad Street approach to a left-turn lane, a through-lane, and a shared through/right turn lane;
- Traffic signal modifications; and
- Modification to the traffic signal at the intersection of the I-95 northbound off-ramp and Beardsley Avenue.

5.3.4 MAIN STREET/BARNUM AVENUE CORRIDOR SECTION 3

MAIN STREET & BARNUM AVENUE INTERSECTION

Retrofits to several existing streets, including the Main Street and Barnum Avenue intersection, will further support last mile pedestrian and bicyclist connections. A safer pedestrian environment may also be achieved by the installation of textured crosswalks and curb extensions at this intersection. Roadway crossing distances would be reduced and the textured pavement would have a calming impact on traffic speeds. Reducing the radii of curves at the intersection would also reduce traffic speeds and increase pedestrians' safety. Reducing the width of Barnum Avenue Cut-off, east of Main Street, by extending the curb line will increase the width of sidewalks and accommodate parking pockets or bus pullouts. Further accommodations for transit may be achieved if the proposed bus pullouts were extended to create wide, fully accessible dedicated bus stops.

The exclusion of curb side parking on Barnum Avenue would create sufficient width for dedicated bicycle lanes on Barnum Avenue Cut-off. This and the continuation of dedicated bicycle lanes on Main Street to the Cut-off would greatly improve bicycle access to the periphery of Stratford Center. The dedicated bicycle lanes require further development but can be instrumental in achieving a continuous loop around Stratford Center.

BARNUM AVENUE CUT-OFF

The cut-off begins at the intersection with Main Street, continues east, and terminates at the MNR overpass. Lack of sidewalks and crosswalks, numerous curb cuts, and parking areas located between store fronts and streets degrade the curb appeal of many properties and discourage pedestrian activity. These issues may be mitigated by improvements along a half-mile section of the Cut-off beginning from the west at the six-legged King Street intersection continuing eastbound just before the Barnum Avenue bridge over Metro-North Railroad.

A phased retrofit strategy similar to Main Street may be applied to the Barnum Avenue Cut-off. Currently the Cut-off accommodates two lanes of vehicular travel in each direction. *Figure 35* illustrates existing conditions and recommended mid- and long-term traffic and pedestrian enhancements for the location. Existing paved shoulders can be reallocated to parallel parking lanes on one side of the street by shifting the entire roadway cross-section. Parallel parking lanes on both sides of the street could be achieved by reducing the number of travel lanes to one in each direction with a middle left turn lane for traffic from both directions. The middle lane would convert to a median at appropriate points on the road. Curb extensions located at the ends of parallel parking lanes would reduce the crossing distances for pedestrians and cyclists.

Main Street between the Stratford Railroad Station, Barnum Avenue, and Barnum Avenue Cut-off are the two most important thoroughfares to address and that will most dramatically transform and expand Stratford Center.

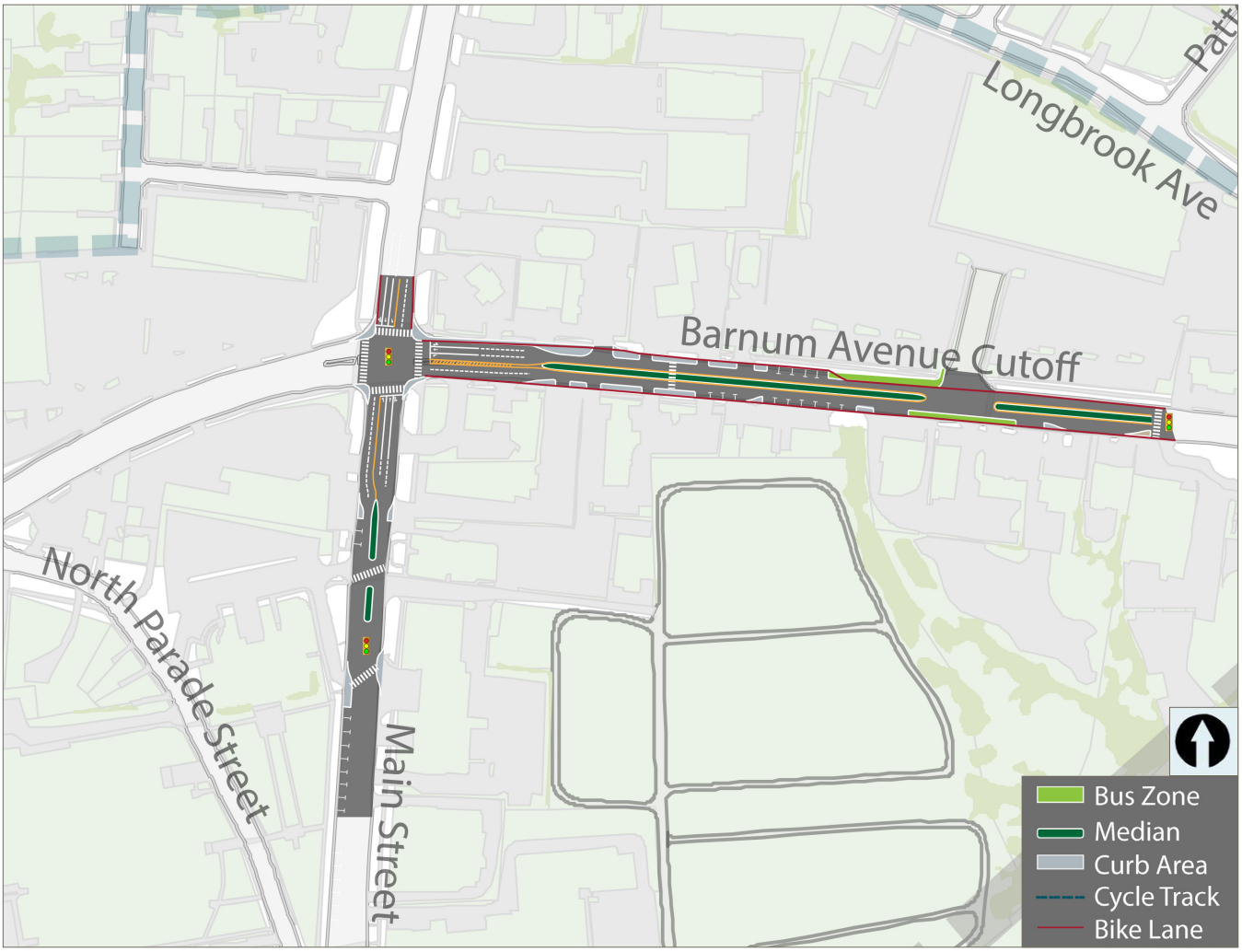


FIGURE 34	INFRASTRUCTURE IMPROVEMENT CORRIDOR SECTION 3

BARNUM AVENUE CUT OFF - EXISTING CONDITIONS

BARNUM AVENUE TOD & INFRASTRUCTURE CHANGES - SHORT TO MEDIUM TERM

BARNUM AVENUE TOD & INFRASTRUCTURE CHANGES - LONG-TERM

FIGURE 35	INFRASTRUCTURE IMPROVEMENT CORRIDOR SECTION 3

5.3.5 WEST BARNUM AVENUE CORRIDOR SECTION 4

The West Barnum Avenue Cluster extends along Barnum Avenue from King Street to Canal Street – a two block area with small scale commercial and retail uses fronting Barnum Avenue. Behind these uses are single family homes. Barnum Avenue is a single lane in both directions with parking lanes, upgraded sidewalks, and distinctive pedestrian level lighting. This corridor has significant potential to extend the TOD Overlay District from the Main Street/Barnum Avenue corridor toward the Barnum Avenue/Boston Avenue intersection to complement higher frequency and rapid transit services.

An approach similar to that for the Main Street/Barnum Avenue corridor section should be considered in this section. Shared bike lanes are possible though they may reduce on-street parking availability. Transit should have dedicated bus zones in preparation for future BRT services.

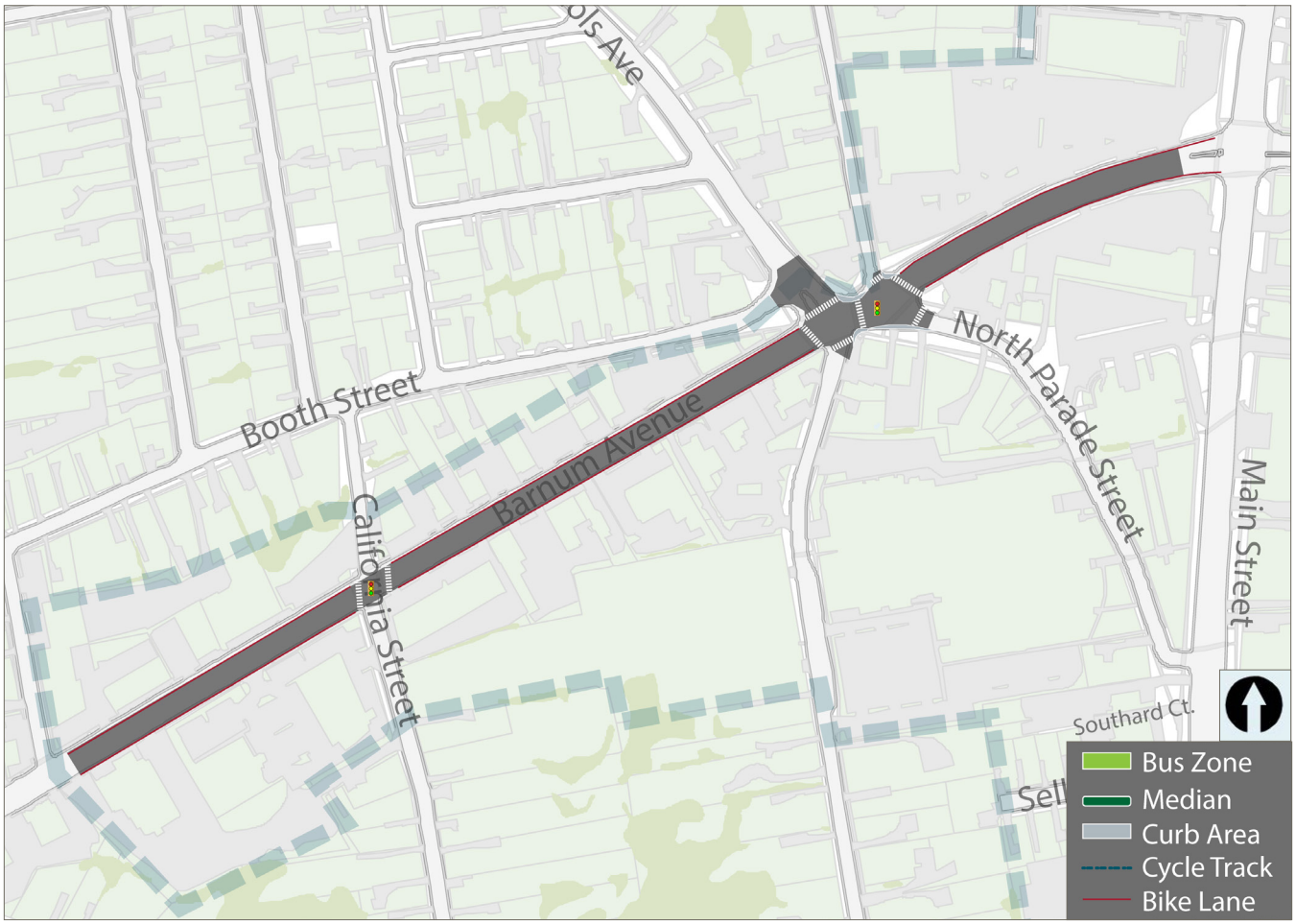


FIGURE 36	INFRASTRUCTURE IMPROVEMENT CORRIDOR SECTION 4

5.4 TRAFFIC CALMING

There are several design details and traffic calming measures to consider that will ease pedestrian circulation within Stratford Center. The Institute of Transportation Engineers Context Sensitive Solutions manual recommends the following practices that would ease pedestrian circulation in the study area.

- Reduce curb radii to force vehicles to make turns at intersections at reduced speeds and to decrease roadway crossing distances for pedestrians;
- Reduce vehicular travel lane widths to reduce vehicle speed thus improving pedestrian safety at crosswalks;
- Stripe/construct high visibility crosswalks with materials such as epoxy paints or other paving materials to alert drivers to the presence of pedestrians;
- Adjust traffic light timing and countdown crossing signals to allow more frequent and safer pedestrian crossings;
- Fill gaps in study area sidewalks and provide continuous paths of pedestrian travel; and
- Eliminate curb cuts in TOD Overlay District roadways, where possible, to reduce pedestrian exposure to traffic.

Retrofitting streets with traffic calming elements such as striping, curbing, lighting, plants, and textured pavements is an inexpensive means to encourage walking and cycling to and within Stratford Center, improve the beauty and walkability of streets, and reduce vehicular and pedestrian traffic conflicts. These retrofit strategies will complement existing sidewalks and proposed TOD area pedestrian paths discussed above and allow for more direct and appealing access from local neighborhoods to Stratford Center. *Photo 14* illustrates an example of highly visible crosswalks, small curb radii, and other elements that may be part of TOD area retrofits.

The strategies discussed above are not exclusive to Stratford Center roadways and sidewalks. Traffic calming measures on cut-through streets such as speed tables and humps, all-way stops, tight intersection radii, and narrow vehicular travel lanes can improve pedestrian safety throughout the study area.

PHOTO 14	TOD RETROFITS (NEW BRUNSWICK, NJ)

5.5 TRANSIT

Transit network improvements will be discussed and detailed in a separate document – the GBRC and GBT Long Range Transit Plan and Alternative Modes Assessment. However, there are several key recommendations that may impact Stratford Center and the TOD Overlay District. These concepts are summarized below.

Areas within the vicinity of Stratford Center could be redeveloped as a transit hub for the eastern half of the GBT service area, complementing the Downtown Bridgeport GBT terminal. The Dock Shopping Center currently acts as the main terminal for this service area but transit agencies typically avoid use of privately owned land for such use due to the general lack of site control. Currently, modest levels of service are provided in the Stratford Center area whereas a new transit hub would allow GBT to provide more frequent and reliable service to the study area. Current vacant properties challenged by site conditions (e.g. contamination requiring remediation) may be considered for use as a local transit hub. Other recommendations include:

- Providing layers of transit service including bus rapid transit and high frequency service along Barnum Avenue;
- Assessing future local connections for priority investment areas in Stratford;
- Providing regional transit connections to Waterbury, New Haven, and Stamford; and
- Improving transit infrastructure including dedicated bus zones to increase the safety and accessibility to services and allow traffic to move while buses are loading and alighting.

Figure 37 illustrates potential future transit services with changes to many of the routes that flow through the TOD Overlay District and Stratford Center.

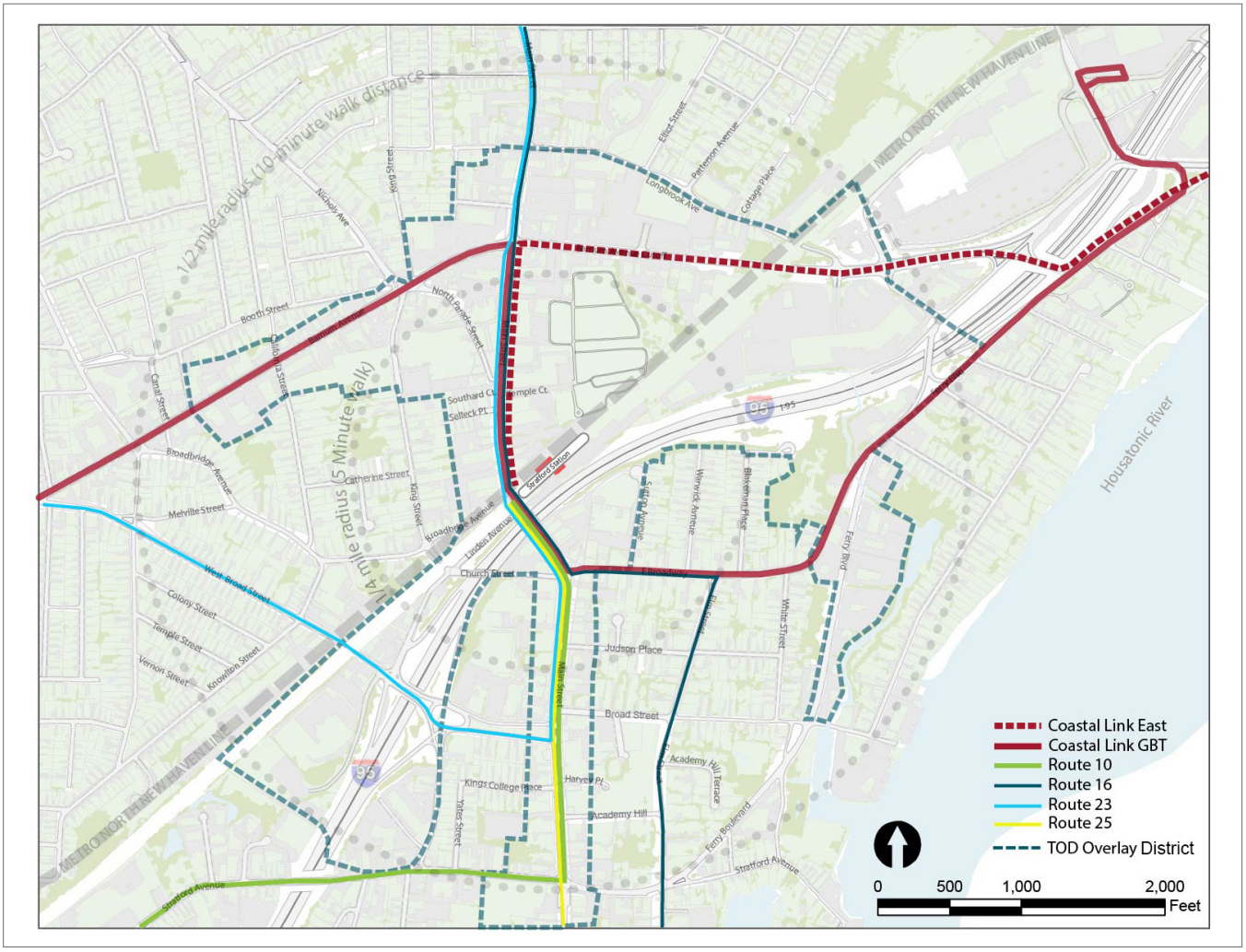


FIGURE 37 | RECOMMENDED BUS TRANSIT SERVICE

5.5.1 THE COASTAL LINK

The Route 1 and Coastal Link are combined to create a future bus rapid transit style service that moves between Bridgeport and Stratford via Barnum Avenue and Main Street. The CL-GBT service travels Main Street to the new terminal area and then proceeds to a new turnaround at The Dock Shopping Center. This presumes the ability to create a separated turn-around within the private parking area of the shopping center or an alternative site in direct control of GBT. The Coastal Link East provides BRT service from Stratford to New Haven. The main improvements for this area would include the upgrade of Route 1 on Barnum Avenue to a frequent transit service that terminates at the railroad station in Stratford. This service could convert to a bus rapid transit corridor in the future with further investment in stop amenities, time-saving fare collection processes, and traffic signal pre-emption. This change in service levels will support TOD along Barnum Avenue and within associated clusters.

Recommended route modifications include the following:

- Route 10 – Route 10 moves onto Stratford Avenue which may have restored two-way service in the future. Route 10 is a high-frequency route with minimum 15-minute all-day service.
- Route 16 on Main Street – This route has been modified to function as a north/south connector service from the Hawley Lane Mall area and then along Main Street to points south including the Army Engine Plant. Future extensions south to the beaches/Lordship could be created if desired by the community.
- Route 23 – This route would function as a regional connector to the Stratford and future Barnum railroad stations.
- Route 25 - Creating a new local Route 25 to provide service that was previously offered by Route 10.

Additional services including high frequency routes and Bus Rapid Transit could then be introduced into the area as illustrated in *Figure 37*. Dedicated bus zones should be created to increase the safety and accessibility of the service and allow traffic to move while buses are stopped at the curbside.

5.5.2 TRANSIT AMENITIES

Cycle storage facilities can also extend the reach of the transit system, particularly if the path to the transit service is a dedicated bicycle lane or pathway. The ability to use a dedicated facility for cycling and then have secure storage at a transit terminal or Stratford Railroad Station will increase the usage of bicycles within Stratford Center and beyond.

PHOTO 15	BIKE PARKING AT BRIDGEPORT TRANSPORTATION CENTER

Transit facilities must accommodate pedestrian needs and help create sense of place in Stratford Center. This may be achieved by the use of pedestrian and transit rider amenities as shown in *Photos 15 and 16.* Aesthetics and green infrastructure add further value to transit amenities as shown in *Photos 17 to 19*. The purpose is to enhance the pedestrian's experience as they utilize public transit. To this end, GBT is embarking on a bus shelter installation program to achieve these goals.

PHOTO 16	DOWNTOWN TRANSIT STATION (CINCINNATI)

PHOTO 17	LRT STATION (MINNEAPOLIS, MN)

PHOTO 18	RAIN GARDEN AT TRANSIT HUB (EUGENE, OR)

PHOTO 19	TRANSIT STOP AMENITIES (BOSTON)

5.6 ACTIVE MODES

5.6.1 THE LAST MILE NETWORK

The “last mile” refers to the last connection between transit service and an individual’s final destination. In Stratford Center, pedestrian and bicyclist circulation is obstructed by the presence of “superblocks” – very large blocks of over 1000 feet with no internal paths or streets accessible for public use. In contrast, a typical block in the nearby and highly walkable historic district is approximately 200-foot by 500-foot. The theory of 8/80 is often cited in new active mode planning. This theory states that an 8 year-old child or 80 year-old adult should be equally comfortable using available infrastructure.

Access can be improved and travel time reduced by fragmenting Stratford Center’s three primary superblocks in the vicinity of the Stratford Railroad Station with the integration of new multi-use paths, streets, and alleys or similar pedestrian passageways (see *Figure 38*). By incorporating public, multi-use paths into these blocks, pedestrians and cyclists will have greater access to the Stratford Railroad Station and Stratford Center while enhancing the value of the properties that they traverse. Implementation of these recommendations will create an inter-connected network of facilities that are responsive to the users and the practicalities of existing road widths, volumes of traffic, and the need to separate facilities for safety and efficiency.

Active mode improvements may be applied as part of this approach as they focus on safe alternative modes of connectivity that encourage healthy lifestyles, positive social interaction, and vibrant public spaces, while also reducing traffic congestion. These improvements will establish a network of pedestrian pathways that link to major corridors like the Housatonic Greenway and allow for greater mobility north towards Paradise Green and south toward the Army Engine Plant. Around the Center School site and Stratford Railroad Station there are opportunities to use existing rights-of-way (ROW) and pathways to create a network for pedestrians and cyclists. These connections can complement on-road facilities to create a secondary network for alternate modes throughout Stratford Center.

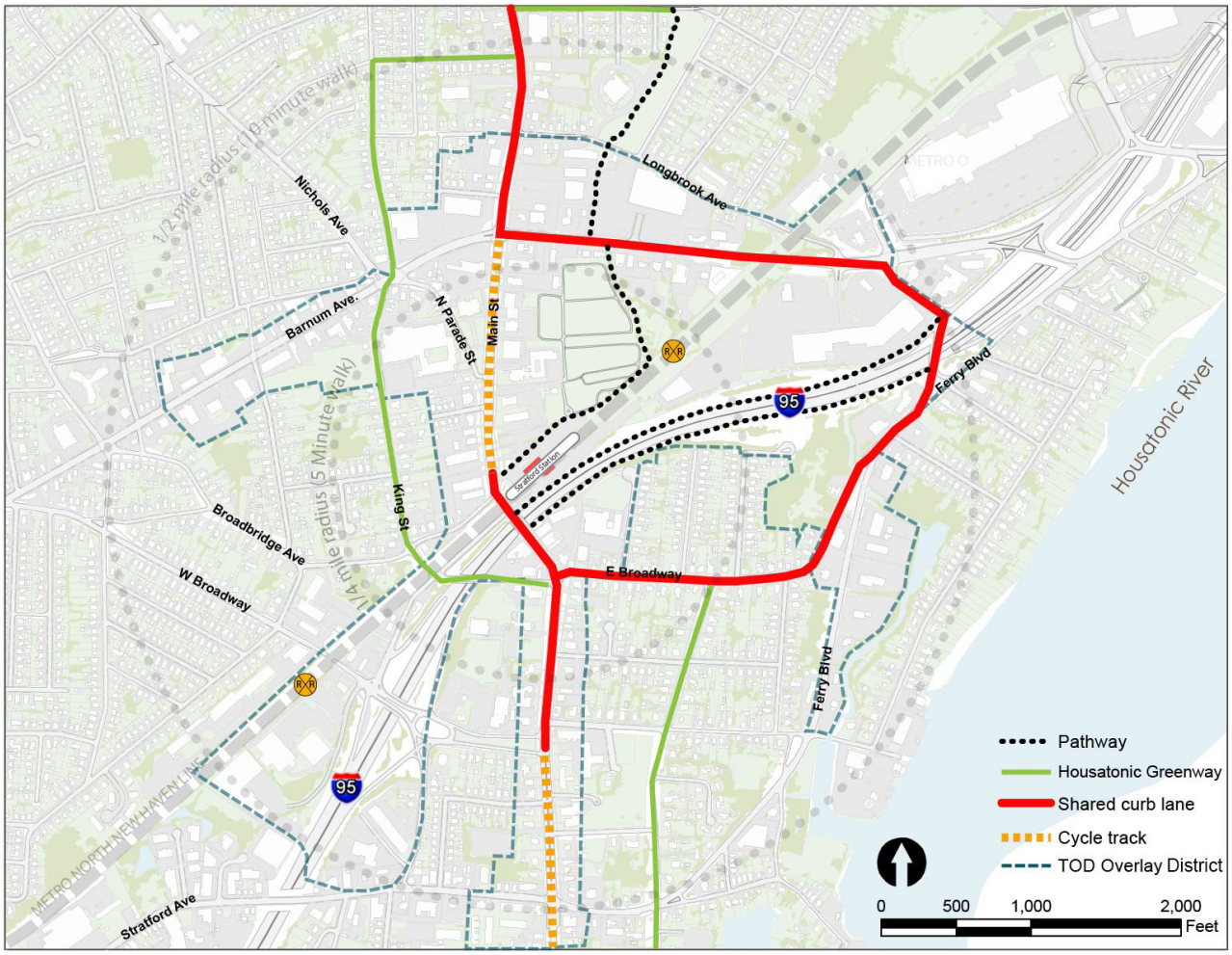


FIGURE 38 | ACTIVE MODES PLAN

5.6.2 PEDESTRIAN PATHWAYS

Four pathways have been identified (Paths A, B, C, and D) that will link the Town to its center by utilizing vacant land and public space (see *Figure 39*). These pathways may entail pedestrian only corridors or regional multi-use trails with sufficient width to accommodate both pedestrians and cyclists. These conceptual path routes complement the Active Modes Plan and include:

» Path A: From the train station heading east, parallel to the north side of the train tracks. The path would follow Ferry Creek (on the east side) due north towards Barnum Avenue (east of Union Cemetery). The path would continue over Barnum Avenue via a crosswalk and follow Ferry Creek northward to Long Brook Park. The path would run approximately ¾-mile in length.

» Path B: Route along the north side of I-95 between Main Street and Veterans Boulevard (see *Photos 20 and 21*).

» Path C: Route along the south side of I-95 between Main Street and Barnum Avenue. Along the southern side of I-95 from Sutton Avenue on the west to the intersection of East Broadway and Ferry Boulevard on the east. Points at Warwick Avenue and Blakeman Place would allow access to these streets. The path would run approximately a half-mile long. Within the Center School site, a short 600-foot pedestrian-oriented travel lane could connect Main Street to Sutton Avenue (see *Photos 22 and 23*).

» Path D: South of Barnum Avenue starting west of Stratford Center at California Street. The path would continue due east over King Street via a crosswalk and end at the intersection of Parade and Main Streets, in front of Stratford High School. The path would provide pedestrian connections between Main Street and residences west of the study area and would run approximately one-quarter mile long.

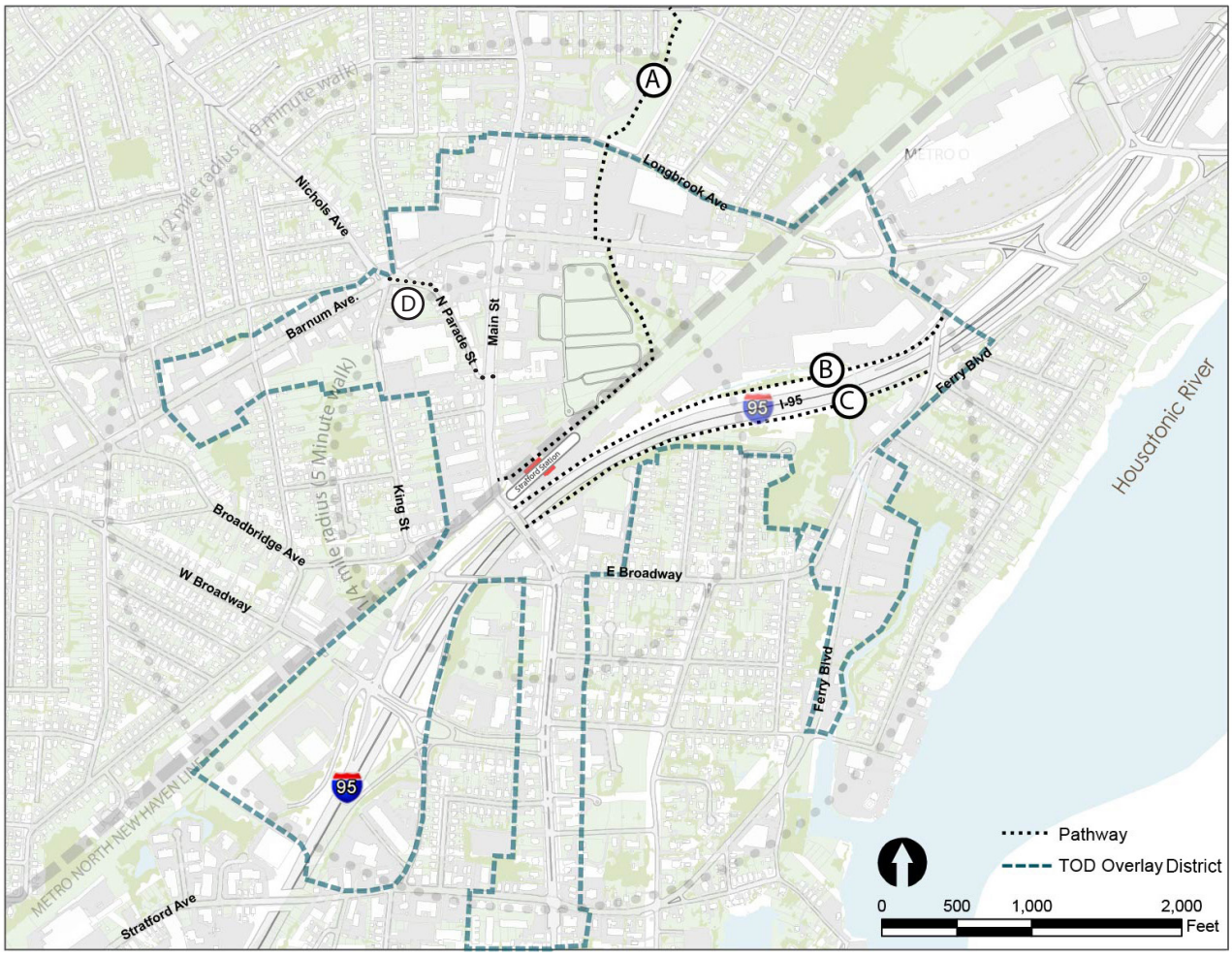


FIGURE 39 | ENHANCED PEDESTRIAN PATHWAYS AS PART OF ACTIVE MODES PLAN

PHOTO 20	PEDESTRIAN & BICYCLE LINK TO E. BROADWAY FROM BARNUM AVENUE CUT-OFF VIA VETERANS BOULEVARD

PHOTO 21	LINK VETERANS BOULEVARD TO EAST BROADWAY VIA FERRY BOULEVARD

PHOTO 22	STATE ROW ADJACENT TO NORTHBOUND I-95 PROVIDES ACCESS TO CENTER SCHOOL SITE

PHOTO 23	PEDESTRIAN & BICYCLE LINK USING I-95 ROW (SOUTH) FROM MAIN STREET TOWARD FERRY BOULEVARD

Collectively, this path network will create a loop within the outer limits of Stratford Center that connects to existing and proposed sidewalks and multi-use paths. Portions of this loop utilize existing openings in the I-95 and railroad viaducts, greatly enhancing connectivity to and mobility within the study area.

5.6.3 HOUSATONIC GREENWAY

A pathway from East Broadway and Church Street would connect to the proposed Housatonic Greenway at King Street. This greenway would extend up King Street to connect with the Main Street/Barnum Avenue cluster. Roadways would feature on-street cycling lanes that would link to the Housatonic Greenway along the eastern portion of Stratford Center (See *Figure 40*). The Housatonic Greenway is a key component of the Active Modes Plan.

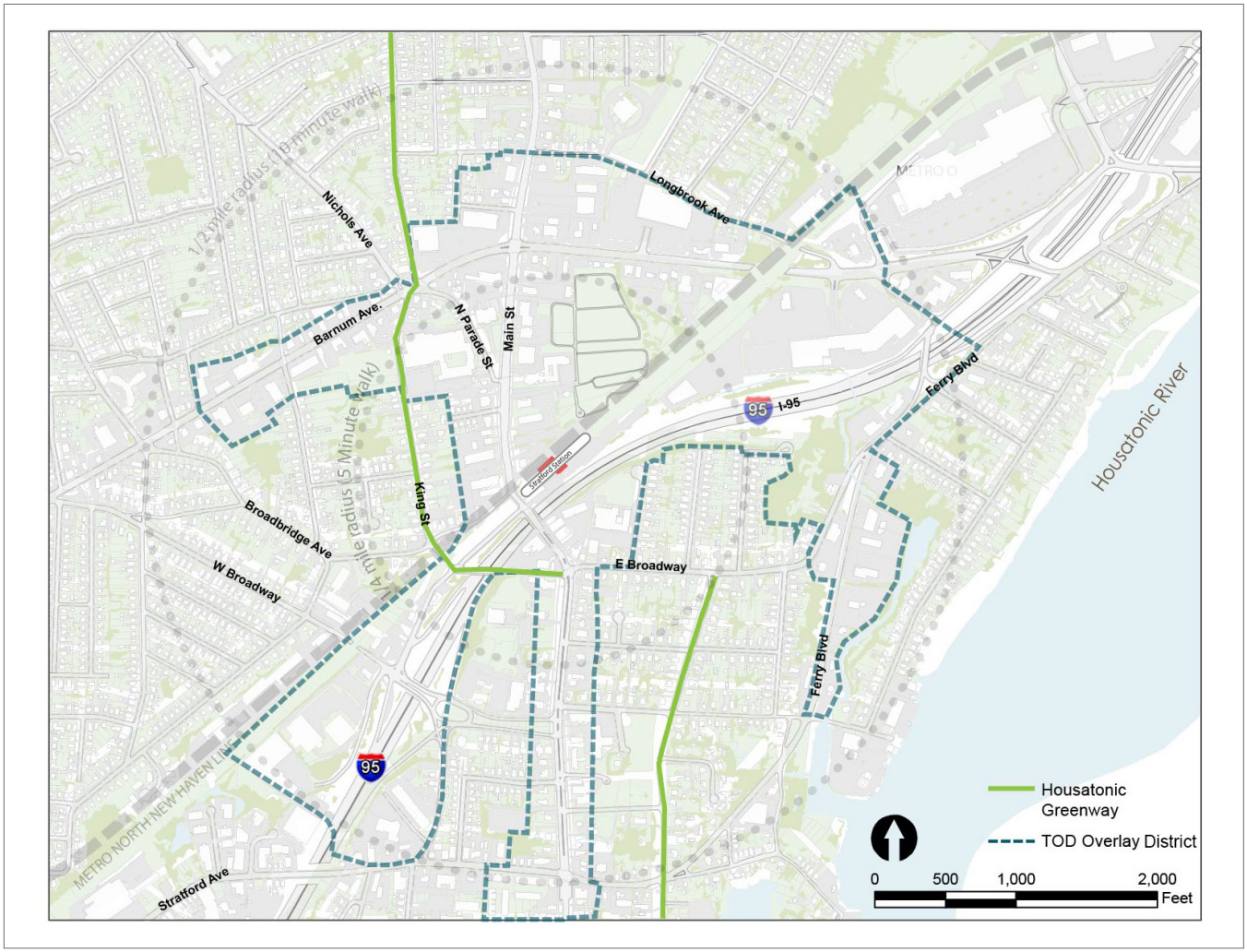


FIGURE 40 | HOUSATONIC GREENWAY

5.6.4 CYCLING & SHARED ROADWAYS

A shared curb lane or painted bike lane runs north from West Broad Street up Main Street to Selleck Place. The lane continues north on Main Street from Barnum Avenue towards Paradise Green. The connecting portion runs from Main Street along Barnum Avenue Cut-off to Veterans Boulevard then to East Broadway back to Main Street. This provides a perimeter loop around Stratford Center that may act as a collector from many intersecting streets, sidewalks, and dedicated multi-use paths (See *Figure 41*).

There are two segments of proposed bicycle lanes along Main Street. The first connects the cycle lanes between Selleck Place and Barnum Avenue Cut-off. The width of the road appears sufficient for a dedicated lane on the right side of the road which allows traffic using North Parade Street to move unimpeded. The second segment begins at East Broad Street and continues south with a dedicated lane on either side of the road due to the location of medians down Main Street. This lane could extend as far south as the Army Engine Plant to create an extensive network for active modes throughout the study area.

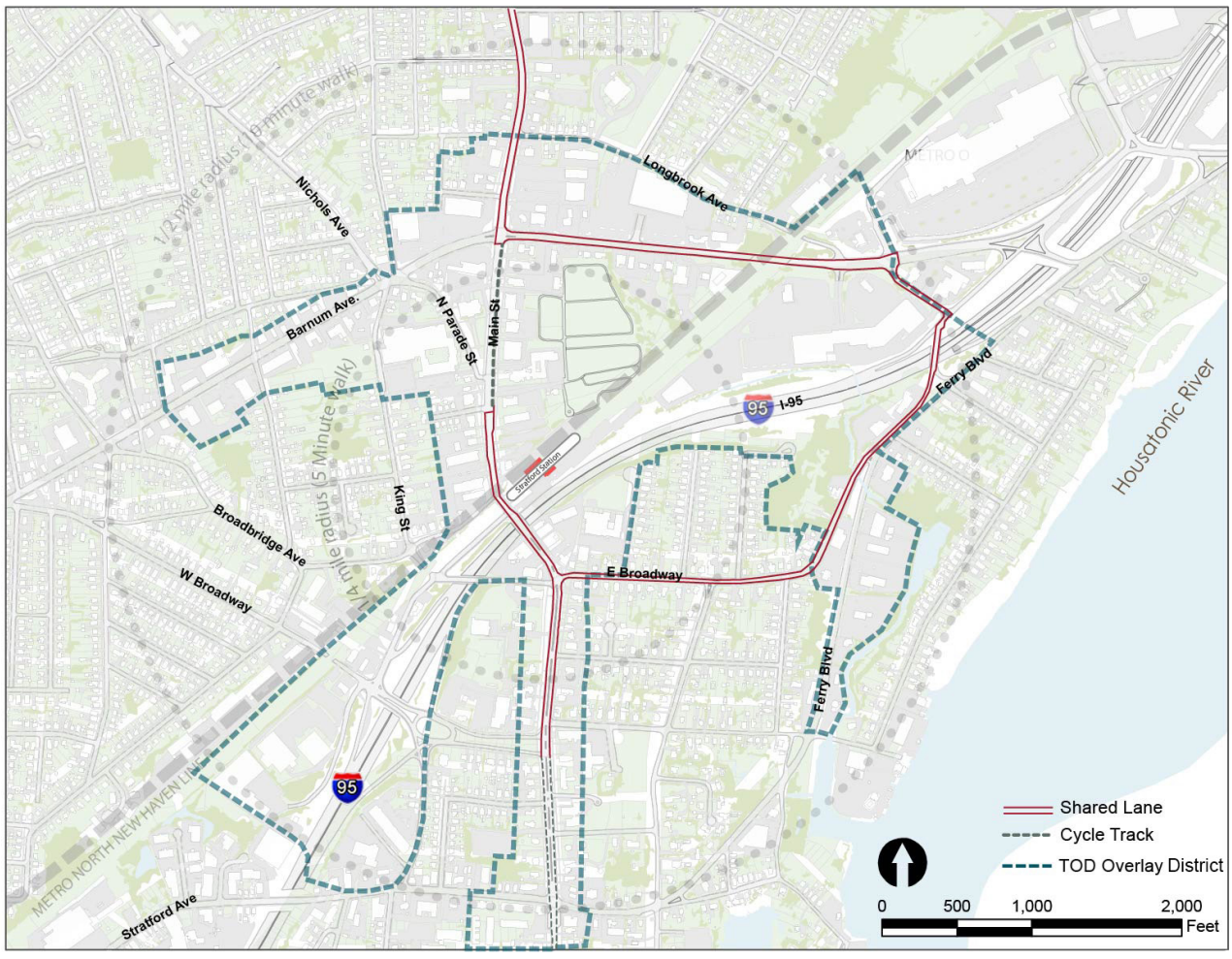


FIGURE 41 | CYCLE INFRASTRUCTURE

From a safety perspective, the creation of bike lanes, shared use pathways, and reduced road widths are common elements in TOD planning. A shared bike lane along the Barnum Avenue Cut-off will connect dedicated bike lanes on Main Street and a new greenway that meets the Cut-off at mid-block. This proposed path will create a strong north-south movement through the study area. The shared bike lane will extend to connect Ferry Boulevard to Stratford Center and tie together the three catalyst sites. Photos 24-26 demonstrate examples of cycle tracks with dedicated lanes in urban corridors.

PHOTO 24	CYCLE TRACK

PHOTO 25	CYCLE TRACK

PHOTO 26	CYCLE TRACK

6

- Transportation Infrastructure
- Brownfields
- Financing Opportunities
- Funding Summary

6| Funding

The Town of Stratford has been successful in securing funding for the implementation of a number of the environmental and infrastructure recommendations made in this study. The Town was recently awarded $200,000 through the State of Connecticut's TOD Planning Grant Program to fund a Complete Streets Improvement Plan for Stratford Center. Upon completion of the plan, the Town will utilize $2 million through the State's Local Transportation Capital Improvement Program (LOTCIP) towards the construction of priority improvements identified by the Complete Streets Plan. These public infrastructure improvements will be accomplished by the Town's progress toward addressing environmental contamination on parcels within the study area.

In 2014, the GBRC provided over $26,000 in EPA Brownfields Assessment funds to conduct Phase I and II Environmental Site Assessments at the Center School site. Remediation of the site will be funded by a $1.2 million State of Connecticut Remedial Action and Redevelopment Municipal Grant which was awarded in early 2015. The Remedial Action and Redevelopment Municipal Grant Program is described further in Section 6.2, below.

This section explains potential funding mechanisms at the state and federal levels, as well as local strategies that could support the implementation of recommendations in the future. Current sources of these public fund are contingent upon legislative approval and budget appropriations. New programs are announced periodically as well.

6.1 TRANSPORTATION INFRASTRUCTURE

MAP-21 (Moving Ahead for Progress in the 21st Century) Act is the current federal transportation funding authorization. Private sector involvement, highway safety, and environmental mitigation are emphasized in MAP-21 and several programs through the act could fund transportation infrastructure improvements in Stratford Center. These programs typically require a 20% local match and include the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Surface Transportation Program (STP).

At the state level, the Local Transportation Capital Improvement Program mentioned in the introduction of this section will fund the construction of Complete Streets improvements in Stratford Center. There is no local match for construction but the Town is required to pay for 100% of design costs.

6.2 BROWNFIELDS

The U.S. Environmental Protection Agency (EPA) and State of Connecticut's Office of Brownfield Remediation and Redevelopment (OBRD) regularly announce competitive funding rounds in support of a range of activities to assess, clean up, and redevelop brownfield sites.

EPA ASSESSMENT, CLEAN-UP, AND REVOLVING LOAN FUND GRANTS

EPA Assessment, Cleanup, and Revolving Loan Fund (RLF) Grants are announced annually. Eligibility for these funds vary by program, but are typically limited to state, local, and tribal governments; not for profits are eligible for some grants. Site eligibility often depends on ownership and type of contamination (funds are usually obligated to sites contaminated by either petroleum or hazardous substances). Ranking criteria generally includes economic need, the impact of brownfield properties on minority or disadvantaged communities, anticipated benefits, staff experience, and past successes. EPA Region 1 (New England) is responsible for oversight of EPA brownfields grants in Connecticut.

EPA Assessment Grants support a wide range of environmental due diligence, assessment, planning, inventory, community involvement, and re-use activities. Two previous assessment grants were awarded to the Town in 2011 ($400,000) and 2013 ($400,000) and were partly used for assessments in the study area. The GBRC was awarded assessment grants in 2013 ($400,000) and 2015 ($400,000). A portion of the GBRC's 2013 grant funded the environmental assessments for the Center School site mentioned above. No local match is required for the grant and a specific site does not have to be identified at the time the application is submitted. Although the competition for assessment grants is high, the Town of Stratford and GBRC have been successful in securing and utilizing funds for projects that are beneficial to their targeted areas, especially those projects that will support TOD in historic, urban locations.

EPA funds to support the clean up of brownfields have also been awarded to the Town of Stratford. The Town of Stratford received a $200,000 Brownfield Cleanup Grant in 2014 to remediate the former Mercer Fuel site at 2350 Stratford Avenue (a bulk coal storage and petroleum distribution facility that has been vacant since 1979). Clean up activities at Mercer Fuel have been complemented by a $167,000 subgrant provided through the GBRC's Revolving Loan Fund (RLF) program (described below) as well as federal (Community Development Block Grant) and local funding sources.

Clean up Grants are typically awarded for $200,000 (the maximum per site) but applicants are eligible to apply for cleanup funds for a maximum of three sites. Under the Clean up grant guidelines, a site is defined as a legal parcel therefore it is sometimes possible to obtain multiple awards for a single project site composed of multiple legal parcels. The property must be owned by the applicant at the time an application is submitted, which reduces some of the competition for funding. Unlike Assessment grants, not-for-profit organizations are also eligible for grant awards. A 20% cost share is required for cleanup grants with labor, material, and/or professional services eligible as match, as well as cash. EPA also considers hardship waiver requests.

Revolving Loan Funds (RLF) support brownfield clean up through subgrants and low interest loans. In 2014, the GBRC was awarded $900,000 by the EPA to capitalize a Revolving Loan Fund (50% subgrants and 50% loans). Like clean up grants, a 20% cost share is required and the maximum subgrant per site is $200,000. A specific site does

not have to be identified at the time of application submittal. Private entities are eligible for loans, but ineligible for subgrants and discounted loans. The Town of Stratford will be receiving a $167,000 subgrant from the GBRC for the remediation of Mercer Coal, 2350 Stratford Avenue.

EPA TARGETED BROWNFIELD ASSESSMENT PROGRAM

EPA's Targeted Brownfields Assessment (TBA) Program provides technical assistance to states, tribes, municipalities, and not for profits (which partner with a public entity) for environmental assessment activities. The purpose of the program is to minimize the uncertainties of contamination often associated with brownfields, especially for communities without EPA Brownfields Assessment Pilots/Grants. Assessments are performed by contractors working directly for the EPA, with services averaging approximately $100,000 per site. Sites not owned by the applicant must be abandoned properties that the applicant will acquire ownership of, such as through tax foreclosure. Redevelopment plans must be in place for the site as well. Sites are selected locally for the program once per year. Site eligibility requirements are similar to those for the EPA assessment grant program but the application process is less onerous.

STATE OF CONNECTICUT TARGETED BROWNFIELD REDEVELOPMENT LOAN PROGRAM

The State of Connecticut's Targeted Brownfield Redevelopment Loan Program provides low interest loans of up to $4 million to potential brownfield purchasers and eligible brownfield owners to cover costs associated with the investigation, assessment, remediation, and development of a brownfield. Borrowers may request all or a portion of the loan forgiven at the discretion of the State's Department of Economic and Community Development.

Loans are made on a "rolling round" basis – applications are accepted on a rolling basis and reviewed in a periodic competitive process. Ranking criteria includes the economic development impact of the project, projected tax revenues, public health and environmental benefits, consistency with the State Plan of Conservation and Development, need for financial assistance, local economic conditions, estimated project costs, and the length of time the brownfield has been abandoned or underutilized.

STATE OF CONNECTICUT URBAN & INDUSTRIAL SITES REINVESTMENT TAX CREDIT PROGRAM

The State of Connecticut's Urban and Industrial Sites Reinvestment Tax Credit Program is designed to drive investment to the State's urban centers and other economically distressed communities. Through the program, the state may provide up to $100 million in tax credits to a company over a ten-year period to support projects that create significant jobs and capital investment in under-served areas. Direct investments must be a minimum

amount of $5 million. For projects that preserve and redevelop a historic facility for mixed uses, the asset value is at least $2 million and at least four housing units must be included in the development.

Eligible Urban Site Investment Projects are those investments that will add significant new economic activity, increase employment in a new facility, and generate significant additional tax revenues to the municipality and the state. Eligible Industrial Site Investment Projects are investments made in real property or in improvements to real property that has been subject to environmental contamination. The investment should return the property to a viable business condition with the same benefits as Urban Site Investment Projects.

STATE OF CONNECTICUT REMEDIAL ACTION & REDEVELOPMENT MUNICIPAL GRANT PROGRAM

The State of Connecticut's Remedial Action and Redevelopment Municipal Grant Program is a competitive program available to municipalities and municipal entities for grant awards up to $4 million. The purpose of the program is to provide assistance for brownfield redevelopment projects that will have a significant economic impact. Grant awards can be used for a full array of activities including environmental or geotechnical assessments, remediation, abatement of hazardous building materials, disposal of hazardous materials or other wastes, long term groundwater monitoring, attorney's fees, consulting and engineering costs, and demolition. Criteria for funding awards are similar to those of the Targeted Brownfield Redevelopment Loan Program – economic development impact, public health and environmental benefits, consistency with the State Plan of Conservation and Development (with an emphasis on transit-oriented development), demonstrated need for financial assistance, economic distress of the municipality, estimated assessment and remediation costs, and the length of time the brownfield has been abandoned or underutilized. The municipality is not required to own the property to be eligible for this funding as long as it has an access agreement for the property. The Town of Stratford was awarded $1.2 million in the 2015 funding round for the cleanup of the Center School site. In 2014, the Town was awarded $2.8 million through this program to demolish and remediate the Contract Plating site (540 Longfellow Avenue).

Most recently (September 2015), the State of Connecticut announced the pilot funding round of the Brownfields Area-Wide Revitalization (BAR) Planning Grant. Municipalities, economic development agencies, and councils of governments may apply for grants of up to $200,000, with a 10% cash match. The goal of the program is to support the development of comprehensive implementation plans to remediate and redevelop neighborhoods, districts, corridors, downtowns, waterfront zones, or other areas burdened with multiple brownfields.

6.3 FINANCING OPPORTUNITIES

There are additional mechanisms to incentivize and finance redevelopment. These include:

Public/Private Partnerships: Leverage public funding to spur private sector investment to yield mutually beneficial results including new development that may otherwise be unattainable.

Property Tax Abatement: In simple terms, tax abatements reduce developer expenses through reduced tax expenditure for a specific period of time to incentivize the private sector to invest in new development while other economic gains are realized to the overall benefit of the community. Abatements may be used when the cost of construction, operation and maintenance of new or renovated multi-family residential development exceeds local lease and sales rates.

Tax Increment Financing (TIF): Investment of future tax revenues to reduce the developer's borrowing costs (such as was approved for the redevelopment of the Stratford Army Engine plant site). A tax exempt publicly guaranteed debt with the proceeds provided to the developer to reduce borrowing costs with the developer obligated to cover the debt service.

Low Income Housing Tax Credits (LIHTC) from the U.S. Department of the Treasury: These tax credits can be used to cover project development costs. "Unrestricted" 4% LIHTC credits can cover up to 30% of such costs. The highly competitive 9% LIHTC credits, whose administration in Connecticut is handled by the Connecticut Housing Finance Authority (CHFA), can cover up to 70% of costs.

The HOME Investment Partnership Program: A federal program that supports the construction, purchase, and rehabilitation of affordable housing for rental or purchase. HOME projects require that 90% of households subsidized through HOME funding have incomes at or below 60% of AMI (Area Median Income). The remaining 10% of households in such projects must have incomes at or below 80% of AMI.

The CHFA Multi-family Mortgages Program: Offers loans to developers and owners of affordable housing at below-market rates in order to help their projects achieve financial feasibility. Projects must set aside at least 20% of units as low-income housing and must comply with CHFA standards for project design, construction, and underwriting.

The Competitive Housing Assistance for Multi-family Properties (CHAMP): Offered by the Department of Economic and Community Development. CHAMP provides gap funding to owners of existing developments and developers of affordable housing using federal Housing Trust Fund (HTF) and federal Affordable Housing Program (FLEX) funds. Funds for this program are made available on a periodic basis and require a competitive application process.

6.4 FUNDING SUMMARY

Based on a review of properties and the brownfields funding mechanisms described above, all sites are eligible to apply to the CT Targeted Brownfield Development Loan Program. As shown in Table 1, two of the three catalyst sites have additional funding options, some of which have already been realized.

SITE	540 LONGBROOK CONTRACT PLATING	1000 EAST BROADWAY CENTER SCHOOL
Size (acres)	10.5	3.6
Previous use	Industrial	School & Board of Education office
Current use	Vacant	Same
Funding Strategy		
EPA Assessment Grant	Eligible	$26,500 (GBRC, 2014)
EPA Clean-up Grant		
EPA Revolving Loan Fund	Eligible	Eligible
CT Targeted Brownfield Development Loan Program		
CT Remedial Action & Redevelopment Municipal Grant	$2.8M (2014)	$1.2M (2015)

TABLE 1 | FUNDING FOR CATALYST SITES

Note: 576-600 Broadway is excluded from this summary as it is a superfund site and not eligible for federal brownfields funding.

7

- Catalyst Site: Center School
- Parking & Circulation Strategy
- Retail Strategy
- Housing Strategy
- Site Design Concepts
- Financial Analysis of Center School Redevelopment
- Traffic Impact

7 | TOD Cluster & Center School Catalyst Site

The public infrastructure investments discussed in *Sections 4* and *5* will improve pedestrian safety and accessibility while also reducing traffic congestion in Stratford Center. In addition to addressing deficiencies identified by Stratford residents, the recommended infrastructure improvements will provide a framework for TOD in the study area. However, for actual redevelopment and revitalization to occur, private investment is critical.

Throughout the public outreach process, Stratford residents expressed dissatisfaction with the availability of parking, lack of shopping, and overall aesthetics in Stratford Center. They also expressed support for mixed-use development. The recently adopted TOD Overlay District will encourage private investment in high quality, aesthetically pleasing development consistent with the historic character of the area. Allowing for a mix of uses in future development and increasing the availability of parking will address the needs of Stratford residents and attract private investment to Stratford Center.

The purpose of this section is to evaluate potential development alternatives in Stratford Center. Potential increases in parking availability and opportunities for development will be assessed against projected traffic impacts and financial feasibility. We begin with the assessment of a potential catalyst redevelopment project at the Town-owned Center School site in Stratford Center (see *Figure 42*).

FIGURE 42 | EXISTING CONDITIONS OF THE CENTER SCHOOL SITE

PHOTO 27	CENTER SCHOOL IN STRATFORD CENTER

7.1 CATALYST SITE: CENTER SCHOOL

The Town of Stratford's Plan of Conservation and Development (2013) identified the potential to revitalize Stratford Center through the redevelopment of the Center School site. Due to its three-acre size and proximity to the Stratford Railroad Station, potential redevelopment of the Center School site could address the parking shortage while providing residents with a range of housing and shopping choices. The site is owned by the Town of Stratford and is currently occupied by the Board of Education office building and a school. Existing conditions at the Center School property are represented in *Photo 27*.

The GBRC secured EPA funding for the Town of Stratford to assess the environmental contamination on the site, which ultimately leveraged over a million dollars in state funding for remediation. These activities were preceded by the completion of a feasibility study for Transit-centered Development in 2010 and adoption of the TOD Overlay District in 2015. The concept and alternatives described here are the potential next steps in the development process and they complement many of the infrastructure improvements recommended for the Stratford Center TOD Cluster, where the Center School site is located (*Figures 43 & 44*). *Photo 28* shows the existing conditions at Sutton Avenue while *Figure 45* depicts the streetscape condition along Sutton Avenue for this concept development looking toward the Center School site.

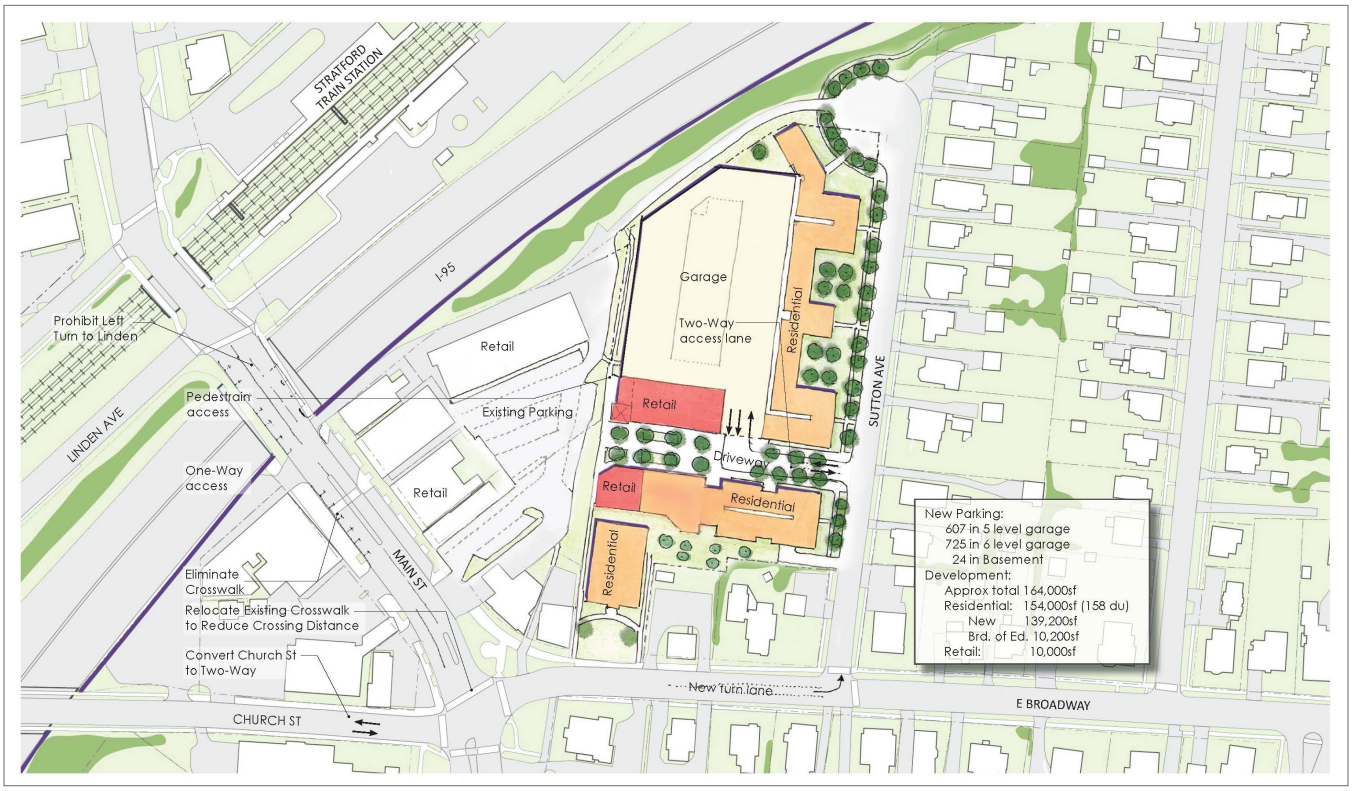


FIGURE 43 | CENTER SCHOOL SITE CONCEPT (NO THROUGH LANE) ALTERNATIVE 1

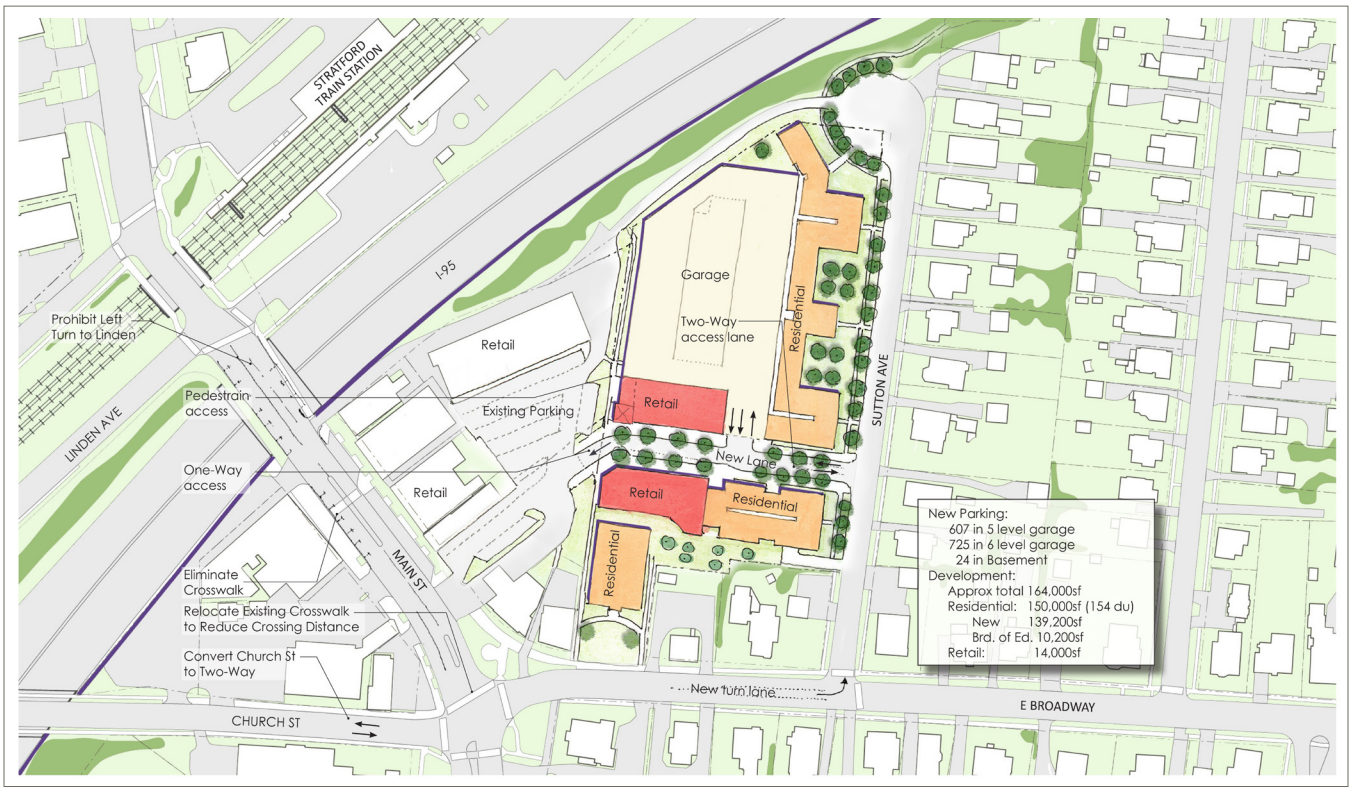


FIGURE 44 | CENTER SCHOOL SITE CONCEPT (ACCESS LANE) ALTERNATIVE 2

PHOTO 28	SUTTON AVENUE - VIEW NORTH FROM EAST BROADWAY TOWARD CENTER SCHOOL SITE (EXISTING)

FIGURE 45	SUTTON AVENUE - VIEW NORTH FROM EAST BROADWAY TOWARD CENTER SCHOOL SITE (REDEVELOPMENT CONCEPT)

7.2 PARKING & CIRCULATION STRATEGY

As the study area supports a primarily suburban population with an overwhelming preference for personal vehicle use, parking demand in Stratford Center continues to far exceed parking supply. Creating additional shared parking that provides spaces for both rail commuters and commercial activity during the day is critical to the revitalization of Stratford Center and to attract more retailers to the area. Shared parking occurs when multiple land uses share the same parking spaces. It takes into account varying peak parking demands, thereby reducing the total number of parking spaces required compared with simply adding together the parking requirements of each specific land use. Shared parking strategies typically reduce the land area and development costs devoted to parking.

A parking structure could address the current parking deficit as well as some of the existing on-street parking along Church Street that could be displaced by proposed traffic and pedestrian safety enhancements. Conceptual plans that included a parking structure were developed for the Center School site. The Center School site was found to have the potential to accommodate a parking structure (with up to 725 vehicle capacity) in addition to mixed-use development and a pedestrian plaza.

Future TOD in Stratford Center would follow the requirements and guidelines of the TOD Overlay District and any structured parking would incorporate active uses at the ground floor, design amenities such as arches, awnings, landscaping, and street furniture, and vehicle screening consistent with the building's architectural style. These strategies would ensure that the structures complement the existing streetscape, local building context, and the historic district.

The dimensions of the Center School site would allow for the conceptual parking structure to be located within a short walking distance of the Stratford Railroad Station and directly adjacent to existing shops and restaurants. Introduction of a new one-way, pedestrian-oriented travel lane through the block between Main Street and Sutton Avenue would provide vehicular access and pedestrian access to the structure, residences, and shops. Collaboration with adjacent property owners is necessary to achieve mutual benefits of the connecting lane. Pedestrians would be further accommodated by a walkway at the Center School site frontage on East Broadway and by an alley along the Interstate-95 right-of-way. Pedestrian access, a public plaza located south of the garage, and streetscape amenities would create a welcoming environment for residents, shoppers, and commuters. Increased parking availability complemented by high quality design would also support a long-term economically viable development for local businesses, investors, and property owners.

7.3 RETAIL STRATEGY

Increasing the concentration of walkable retail in a compact area would support Stratford residents' preference for downtown shopping and further establish Stratford Center as a destination. The two conceptual plan alternatives developed for the Center School site (see *Figure 43* and *Figure 44*) address the three critical elements required to support increased retail in Stratford Center: additional land area for new retail development, increased pedestrian traffic associated with commuter passersby and residential infill development, and added parking.

A parking structure at the site would increase pedestrian traffic in Stratford Center, addressing a critical need identified in a 2014 survey of local property owners. As retailers are currently located between the site of the proposed parking structure and the Stratford Railroad Station on Main Street, commuters would pass these businesses twice a day and could bolster sales and infill development. Businesses would be further supported by the additional parking capacity in the parking structure as well as a growing residential population that will likely require access to goods and services close to home.

Introduction of a new one-way, pedestrian-oriented travel lane through the block between Main Street and Sutton Avenue could further support retail. This lane would provide vehicular access to structured parking and safe pedestrian access to retail space within the new development.

7.4 HOUSING STRATEGY

In addition to retailers, pedestrian amenities, and access to transit, TOD requires a residential base that will support local businesses, utilize transit facilities, and bring vibrancy to the area. A mix of housing options in Stratford Center and throughout the study area would provide this residential base.

A mixed-use development concept for the Center School site would include a parking structure, ground floor retail, and multi-family dwellings. Development of residential units would follow the design guidelines detailed in the TOD Overlay District to ensure compatibility with the scale and character of development in Stratford Center and adjacent neighborhoods. Height limits based on adjacent uses and landscape requirements would further a harmonious visual transition between the new development and the existing neighborhood. Very importantly, a portion of the spaces in the parking structure would be dedicated for residents of the development and retail patrons.

Including a housing component in the conceptual plans, based on a financial analysis, would defray costs associated with structured parking. Some development costs may also be offset by the inclusion of affordable housing units at the site. Development costs and a financial analysis are discussed later in this section. Incentive programs to fund affordable housing development are described in *Section 6*.

7.5 SITE DESIGN CONCEPTS

Concepts for the Center School site were evaluated; two alternatives were previously discussed in Section 7.1. Both alternatives place a multi-story parking structure along the northwest property line of the Center School Site. In both alternatives, the parking structure is wrapped on two sides by mixed-use development and can accommodate up to 154 residential units and 14,000 square feet of retail space. The alternatives differ in the height of the parking structure and in the corresponding number of parking spaces that each would provide. Alternative 1 would allow a parking structure that provides 725 spaces on six floors, the top level including a surface lot to reduce the overall height of the structure. Alternative 2 would provide 607 parking spaces on five floors. The six-story parking structure would remain under the TOD Overlay District height limit of 60 feet. Due to the increase in height, some portions of the six-story garage alternative would be more visible from surrounding streets and adjacent properties than the five-story alternative.

The parking structure would be concealed on the Sutton Avenue side by four-story residential buildings that transition down to three-story buildings along the property line. The south face of the parking structure would be concealed by retail at the ground floor and three levels of residential units above. South of the parking structure and access roadway, a mixed-use, three-story building would have retail on the ground floor and residential units on the second and third floors. The north facade of the garage would be adjacent to I-95. The existing and historically significant Board of Education building could be converted to residential use, preferably senior citizen or age-restricted housing. The parking structure, as a result, would be well-concealed within the development by structures appropriately scaled to the neighborhood context.

A pedestrian plaza and well-designed pedestrian paths would create an open environment that both enhances the character of Stratford Center and provides a convenient connection to retail and transit that is currently thwarted by the large impassable school building property.

Both alternatives propose making the most efficient use of new parking spaces by implementing a shared parking strategy. Commuters who use the garage on weekdays during the day can “share” the same spaces with residential and retail users who use the garage at night and on weekends. A space that can serve a commuter during a weekday can also serve retailers during the weekend. A shared parking strategy does not assume that all spaces are shared, but instead estimates a fractional proportion of spaces that could be shared. If a shared parking strategy is utilized, both proposed alternatives will satisfy existing commuter parking demand as well as potential future residential and retail demand. In addition to shared parking, on-street and private parking and the new 115-space commuter parking area north of the Stratford Railroad Station are critical to meeting parking demand from existing and new development.

The Town of Stratford met with and discussed the feasibility and need for a parking structure in the Stratford Center area and on the Center School site with the State of Connecticut Department of Transportation. Though discussions were positive, no commitments have been made to develop a new structure as a result of these meetings.

7.6 FINANCIAL ANALYSIS OF CENTER SCHOOL REDEVELOPMENT

Informed by the conceptual plan and public input, a preliminary financial analysis for the redevelopment of the Center School site was conducted in July of 2014. The analysis compares the investment needs of public facilities (such as the parking structure), reviews potential revenues for residential and retail development, and calculates income from the parking structure. The analysis identified a funding gap that would have to be addressed in order to attract a developer to build at the site. Preliminary strategies to address the funding gap are outlined in this analysis.

Based on the dimensions of the Center School site and Figures 41 and 42, the conceptual plan could support 379,000 to 421,000 gross square feet of new development. Depending on the height of the parking structure, either 215,000 square feet of parking (607 spaces in Alternative 1) or 257,000 square feet of parking (725 spaces in Alternative 2) could potentially be realized at the site. Up to 154 new residential units could be accommodated as well. At an average of 975 gross square feet per unit, this would amount to 150,000 square feet of new residential units. At the ground level, 10,000-14,000 square feet of retail space would be available, though opportunities to increase this allocation exist.

To evaluate the financial feasibility of the proposed project, a stabilized-year financial analysis was conducted to determine the residual land value of the parcel or the amount of money a developer would be willing to pay for the land. Residual land value is calculated by comparing the market value of the development against building costs and the developer's profit from the project. If negative, the project faces a funding gap and a developer would not undertake the project without a subsidy. Market value was assessed by estimating the project's potential cash flow (net operating income) in a stabilized-year of operations and calculating the capitalized value of the revenue.

The following assumptions and factors informed this analysis and are applicable to the overall residential and retail markets in the Town of Stratford.

7.6.1 RESIDENTIAL

- Monthly residential rent of $1.94 per square foot. The rental rate is consistent with those at 1111 Stratford Avenue, a recently built 128-unit garden apartment community a half-mile from the site.
- A vacancy rate of 7.5%.

» Operating costs equal to 30% of rental revenue.

» 1.25 parking spaces per unit, a typical developer-recommended ratio for TOD projects within the region.

» Vertical development costs of $140 per square foot. This is consistent with 2014 Connecticut Housing Finance Authority guidelines for wood frame, vinyl siding, multi-story apartment construction. For the purpose of this analysis, this estimate has also been used to estimate the cost of renovating the Board of Education building for residential use.

7.6.2 RETAIL

» Annual triple-net rental rate of $12 per square foot. The rental rate was discounted from the $16 to $18 per square foot seen at 2505 Main Street, a property with better visibility than the Center School Site.

» A vacancy rate of 5%.

» Operating costs equal to 3% of rental revenue.

» Vertical development costs of $140 per square-foot, in line with the assumed cost for residential development, providing sufficient budget for tenant improvements.

7.6.3 PARKING

There is currently a waiting list for purchase of annual commuter parking passes for the Stratford Railroad Station (see *Figure 18*).

» The garage parking spaces would be distributed among commuters, residents, and retail visitors. Given that 460 spaces (in the 607 space scenario) and 545 spaces (in the 725 space scenario) would be reserved for commuters, the balance (over 200 spaces) would be available for residents and retail visitors.

» The analysis assumes that of the commuter space tally, 60 percent would be allocated to permit holders at the Town's "B" permit rate of $350 per year, 20 percent would be allocated to permit holders at the Town's "K" permit rate of $960 per year, and 20 percent would be allocated for daily commuters at $5 per day. These are highly preliminary distribution assumptions that are subject to discussion and negotiation. The analysis assumes the "B" and "K" permits would be "oversold" at a 5 percent margin and daily spaces would have 10 percent vacancy.

(Note: The Town of Stratford's defines permit types as follows: "B" Permit Parking is for weekday commuter parking on a first come, first serve basis. "K" Permit Parking is for individually reserved spaces at Stratford Railroad Station to be available to the permit holder 24 hours a day, seven days a week. Prices are as of November 3, 2015.)

» Garage operating costs of $500 per space per year, in line with costs observed at other suburban TOD projects in the region.

» Vertical construction costs of $24,000 per space, as recommended by the GBRC and consistent with privately-financed parking construction costs observed at suburban TOD projects in the region.

7.6.4 DEVELOPMENT HYPOTHESES

» The capitalization rate for the entire project is assumed to be 6.5 percent, within the range for suburban, multi-story, garden apartment complexes in the region according to a Q1 2014 CBRE report, reflective of trends from the second half of 2013.

» The analysis assumes a developer would expect to earn a profit equal to 7.5 percent of the total construction costs.

» The analysis does not reflect the cost to prepare the site for development. These may include horizontal infrastructure, demolition and/or land acquisition costs.

7.6.5 FINDINGS

A comparative analysis of market value against costs and profit associated with the Center School concepts indicates that the 607 space alternative has a funding gap of $14.7 million and the 725 space alternative has a funding gap of $17.5 million . The developer would not build this project or recover its investment in the commuter parking spaces without subsidy. In order to attract a developer to build and operate the proposed structure, either $14.7 million or $17.5 million in subsidy would be necessary. This estimate is highly subject to change according to market conditions that may impact revenues, costs, and financing. For example, actual construction cost of the parking structure and building materials selection may alter these values significantly.

	CENTER SCHOOL SITE REDEVELOPMENT CONCEPT	
	ALTERNATIVE 1	ALTERNATIVE 2
STORIES		
	5	6
RESIDENTIAL SF		
	154,000sf (154 Units)	150,000sf (154 Units)
RETAIL SF		
	10,000	14,000
PARKING ALLOCATION		
	607	725
FUNDING GAP	**$14.7M**	**$17.5M**

TABLE 2 | CENTER SCHOOL SITE REDEVELOPMENT CONCEPT FUNDING GAPS

7.6.6 REDUCING THE FUNDING GAP

Tables 3 and 4 present an alternate financial assessment, modifying development components to reduce the funding gaps outlined in Table 2. These modifications include increasing the residential allocation (150,000 s.f. of residential increased to 160,000 s.f.) and increasing the retail program (from 10,000 s.f. to 30,000 s.f. subject to land availability). Funding to construct commuter parking and allocation of commuter parking revenue present another variable.

A strategy to improve the economics and enhance the appeal of development concepts to developers would be for the public sector to fund the cost of the commuter parking component. With that investment, the public sector could then be allocated all commuter parking revenues. Table 4 shows that this strategy would eliminate a large part of the funding gap, resulting in a residual land value of approximately $2 million. This conceptual analysis was conducted assuming an estimated 600 space or 750 space parking structure prior to further refinement which resulted in the 607 space and 725 space preferred concepts previously mentioned. The residual land value is approximately the same for both the 600-space and 750-space garage scenarios, since neither option entails any commuter parking costs or generates any commuter parking revenues for the developer.

STRATEGIC ALTERNATIVES TO ADDRESS THE FINANCIAL GAP

- Creation of infrastructure improvement district to cover garage and other project infrastructure costs,
- Increase commuter rates to boost revenues;
- Issue tax-exempt publicly-guaranteed debt and obligate the developer to cover debt service, lowering the developer's borrowing costs.

	SCENARIO 1 (600 SPACES)	SCENARIO 2 (750 SPACES)
RESIDENTIAL PROGRAM (160,000 SF)		
Rental revenue	$2,980,000	$2,980,000
Vacancy allowance	($220,000)	($220,000)
Effective rental revenue	$2,760,000	$2,760,000
Operating expenses	($890,000)	($890,000)
Net operating income	$1,870,000	$1,870,000
RETAIL PROGRAM (30,000 SF)		
Rental revenue	$360,000	$360,000
Vacancy allowance	($20,000)	($20,000)
Effective rental revenue	$340,000	$340,000
Operating expenses	($10,000)	($10,000)
Net operating income	$330,000	$330,000
GARAGE PARKING PROGRAM		
Commuter parking revenue	$260,000	$360,000
Residential parking revenue	$180,000	$180,000
Retail parking revenue	$0	$0
Vacancy allowance	($20,000)	($20,000)
Effective parking revenue	$420,000	$520,000
Operating expenses	($300,000)	($380,000)
Net operating income	$120,000	$140,000
RESIDUAL LAND VALUE		
Residential market value	$28,650,000	$28,650,000
Retail market value	$5,100,000	$5,100,000
Parking market value	$1,930,000	$2,290,000
Project market value sub-total	$35,680,000	$36,040,000
Residential development costs	($22,400,000)	($22,400,000)
Retail development costs	($4,200,000)	($4,200,000)
Parking development costs	($13,200,000)	($16,500,000)
Project vertical development costs sub-total	($39,800,000)	($43,100,000)
Developer profit	($2,990,000)	($3,230,000)
RESIDUAL LAND VALUE (FUNDING GAP)	**($7,110,000)**	**($10,290,000)**

TABLE 3 | REDUCING THE FUNDING GAP: PRELIMINARY FINANCIAL ANALYSIS (ROUNDED VALUES)

	SCENARIO 1 (600 SPACES)	SCENARIO 2 (750 SPACES)
RESIDENTIAL PROGRAM (160,000 SF)		
Rental revenue	$2,980,000	$2,980,000
Vacancy allowance	($220,000)	($220,000)
Effective rental revenue	$2,760,000	$2,760,000
Operating expenses	($890,000)	($890,000)
Net operating income	$1,870,000	$1,870,000
RETAIL PROGRAM (30,000 SF)		
Rental revenue	$360,000	$360,000
Vacancy allowance	($20,000)	($20,000)
Effective rental revenue	$340,000	$340,000
Operating expenses	($10,000)	($10,000)
Net operating income	$330,000	$330,000
GARAGE PARKING PROGRAM		
Commuter parking revenue	$0	$0
Residential parking revenue	$180,000	$180,000
Retail parking revenue	$0	$0
Vacancy allowance	($10,000)	($10,000)
Effective parking revenue	$170,000	$170,000
Operating expenses	($100,000)	($100,000)
Net operating income	$70,000	$70,000
RESIDUAL LAND VALUE		
Residential market value	$28,650,000	$28,650,000
Retail market value	$5,100,000	$5,100,000
Parking market value	$970,000	$970,000
Project market value sub-total	$34,720,000	$34,720,000
Residential development costs	($22,400,000)	($22,400,000)
Retail development costs	($4,200,000)	($4,200,000)
Parking development costs	($4,400,000)	($4,400,000)
Project vertical development costs sub-total	($31,000,000)	($31,000,000)
Developer profit	($2,330,000)	($2,330,000)
RESIDUAL LAND VALUE (FUNDING GAP)	**($1,390,000)**	**($1,390,000)**

TABLE 4 | REDUCING THE FUNDING GAP: PRELIMINARY FINANCIAL ANALYSIS WITH PUBLIC INVESTMENT IN COMMUTER PARKING (ROUNDED VALUES)

Other means to address the funding gap and provide incentives to a prospective developer are to increase project cash flow or reduce construction costs, both of which require further evaluation. Mechanisms may include:

» Higher parking rates to generate greater cash flow. However, higher parking rates may also reduce parking demand, depending on customer sensitivity to price.

» Investment of future tax revenues into the project could provide upfront proceeds for the developer to finance the project by reducing their borrowing costs. A district-based approach such as the Point Stratford Infrastructure Improvement District provides a precedent.

» A public entity could issue tax-exempt, publicly-guaranteed debt and allocate the proceeds to the developer to build the project, but obligate the developer to cover debt service. This would reduce the developer's borrowing costs.

» A public entity could offer the developer a grant to offset the cost of the parking garage, which would reduce development costs.

7.6.7 PUBLIC/PRIVATE DEVELOPMENT STRATEGY

Based on these conceptual plans and financial analysis, redevelopment of the Center School site to support a mix of uses could be achieved through a public/private partnership. The public land, owned by the Town of Stratford, could be made available through purchase by a private developer to implement a preferred development scenario. This strategy would reduce a sizable portion of the funding gap.

The project would be awarded to a developer through an expression of interest, qualifications, and request for proposals process, commensurate with local procurement policies. This process would incorporate a series of locally-guided criteria for construction of the site including the parking structure, identification of funding partners, and conformance to the design guidelines detailed in the TOD Overlay District. Design requirements will ensure that the physical development of the site is compatible within the surrounding neighborhood context and that it aligns with the community's vision for Stratford Center.

This program and analysis does not include an affordable housing component. It is possible that State and Federal housing incentives described in Section 6 could be accessed to offset the reduced rents.

7.7 TRAFFIC IMPACT

7.7.1 PURPOSE & NEED

Capacity analyses were performed for the Stratford TOD study area to ascertain existing congestion levels, project traffic volumes for the 2040 horizon year, and evaluate the impacts of the ensuing development in the 2040 Build Condition, with proposed traffic capacity improvements in place. Collection of existing traffic data at study area intersections provides us with a baseline to develop and model future volumes.

7.7.2 TRAFFIC DATA COLLECTION

Traffic volume data was collected at the following six intersections from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM on Tuesday, January 11, 2014:

- Stratford Avenue and Beardsley Avenue/Sherwood Place;
- Main Street and Stratford Avenue;
- Main Street and Linden Avenue/MNRR Outbound Parking;
- Main Street and MNRR Outbound Station Parking Driveway;
- Barnum Avenue and King Street/Nichols Place/Essex Place; and
- Main Street and East Broadway/Church Street.

AM and PM peak hour 30-minute spot counts were also conducted on the same day at the following locations:

- Main Street and Judson Place; and
- Barnum Avenue Cut-off and Burlington Coat Factory Driveway.

As part of CTDOT's Interchange-33 Reconstruction Project, engineering consultants provided AM and PM peak hour volumes for the following study area intersections/facilities:

- Main Street and Barnum Avenue;
- Main Street and West Broad Street;
- West Broad Street and Linden Street; and
- Broad Street Circle Intersections (West Broad St., I-95 northbound off/on ramps, and Beardsley Avenue)

To obtain a more complete picture of the study area, the intersections of Main Street and Essex Street/Firehouse Driveway and Main Street and Broadbridge Avenue were included in this analysis. Data for Main Street and Essex Street was collected on Wednesday, July 1, 2014 and peak hour volumes were derived for the intersection of Main Street and Broadbridge Avenue by calculating the difference in volumes between adjacent intersections.

After all traffic volume data was collected, the study area peak hours were determined to be weekdays from 7:30 AM to 8:30 AM and 5:00 PM to 6:00 PM. The corresponding AM and PM peak hour volumes are shown in *Appendix B, Exhibits B1 and B2*.

7.7.3 QUEUING OBSERVATIONS

During traffic data collection, field surveyors noted study area queuing, particularly during the PM peak hour along northbound and southbound Main Street from the Metro-North Railroad underpass to Judson Place and Essex Place. PM peak hour queuing was also observed along Barnum Avenue between Nichols Avenue and Main Street and at the intersection of West Broad Street and Linden Avenue. Although the duration of some queuing lasted approximately 15 minutes, extensive queuing cleared before the end of the peak hour. Intermittent queuing extended from the West Broad Street and Linden Avenue intersection during both peak hours. Photos of queuing and maximum observed queues are shown below, (see *Figure 46*).

FIGURE 46	OBSERVED CONGESTION AT PM PEAK HOUR

7.7.4 CAPACITY ANALYSIS & LEVEL OF SERVICE

Capacity analysis was performed to measure congestion levels for study area intersections. Running capacity analysis for study area intersections produce levels of service (or LOS) for each turning movement at an intersection and for the overall intersection. LOS is an evaluation of the quality of operation of an intersection and is a measure of the average delay a driver experiences while traveling through the intersection. LOS can range from A to F and is based on the average control (i.e. signal or stop signs) delay per vehicle. For a signalized intersection, LOS A indicates operations with an average control delay less than 10 seconds per vehicle while LOS F describes operations with an average control delay in excess of 80 seconds per vehicle or a volume-to-capacity (v/c) ratio greater than 1.0. For an unsignalized intersection, LOS A indicates operations with an average control delay less than 10 seconds per vehicle while LOS F describes operations with an average control delay in excess of 50 seconds per vehicle, or a v/c ratio greater than 1.0. The delay criteria for signalized and unsignalized intersections are summarized in Table 5.

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SECONDS/VEHICLE)	
	Signalized	Unsignalized
A	Less than or equal to 10	Less than or equal to 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80 or v/c > 1	> 50 or v/c > 1

TABLE 5 | LOS CRITERIA FOR SIGNALIZED & UNSIGNALIZED INTERSECTIONS *(SOURCE: 2010 HIGHWAY CAPACITY MANUAL)*

LOS D or better operations are generally deemed acceptable from a traffic operations perspective, while LOS E or F operations are often indicative of queuing and congestion. Access improvements developed in this study seek to restore or improve traffic operations to LOS D or better, with minimal queuing.

7.7.5 2014 EXISTING CONDITION LEVELS OF SERVICE

2014 Existing Condition capacity analysis results for the AM and PM peak hours are shown in *Appendix B, Exhibit B3*. All study area lane groups operate at LOS D or better, except for the following movements that are currently experiencing peak hour congestion:

Barnum Avenue & King Street/Nichols Avenue/Essex Place intersection

- The northbound King Street approach operates at LOS E during both peak hours.
- The southbound Nichols Avenue shared through/right-turn group operates at LOS E during the AM peak hour.

Main Street & inbound station parking driveway intersection

» The westbound inbound station parking driveway left-turn movement operates at LOS F during both AM and PM peak hours.

Main Street & Linden Avenue/outbound station parking driveway intersection.

» The northbound shared left-turn/through lane group operates at LOS F during the PM peak hour.

7.7.6 2040 NO BUILD CONDITION LEVELS OF SERVICE

2014 Existing Condition volumes were grown to 2040 levels with a background growth rate of approximately 0.18%, developed according to population forecasting data from the GBRC. 2040 volumes were also adjusted to account for changes in regional travel patterns ensuing from the Interchange-33 Missing Movements project, with AM and PM peak hour volume adjustments shown in *Appendix B, Exhibits B4 and B5*. Other planning transportation improvement projects, such as improvements to the intersection of West Broad Street and Linden Street/I-95 southbound on-ramp and extension of the Housatonic Greenway, have also been incorporated into the study area roadway network for the 2040 No Build Condition. Resulting 2040 No Build Condition volumes are shown in *Appendix B, Exhibits B6 and B7*, respectively for the AM and PM peak hours.

2040 No Build Condition capacity analysis results for the AM and PM peak hours are shown in *Appendix B, Exhibit B8*. All study area lane groups operate at LOS D or better, except for the following movements that would experience peak hour congestion:

Barnum Avenue & King Street/Nichols Avenue/Essex Place intersection

» The northbound King Street approach would operate at LOS E during the AM peak hour.

» The southbound Nichols Avenue shared through/right-lane group would operate at LOS E during the AM peak hour.

Main Street & inbound station parking driveway intersection

» The westbound inbound station parking driveway left-turn movement would operate at LOS F during both AM and PM peak hours.

Main Street & Linden Avenue/MNRR outbound parking intersection

» The northbound Main Street shared left/through-lane group would operate at LOS F during the PM peak hour.

7.7.7 2040 BUILD CONDITION

STUDY AREA TRIP GENERATION

To conduct the analysis, trips generated by proposed TOD study area land use growth are distributed across study area roadways according to the distribution percentages shown in *Appendix B, Exhibit B9*. Trips generated by the Center School site (*Appendix B, Exhibit B10*) would result in the AM and PM peak hour site-specific volumes shown in *Appendix B, Exhibits B11 and B12*. Trips generated by other projected development within the TOD study area (*Appendix B, Exhibit B13*) would result in the AM and PM peak hour site-specific volumes shown in *Appendix B, Exhibits B14 and B15*.

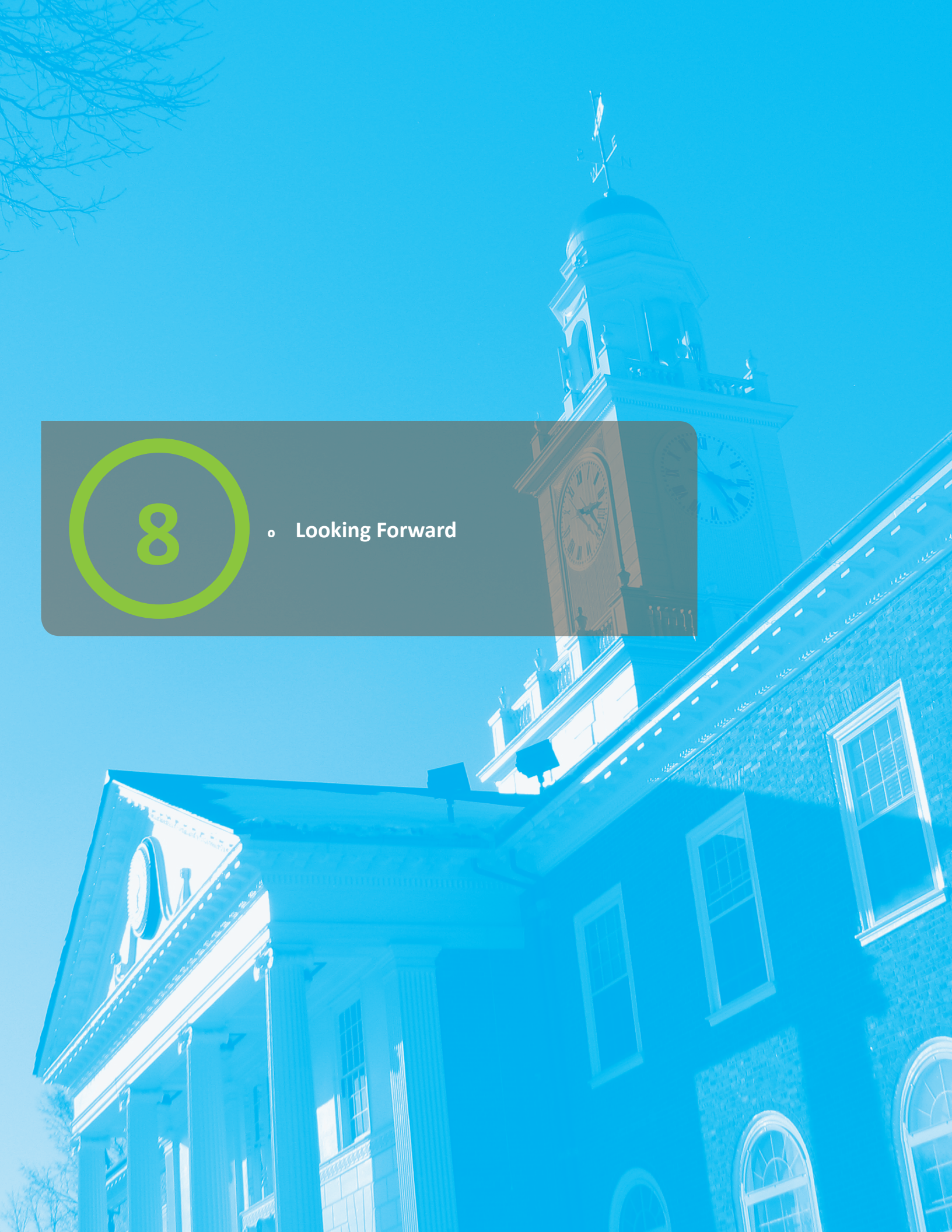
PROPOSED TRAFFIC IMPROVEMENTS

Infrastructure improvements are proposed to reduce traffic congestion and increase traffic capacity:

- Prohibition of northbound and southbound left turns from Main Street at the Main Street and Linden Avenue/Metro-North Railroad Outbound parking driveway intersection;
- Implementation of two-way traffic flow on Church Street between Main Street and Linden Avenue;
- Left-turn bay striping on East Broadway at Sutton Street to accommodate Center School site ingress traffic; and
- Signal timing adjustments at the Main Street intersections with East Broadway/Church Street, Linden Avenue, Broadbridge Avenue, and Essex Street for semi-actuated, fixed-cycle length operation in order to enable coordination along Main Street.

2040 BUILD CONDITION LEVELS OF SERVICE

Trips generated by the Center School site and other projected TOD study area development were added to the 2040 No Build Condition volumes to calculate 2040 Build Condition AM and PM peak hour volumes (*Appendix B, B16 and B17*). The volumes and all proposed traffic improvements were modeled in Synchro to produce capacity analysis results, presented in A*ppendix B, Exhibit B18*, which demonstrates that all lane groups would operate at LOS D or better.



8

Looking Forward

8 | Summary

Throughout the process of developing this plan, Stratford residents expressed a desire for a vibrant Stratford Center. Recent projects, including the 2013 Plan of Conservation and Development and the 2010 Transit Centered Development Feasibility Plan, support this objective. The intent of this study is to further the goals of these previously adopted plans by developing a potential implementation strategy. This strategy positions Stratford Center to accommodate market driven growth and mixed use development in close proximity to transit.

At the beginning of this study, the following three questions were posed:

1. **What locations (priority areas) within Stratford Center will further TOD?**
2. **What infrastructure investments will encourage and support new development and/or adaptive re-use in these priority areas?**
3. **What steps should be implemented to catalyze new development?**

Through a public outreach process, an analysis of existing conditions, the identification of TOD clusters and associated infrastructure improvements, conceptual site plans and a detailed market, financial and feasibility analysis, these questions were successfully addressed.

- **TOD Clusters were identified within the study area for potential prioritized development and associated infrastructure improvements.**
- **Specific investments are identified including new pedestrian and bicycle amenities, intersection and roadway improvements, transit enhancements, and additional commuter parking. Also, a complete streets strategy has been incorporated to guide future investment.**
- **A TOD Overlay District and design guidelines were adopted; TOD clusters and potential funding sources are identified; and opportunities for public/private partnerships are conceptualized that will catalyze new development that is consistent with the community's vision for Stratford Center.**

This plan will support the Town of Stratford in strengthening its current assets including its railroad station, historic character, and access to natural resources through the revitalization of Stratford Center.

Appendix A

TOD Ordinance

A

Proposed Stratford TOD Zoning

Section 7A Transit-Oriented Development Overlay District

I. Purpose

The purpose of the Transit-Oriented Development (TOD) Overlay District is to enhance Stratford's residential neighborhoods, to preserve its historic character, to revitalize Stratford Town Center and commercial areas and to promote mixed-use development that increases employment and the Town's tax base, by:

1) Providing an alternative to the traditional built environment by emphasizing mixed-use, pedestrian-oriented development;
2) Allowing market-driven growth in places that are most conducive to accommodating additional activity;
3) Encouraging the redevelopment of underutilized or obsolete areas;
4) Creating an environment that encourages walking, bicycling and transit use;
5) Facilitating the adaptive re-use of existing buildings and infill development;
6) Reducing auto dependency and traffic congestion by locating multiple destinations and trip purposes within walking distance of one another;
7) Providing a range of housing options for people at different stages of life;
8) Ensuring that new development is consistent with and enhances the nearby streetscape; and
9) Encouraging a mix of moderate-density development within walking distance of the Stratford Train Station to increase transit ridership.

II. Applicability

A. The TOD Overlay District consists of those areas as shown on the Zoning Map of the Town of Stratford dated October 1, 1956, and amendments thereto, which map and amendments are on file in the Town Clerk's office and the office of the Town's Planning and Zoning Commissions. Any parcel which is depicted on the Zoning Map as being wholly within or partially within the TOD Overlay District shall be determined eligible for the provisions of the Overlay District as described in this Section. A developer of a property located within the TOD Overlay District may choose to develop under the provisions of the underlying zoning, or may choose to utilize the provisions of the TOD Overlay District, subject to meeting the General Provisions, Development Standards and Design Standards, as described in this Section, to the satisfaction of the Stratford Zoning Commission.

III. Definitions

As used in this section, the following terms shall have the meanings indicated:

Active Use. A use that attracts pedestrian activity during varied times of the day, provides access to the general public and conceals uses designed for parking and other non-active uses if present. Such uses

generally include, but are not limited to, retail, commercial uses, restaurants, coffee shops, libraries and educational and cultural uses. Active uses typically do not include professional offices.

Commercial Security Structure. Security doors, gates or grates; window guards; wire or similar fixed or moveable physical barriers designed to protect the contents or occupants of a commercial establishment.

Green Building Elements. Measures incorporated into building design and construction that are intended to minimize impacts to the environment through conservation of natural resources, increased energy and efficiency and improved indoor air quality.

Green Infrastructure. Measures that utilize best management practices for stormwater management that infiltrate or otherwise reuse stormwater. Such techniques may include green roofs, landscaping, rain gardens, bioretention areas, vegetated swales, pocket wetlands, infiltration planters and vegetated median strips. Individual green infrastructure practices shall be defined according to the current Connecticut Stormwater Quality Manual.

Green Roof. The roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems. Such roof may or may not be open to residents or users of the building.

Mixed Use. Development contained on a single parcel that includes different, complementary uses (both residential and non-residential) and which provide for a variety of activities throughout the day.

Overlay Zoning District. A zoning district that encompasses one or more underlying zoning districts and imposes additional or alternative requirements or provisions than required by the underlying zoning.

Pedestrian-Oriented Development. The design of communities, neighborhoods, streetscapes, buildings and other uses that promote pedestrian comfort, safety, access and visual interest.

Shared Parking. Parking that is utilized by two or more different uses that generate different peak period parking demand.

Streetscape. The area between building facades on either side of a street or between properties on either side of a street, encompassing its curb-to-curb distance, boulevards, sidewalks, setbacks and property facades or frontages.

Transit-Oriented Development. A development pattern created around a transit facility or station that is characterized by higher-density, mixed uses, a safe and attractive pedestrian environment, reduced parking and direct and convenient access to the transit facility.

Transit Station. The area, including the platform, which supports transit usage and that is owned and/or operated by the Metropolitan Transit Authority.

Usable Open Space. Active recreational areas, sitting areas or other landscaped areas open to the sky, but not including surface parking or sidewalk areas.

IV. Permitted Uses

Any use or combination of uses allowed in the underlying zoning district shall be allowed in the TOD Overlay District. In addition, residential uses pursuant to § 5.3.2 and the standards in this section shall be permitted. In the event that an applicant seeking to develop utilizing the provisions of the TOD Overlay District is within the Limited Business (LB) district, the Zoning Commission may consider permitting ground-floor retail, restaurant or personal-service use subject to the provisions of this section. Notwithstanding the underlying zoning, for areas within the LB district that are indicated on the Zoning Map as "TOD-1," active ground floor uses shall be required pursuant to § 7A VII (F) of these regulations.

V. Procedure

Any application seeking to develop utilizing the provisions of the TOD Overlay District shall be subject to Special Case approval from the Zoning Commission, pursuant to the requirements of § 20 of these regulations, and the relevant provisions of the TOD Overlay District as contained in Section 7A.VI, and VII and VIII of these regulations. Any such application that is within the Stratford Academy Hill Historic District shall also be subject to the requirements of that district, including review by the Historic District Commission pursuant to § 121 of the Town Code.

VI. General Provisions of the TOD Overlay District

The following site development prerequisites are required to be met by an applicant seeking to develop land under the provisions of the TOD Overlay District:

A. **Contribution to Transit-Oriented Development.** The site to be developed shall be determined by the Zoning Commission to be well-connected to the Transit Station for all transportation users (pedestrians and bicyclists as well as vehicles) and shall be determined to have potential to enhance and contribute to an active, walkable downtown environment.

B. **Single Applicant.** The development application shall be made by a single entity, and shall be developed under single direction in accordance with an approved plan.

C. **Development Plan.** The application for development shall be accompanied by a plan, or plans, showing the detailed use of the entire site, and the plan or plans shall comply with all relevant requirements provided in Section 22.1 of these regulations, and Section 20.2, pertaining to special cases. In addition, the application shall demonstrate compliance with the provisions and design standards of the TOD Overlay District, as contained in this section, to the satisfaction of the Zoning Commission.

D. **Utilities.** The development site shall be served by public sanitary sewers, stormwater systems and utilities. Where feasible, for projects involving new construction and/or redevelopment

activities, every effort shall be made to place telephone, cable television and similar utility lines underground.

VII. TOD Overlay District Development Standards. Notwithstanding the requirements of the underlying zoning district, the following provisions shall apply to developments seeking to utilize the provisions of the TOD Overlay District:

A. **Contextual Relationship.** The proposed development shall be consistent with the existing surrounding context, particularly with existing development on directly adjacent sites.

B. **Mixed Uses.** Sites within the TOD Overlay District are encouraged to be developed with a mix of complementary uses which provide for a variety of activities throughout the day and on different days of the week.

C. **Lot size.** The minimum lot size shall be as required by the underlying zoning district.

D. **Density.** For developments containing residential uses, the maximum residential density shall be 50 bedrooms per 40,000 square feet of lot area, as defined in § 1.24.1 of these regulations.

E. **Bedroom Mix.** At least 70% of the residential units shall be efficiency or one-bedroom units, with the balance of the units limited to two-bedroom apartments. For the purposes of these regulations, libraries, dens, studios, studies, lofts and other similar spaces may be deemed to be bedrooms if the Zoning Commission finds that the size, design and layout of these rooms are generally similar to bedrooms.

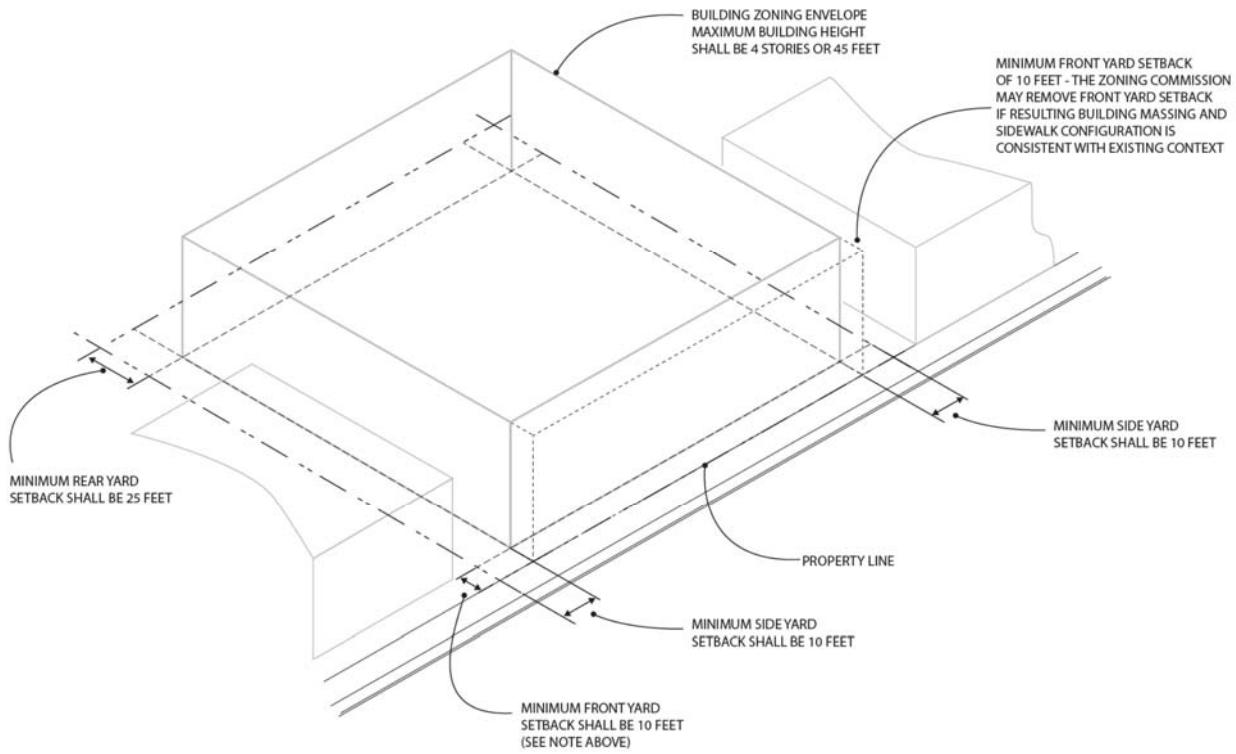
F. **Active Ground-Floor Uses.** For areas indicated on the Zoning Map as "TOD-1," uses on the ground floor of buildings shall be active uses as defined in § III, above. Residential or office uses within such buildings shall be limited to the upper floors, unless waived by the Zoning Commission based on the particular characteristics of the site and the surrounding context.

G. **Minimum Frontage.** The minimum lot frontage shall be as required by the underlying zoning district.

H. **Minimum Front Yard.** The minimum front yard setback shall be 10 feet. The Zoning Commission may reduce or remove any front yard setback if the resulting building massing and sidewalk configuration is consistent with the existing context.

I. **Minimum Rear Yard.** The minimum rear yard setback shall be 25 feet.

J. **Minimum Side Yard.** The minimum side yard setback shall be 10 feet. The two side yards may be combined in order to achieve greater flexibility and efficiency on the site. In addition, the Zoning Commission may reduce or remove any side yard setback if the resulting building massing and sidewalk configuration is consistent with the existing context, provided, however, that the site provides sufficient access for parking and loading.



Setback diagram showing minimum required yards in the TOD Overlay District. Front and side yards may be waived in order to achieve consistency with existing context.

K. **Maximum Building Height.** Building heights shall be 4 stories, or 45 feet in height, if the Commission finds that the building massing and height is consistent with the existing surrounding context.[1]

L. **Maximum Building Coverage.** The maximum building coverage shall be 40% of the lot area.

M. **Required Open Space.** A minimum of 15% of the total lot area shall be established for usable open space and landscaping. A minimum landscape buffer of at least 10 feet shall be provided along all rear yards, and at least 6 feet along all side and rear yards, unless waived by the Zoning Commission based on the particular characteristics of the site.

N. **Minimum Required Parking.**

1) Parking requirements for residential uses shall be as follows:

a) 1.0 space for each dwelling unit containing an efficiency or one bedroom

[1] Parcels east of Main Street and within 550 feet of the Stratford Train Station platform may have maximum building coverage of 65% and building heights of up to 60 feet in areas set back 100 feet or greater from Main Street and 75 feet or greater from Sutton Avenue. The Zoning Commission may consider allowing maximum building coverage of 65% and maximum building height of 60 feet elsewhere in the TOD Overlay District, based on the particular characteristics of the site and the surrounding context.

b) An additional 0.25 spaces for each bedroom in excess of one bedroom

c) Indoor parking may be included in the required parking spaces.

d) No required off-street parking facility shall be developed within the required front yard, or shall be developed within 5 feet of a side or rear lot line.

2) Parking requirements for financial institutions, non-medical office buildings, retail stores, personal service shops and similar business buildings shall be 3 spaces for each 1,000 square feet of gross floor area.

3) Parking requirements for medical office uses shall be 1 space for each 250 square feet of gross floor area.

4) Parking requirements for restaurants, clubs, taverns or bars shall be 1 space for each 100 square feet of gross floor area.

5) All other parking requirements shall be consistent with § 12.5 of these regulations, except as modified by the Zoning Commission pursuant to § 7A VIII (F) of these regulations.

VIII. TOD Overlay District Design Guidelines.

These TOD Overlay District Design Guidelines are intended to encourage and guide high-quality development, infill and redevelopment in the vicinity of the Stratford Train Station. The purpose of these guidelines is to foster a cooperative and creative approach to design between the Town and the development community that serves as the basis for dialogue between the Town and applicants during the site development process. As a result, projects seeking to utilize the provisions of the TOD Overlay District will be required to demonstrate that the proposed development's design is consistent with the purpose and intent of these guidelines.

A. Building Massing and Character.

1) Buildings shall be designed to avoid the appearance of a large, monotonous building mass by dividing large facades into the appearance of several sections or smaller buildings. Long building facades are encouraged to be broken up into lengths of approximately 30 feet with sufficient building articulation, architectural features and landscaping. Large-scale retail stores with building frontages exceeding 30 feet are encouraged to include architectural details and design elements to create the appearance of multiple storefronts. Buildings should also incorporate screening of rooftop mechanical equipment, as detailed in Subsection M, below.

Building Massing and Character: Sensitively designed building can enhance context by using features such as window bays that break up horizontal building mass, and "stepping down" to complement adjacent buildings.

2) New infill development shall generally employ building types that are compatible with the historic architecture of the area in their massing and external treatment.

   a) New infill development shall retain the historic architectural rhythm of building openings (including windows and entries) of the same block.

   b) New infill development shall also attempt to maintain the horizontal rhythm of existing facades by using a similar alignment of windows, floor spacing, cornices, awnings and other elements. This rhythm shall be achieved by aligning the top, middle and base floors. Buildings shall have a distinct base at ground level using articulation or materials such as stone, masonry or concrete. The top level should be treated with a distinct outline with elements such as a parapet, cornice or other projection.

Despite different architectural styles, both buildings achieve a horizontal rhythm through alignment of windows and other architectural elements.

3) To the greatest extent practicable, the height of new infill development shall be coordinated with the heights of adjacent or nearby structures.

The one-story building at left disrupts the building pattern of the block. In contrast, the comparable scale of the buildings at right creates a unified feel, even with the change in topography and variation in styles.

4) Building facades and site improvements significantly exposed to public view shall be constructed with high-quality, durable exterior materials. Use of lesser-quality materials, including, but not limited to, masonite paneling, sheet tile, simulated brick, pegboard, vinyl and aluminum siding, external insulation and finish systems, plastic laminate and canopies and awnings made of vinyl is discouraged.

These buildings incorporate high-quality materials and features to accentuate unique architectural elements.

B. Building Orientation and Entrances.

1) Front facades of buildings shall be oriented toward existing public streets, with the primary building entrance in the front façade. Buildings with multiple front facades shall have entrances in each front façade or corner entrances, unless otherwise determined by the Zoning Commission.

2) All primary building entrances shall be accentuated with accents such as recessed or protruding entrances, canopies, porticos or overhangs.

Each of these store entrances uses an accent feature that is inviting to pedestrians and creates visual interest. Such treatments, while dependent on site-specific factors and the character of the store, are encouraged.

3) Loading doors, service doors and loading docks shall not be located in any façade facing a public street or any portion of a façade within 35 feet of a public street.

C. Walls and Windows.

1) Blank walls shall not be permitted along any exterior wall facing a public street. Walls along public streets shall comprise a minimum of 35% window area and a maximum of 75% window area, with windows interspersed across the façade.

2) Ground-floor facades facing a public street shall comprise a minimum of 50% clear window area, with such window area free of obstruction from signage or display items. Storefronts and window displays should be situated close to the outermost edge of the building façade, and deep setbacks and dark alcoves are to be avoided.

The windows at top are obstructed by signage or display items, detracting from the streetscape, which should be avoided. The windows at the bottom are open and inviting to the pedestrian.

3) Smoked, reflective or black glass in windows is prohibited.

4) Walls or portions of walls where windows are not provided shall have architectural treatments designed to break up the bulk of the wall and avoid blank, featureless areas.

5) Rear and side facades shall have colors and materials that are similar to the front façade and shall blend with structures within the development. Any development with more than one building on the site shall have a common and coherent architectural theme throughout the development.

6) Windows or doors shall not be covered with any interior or exterior commercial security structure.

D. **Roofs.** Roofs shall be in keeping with the character of surrounding buildings. Buildings shall have varied roof lines and materials. Peaked, mansard and other sloping roof types are encouraged. Flat roofs should be topped with cornices or decorative parapets.

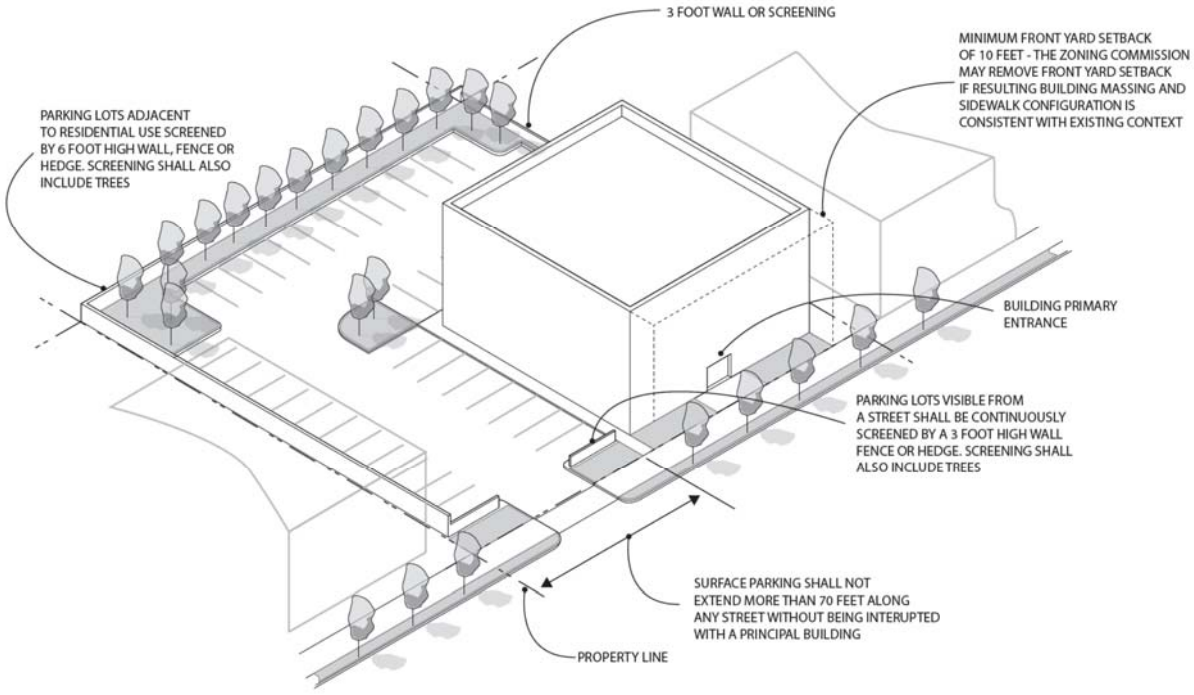
Variation in roof styles creates visual interest.

E. **Driveways.** The creation of new sidewalk curb cuts shall be avoided whenever an alternative point of access is available or can be created. Where feasible, ingress and egress from parking shall be from side streets. The consolidation and sharing of driveways and curb cuts between adjacent properties and interior connections between parking lots and/or the use of shared parking facilities is strongly encouraged.

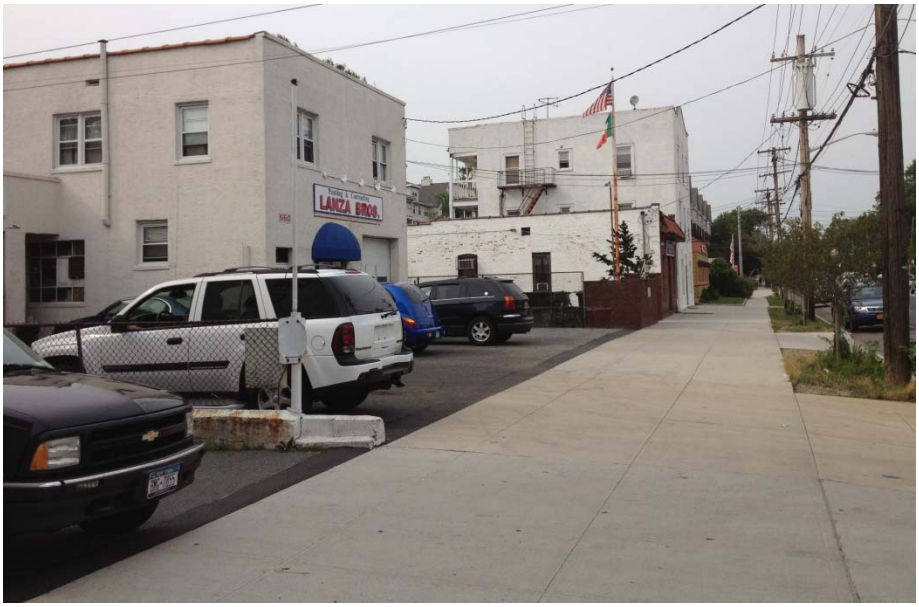
F. Parking Design.

1) Surface Parking.

a) Surface parking lots shall be located to the rear or to the side of principal buildings. Surface parking shall not be located between a building and a street.



ABOVE: Appropriate layout of surface parking lots in the TOD Overlay District.
BELOW: Parking between buildings and the street disrupts the pedestrian experience, and is discouraged.



b) Surface parking shall not extend more than 70 feet in width along any street without being interrupted with a principal building.

c) Parking lots visible from a street shall be continuously screened by a 3-foot high wall, fence or hedge. Parking lots adjacent to a residential use shall be continuously screened by a 6-foot-high wall, fence or hedge. Screening shall also include street trees.

d) No more than 12 adjacent perpendicular parking spaces may be provided without a raised planting island containing a tree. Such raised planting island shall be at least 8 feet in width to guide vehicular movement and to separate opposing rows of parking spaces so as to provide adequate space for plant growth, pedestrian circulation and vehicle overhang. The islands and landscaping within them shall be designed and arranged in such a way as to provide vertical definition to major traffic circulation aisles, entrances and exits; to channel internal traffic flow and prevent indiscriminate diagonal movement of vehicles; and to provide relief from the visual monotony and shadeless expanse of a large parking area. Curbs of such islands shall be designed so as to facilitate surface drainage and prevent vehicles from overlapping sidewalks and damaging landscape materials.

LEFT: A lack of landscaping within surface parking lots is unattractive and detracts from the pedestrian-friendliness of lots. This type of parking configuration is discouraged.

RIGHT: The large number and variety of landscaping within this parking lot improves the pedestrian and driver experience, is visually attract and reduces the heat island effect.

e) In all off-street parking areas containing 25 or more parking spaces, at least 10% of the interior of the parking area shall be curbed and landscaped with trees, shrubs and other material.

2) Structured Parking.

a) Except for their pedestrian and vehicular entrances, structured parking garages, or structured parking within a principal building, that is located within 50 feet of a street curbline at street level shall have active uses in occupied space along 70% of the first floor of the structured parking that faces the street.

This parking structure, associated with the residential uses above, is disguised by active ground-floor uses that contribute to pedestrian activity.

b) Structured parking shall have design treatments such as colonnades, arches, awnings, landscaping, street furniture and other public amenities to create the appearance of an occupied building. Blank walls are not permitted.

c) Vehicles shall be generally screened from the street through features such as grills, lattices, mock windows, louvers, false facades, etc. Such screening shall be in keeping with the rest of the building's architecture style and materials.

3) Shared and Off-Site Parking.

a) On lots serving more than one use, the total number of required parking spaces may be reduced, provided that the applicant submits credible evidence to the satisfaction of the Zoning Commission that the peak parking demand of the uses do not coincide, and that the accumulated parking demand at any one time shall not exceed the total capacity of the facility. Such evidence must take into account the parking demand of residents, employees, customers, visitors and any other uses of the lot. It must also take into account parking demand on both weekends and weekdays, and both during the daytime and overnight.

b) Where an applicant cannot provide the required parking spaces on the subject lot, the Zoning Commission may permit the use of parking facilities within a readily accessible area no more than 200 feet from the site to satisfy the parking requirements. The applicant shall submit proof acceptable to the Zoning Commission and documents satisfactory to the Town Attorney to assure the adequacy and continuation of such additional or substitute parking facilities during the use of the premises by the applicant and all successors. If the use of the premises is changed, enlarged or extended by a subsequent user, such subsequent user will provide off-street parking facilities for its own use, in accordance with the requirements of § 12.5 of these regulations.

4) Bicycle Parking. For developments including non-residential uses, bike racks shall be provided as appropriate to serve employees, customers and visitors. For residential uses, internal safe, secure and lighted storage shall be provided on the first level for all tenants wishing to own bikes. Garages will be included toward satisfying this requirement.

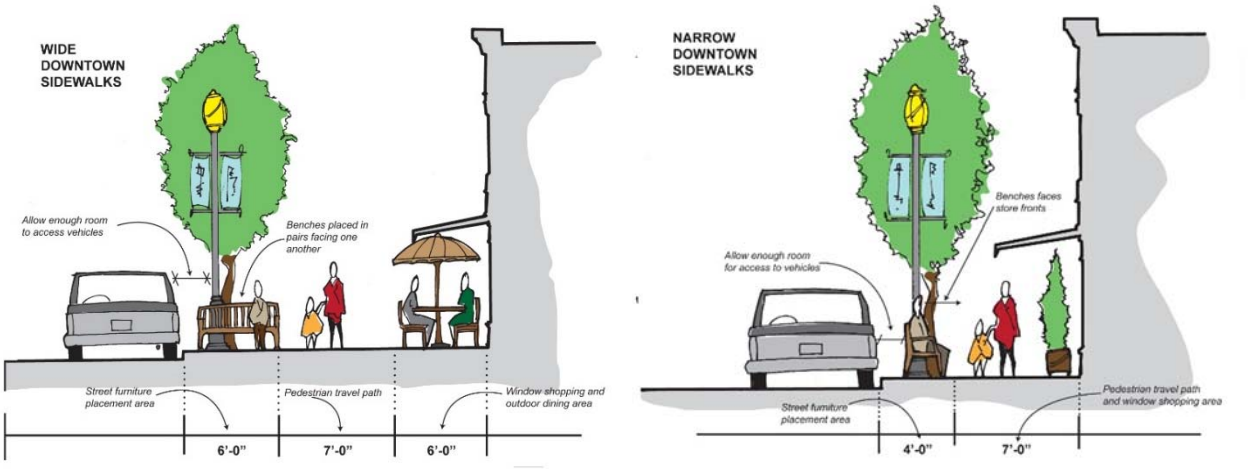
G. Pedestrian Circulation.

1) Sidewalks shall be constructed along the frontage of all public streets.

2) All main entrances should be connected by a continuous network of sidewalks lined by open space and landscaping, with designated crosswalks or pedestrian-oriented paving treatment at internal and external intersections. The sidewalk pattern shall continue across driveways.

3) Sidewalks shall have a minimum unobstructed width of 5 feet, and may extend up to 20 feet, dependent on expected level of activity.

Pedestrian-oriented paving treatments at intersections enhance safety and aesthetics, while street furniture, including trees and benches, provide a sense of pedestrian enclosure, protecting pedestrians from busy street traffic.



Examples of two sidewalk configurations: Both configurations provide opportunity for street furniture such as trees and benches to provide a sense of "pedestrian enclosure," but the left image allows for a wider sidewalks and provides opportunity for on-street café dining, where practicable.

H. Open Space.

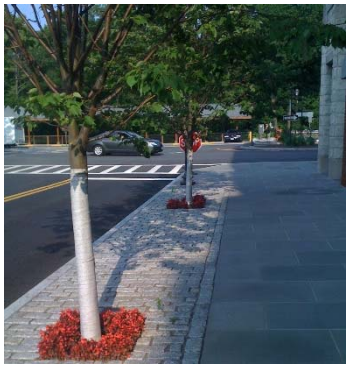
1) Rooftop spaces that are open to all of the residents of the building may account for up to 10% of the total square footage of required open space as specified in § VII (M) above, if the Zoning Commission finds that they provide usable open space.

2) The property must be at all times maintained in a neat, clean, sanitary condition and free of noxious weeds.

I. Sustainability. The proposed development or redevelopment shall utilize current best practices to promote environmental sustainability, including, but not limited to incorporation of green building or green infrastructure elements as defined in § III; brownfield remediation; use of permeable surfaces for parking areas, walkways, patios or similar areas; and use of techniques to reduce the consumption of energy.

J. Streetscapes.

1) Street trees shall be planted by the developer along all public rights-of-way. Such trees shall be planted at intervals of no more than 35 feet. Tree species shall be selected that require minimal maintenance, are of native origin and have minimal potential for conflicts with overhead power lines and other utilities.



Street trees create separation between the pedestrian and the street and contribute to a more walkable, as well as aesthetically pleasing, environment.

2) Pedestrian amenities such as benches, public art, planters, trash receptacles, etc., are encouraged and shall be located along sidewalks and in landscaped areas, open spaces and plazas.

K. Lighting.

1) Adequate lighting for pedestrians and vehicles shall be provided in all areas open to the public.

2) Lighting fixtures shall be appropriately shielded to prevent trespass lighting onto adjacent properties and public rights-of-way, and to minimize light spill into the night sky.

3) No parking lot or building lighting fixture designed to illuminate the ground shall exceed 18 feet in height from grade level, and no pedestrian lighting fixture shall exceed 10 feet in height from grade level.

L. **Refuse Areas.** The storage of refuse shall be provided inside the building(s) or within an outdoor area enclosed by either walls or opaque fencing at least 6 feet in height and of a material consistent with the design of the principal building. Any refuse area outside of the building shall be designed to be architecturally compatible with the building(s) and shall not be located in the front of the building(s).

Refuse areas and mechanical equipment can be effectively screened with appropriate attention to design and materiality. The left image shows a refuse area designed to complement its attendant building. The image on the right is located on the side of a building in a well-landscaped parking area. Its design includes high-quality materials and a green roof.

M. **Screening.**

1) Mechanical equipment, including rooftop mechanicals, shall be screened from views along adjacent streets, sidewalks and internal walkways by architectural materials, walls, fencing or landscaping.

2) Service and loading areas must be visually screened from streets and pedestrian ways and must be located to the side or rear of buildings.

3) Fencing materials along public street rights-of-way shall be limited to tubular steel or wrought-iron-type milled steel pickets. Fencing along side or rear yards or within a lot may be wood, steel pickets or any other approved fence type. Chain link fencing shall not be permitted.

N. **Outdoor Storage.** Outdoor storage is not permitted.

O. **Signs.** The development application shall include a comprehensive signage plan indicating conformance to the standards of § 16 of these regulations, in addition to the following provisions:

1) Height. No sign shall extend higher than the height of the ground story.

2) Design. All signs within the TOD Overlay District shall be complementary in their use of color, shape and material and shall be consistent with the existing character of surrounding development. No exposed raceways shall be permitted. Signs should be limited to no more than three colors: background color (generally dark, matte finish), lettering color (white or light shade) and one color for emphasis or accent purposes. Lettering should be bold and simple for clarity and consist of no more than two typefaces or fonts.

3) Lighting. Signs shall be front-lit rather than internally illuminated.

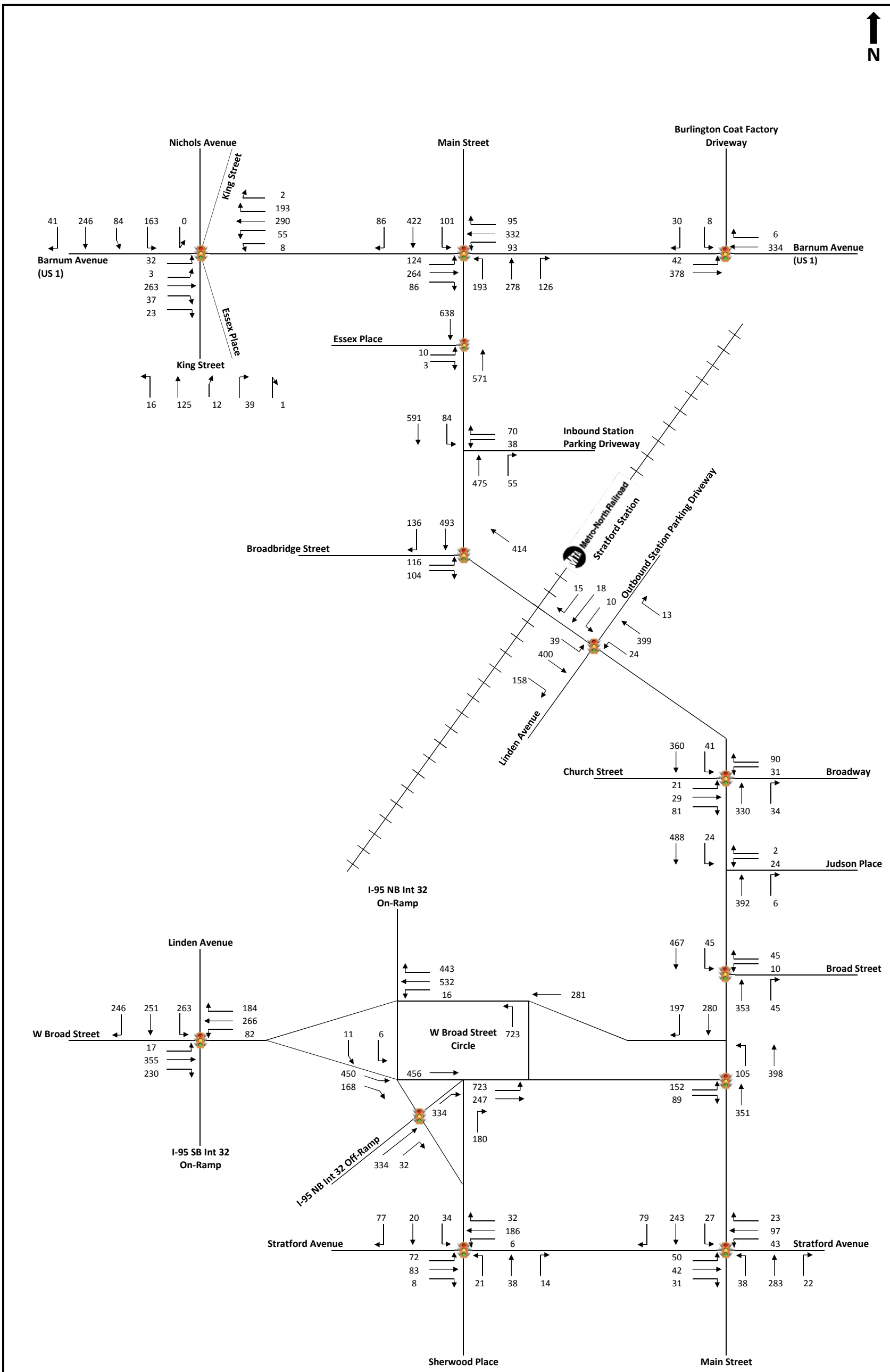
Signage on these buildings is simple, attractive, easy to read and incorporated into the architectural design. In all cases, signage is made of high-quality materials and illuminated from an external source.


Sandwiches
Salads
Coffees
Cheese
& More
skappo merkato
960-ZAN

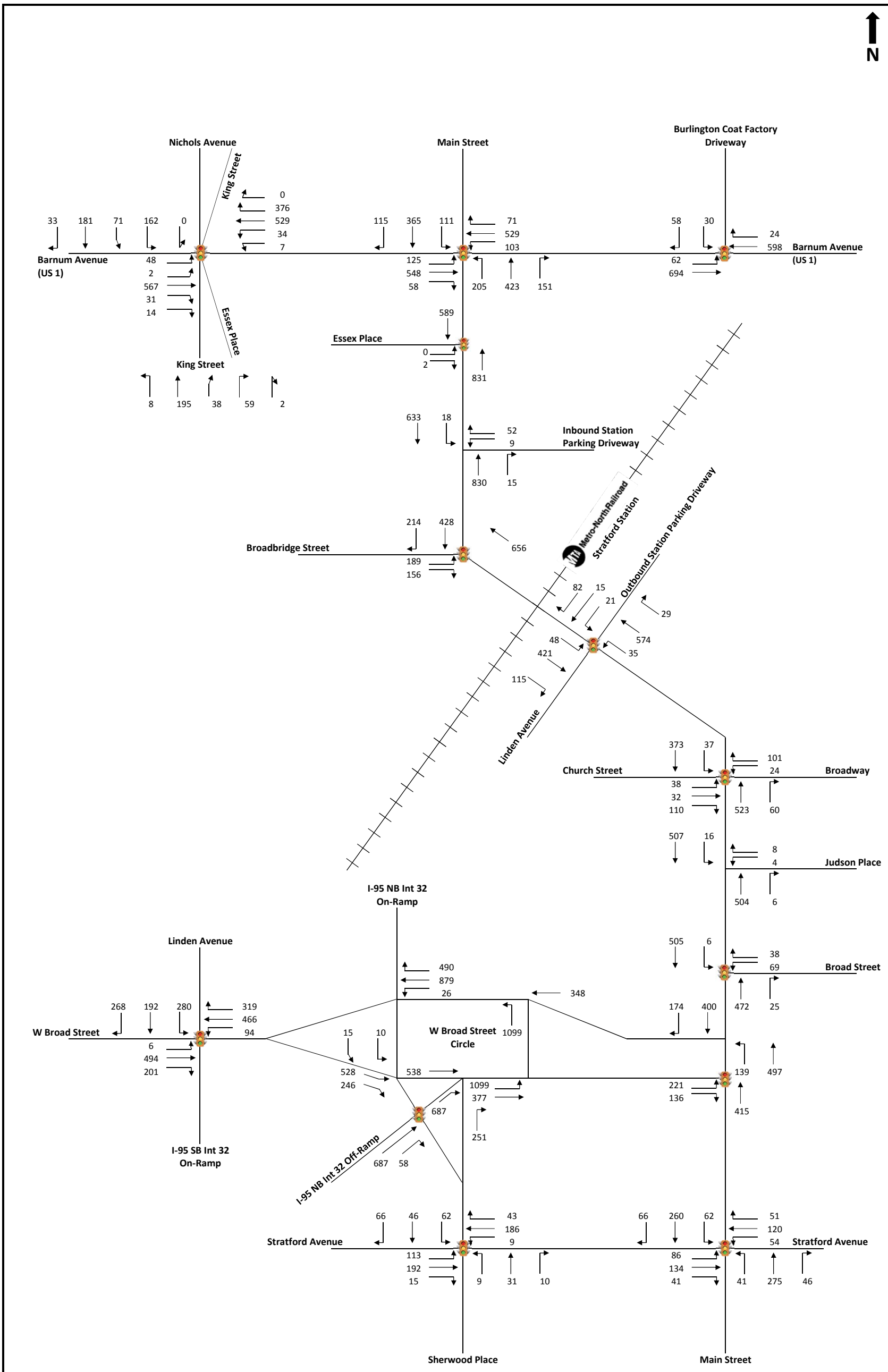
Appendix B

Traffic Modeling

B



Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B1 2014 Existing Condition Traffic Volumes AM Peak Hour (7:30AM - 8:30AM)



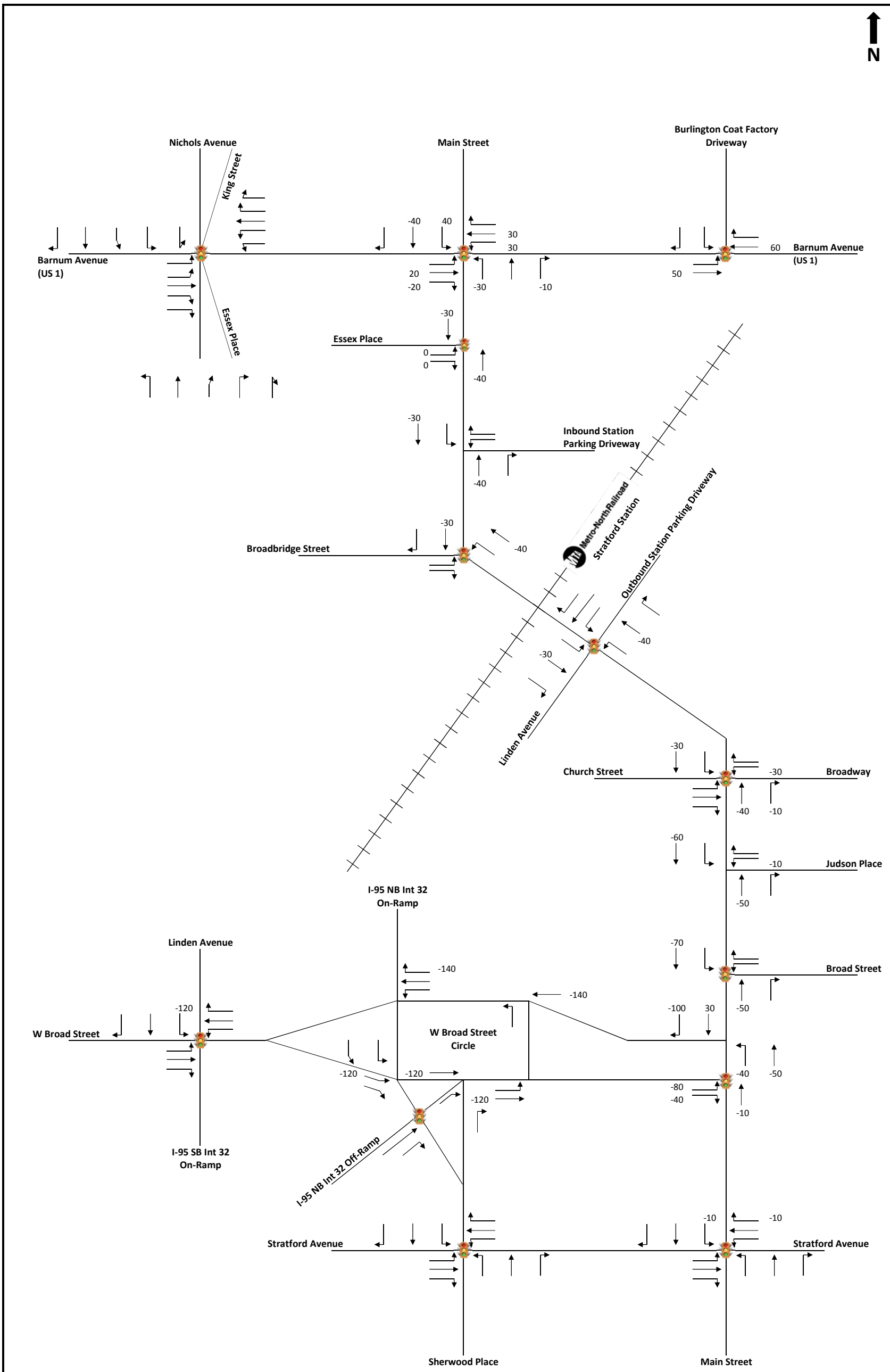
Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B2 2014 Existing Condition PM Peak Hour (5:00PM - 6:00PM)

Exhibit B3
2014 Existing Condition
Capacity Analysis Results

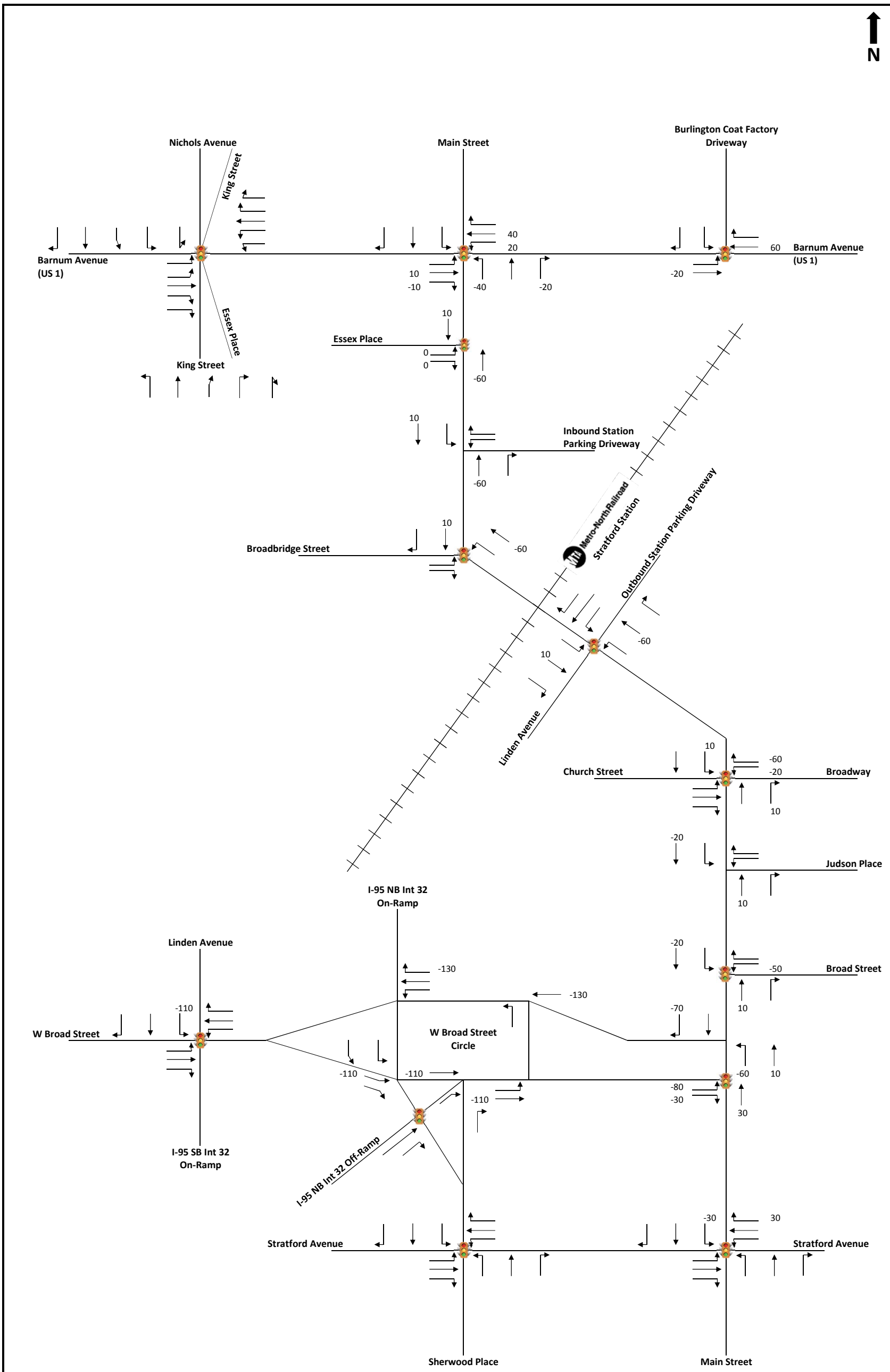
Intersection	AM Peak Hour (7:30 AM to 8:30 AM)				PM Peak Hour (5:00 PM to 6:00 PM)			
	Lane Group	v/c Ratio	Delay	Level of Service	Lane Group	v/c Ratio	Delay	Level of Service
Barnum Avenue & King Street/ Nichols Avenue/Essex Place *Signalized*	**EB-LTR**	0.42	28.7	C	**EB-LTR**	0.73	34.7	C
	WB-LTR	0.63	29.8	C	**WB-LTR**	0.86	35.9	D
	NB-LTR	0.72	57.7	E	**NB-LTR**	0.78	56.8	E
	SB-L	0.39	33.5	C	**SB-L**	0.45	40.0	D
	SB-TR	0.87	55.3	E	**SB-TR**	0.77	52.2	D
	Intersection	-	39.0	D	**Intersection**	-	40.5	D
Barnum Avenue & Main Street *Signalized*	**EB-L**	0.33	25.6	C	**EB-L**	0.34	20.8	C
	EB-TR	0.35	35.7	D	**EB-TR**	0.49	30.4	C
	WB-L	0.24	19.3	B	**WB-L**	0.30	16.4	B
	WB-TR	0.44	32.8	C	**WB-TR**	0.50	28.2	C
	NB-L	0.54	21.9	C	**NB-L**	0.58	25.8	C
	NB-TR	0.45	29.9	C	**NB-TR**	0.69	39.1	D
	SB-L	0.29	17.4	B	**SB-L**	0.39	22.0	C
	SB-TR	0.66	40.3	D	**SB-TR**	0.65	41.6	D
	Intersection	-	31.8	C	**Intersection**	-	32.0	C
Barnum Avenue Cutoff & Burlington Coat Factory Driveway *Unsignalized AM* *Signalized PM*	**EB-LT**	0.16	0.8	A	**EB-LT**	0.32	1.0	A
	WB-TR	0.14	0.0	A	**WB-TR**	0.23	1.9	A
	SB-L	0.02	14.7	B	**SB-L**	0.12	20.4	C
	SB-R	0.04	9.5	A	**SB-R**	0.20	8.2	A
					Intersection	-	2.1	A
Main Street & Essex Street/Firehouse *Signalized*	**EB-LR**	0.18	0.5	A	**EB-LR**	0.00	0.0	A
	NB-T	0.20	0.5	A	**NB-T**	0.26	0.5	A
	SB-T	0.09	30.0	D	**SB-T**	0.19	0.4	A
	Intersection	-	0.8	A	**Intersection**	-	0.5	A
Main Street & Inbound Station Parking Driveway *Unsignalized*	**WB-L**	0.46	68.5	**F**	**WB-L**	0.12	58.6	**F**
	WB-R	0.16	13.5	B	**WB-R**	0.18	19.0	C
	SB-L	0.11	9.4	A	**SB-L**	0.03	10.7	B
Main Street & Broadbridge Avenue *Signalized*	**EB-LR**	0.58	35.1	D	**EB-LR**	0.75	43.5	D
	NB-LT	0.44	3.0	A	**NB-LT**	0.61	7.3	A
	SB-TR	0.83	40.1	D	**SB-TR**	0.81	37.9	D
	Intersection	-	27.1	C	**Intersection**	-	26.8	C
Main Street & Linden Avenue Outbound Station Parking Driveway *Signalized*	**WB-LTR**	0.19	29.0	C	**WB-LTR**	0.35	16.2	B
	NB-LT	0.86	47.6	D	**NB-LT**	1.19	133.8	**F**
	NB-R	0.02	0.1	A	**NB-R**	0.05	0.1	A
	SB-LTR	0.53	7.1	A	**SB-LTR**	0.47	5.8	A
	Intersection	-	23.8	C	**Intersection**	-	64.7	E
Main Street & Church Street/E Broadway *Signalized*	**EB-LT**	0.24	29.1	C	**EB-LT**	0.28	29.5	C
	EB-R	0.30	9.3	A	**EB-R**	0.33	8.8	A
	WB-L	0.22	29.9	C	**WB-LR**	0.13	27.7	C
	WB-R	0.36	10.1	B	**WB-LR**	0.34	9.4	A
	NB-T	0.33	7.3	A	**NB-T**	0.44	8.6	A
	NB-R	0.04	1.1	A	**NB-R**	0.05	2.2	A
	SB-L	0.07	6.7	A	**SB-L**	0.07	7.0	A
	SB-T	0.35	7.4	A	**SB-T**	0.30	7.0	A
	Intersection	-	9.3	A	**Intersection**	-	9.4	A
Main Street & Judson Place *Unsignalized*	**WB-LR**	0.10	19.4	C	**WB-LR**	0.03	14.4	B
	NB-TR	0.25	0.0	A	**NB-TR**	0.33	0.0	A
	SB-LT	0.02	0.7	A	**SB-LT**	0.02	0.5	A
Main Street & Broad Street *Signalized*	**WB-LR**	0.23	13.7	B	**WB-LR**	0.41	25.4	C
	NB-TR	0.29	1.8	A	**NB-T**	0.31	1.8	A
	SB-LT	0.35	9.6	A	**SB-T**	0.29	10.7	B
	Intersection	-	6.6	A	**Intersection**	-	8.2	A
Main Street & W Broad Street *Signalized*	**EB-L**	0.54	30.8	C	**EB-L**	0.61	33.2	C
	EB-R	0.27	7.4	A	**EB-R**	0.32	6.6	A
	NB-T	0.21	8.5	A	**NB-T**	0.22	10.3	B
	SB-T	0.22	0.6	A	**SB-T**	0.28	1.2	A
	Intersection	-	9.8	A	**Intersection**	-	11.1	B
Main Street & Stratford Avenue *Signalized*	**EB-LTR**	0.25	17.9	B	**EB-LTR**	0.47	21.1	C
	WB-L	0.12	19.8	B	**WB-L**	0.17	20.1	C
	WB-TR	0.21	17.8	B	**WB-TR**	0.27	17.2	B
	NB-L	0.06	8.1	A	**NB-L**	0.08	10.9	B
	NB-TR	0.34	14.1	B	**NB-TR**	0.47	20.0	C
	SB-L	0.04	8.1	A	**SB-L**	0.12	10.9	B
	SB-TR	0.43	15.6	B	**SB-TR**	0.54	21.5	C
	Intersection	-	15.4	B	**Intersection**	-	19.5	B
Stratford Avenue & Beardsley Avenue/Sherwood Place *Signalized*	**EB-LTR**	0.16	6.9	A	**EB-LTR**	0.30	9.4	A
	WB-LTR	0.17	6.4	A	**WB-LTR**	0.19	7.9	A
	NB-LTR	0.30	28.2	C	**NB-LTR**	0.16	23.2	C
	SB-LTR	0.44	19.0	B	**SB-LTR**	0.59	31.4	C
	Intersection	-	12.1	B	**Intersection**	-	14.7	B
Beardsley Avenue & I-95 NB Off-Ramp *Signalized*	**EB-T**	0.22	2.6	A	**EB-T**	0.47	4.1	A
	EB-R	0.02	0.8	A	**EB-R**	0.04	1.3	A
	SB-T	0.56	35.4	D	**SB-T**	0.80	48.5	D
	Intersection	-	13.3	B	**Intersection**	-	15.5	B
W Broad Street & Linden Avenue/I-95 SB On-Ramp *Signalized*	**EB-L**	0.04	11.4	B	**EB-L**	0.02	10.7	B
	EB-TR	0.80	24.3	C	**EB-TR**	0.82	25.5	C
	WB-L	0.08	6.0	A	**WB-L**	0.08	5.6	A
	WB-TR	0.22	4.8	A	**WB-TR**	0.33	6.2	A
	SB-LT	0.84	39.7	D	**SB-LT**	0.89	51.1	D
	SB-R	0.40	15.3	B	**SB-R**	0.49	17.9	B
	Intersection	-	21.8	C	**Intersection**	-	22.4	C

v/c ratio = volume/capacity ratio

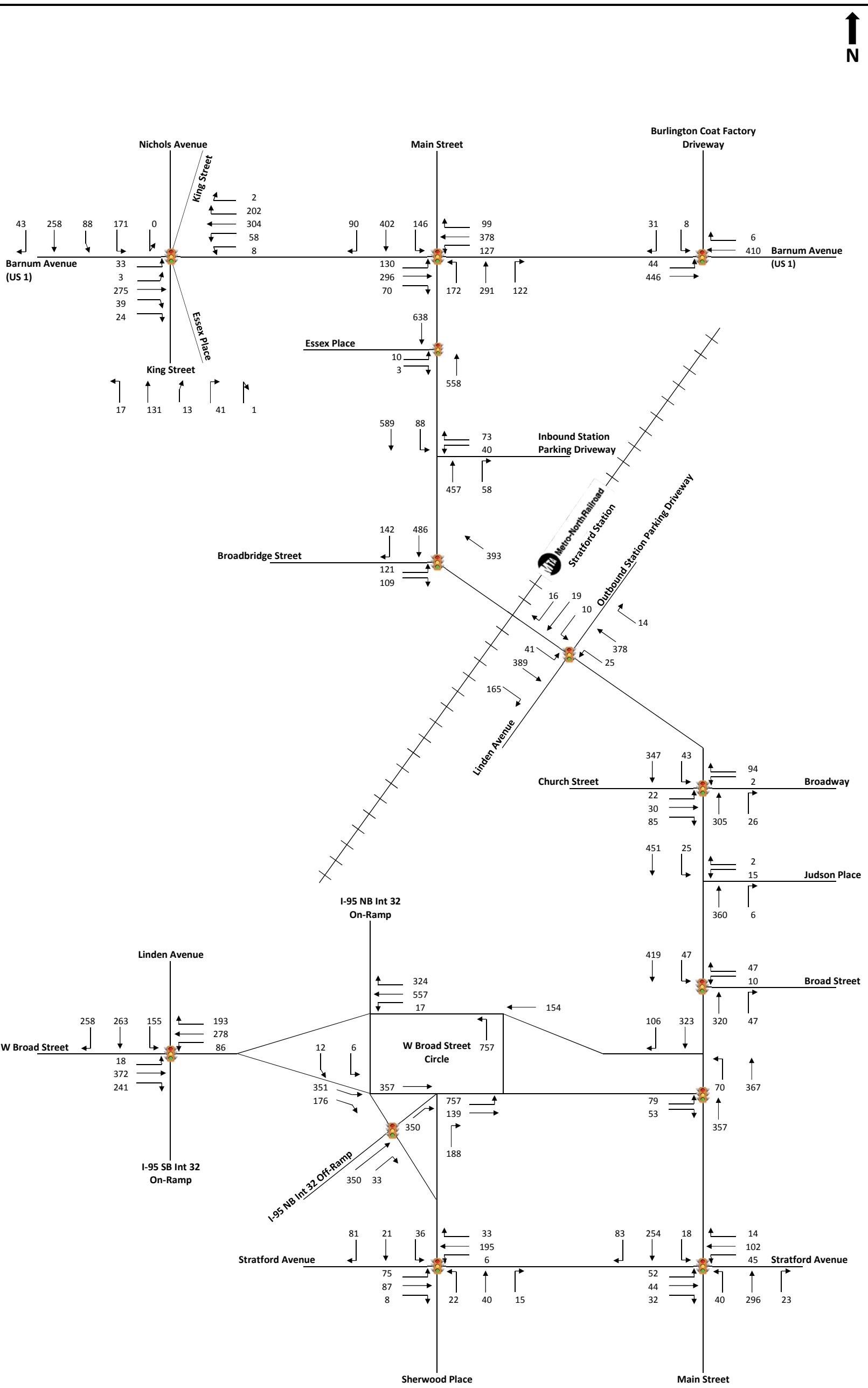
Source: Synchro 8



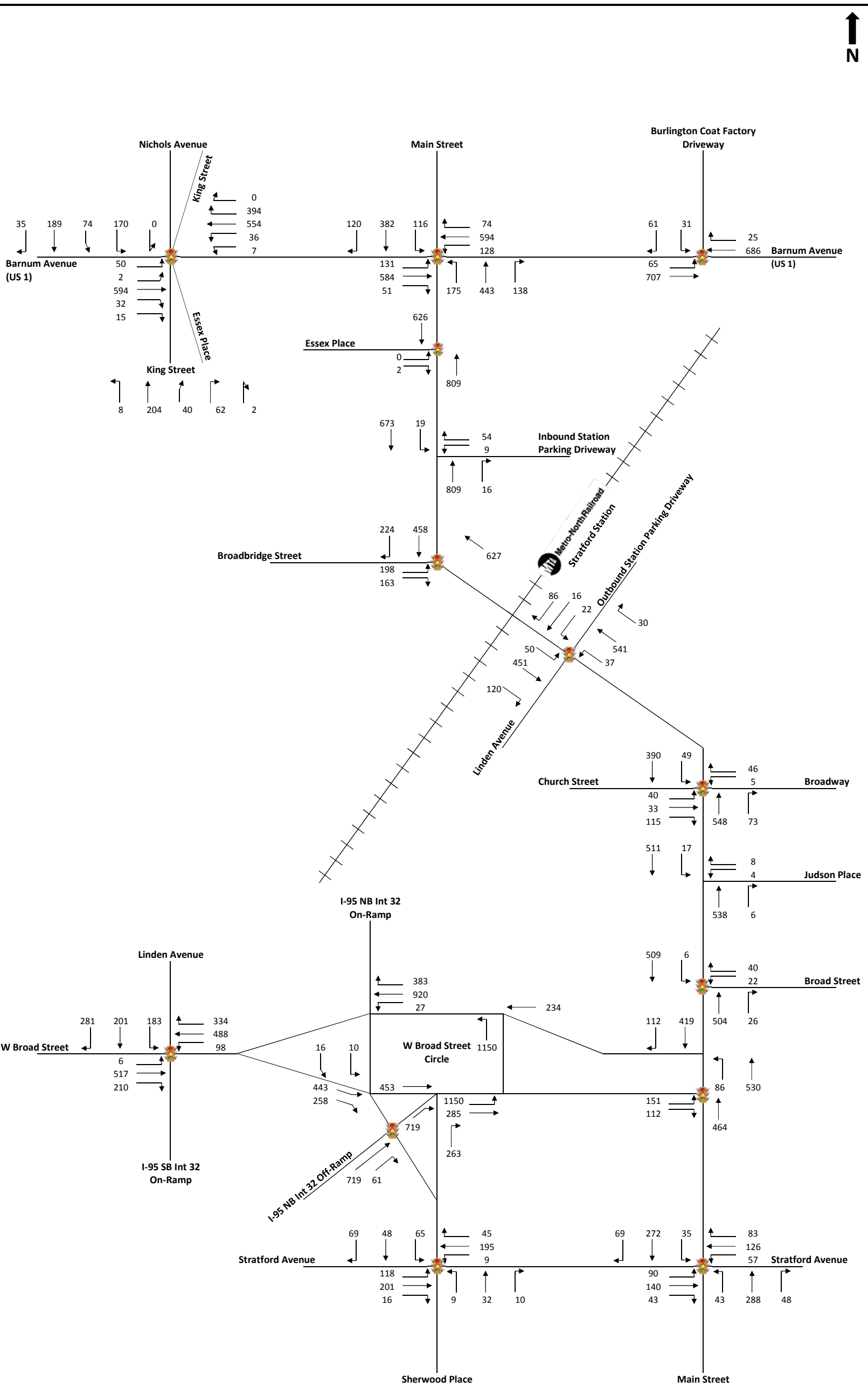
Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B4 I-95 Interchange 33 Diversion Volumes AM Peak Hour (7:30AM - 8:30AM)



Stantec	**GREATER BRIDGEPORT TRANSIT** **STRATFORD TRANSIT ORIENTED DEVELOPMENT** **STRATFORD, CT**	**EXHIBIT B5** **I-95 Interchange 33 Diversion Volumes** **PM Peak Hour (5:00PM - 6:00PM)**



Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B6 2040 No Build Condition Traffic Volumes AM Peak Hour (7:30AM - 8:30AM)



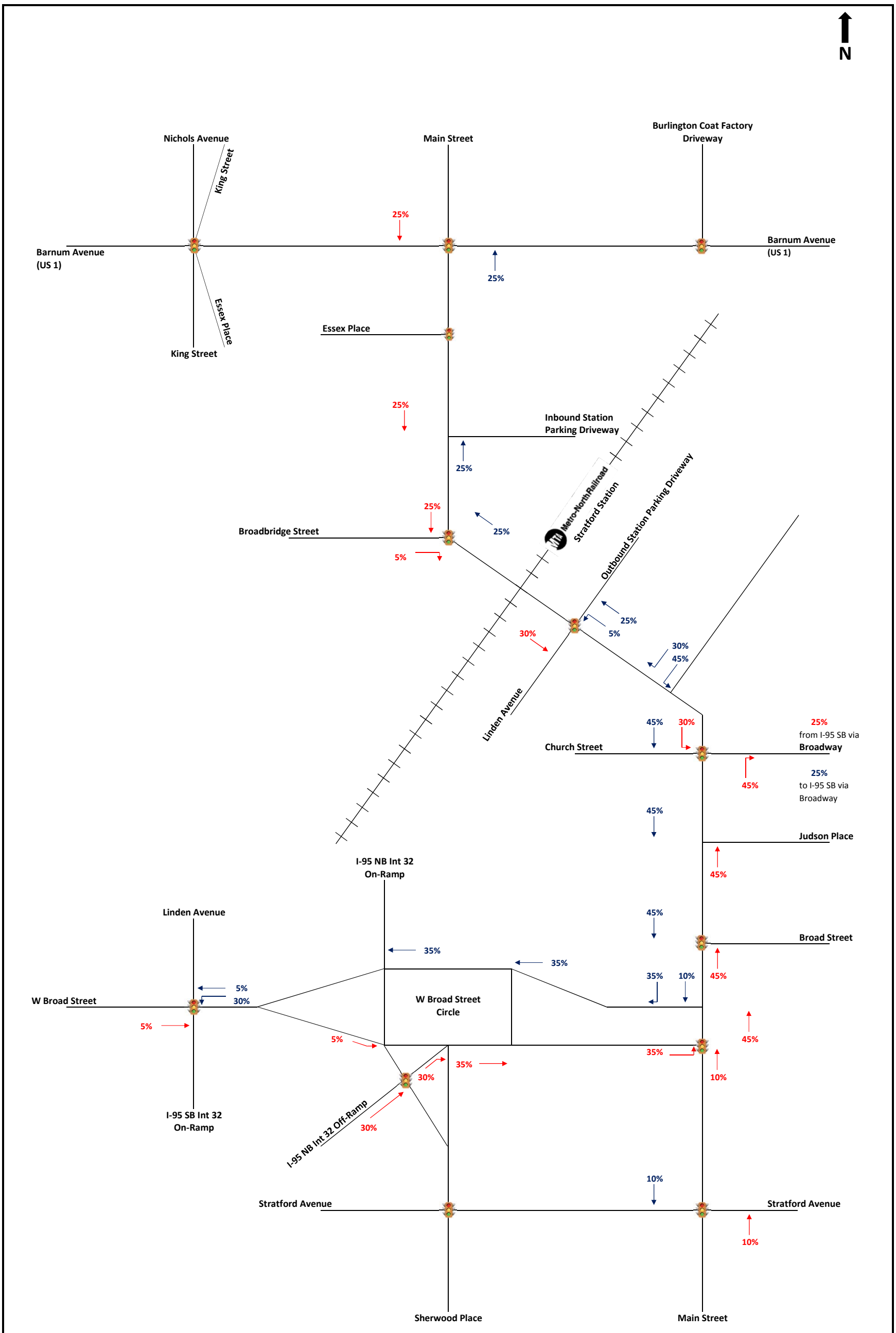
Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B7 2040 No Build Condition Traffic Volumes PM Peak Hour (5:00PM - 6:00PM)

Exhibit B8
2040 No Build Condition
Capacity Analysis Results

Intersection	AM Peak Hour (7:30 AM to 8:30 AM)				PM Peak Hour (5:00 PM to 6:00 PM)			
	Lane Group	v/c Ratio	Delay	Level of Service	Lane Group	v/c Ratio	Delay	Level of Service
Barnum Avenue & King Street/ Nichols Avenue/Essex Place *Signalized*	**EB-LTR**	0.47	30.6	C	**EB-LTR**	0.85	42.4	D
	WB-LTR	0.71	32.0	C	**WB-LTR**	0.98	52.4	D
	NB-LTR	0.75	58.6	E	**NB-LTR**	0.77	54.8	D
	SB-L	0.40	32.9	C	**SB-L**	0.46	40.1	D
	SB-TR	0.88	55.5	E	**SB-TR**	0.79	53.6	D
	Intersection	-	40.3	D	**Intersection**	-	49.2	D
Barnum Avenue & Main Street *Signalized*	**EB-L**	0.34	23.5	C	**EB-L**	0.39	22.1	C
	EB-TR	0.33	34.1	C	**EB-TR**	0.52	32.2	C
	WB-L	0.30	17.3	B	**WB-L**	0.38	18.2	B
	WB-TR	0.43	28.8	C	**WB-TR**	0.54	28.2	C
	NB-L	0.55	25.2	C	**NB-L**	0.54	25.2	C
	NB-TR	0.55	36.2	D	**NB-TR**	0.69	38.9	D
	SB-L	0.45	22.4	C	**SB-L**	0.43	23.1	C
	SB-TR	0.65	40.4	D	**SB-TR**	0.62	38.9	D
	Intersection	-	31.8	C	**Intersection**	-	31.9	C
Barnum Avenue Cutoff & Burlington Coat Factory Driveway *Unsignalized AM* *Signalized PM*	**EB-LT**	0.19	0.9	A	**EB-LT**	0.33	1.0	A
	WB-TR	0.17	0.0	A	**WB-TR**	0.26	2.0	A
	SB-L	0.03	16.8	C	**SB-L**	0.12	20.4	C
	SB-R	0.04	9.8	A	**SB-R**	0.21	8.1	A
					Intersection	-	2.1	A
Main Street & Essex Street/Firehouse *Signalized*	**EB-LR**	0.18	0.5	A	**EB-LR**	0.00	0.0	A
	NB-T	0.20	0.5	A	**NB-T**	0.26	0.5	A
	SB-T	0.09	30.0	C	**SB-T**	0.20	0.5	A
	Intersection	-	0.8	A	**Intersection**	-	0.5	A
Main Street & Inbound Station Parking Driveway *Unsignalized*	**WB-L**	0.47	67.8	F	**WB-L**	0.13	60.0	F
	WB-R	0.17	13.3	B	**WB-R**	0.18	18.5	C
	SB-L	0.11	9.4	A	**SB-L**	0.03	10.6	B
Main Street & Broadbridge Avenue *Signalized*	**EB-LR**	0.61	35.5	D	**EB-LR**	0.76	43.4	D
	NB-LT	0.42	3.0	A	**NB-LT**	0.59	6.2	A
	SB-TR	0.83	39.6	D	**SB-TR**	0.87	43.0	D
	Intersection	-	27.4	C	**Intersection**	-	29.3	C
Main Street & Linden Avenue Outbound Station Parking Driveway *Signalized*	**WB-LTR**	0.20	29.3	C	**WB-LTR**	0.38	16.5	B
	NB-LT	0.83	44.3	D	**NB-LT**	1.18	128.0	F
	NB-R	0.03	0.1	A	**NB-R**	0.05	0.2	A
	SB-LTR	0.52	6.7	A	**SB-LTR**	0.49	7.1	A
	Intersection	-	21.9	C	**Intersection**	-	59.4	E
Main Street & Church Street/E Broadway *Signalized*	**EB-LT**	0.25	29.3	C	**EB-LT**	0.29	29.6	C
	EB-R	0.31	9.4	A	**EB-R**	0.34	8.7	A
	WB-L	0.01	25.5	C	**WB-L**	0.03	25.4	C
	WB-R	0.37	10.1	B	**WB-R**	0.16	2.9	A
	NB-T	0.31	7.0	A	**NB-T**	0.46	9.3	A
	NB-R	0.03	0.3	A	**NB-R**	0.06	2.7	A
	SB-L	0.07	6.6	A	**SB-L**	0.09	7.2	A
	SB-T	0.34	7.3	A	**SB-T**	0.32	7.2	A
	Intersection	-	8.7	A	**Intersection**	-	9.1	A
Main Street & Judson Place *Unsignalized*	**WB-LR**	0.06	17.7	C	**WB-LR**	0.03	14.9	B
	NB-TR	0.23	0.0	A	**NB-TR**	0.35	0.0	A
	SB-LT	0.02	0.7	A	**SB-LT**	0.02	0.5	A
Main Street & Broad Street *Signalized*	**WB-LR**	0.24	13.6	B	**WB-LR**	0.26	17.4	B
	NB-TR	0.27	1.9	A	**NB-T**	0.33	2.0	A
	SB-LT	0.30	7.3	A	**SB-T**	0.26	8.1	A
	Intersection	-	5.5	A	**Intersection**	-	5.7	A
Main Street & W Broad Street *Signalized*	**EB-L**	0.36	30.8	C	**EB-L**	0.51	33.5	C
	EB-R	0.22	13.6	B	**EB-R**	0.31	9.3	A
	NB-T	0.20	6.7	A	**NB-T**	0.23	7.9	A
	SB-T	0.24	0.8	A	**SB-T**	0.27	1.1	A
	Intersection	-	7.1	A	**Intersection**	-	8.9	A
Main Street & Stratford Avenue *Signalized*	**EB-LTR**	0.26	18.4	B	**EB-LTR**	0.47	20.9	C
	WB-L	0.13	20.1	C	**WB-L**	0.17	19.8	B
	WB-TR	0.21	18.5	B	**WB-TR**	0.32	16.7	B
	NB-L	0.07	8.2	A	**NB-L**	0.10	12.1	B
	NB-TR	0.33	12.5	B	**NB-TR**	0.46	19.6	B
	SB-L	0.03	8.2	A	**SB-L**	0.07	12.1	B
	SB-TR	0.44	16.0	B	**SB-TR**	0.58	24.0	C
	Intersection	-	15.2	B	**Intersection**	-	20.1	C
Stratford Avenue & Beardsley Avenue/Sherwood Place *Signalized*	**EB-LTR**	0.17	7.1	A	**EB-LTR**	0.32	9.8	A
	WB-LTR	0.18	6.6	A	**WB-LTR**	0.20	8.1	A
	NB-LTR	0.31	28.4	C	**NB-LTR**	0.16	23.0	C
	SB-LTR	0.46	19.3	B	**SB-LTR**	0.61	32.1	C
	Intersection	-	12.3	B	**Intersection**	-	15.1	B
Beardsley Avenue & I-95 NB Off-Ramp *Signalized*	**EB-T**	0.23	2.7	A	**EB-T**	0.49	4.3	A
	EB-R	0.03	0.8	A	**EB-R**	0.05	1.3	A
	SB-T	0.58	36.2	D	**SB-T**	0.83	51.4	D
	Intersection	-	13.6	B	**Intersection**	-	16.4	B
W Broad Street & Linden Avenue/I-95 SB On-Ramp *Signalized*	**EB-L**	0.06	13.3	B	**EB-L**	0.02	11.7	B
	EB-TR	0.56	13.5	B	**EB-TR**	0.64	14.9	B
	WB-L	0.09	5.8	A	**WB-L**	0.09	5.1	A
	WB-TR	0.28	4.7	A	**WB-TR**	0.44	6.2	A
	SB-L	0.28	14.9	B	**SB-L**	0.35	18.6	B
	SB-T	0.51	18.0	B	**SB-T**	0.44	19.8	B
	SB-R	0.39	4.0	A	**SB-R**	0.43	4.7	A
	Intersection	-	10.4	B	**Intersection**	-	10.9	B

v/c ratio = volume/capacity ratio

Source: Synchro 8



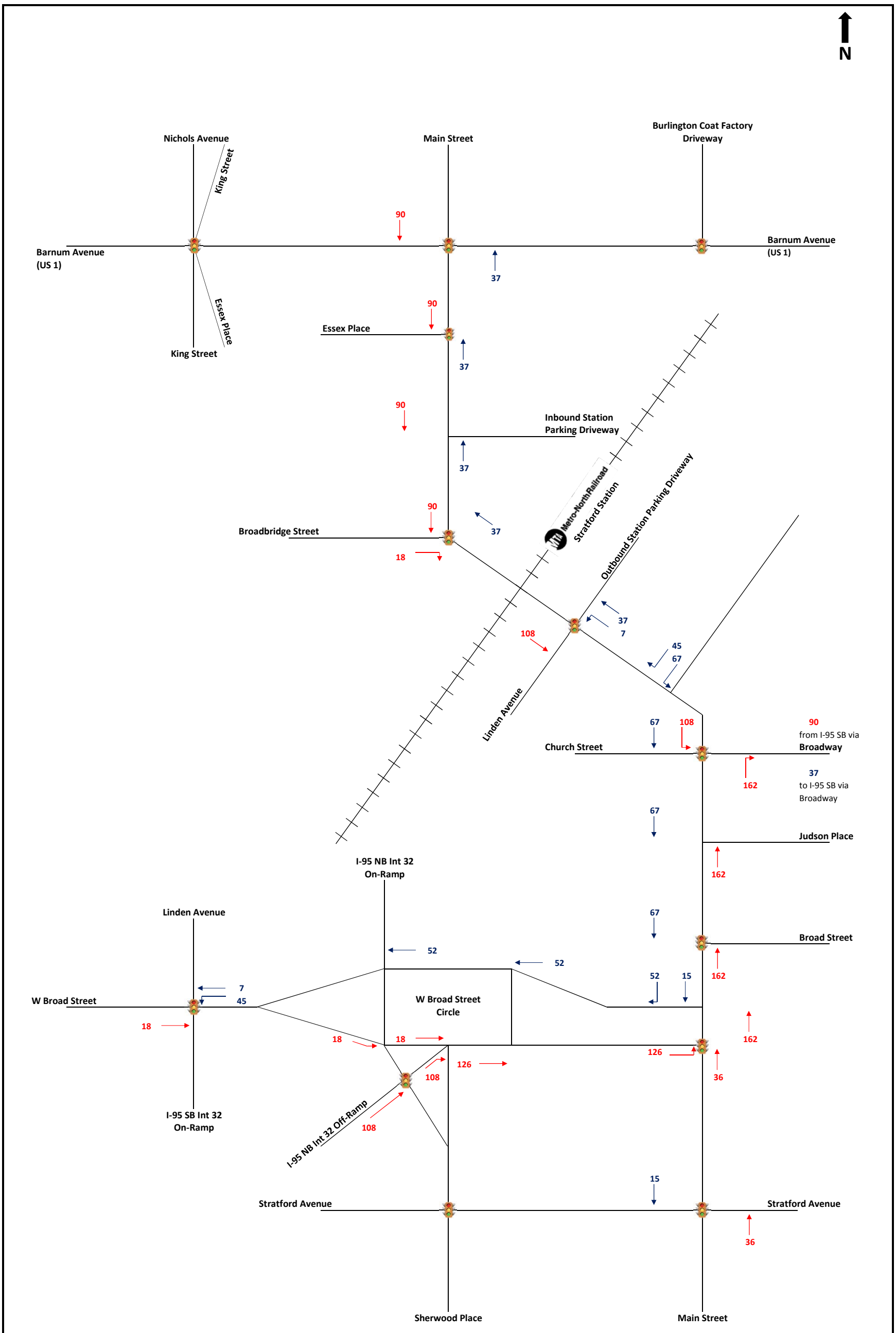
Stantec

GREATER BRIDGEPORT TRANSIT
STRATFORD TRANSIT ORIENTED DEVELOPMENT
STRATFORD, CT

EXHIBIT B9
Distribution for Center School Site and 25% of POCD
AM and PM Peak Hours

EXHIBIT B10
Trip Generation for Center School Site

DESCRIPTION			AM PEAK HOUR (7:30 AM – 8:30 AM)			PM PEAK HOUR (5:00 PM – 6:00 PM)		
ITE CODE	LAND USE	AMOUNT	IN	OUT	TOTAL	IN	OUT	TOTAL
220	Apartment	168 dwelling units	17	69	86	72	39	110
090	Park-and-Ride Garage	550 commuter spaces	331	88	420	86	257	342
820	Retail/ Shopping Center	30,000 SF	18	11	29	53	58	111
		Total Unadjusted Trips	366	168	534	211	353	564
		Transit Credit (25% for Residential / 5% for Retail)	-5	-18	-23	-21	-13	-33
		Internal Capture (from NCHRP 684)	-1	-1	-2	-20	-20	-40
		Total Trips for Center School Site w/ Commuter Parking	**360**	**149**	**509**	**170**	**321**	**491**
		Total Trips for Center School Site w/o Commuter Parking	**29**	**61**	**90**	**84**	**64**	**148**



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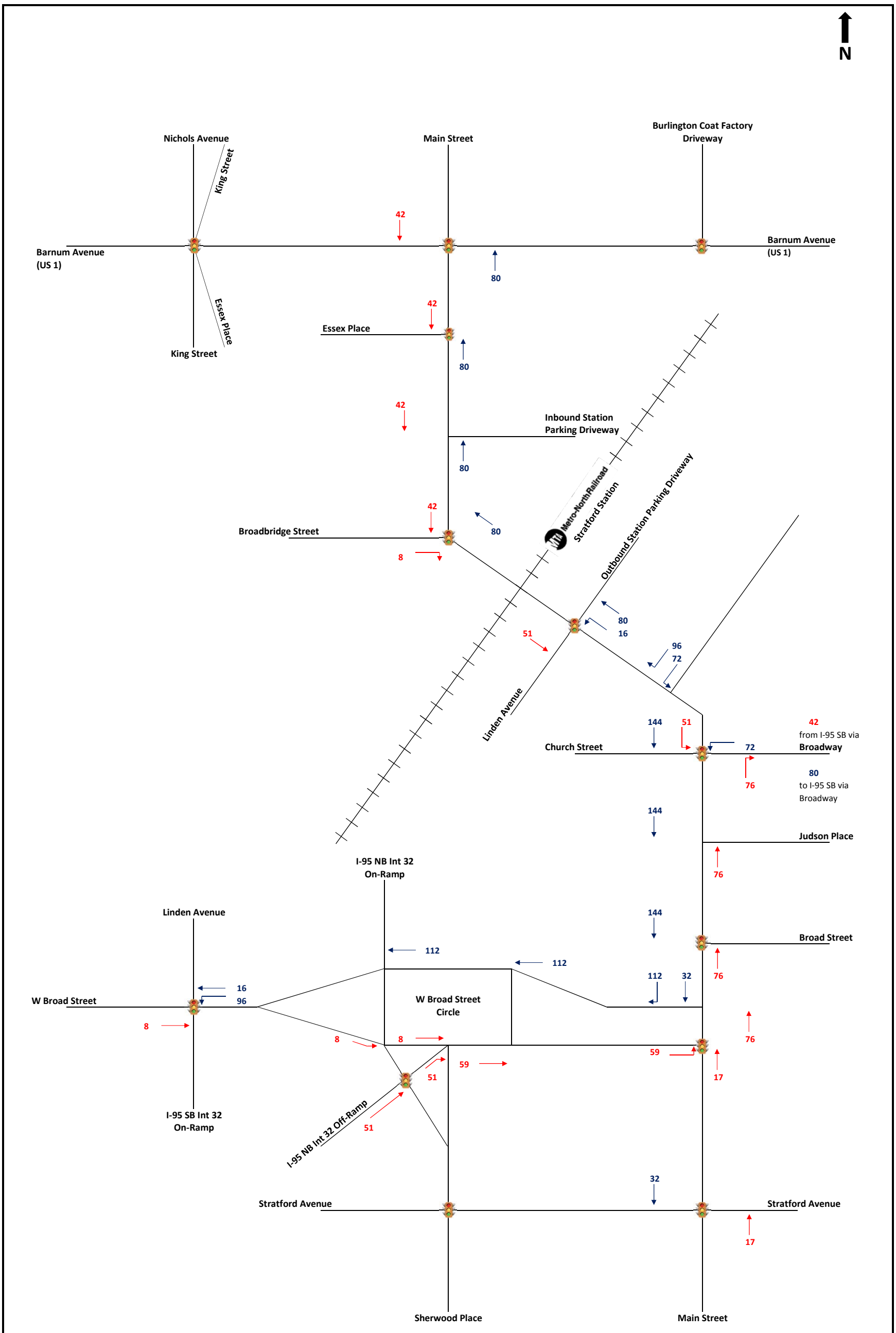
GREATER BRIDGEPORT TRANSIT
STRATFORD TRANSIT ORIENTED DEVELOPMENT
STRATFORD, CT

EXHIBIT B11
Center School Site Increment
AM Peak Hour (7:30AM - 8:30AM)



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GREATER BRIDGEPORT TRANSIT
STRATFORD TRANSIT ORIENTED DEVELOPMENT
STRATFORD, CT

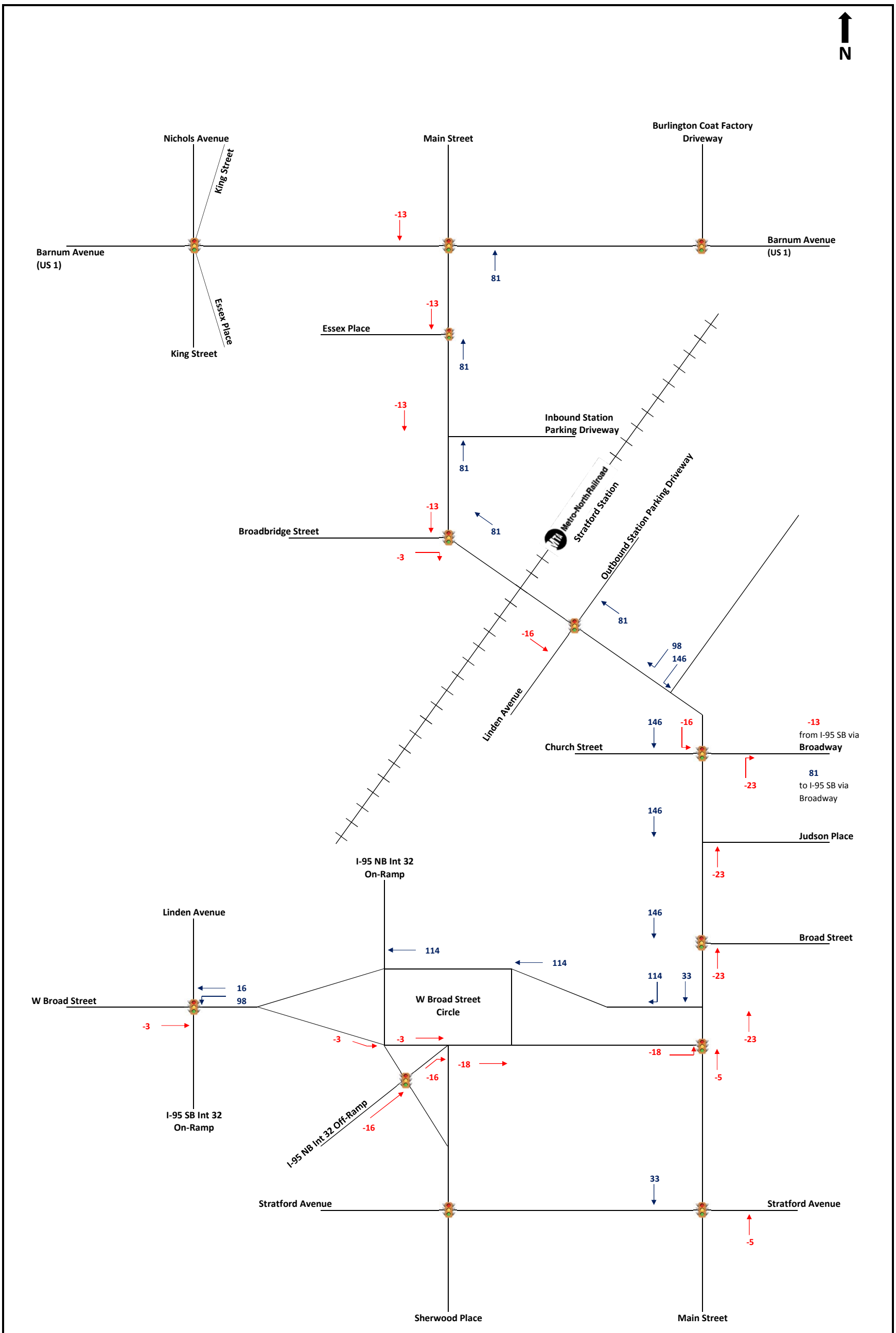
EXHIBIT B12
Center School Site Increment
PM Peak Hour (5:00PM - 6:00PM)

EXHIBIT B13

Trip Generation for 25% of Build-out from Stratford's POCD Report

Comparison of Existing vs. Proposed Land Uses and Ensuing Change in Trip Generation

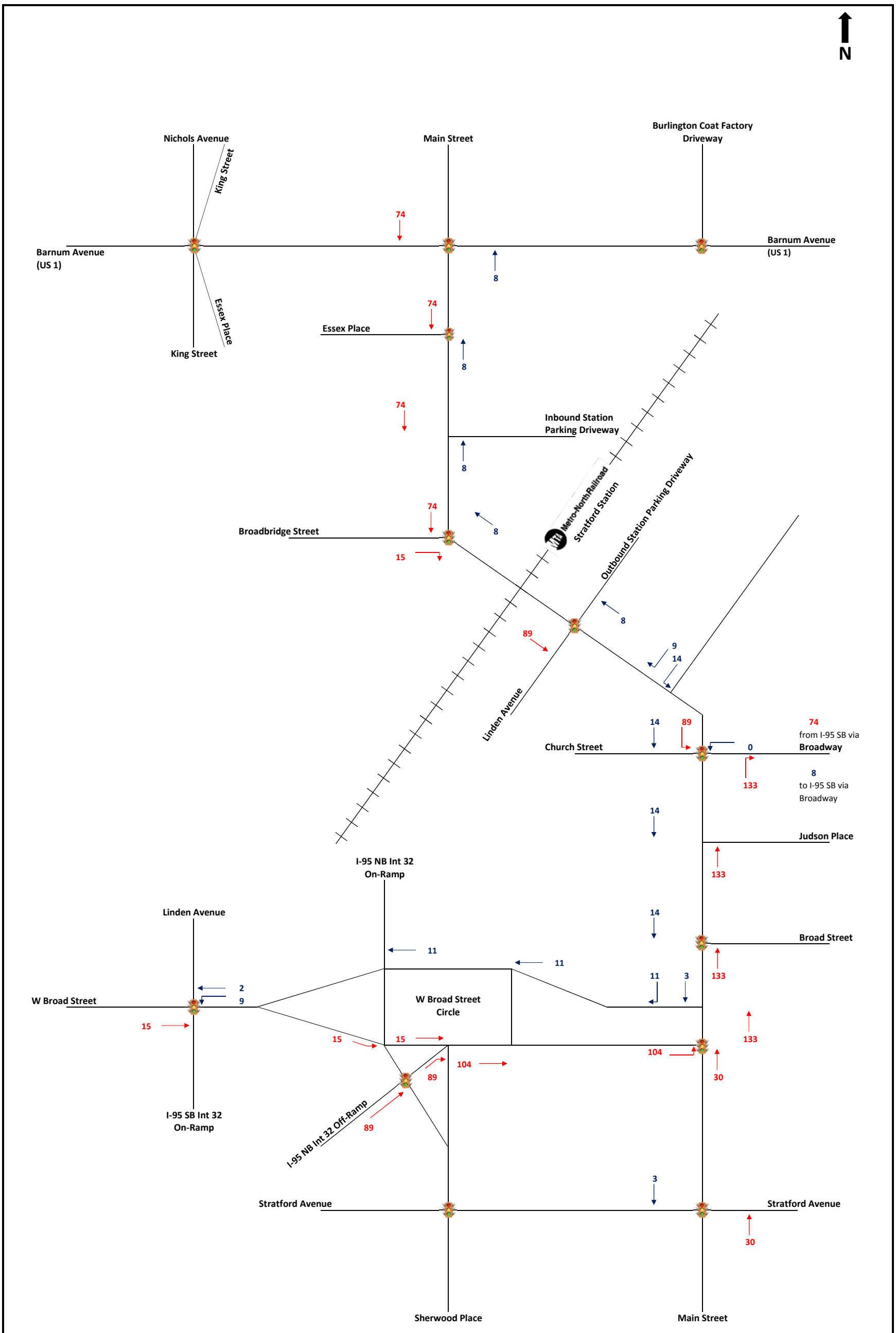
	Use	Quantity	Unit	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Existing Land Use	Commercial	1,400	KSF	483	296	780	1685	1826	3511
	Industrial	220	KSF	144	32	176	42	160	202
	Residential	45	Unit	5	21	26	28	15	42
	Existing TOD Trip Generation			**633**	**349**	**982**	**1755**	**2000**	**3755**
25% of Build-out	Commercial	1,419	KSF	487	299	786	1701	1842	3543
	Residential	950	Unit	94	375	469	351	189	540
	Future TOD Trip Generation			**581**	**674**	**1255**	**2052**	**2031**	**4083**
Increase (Decrease) In Study Area Trips				**(52)**	**326**	**274**	**296**	**31**	**328**



Stantec

GREATER BRIDGEPORT TRANSIT
STRATFORD TRANSIT ORIENTED DEVELOPMENT
STRATFORD, CT

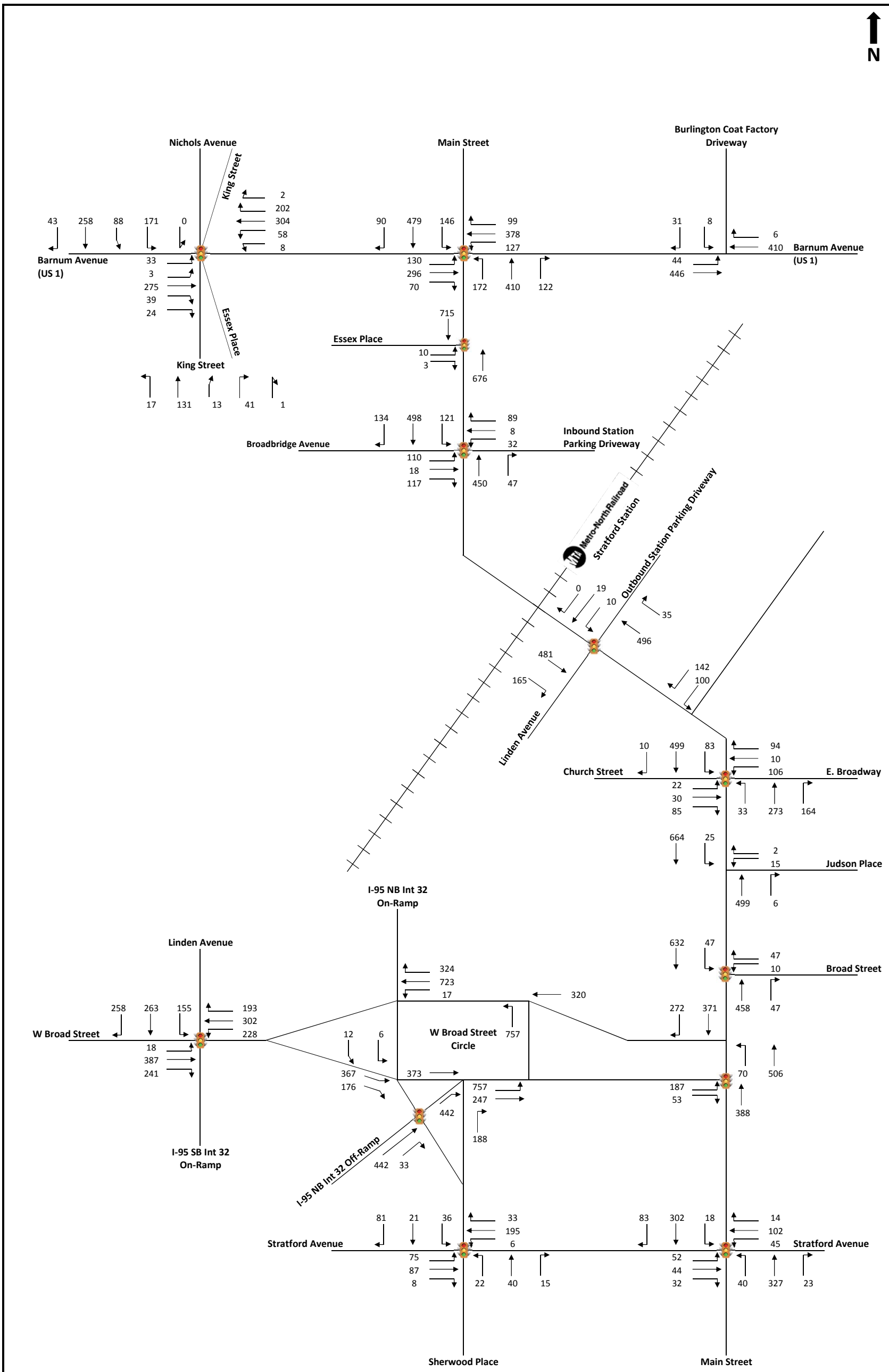
EXHIBIT B14
POCD 25% Build-out Increment
AM Peak Hour (7:30AM - 8:30AM)



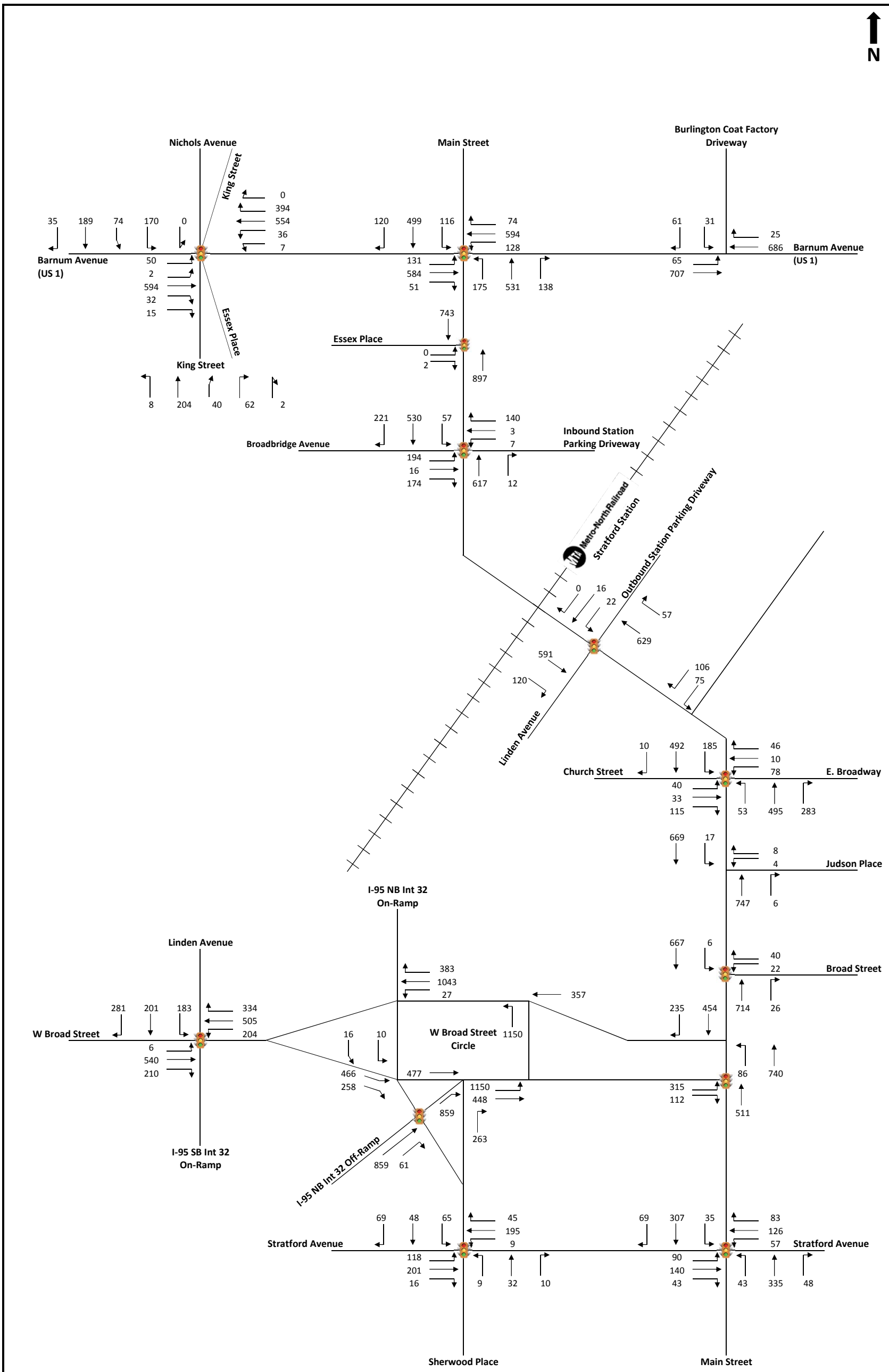
Stantec

GREATER BRIDGEPORT TRANSIT
STRATFORD TRANSIT ORIENTED DEVELOPMENT
STRATFORD, CT

EXHIBIT B15
POCD 25% Build-out Increment
PM Peak Hour (5:00PM - 6:00PM)



Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B16 2040 Build Condition Traffic Volumes AM Peak Hour (7:30AM - 8:30AM)



Stantec	GREATER BRIDGEPORT TRANSIT STRATFORD TRANSIT ORIENTED DEVELOPMENT STRATFORD, CT	EXHIBIT B17 2040 Build Condition Traffic Volumes PM Peak Hour (7:30PM - 8:30PM)

Exhibit B18
2040 Build Condition
Capacity Analysis Results

Intersection	AM Peak Hour (7:30 AM to 8:30 AM)				PM Peak Hour (5:00 PM to 6:00 PM)			
	Lane Group	v/c Ratio	Delay	Level of Service	Lane Group	v/c Ratio	Delay	Level of Service
Barnum Avenue & King Street/ Nichols Avenue/Essex Place *Signalized*	**EB-LTR**	0.50	32.1	C	**EB-LTR**	0.85	42.3	D
	WB-LTR	0.75	48.5	D	**WB-LTR**	0.98	54.4	D
	NB-LTR	0.70	54.3	D	**NB-LTR**	0.77	54.8	D
	SB-L	0.40	32.5	C	**SB-L**	0.46	40.1	D
	SB-TR	0.88	54.9	D	**SB-TR**	0.79	53.6	D
	Intersection	-	45.4	D	**Intersection**	-	50.0	D
Barnum Avenue & Main Street *Signalized*	**EB-L**	0.36	15.5	B	**EB-L**	0.42	22.5	C
	EB-TR	0.36	22.6	C	**EB-TR**	0.57	30.9	C
	WB-L	0.32	19.2	B	**WB-L**	0.42	19.0	B
	WB-TR	0.46	31.6	C	**WB-TR**	0.59	31.2	C
	NB-L	0.56	23.6	C	**NB-L**	0.56	23.7	C
	NB-TR	0.62	35.3	D	**NB-TR**	0.70	36.0	D
	SB-L	0.49	21.8	C	**SB-L**	0.44	21.4	C
	SB-TR	0.68	38.9	D	**SB-TR**	0.68	38.0	D
	Intersection	-	30.1	C	**Intersection**	-	31.9	C
Barnum Avenue Cutoff & Burlington Coat Factory Driveway *Unsignalized AM* *Signalized PM*	**EB-LT**	0.04	1.2	A	**EB-LT**	0.59	15.3	B
	WB-TR	0.27	0.0	A	**WB-TR**	0.49	3.9	A
	SB-L	0.04	20.6	C	**SB-L**	0.12	20.4	C
	SB-R	0.06	11.2	B	**SB-R**	0.21	8.1	A
						-	9.9	A
Main Street & Essex Street/Firehouse *Signalized*	**EB-LR**	0.02	17.8	B	**EB-LR**	0.00	0.0	A
	NB-T	0.47	12.3	B	**NB-T**	0.57	8.4	A
	SB-T	0.50	8.2	A	**SB-T**	0.47	5.1	A
	Intersection	-	10.3	B	**Intersection**	-	6.9	A
Main Street & Broadbridge Avenue/ Inbound Station Parking Driveway *Signalized*	**EB-LTR**	0.65	31.7	C	**EB-LTR**	0.76	33.3	C
	WB-LT	0.13	25.6	C	**WB-LT**	0.02	19.1	B
	WB-R	0.20	6.4	A	**WB-R**	0.24	4.6	A
	NB-TR	0.76	26.0	C	**NB-TR**	0.75	25.9	C
	SB-L	0.27	6.4	A	**SB-L**	0.25	8.2	A
	SB-TR	0.54	6.1	A	**SB-TR**	0.67	11.9	B
	Intersection	-	16.6	B	**Intersection**	-	19.9	B
Main Street & Linden Avenue Outbound Station Parking Driveway *Signalized*	**WB-LTR**	0.09	28.6	C	**WB-LTR**	0.31	46.1	D
	NB-T	0.51	9.4	A	**NB-T**	0.48	5.2	A
	NB-R	0.04	1.8	A	**NB-R**	0.05	0.6	A
	SB-LTR	0.52	8.2	A	**SB-LTR**	0.42	3.6	A
	Intersection	-	9.0	A	**Intersection**	-	5.3	A
Center School Site Egress & Main Street *Unsignalized*	**WB-LR**	0.60	25.0	D	**WB-LR**	0.55	27.6	D
Main Street & Church Street/E Broadway *Signalized*	**EB-LTR**	0.40	19.3	B	**EB-LTR**	0.62	30.3	C
	WB-LT	0.61	48.0	D	**WB-LT**	0.60	52.4	D
	WB-R	0.30	13.8	B	**WB-R**	0.15	5.2	A
	NB-L	0.07	7.5	A	**NB-L**	0.10	7.1	A
	NB-TR	0.46	9.2	A	**NB-TR**	0.71	14.4	B
	SB-L	0.15	4.0	A	**SB-L**	0.56	14.9	B
	SB-T	0.48	5.8	A	**SB-T**	0.42	6.0	A
	Intersection	-	12.1	B	**Intersection**	-	15.2	B
Main Street & Judson Place *Unsignalized*	**WB-LR**	0.09	23.7	C	**WB-LR**	0.05	19.6	C
	NB-TR	0.32	0.0	A	**NB-TR**	0.48	0.0	A
	SB-LT	0.03	0.7	A	**SB-LT**	0.02	0.7	A
Main Street & Broad Street *Signalized*	**WB-LR**	0.23	13.4	B	**WB-LR**	0.24	16.1	B
	NB-TR	0.37	2.2	A	**NB-TR**	0.46	2.5	A
	SB-LT	0.48	12.1	B	**SB-LT**	0.43	13.8	B
	Intersection	-	8.1	A	**Intersection**	-	8.2	A
Main Street & W Broad Street *Signalized*	**EB-L**	0.60	30.9	C	**EB-L**	0.67	29.1	C
	EB-R	0.16	7.3	A	**EB-R**	0.23	5.0	A
	NB-T	0.25	9.7	A	**NB-T**	0.31	12.6	B
	SB-T	0.31	0.7	A	**SB-T**	0.35	1.2	A
	Intersection	-	10.2	B	**Intersection**	-	12.0	B
Main Street & Stratford Avenue *Signalized*	**EB-LTR**	0.27	19.3	B	**EB-LTR**	0.47	21.5	C
	WB-L	0.14	21.1	C	**WB-L**	0.18	20.4	C
	WB-TR	0.21	19.4	B	**WB-TR**	0.32	17.2	B
	NB-L	0.07	8.1	A	**NB-L**	0.10	12.1	B
	NB-TR	0.35	12.6	B	**NB-TR**	0.55	22.3	C
	SB-L	0.03	8.1	A	**SB-L**	0.08	12.1	B
	SB-TR	0.49	16.7	B	**SB-TR**	0.63	25.4	C
	Intersection	-	15.7	B	**Intersection**	-	21.6	C
Stratford Avenue & Beardsley Avenue/Sherwood Place *Signalized*	**EB-LTR**	0.17	7.1	A	**EB-LTR**	0.32	9.8	A
	WB-LTR	0.18	6.6	A	**WB-LTR**	0.20	8.1	A
	NB-LTR	0.31	28.4	C	**NB-LTR**	0.16	23.0	C
	SB-LTR	0.46	19.3	B	**SB-LTR**	0.61	32.1	C
	Intersection	-	12.3	B	**Intersection**	-	15.1	B
Beardsley Avenue & I-95 NB Off-Ramp *Signalized*	**EB-T**	0.30	3.0	A	**EB-T**	0.59	5.4	A
	EB-R	0.03	1.0	A	**EB-R**	0.05	1.4	A
	SB-T	0.58	36.2	D	**SB-T**	0.83	51.4	D
	Intersection	-	12.3	B	**Intersection**	-	15.7	B
W Broad Street & Linden Avenue/I-95 SB On-Ramp *Signalized*	**EB-L**	0.06	13.4	B	**EB-L**	0.02	11.7	B
	EB-TR	0.58	14.3	B	**EB-TR**	0.64	15.1	B
	WB-L	0.23	6.5	A	**WB-L**	0.19	5.4	A
	WB-TR	0.29	5.4	A	**WB-TR**	0.45	6.5	A
	SB-L	0.28	15.4	B	**SB-L**	0.35	19.0	B
	SB-T	0.52	18.7	B	**SB-T**	0.45	20.3	C
	SB-R	0.39	4.1	A	**SB-R**	0.44	4.8	A
	Intersection	-	10.6	B	**Intersection**	-	10.9	B

v/c ratio = volume/capacity ratio

Source: Synchro 8