



GOLDEN TRIANGLE PLANNING STUDY

November 2018

**A joint study for the municipalities of
Natick & Framingham**

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* At noon on January 1, 2018 the Town of Framingham became the City of Framingham. Adoption of the recommendations in this Report will require attentiveness to the political dynamics of this government transition.

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EXECUTIVE SUMMARY

The Executive Summary summarizes each of the report chapters. A complete list of all of the recommendations for implementation is included at the end.

EXECUTIVE SUMMARY

INTRODUCTION

The Golden Triangle (The Triangle), is a critical economic engine for both Framingham and Natick. Located strategically off Exit 13 of the Massachusetts Turnpike/I-90 (MassPike), The Triangle is a regional hub for businesses, shoppers, and travelers (Fig. ES.1). It is home to a dynamic mix of mature companies and emerging startups, including The TJX Companies (TJX), Meditech, IDG, Heartware, and MathWorks. It is also known as New England’s premier retail shopping center. Encompassing Route 9, Route 30, and Speen Street, it is home to many leading retailers housed at Shoppers World, the Natick Mall, and other shopping plazas.

However, the successful, but largely uncoordinated, development of the area to date has created some significant challenges, including:

- Serious traffic delays, especially at the MassPike Exit 13, the Route 30/Speen Street intersection, and the Route 9 corridor;
- Superblocks and disconnected street patterns that add to traffic delays and impede circulation within The Triangle;
- The lack of effective transportation/mobility alternatives to car-based transit;
- Underutilized land defined by surface parking lots;
- Properties that straddle municipal boundaries and are split zoned; and
- Obsolete zoning.

Most recently, the national decline in retail has increased the urgency for rethinking the existing uses and development patterns in The Triangle. Shopping centers around the country are closing, leaving owners and municipalities struggling to find new uses for these aging properties. At the Natick Mall, J.C. Penney recently closed and Sears is downsizing. Toys R Us recently announced that they are closing the Shoppers World store.

The stakes are high. The continuing retail decline will reduce property values in The Triangle and the revenues that both municipalities depend upon. This window in time, while The Triangle has not seen more widespread closures and property values are still high, presents Natick and Framingham with the rare opportunity to plan for the future and re-envision The Triangle to adapt to 21st Century market realities.

The opportunity to continue and encourage the dynamic evolution of The Triangle into a mixed-use hub of commerce, with the inclusion of multi-modal transportation accommodations according to the Complete Streets policies of each municipality, is crucial to the future of The Triangle. At the same time, safe and efficient access to Exit 13 on the MassPike is essential to municipal and regional growth.



Figure ES.1: Bird's eye view of the Golden Triangle looking north, with Route 9 near the bottom of the photo and the MassPike near the top. As defined for this Study and shown on Figure 1.6, the boundaries of The Triangle are roughly Route 126 (Concord Street) on the west, one block south of Route 9 to the south, the Cochituate Rail Trail and the MassPike to the northeast. The western boundary jogs to the east to avoid the residential neighborhood east of Route 126 on the west side of the Triangle. These boundaries encompass approximately 940 acres or 1.5 square miles.

At the same time, the suburban office market is seeing rising competition from urban centers. In November, 2017 Bose Corporation announced that they will be opening their first office in Boston (their headquarters will remain in Framingham).

THE STUDY: PURPOSE AND GOALS

In 2013, the Massachusetts Department of Transportation (MassDOT) and the Metropolitan Planning Organization (MPO) initiated steps to address traffic congestion in the area, particularly around the MassPike Exit 13/Route 30/Speen Street area.

This Golden Triangle Planning Study (the Study) was commissioned by Framingham and Natick to examine and understand the area’s future development potential and the transportation/mobility and infrastructure improvements necessary to support that development. Information from this Study will provide important input to the MassDOT and MPO analyses.

This Study is intended to provide Natick and Framingham with a clear and achievable future vision for The Triangle, with specific focus on the Route 30, Route 9, and Speen Street corridors, as well as access to and from Exit 13 of the MassPike. This coordinated Study will help the two municipalities realize the desired development, anticipate impacts, and pursue solutions with regard to:

- Traffic, transportation, and walkability
- Infrastructure
- Connectivity to nearby neighborhoods
- Schools
- Zoning and land use
- Cohesive development
- Tax revenues

The vision is supported by a recommended implementation action plan for the two municipalities to follow. The Study includes recommendations for:

- Development Vision and Urban Design
- Transportation and Infrastructure Improvements
- Zoning and Regulatory Changes

This is a long-term vision for The Triangle that could take up to 20 years to realize. Therefore, flexibility is key to successful implementation. The vision has to have the flexibility to adapt to the changing retail environment as well as to changes in market conditions, transportation modes and technologies, and lifestyle choices. Today’s complex retail market is experiencing changes, including the rise of internet shopping and the desire for “experience retail”. And, an increasingly competitive office market must serve employees who prefer urban, walkable, live/work/play environments.

PUBLIC OUTREACH

Implementation of the Study recommendations will require public/private support and participation. The public process outlined below was designed to ensure that the public was well informed on the Study, and had the opportunity to review recommendations and comment and ask questions along the way, in order to garner broad based consensus.

- **A Steering Committee** (the Committee) composed of representatives from both Natick and Framingham was convened to review progress and provide guidance at key points in the Study. Members of the Committee included municipal officials and staff, as well as local property owners and businesses.
- Early in the process, the Consultant Team also held a series of one-on-one meetings with a number of **Stakeholders**, including property and business owners and their representatives, as well as local realtors. These meetings provided further insight into The Triangle and an understanding of stakeholder ideas and concerns, as well as their future plans.
- Framingham and Natick established an **on-line platform** (coUrbanize at www.courb.co/golden-tri) to provide an easy way for residents and businesses to provide feedback. The on-line forum includes updates on project progress and products and allows participants to submit written comments and place site-specific comments on an area map.
- The municipalities held a series of **community meetings**, including one joint open house, as well as separate community meetings in Natick and Framingham, to familiarize the communities with the project and to solicit feedback.

EXISTING CONDITIONS

A detailed analysis of existing conditions provided background information on the history of The Triangle, planning and urban design; market conditions, zoning; transportation, and infrastructure. This information provided the basis for defining and analyzing alternative development scenarios.

BUILD-OUT ANALYSIS

In order to understand the impacts of future development on the transportation system, different development scenarios were analyzed. These outputs were then used as inputs to the transportation model to better understand what transportation improvements would be needed to accommodate land use changes in the future.

Within The Triangle's boundary, there is just over 10.3 million square feet of existing development. Approximately 4.6 million square feet (45 percent) is on the Natick side, and 5.7 million square feet (55 percent) is on the Framingham side. An analysis of the build-out potential of The Triangle under existing zoning showed a difference of only 50,000 square feet when comparing existing development to what could be developed under the existing zoning. Adding in the potential development allowed with the overlay districts resulted in an additional five million square feet of development potential above what is currently built on parcels that fall within the overlay districts. This indicates that the overlay districts are vastly underutilized from a build-out perspective. The total development capacity of parcels covered by the overlays, as well as parcels that fall only under a base zoning district, is just over 15.3 million square feet.

FUTURE SCENARIO MODELING

The Consultant Team also modeled three scenarios which looked at how the future land use mix in The Triangle could potentially change over time and what impact that might have on future tax revenue, jobs, housing units, and population:

- **Decline in Retail:** It is assumed that some retail spaces will transform over time, likely shifting to a mix of uses which could include additional office, entertainment, and residential. This shift has already occurred on the Natick side of The Triangle with the introduction of the Nouvelle at the Natick Mall and the Wegmans grocery store currently under construction. Declines of 8 percent, 10 percent, and 15 percent in retail square footage were modeled, based on a low, medium, and high vacancy rate that are typically seen in declining or underperforming retail markets.

- **Mix of Uses:** As the redevelopment and repositioning of built space occurs over time, it is likely that the use mix will shift away from single use structures to more of a mixed-use approach. This is evidenced by the new development proposal on the former Sam's Club (PACE Membership Warehouse, Ford Distribution) site in Natick where the site of a single use building is being transformed to accommodate residences and a hotel. This set of build-out scenarios assumed the same retail decline figures as noted above, but takes into account a five percent increase in overall built square footage in The Triangle, allocated evenly across office, residential, and indoor entertainment/recreation uses
- **Growth in The Triangle:** New development and redevelopment in The Triangle is likely to increase the overall square footage of built space over time. Growth scenarios of 10 percent and 20 percent were modeled to help both municipalities understand what improvements might be necessary to accommodate that growth so there can be requests and advocacy for those improvements over time.

It is estimated that 10 percent growth would generate between \$3.5 and \$3.7 million in additional tax revenue for the two municipalities over time. It is estimated that 20 percent growth would generate between \$7.2 and \$7.4 million in additional tax revenue.

The Consultant Team used the results of the modeling exercise for existing conditions, 10 percent growth, and 20 percent growth as inputs into the transportation model. The build-out model also was used to calculate potential changes in population, employment, housing units, property tax revenue, and service costs to both municipalities. While increases to tax revenues are important, both communities wanted to ensure that municipal service costs would not outpace potential revenues. Service costs increase with additional development, but net tax revenue from The Triangle still outpaces municipal service costs.

VISION AND URBAN DESIGN

The Vision for The Triangle is that of a vibrant mixed-use district that attracts residents, shoppers, employees and employers to live, work, shop, and play in a well-connected environment that encourages walking and bicycling between destinations and minimizes the need for auto usage (Figs. ES.2 and ES.3). A series of design principles for future development, a connections and open space framework, and a series of hypothetical development concepts for parcels representing different development opportunities was developed. The principles, connections framework and development concepts represent a long-term view of the future of The Triangle, and are intended to provide a structure for working with property owners on development opportunities as they emerge over time. The recommendations in this chapter were developed to accommodate phased implementation, with the idea that, in many cases, public realm improvements would be implemented with adjacent development projects.

Design principles include:

- Ensure that new development is sensitive to adjacent neighborhoods in Natick and Framingham and improves the quality of life for residents of both municipalities.
- Expand mixed-use development, including retail, office, residential, entertainment, and open space.
- Create an attractive, safe/convenient pedestrian and bicycle environment with good pedestrian, bicycle, vehicular, and transit connections between destinations.
- Create new amenities (e.g., open space, Cochituate Rail Trail and other greenways, entertainment, transit) and take advantage of those amenities when planning and marketing new development.
- Site buildings to define the street edges.
- Create development sites that are flexible to accommodate multiple uses as the market changes over time and to accommodate a variety of phasing sequences.
- Site lower scale buildings at neighborhood edges to provide a buffer.



Figure ES.2: Assembly Row in Somerville, MA: a recent example of a vibrant, mixed-use district with retail, office, residential, and entertainment uses; and an attractive, walkable pedestrian environment.



Figure ES.3: Recent example of a vibrant, mixed-use district with retail, office, residential, entertainment uses; an attractive, walkable pedestrian environment and a central open space in Storrs, CT.

The conceptual redevelopment plans on the following pages were prepared to illustrate how the design principals and Connections and Open Space Framework could be accommodated on a variety of parcel types. The selection of individual parcels does not imply imminent redevelopment of any of these parcels. Conceptual plans were developed by the Consultant Team in discussion with the Client, but did not involve the individual property owners.

- Site retail in locations with good visibility (e.g., Routes 9 & 30 and Speen Street).
- Site corporate office parks along MassPike.
- Expand and clarify a transit shuttle route.

The Aspirational Connections and Open Space Framework Plan (The Framework Plan) shown in Figure ES.4 provides the framework for mobility (vehicular, pedestrian, bicycle and transit) and a development parcelization grid sized and configured to accommodate multiple forms of mixed-use development.

This Framework Plan represents the aspirational vision for the future of The Triangle and should be used to guide development and the creation of improved connections throughout The Triangle. Individual development proposals, while not necessarily exactly replicating the Framework Plan, should allow for, and contribute to, the realization of a similar open space and connections network. Development proposals should be required to clearly detail how they accommodate and/or provide new, pedestrian-friendly streets and site buildings to reinforce the street edges.

The components of The Framework Plan are:

- A continuous north-south and east-west greenway system utilizing existing open space (i.e., the central wetlands – Bannister’s Meadows, the Cochituate Rail Trail and Wonderbread Spur, the pathway around the Natick Mall and other identified wetlands) in combination with the patchwork of wooded areas bordering and linking the wetlands as well as a perimeter path around the central wetlands. These two major greenway corridors will include a wide multi-use path and pedestrian boardwalks through Bannister’s Meadows.
- New continuous east-west pedestrian-friendly “complete streets” (shown as green streets on The Framework Plan) between Route 9 and Route 30, and north of Route 30. Streets that are likely to happen in the longer-term are labeled “future street.” These new streets would function as active front door streets for new mixed-use development – walkable streets that link housing to jobs, retail, and entertainment and that have nodes of gathering spaces.

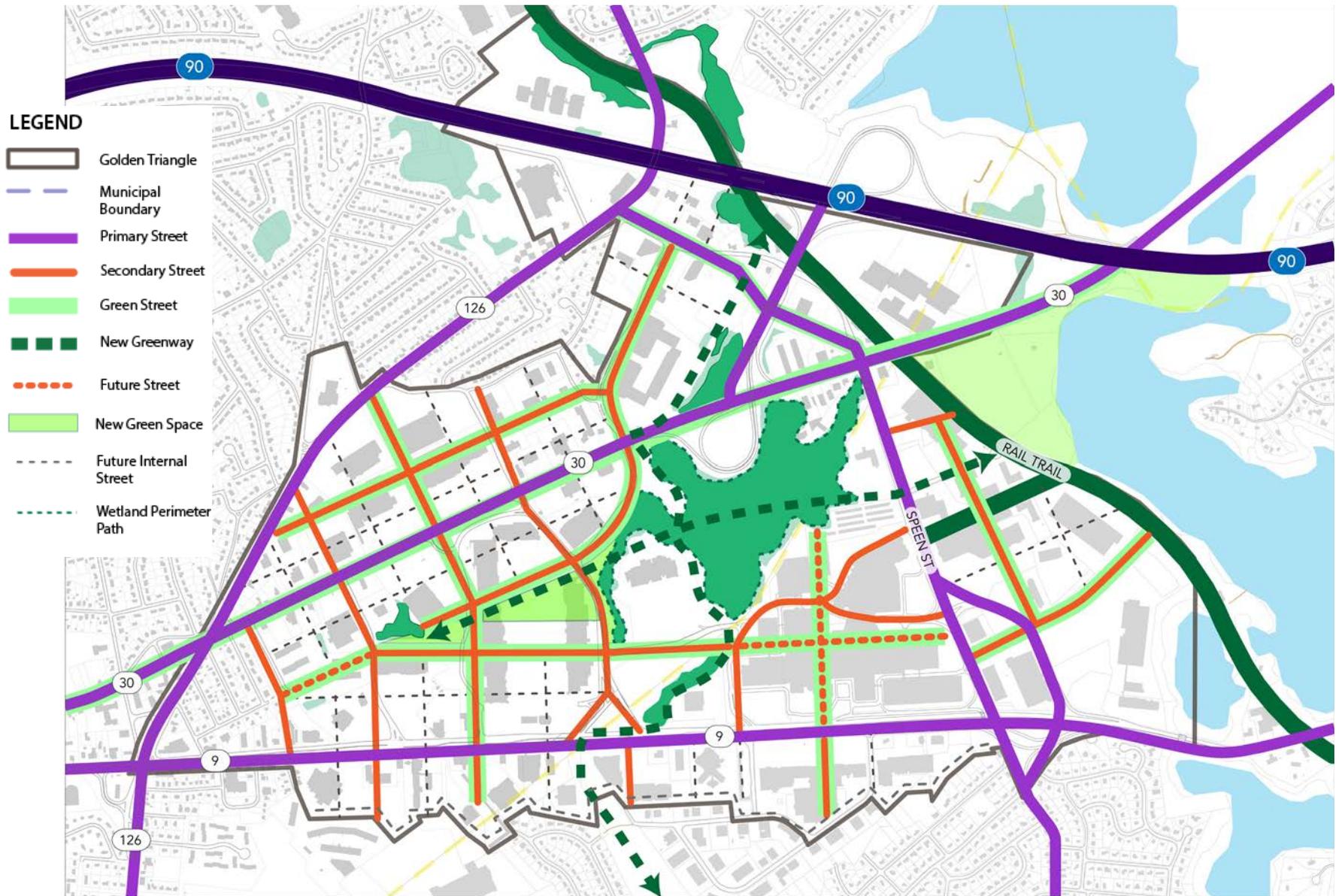


Figure ES.4: Aspirational Connections and Open Space Framework Plan.

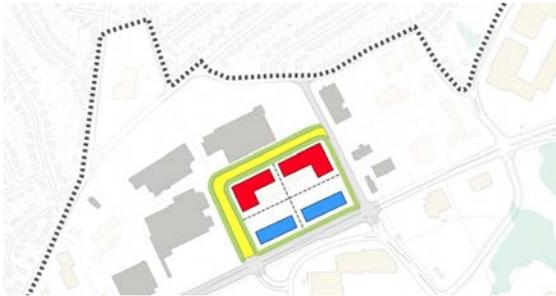


Figure ES.5: Potential Phase 1 redevelopment of parcel with new east-west street connecting to north-south street.



Figure ES.6: Potential redevelopment of four big box parcels with a continuous new east-west street.

LEGEND	
	COMMERCIAL (Retail, Restaurant, Entertainment)
	OFFICE
	RESIDENTIAL
	EXISTING BUILDINGS
	OPEN SPACE
	NEW ROAD
	FUTURE INTERNAL STREET
	EXISTING ROAD
	GOLDEN TRIANGLE BOUNDARY

- Redefined parcels lining the new streets of a size and geometry that can accommodate various building typologies – in other words, conventional city blocks.

Conceptual redevelopment plans for properties representing three parcel typologies were prepared to illustrate how the design principles and Connections and Open Space Framework could be accommodated on a variety of parcel types. The selection of individual parcels does not imply the imminent redevelopment of any of these parcels.

Big Box Parcels Connectivity and Potential Redevelopment Sequence: These single-owner big box parcels tend to have one or only a limited number of tenants. They are therefore less complex and more likely to change in the short-term than either the larger multi-use parcels or the small parcels that would require consolidation for an efficient redevelopment.

The plans provide a hypothetical example of how a new mobility and parcelization system, consistent with the design principles, could be developed incrementally as individual property owners make redevelopment plans. In this example, one of the big box parcels (Target) is positioned for the first phase of redevelopment with a mix of retail, restaurant, office, and residential uses (Fig. ES.5). This pattern is extended to the adjacent parcels, with smaller scale residential development (2-3 story townhouses) shown by the existing adjacent residential neighborhood (Fig. ES.6). A new east-west street links and creates new pedestrian-friendly street frontage. The new east-west street could be created with an easement along the rear of the existing parcels. An incentive or density bonus zoning provision could be used to encourage developers to build the road, to grant easements for the construction of connecting internal streets, and/or to pay into a fund that could be used by the municipalities to build connecting streets.

Medium Size Strip Commercial Center Potential Redevelopment: The Cloverleaf Mall is a good example of a medium size strip commercial center. If, over time, the Speen Street sites of Home Depot and the Cloverleaf Mall are redeveloped, a street and parcelization plan could be developed incrementally to create a new “urban village.” The centerpiece would be a new north-south “complete street” (a pedestrian-friendly two-lane street with parking, in-street bike lanes, and wide sidewalks) linking the MathWorks and TJX campuses. The new north-south street is shown lined with buildings

sized for commercial uses (office, retail and entertainment) on the west, with housing facing the lake and the Cochituate Rail Trail on the east (Fig. ES.7).

Large Transformative Parcel Potential Redevelopment: A conceptual redevelopment plan was prepared for the Shoppers World site to illustrate the potential for redeveloping an existing single-use superblock site with minimal pedestrian amenities into a mixed-use, pedestrian-friendly development. While redevelopment of a large transformative parcel would have the greatest impact on The Triangle, the scale of the parcel and number of tenants makes the redevelopment complex, and less likely to redevelop in the near-term.

The conceptual redevelopment plan was designed to be easily phased to provide the owner with greater flexibility. A three-phase development sequence, in which the phases could happen in any order, was developed (Fig. ES.8). The key elements of the plan include:

- Two new east-west pedestrian-friendly streets lined with active mixed-use development (buildings sized for housing over retail) and connecting the far western section of The Triangle with Flutie Pass and Burr Street and the eastern side of The Triangle, and a new north-south internal street (Fig. ES.9). The new north-south street provides a pedestrian connection from Routes 9 and 30 to the new open space. The two new east-west roads and the new north-south road divide the Shoppers World property into six large blocks which can be developed independently in multiple sequences.
- Commercial and office uses fronting on Route 9 and Route 30.
- Surface and structured parking in the interior of the parcels.
- The land use scenario in the central block is scaled for housing over retail, with much of it facing into a new village square or common.
- The major new open space terminates the east-west greenway connections to the Cochituate Rail Trail. Outdoor entertainment uses could complement the AMC Theatre to the east.

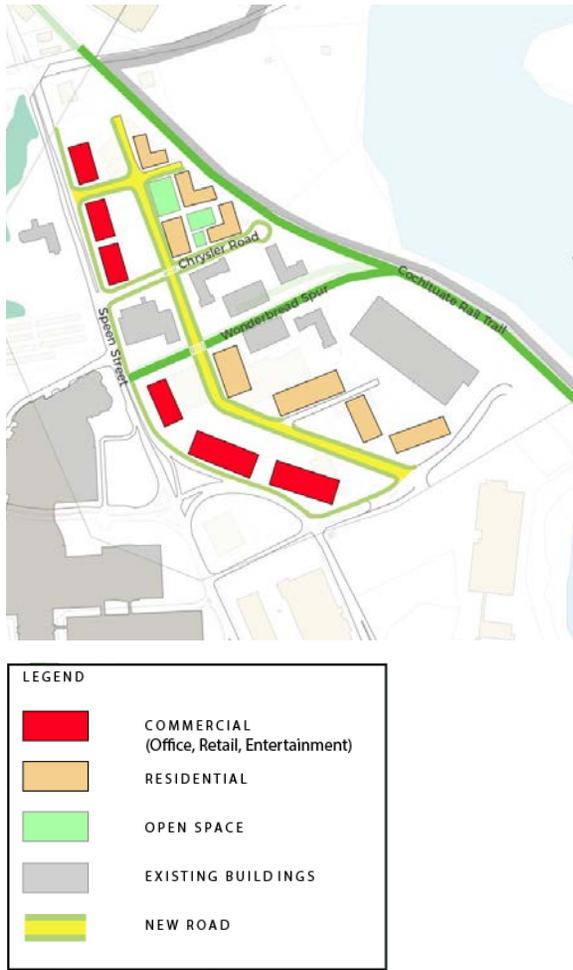


Figure ES.7: A hypothetical redevelopment of the Cloverleaf Mall and Home Depot includes a new pedestrian-friendly north-south street, from TJX to MathWorks, lined with mixed-use development.

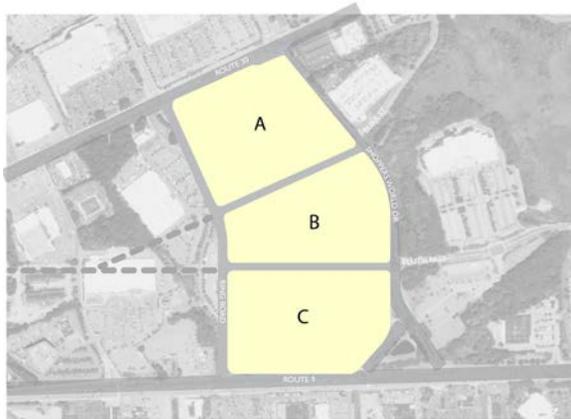


Figure ES.8: Potential redevelopment blocks within the Shoppers World site.

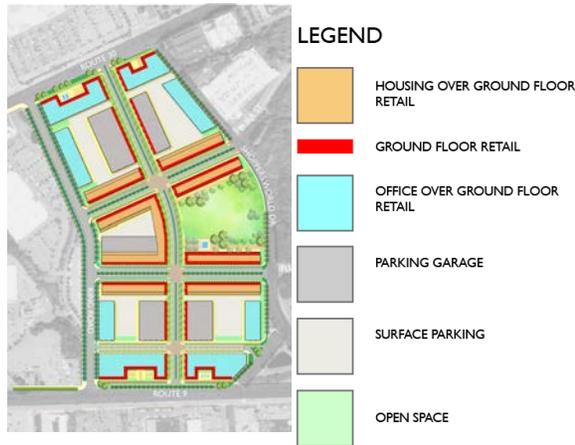


Figure ES.9: Potential mixed-use redevelopment of the Shoppers World site.

The sum could be a lively mixed-use district with three new pedestrian and bicycle friendly streets, a major new open space framed by housing with ground floor retail and opening out toward Bannister's Meadows and its series of paths and boardwalks.

Frontage Road Parallel to Route 9 and Route 30: The redevelopment option for parcels facing Route 9 and/or Route 30 involves creating a more pedestrian-friendly environment by siting new commercial buildings further from these busy roads with a separation zone that includes a landscaped setback, a narrow frontage road with on-street parallel parking, and a wide sidewalk with a curbside tree lawn (Fig. ES.10). This design has the advantage of creating a greater buffer between pedestrians and traffic on busy streets, providing additional space for plazas and pedestrian amenities, and reducing the need for drivers to exit onto Routes 9 and 30 to reach other nearby destinations. The exact design of the frontage road will need to be developed in greater detail and will need to be flexible to accommodate different site conditions and redevelopment plans.

Future redevelopment on the south side of Route 9, where possible, should include the frontage road configuration. However, because redevelopment on a number of parcels may not happen for many years, the potential for an east-west access road connecting all or most of these parcels at the rear of properties was examined. While several factors, including changes in elevation, building location and irregular rear lot lines, complicate the introduction of such an access road, there are opportunities for a series of short east-west streets connecting some of the parcels to one another and to one of the north-south streets that have a signalized intersection at Route 9. At a minimum, as parcels redevelop, property owners should be encouraged to create these connections, as well as to consolidate curb cuts. The Study also recommends assessing the issues involved in extending public ownership of Mercer Road to its intersection with Route 9, and formalizing the existing path from Essex Road to Mercer Road to provide improved pedestrian and bicycle access for the neighborhoods south of Route 9.

TRANSPORTATION

Transportation recommendations were developed for the 10 and 20 percent growth scenarios. Traffic congestion is a problem today, and it is recommended that implementation of the improvements outlined for the 10% growth level should begin in the short-term to accommodate existing traffic as well as future growth. With redevelopment at the **10 percent growth** level, the following infrastructure changes will be required:

- A displaced left turn lane configuration at Route 30 and Speen Street which separates the northbound left turn to the west of the intersection (Fig. ES.11). The displaced left turn design removes the conflict between the heavy northbound left turn from Speen Street onto Route 30 and the southbound through volumes along Speen Street. Removing that conflict allows more vehicles to be processed at one time reducing delays at the intersection.



Figure ES.10: Street level view of potential new mixed-use development on Route 9 at existing Shoppers World site. The rendering illustrates a one-way frontage road separated from Route 9 by a tree row. The frontage road, parallel parking, bike lane, and tree row buffer pedestrians from Route 9 traffic. Active store fronts and a small plaza with cafe tables and trees enhances the pedestrian environment.

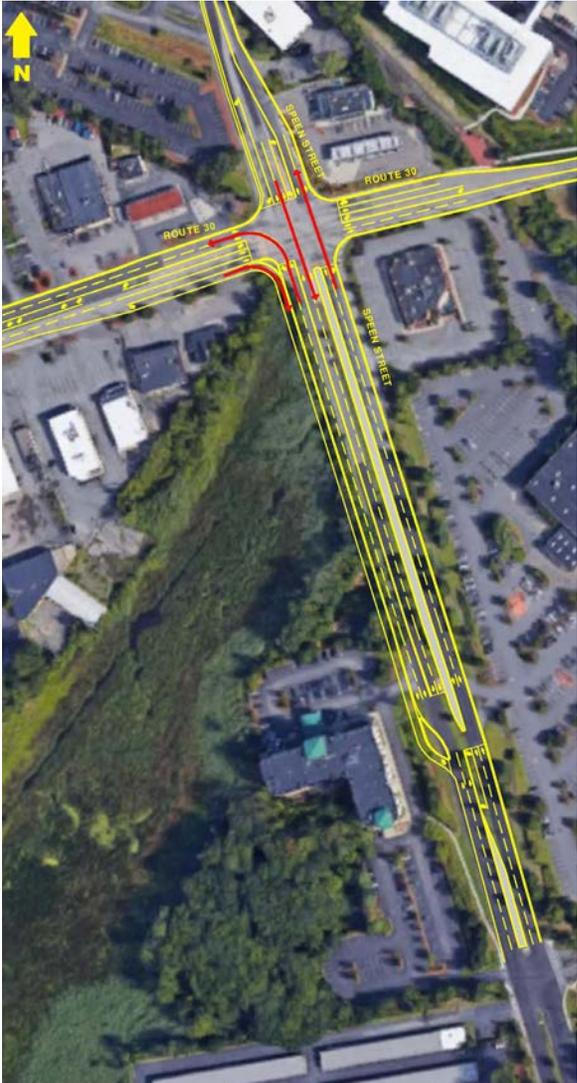


Figure ES.11: Concurrent Traffic Movements at Displaced Left Turn. This drawing represents a very conceptual layout; the final layout and right-of-way would be determined during future design phases.

- Mixed-use redevelopments that capture trips internally (both future development trips as well as trips between existing uses and future uses).
- Connections between parcels within The Triangle to accommodate vehicles, pedestrians and bicyclists as shown in the Framework Plan.
- Incorporation of transit amenities into redevelopment projects as well as at existing demand locations.
- Provision of a new commuter shuttle connecting to the Commuter Rail with limited stops.

In order to accommodate the **20 percent growth** scenario, all of the tools described above will continue to be required. In addition, to accommodate the future traffic growth, the following recommendations also will need to be implemented:

- An interchange redesign of MassPike Exit 13 would need to be considered. A concept that includes ramp connections to Speen Street while maintaining a grade separated connection over it to reach Route 30 would ensure that the traffic volumes at Route 30 are reduced enough to contemplate an at-grade intersection. If Speen Street were relocated so that it crossed the MassPike ramps alignment approximately 375 feet further to the south, full access to both directions of the Massachusetts Turnpike ramps would be accommodated (shown in the Framework Plan). This design would better serve bicycle and pedestrian traffic and open up potential development parcels. This shifting of alignment would require significant land acquisition, design and construction costs as well as significant political support. The benefit of accommodating traffic to and from Speen Street at Speen Street would be a reduction in traffic at the intersection of the ramps with Route 30.
- Transit opportunities in The Triangle will need to be continually expanded as development comes on line. Evaluation of routes and headways, stop locations and amenities, and pedestrian connections to potential destinations will need to be evaluated periodically to ensure that transit is a viable alternate mode for employees, residents and visitors to The Triangle.

UTILITIES

As properties are redeveloped, the following recommendations for utility improvements should be implemented:

- All redevelopments will need to comply with local and state regulations to ensure that adequate water supply is available and that capacity exists for the resulting wastewater.
- When projects are redeveloped in the area of Route 30 and Speen Street, as well as other areas prone to flooding, special attention should be given to the stormwater in light of existing flooding occurrences.
- When possible, underground power, cable and telephone should be considered.

ZONING

A series of zoning principles was developed to help guide the creation of new zoning language that clarifies zoning and supports desired developments across both municipalities:

- Encourage and allow a more diverse mix of uses.
- Break up large blocks or parcels into smaller walkable segments.
- Concentrate height and density in specific locations.
- Create Transition Zones between high and low intensity development to lessen the visual impact on neighboring residents in Framingham and Natick and to open up transportation access and connectivity to adjacent neighborhoods in Natick.
- Create building envelopes using dimensional standards and move away from dictating density through Floor Area Ratio numbers.
- Establish building setbacks that relate to the type of street on which the parcel fronts.

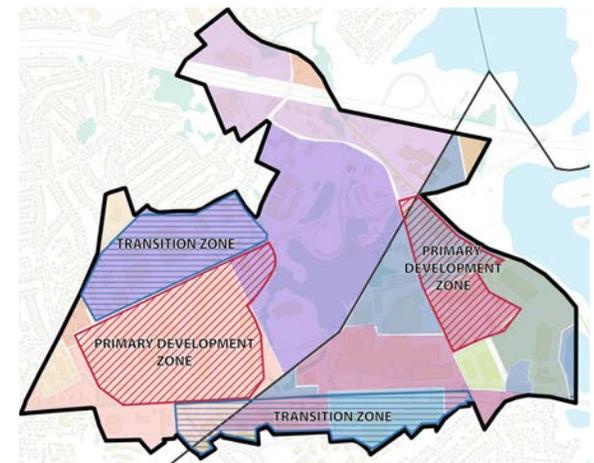


Figure ES.12: Proposed location of Primary and Transition Zones.

Implementation of this Plan could take up to 20 or more years, necessitating long-term attention to the framework of Development Vision & Urban Design, Transportation, and Zoning & Regulatory Changes.

Over that long-term, both communities must remain committed to working together, and with property owners, in order to succeed. Community engagement and process, as well as inter-municipal and public-private partnerships will be required for full implementation.

Report illustrations of transportation improvements and potential redevelopment are very conceptual and will require a much more detailed level of design to proceed. These concepts are intended to be a starting point for discussion, but are anticipated to be refined through the design process and in response to opportunities that arise with changing retail and commercial markets.

- Encourage front yard setbacks to be used for landscaping, sidewalks, shared use paths, pedestrian spaces, or a frontage road along Routes 9 and 30 and move away from only have parking in the front setback.

Two new zoning districts are recommended (Fig. ES.12):

- **Primary Development Zones** are focused around the Shoppers World and Caldor Road area in Framingham, and between Superior Drive and Route 30 in Natick. This second area encompasses two large retail establishments - Home Depot and the Cloverleaf Mall. Review of development proposals will need to consider the traffic impacts of changes in land use and whether traffic improvements, such as the displaced left turn on Speen Street, have been implemented. These two areas hold a great deal of redevelopment potential, could support larger-scale mixed-use development, are well-connected to the transportation system and are further from nearby residential neighborhoods. Alternatively, the Primary Development Zone in Natick could be in the area around Sherwood Plaza (the area described in the plan as a Transition Zone – see below). Development in this location potentially could have less of an impact on Speen Street traffic, but would place development closer to a single-family residential neighborhood. The Primary Development Zones are intended to be the higher intensity redevelopment districts within The Triangle, similar to what was envisioned through the existing Regional Center Overlay District.
- **Transition Zones** are areas of The Triangle that also have redevelopment potential, and tend to be single use structures (primarily retail), but abut nearby single-family neighborhoods. The proximity to these neighborhoods necessitates a different approach to the zoning, where transitions in use and development intensity change as one moves from the primary travel corridors of Routes 9 and 30 toward the abutting neighborhoods.

Both Primary Development Zones and Transition Zones are intended to be created as new base zoning districts to remove any possibility of future redevelopment utilizing the existing underlying zoning.

The Study does not recommend rezoning the entire Golden Triangle at this time. It is important to focus development in specific areas to marry desired land use changes with future transportation

changes to ensure proper mitigation of traffic issues is planned and executed alongside new development opportunities. As The Triangle redevelops and transportation improvements occur, both municipalities should monitor progress and make determinations over time with regard to rezoning additional portions of The Triangle.

While many uses currently allowed in the base zoning districts for The Triangle remain desirable, there are some additional uses both municipalities should consider allowing in the future. The changing nature of the retail market and opportunities to support residential, mixed-use and cottage industries necessitate a new flexibility with uses that may not have been considered fifty or sixty years ago when development of retail space first started in The Triangle. One of the most effective ways to unify a district like The Triangle is through visual cues that transition seamlessly across municipal boundaries. The location of parking, placement of public amenities and a consistent landscaping plan are all site planning elements that can help create a consistent look and feel across parcels.

IMPLEMENTATION

Implementation of this Plan will require a number of actions from both municipalities as well as from the Commonwealth and private property owners, and developers. Implementation actions detailed throughout this report are summarized below.

VISION AND URBAN DESIGN

- Ensure that new development is consistent with and helps to implement the Framework Plan. Development proposals should be required to clearly detail how they accommodate and/or provide new, pedestrian-friendly streets that create new connections through The Triangle with buildings sited to reinforce the street edges.
- Review new development proposals for consistency with this Report, including inclusion of mixed-use, connections, open space, placemaking elements, driveway consolidation, pedestrian and bicycle facilities, zoning and design principles.

- Encourage mixed-use development including retail, office, entertainment and residential uses.
- Work with property owners and developers to facilitate desired development.
- Finalize and adopt the zoning recommendations in Chapter 6.
- Pursue funding for the design and construction of the greenways through the wetlands.
- Design and implement a wayfinding and signage program throughout The Triangle.
- Work with property owners and developers to develop a continuous north-south and east-west greenway system utilizing existing open space (i.e., the central wetlands – Bannister’s Meadows, the Cochituate Rail Trail and Wonderbread Spur, the pathway around the Natick Mall and other identified wetlands) in combination with the patchwork of wooded areas bordering and linking the wetlands, including a wide multi-use path and pedestrian boardwalks through Bannister’s Meadows.
- Consider opening discussions with Eversource regarding building trails under Eversource power lines, both north and south of Route 9.
- Conduct a more detailed study to determine the feasibility of a perimeter pathway around Bannister’s Meadows, including the availability of relatively flat land for constructing the path, permitting issues, and future ownership and maintenance responsibility.
- Consider providing an incentive or density bonus zoning provision to encourage developers to build connecting roads, to grant easements for the construction of connecting internal streets, and/or to pay into a fund that could be used by the municipalities to build connecting streets.
- Encourage developers to incorporate the frontage road concept for new development on parcels facing Route 9 and/or Route 30. This involves creating a more pedestrian-friendly environment by siting new commercial buildings further from these busy roads with a separation zone that includes a landscaped setback, a narrow frontage road with on-street parallel parking, and a wide sidewalk with a curbside tree lawn.
- On the south side of Route 9:

- Work with property owners to study the feasibility of, and implement, segments of a connecting road at the rear of parcels, as well to consolidate driveways.
- Explore options for defining the legal status of the pedestrian path from Essex Street to Mercer Road with the intention of creating a more definitive connection.
- Encourage the introduction of a frontage road as properties are redeveloped.
- In the short-term, consider developing a short cycle track on Route 9 that connects via the Natick Mall path on the west side of Speen Street to the Wonderbread Spur and Cochituate Rail Trail on the east and to Ring Road or Shoppers World Drive on the west. In the long-term, as obstacles are removed by future redevelopment the potential redesign of MassPike Exit 13, consider developing a continuous cycle track on both Routes 9 and Route 30.

T R A N S P O R T A T I O N

- Property owners will need to become major players in transit improvements, including lobbying MassDOT and the MWRTA for improvements, providing employee incentives for commuting by transit and providing on-site transit amenities.
- Work with MassDOT and the legislative delegation to secure funding for the infrastructure that is needed to reach the desired growth. Specifically, MassDOT should be approached regarding:
 - Providing bus pull outs and shelters along Route 9 and Route 30 in order to encourage use of transit. Incorporating the transit accommodations into any infrastructure projects.
 - Providing funding for the proposed commuter route which will provide a first mile/last mile transit connection from the Commuter Rail to the Golden Triangle.
 - Accommodating pedestrians and bicyclists in infrastructure projects.
 - Committing to snow removal to allow for safe passage during all seasons. The municipalities should work with private property owners to ensure that public paths on private property are also cleared.

- Designing and constructing the displaced left turn concept at the intersection of Route 30 and Speen Street.
- Interchange improvements required to meet the goals of this study, including providing more direct access to Speen Street in order to reduce traffic at the ramp connection to Route 30 resulting in an intersection at Route 30 that is not grade separated.
- Evaluate transit routes and headways, stop locations and amenities, and pedestrian connections to potential destinations periodically to ensure that transit is a viable alternate mode for employees, residents and visitors to The Triangle.
- Work with MassPort to incorporate additional parking capacity onto the existing Logan Express site.
- Continue to monitor changes in transportation technology to ensure that the transportation system accommodates new technologies and traffic operations in The Triangle remain as efficient as possible.
- The municipalities should include zoning that allows for the mixed-use types of projects that will result in lower exterior trip generation.
- When permitted, projects should be required to include pedestrian, cyclist and transit accommodation as well as provide appropriate connections to adjacent properties, either through constructing those connections as described in detail in Chapter 5, or providing easements and paying into a fund to allow them to be constructed at a later date when adjacent properties are redeveloped.
- Development projects should be required to join the Transportation Management Association (TMA) which joins together employers and then uses that larger employment base to support transit, carpooling and other tools to reduce single occupant vehicular traffic.

UTILITIES

- All redevelopments will need to comply with local and state regulations to ensure that adequate water supply is available and that capacity exists for the resulting wastewater.
- When projects are redeveloped in the area of Route 30 and Speen Street, and in other locations where flooding has been observed, special attention should be given to the stormwater in light of existing flooding occurrences.
- When possible, underground power, cable and telephone should be considered.

ZONING

- Coordinate on limiting the granting of Variances and Special Permits to ensure that the intent of the Master Plan is not undermined.
- Create and adopt new zoning for Primary Development Zones:
 - Allow up to six stories in height for new development. Consider allowing taller buildings by Special Permit, particularly for a larger office project or a project that is considering structured or underground parking as a way to increase allowable development on a given site. If Special Permits are granted for taller buildings, consideration should be given to tying density bonuses back to an increase in public amenities, transportation connectivity and landscaping requirements.
 - Encourage parcel consolidation and larger, more coordinated development projects, by setting a higher minimum lot size (than in the existing zoning).
 - Set both a minimum and maximum front yard setback and vary those requirements by the type of street on which the parcel fronts.
 - Create a building frontage requirement to ensure there is an ample amount of building wall along the frontage of the property.

- Require a high percentage of transparency in ground floor facades along streets to create a more interesting pedestrian environment.
- Step back provisions for upper stories above the second or third floor for buildings that have frontage on secondary streets should be considered on an individual basis.
- Create and adopt new zoning for Transition Zones:
 - Allow buildings up to three to four stories in height and create a transition provision in the zoning that heights step down within a certain radius of single-family residential neighborhoods.
 - Set minimum lot sizes in a way that does not discourage individual property owners from investing in or redeveloping their land, but also encourages parcel consolidation where appropriate.
 - Set both a minimum and maximum front yard setback and vary those requirements by the type of street on which the parcel fronts.
 - Set a deeper rear yard setback where commercial properties abut surrounding residential neighborhoods to provide a larger well-landscaped buffer.
 - Create a building frontage requirement to ensure there is an ample amount of building wall along the frontage of the property.
 - Vary the allowable uses in the transition zone to shift the focus more toward neighborhood-scale retail, office, residential, and entertainment/civic uses. These might include small restaurants, neighborhood services, professional offices, art galleries, coffee shops, fitness and wellness, and residential uses such as townhomes, duplexes, and smaller-scale multi-family dwellings.
- Both Primary Development Zones and Transition Zones are intended to be created as new base zoning districts to remove any possibility of future redevelopment utilizing the existing underlying zoning. Prior to removing or changing existing base zones and/or overlay districts, both municipalities should check with legal staff with regard to any payments received under the existing overlay districts and how those may be impacted by any proposed zoning changes.

- Create an incentive or density bonus provision to encourage developers to grant easements for the construction of connecting internal streets or to pay into a fund that could be used by the municipalities to build connecting streets.
- As The Triangle redevelops and transportation improvements occur, both municipalities should monitor progress and make determinations over time with regard to rezoning additional portions of The Triangle.
- Modify allowable uses within Triangle to encourage to support today's residential, mixed-use and cottage industries.
- Adopt parking recommendations:
 - Unify parking requirements for the new zoning districts. Consider using Natick's parking requirements as a starting point as they are lower than Framingham's.
 - Consider parking maximums in The Triangle. Retail and office developers may want to build more parking than is required under zoning.
 - Allow shared parking for mixed-use developments. Consider a 10 percent reduction in overall parking for uses that do not have overlapping times of parking demand.
 - Regulate the placement of parking to limit it to the rear and sides of buildings.
 - Encourage shared access to adjacent parking lots and the closure of curb cuts where possible, particularly along primary travel corridors.
 - Establish bike parking standards for residential and mixed-use development, at a minimum.
 - Allow for parking reductions if the applicant provides transportation demand management solutions such as car sharing, land banked spaces, joining the MetroWest TMA, subsidizing transit passes, etc.

- Adopt recommendations for landscaping and public amenities:
 - Develop a unified set of landscaping requirements that includes the types (e.g., columnar, high canopy), size and caliper of street trees, bushes and other plantings with a preference toward native or hybrid species.
 - Develop a unified set of design guidelines and imagery that represent the placement, clustering and types of landscaping that is desired in The Triangle.
 - Vary the minimum landscape requirements for the primary development zone and the transition zone. While the overall density of plantings and the percentage of open space may vary between the primary and transition zones, there should be visual consistency between the two.
 - Ensure the front setback in both districts is wide enough to accommodate an ample amount of landscape buffer between the road and the building with room for sidewalks, shared use paths, or a frontage road if desired.
 - Consider varying landscape and public amenity requirements by the size of the development, where larger-scale development provides more and smaller-scale development provides less. At no point should the minimum requirements detract from the overall landscape and public amenity plan for The Triangle. Consistency across parcels is the goal, but standards and amounts can vary based on the size of the development project.
 - Consider varying sidewalk/pathway widths and public amenity space (pedestrian gather spaces, plazas, etc.) by the roadway on which the parcel fronts.

MUNICIPAL COORDINATION

- To improve cross-municipal coordination between Framingham and Natick, consideration should be given to creating a district-wide entity such as a Business Improvement District (BID) to ensure coordination between municipal staff, governing bodies, property owners, and businesses in The Triangle. The BID would have dedicated staff who could focus on both public and private needs and serve as an intermediary to negotiate and advocate for improvements in The Triangle.

- The two municipalities should consider the idea of establishing a District Improvement Financing (DIF) district as a way to help fund public infrastructure and improvement projects in The Triangle. The DIF district would use incremental property tax gains as an vehicle for funding future infrastructure enhancements. Further study would be needed to determine if a DIF could serve two municipalities together, where the district boundaries would be drawn, how tax revenue and cost share would be determined, and how projects would be selected for DIF funding.
- The two municipalities should continue to inform each other of development proposals, zoning changes, infrastructure improvements, and similar issues. This practice should be codified in any new zoning for The Triangle where the zoning district boundaries span the municipal boundary between Framingham and Natick. This would be similar to how the Regional Center Overlay district works today.



01 INTRODUCTION

- **THE STUDY: PURPOSE & GOALS**
 - **THE THREE-LEGGED STOOL**
 - **REPORT STRUCTURE**
-



Figure 1.1: Bird's eye view of the Golden Triangle looking north, with Route 9 near the bottom of the photo and the MassPike near the top. As defined for this Study and shown on Figure 1.6, the boundaries of The Triangle are roughly Route 126 (Concord Street) on the west, one block south of Route 9 to the south, the Cochituate Rail Trail and the MassPike to the northeast. The western boundary jogs to the east to avoid the residential neighborhood east of Route 126 on the west side of the Triangle. These boundaries encompass approximately 940 acres or 1.5 square miles.

INTRODUCTION



Figure 1.2: TJX recently expanded their headquarters in The Triangle.



Figure 1.3: The Meditech building is just off Route 30 in Framingham.

The Golden Triangle (The Triangle) is a critical economic engine for both Framingham and Natick. Located strategically off Exit 13 of the Massachusetts Turnpike/I-90 (MassPike), The Triangle is a regional hub for businesses, shoppers, and travelers (Fig. 1.1). It is home to a dynamic mix of mature companies and emerging startups, including The TJX Companies (TJX), Meditech, IDG, Heartware, and MathWorks (Figs. 1.2 & 1.3). The Triangle is also known as New England's premier retail shopping center. Encompassing Route 9, Route 30, and Speen Street (Fig. 1.1 and Fig. 1.6), it is home to many leading retailers housed at Shoppers World, the Natick Mall, and other shopping plazas (Fig. 1.4 & 1.5). While The Triangle is largely automobile-oriented, the area is starting to accommodate multiple transportation options, with the recently expanded MassPort Logan Express facility, the inclusion of landscaped pedestrian paths through the area, and the almost finalized Cochituate Rail Trail connecting The Triangle to the historic Saxonville area of Framingham to the north (completed) and the Natick Center commuter rail station to the south (in the planning phase).

However, the successful, but largely uncoordinated, development of the area to date has created some significant challenges, including:

- Serious traffic delays, especially at the MassPike Exit 13, the Route 30/Speen Street intersection, and the Route 9 corridor;
- Superblocks and disconnected street patterns that add to traffic delays and impede circulation within The Triangle;
- The lack of effective transportation/mobility alternatives to car-based transit;
- Underutilized land defined by surface parking lots;
- Properties that straddle municipal boundaries and are split zoned; and
- Obsolete zoning which may preclude sustainable development patterns that foster transportation and mobility options, economic growth, and resiliency.

Most recently, the national decline in retail has increased the urgency for rethinking the existing uses and development patterns in The Triangle. Shopping centers around the country are closing, leaving owners and municipalities struggling to find new uses for these aging

properties. At the Natick Mall, J.C. Penney recently closed and Sears is downsizing. Toys R Us recently announced that they are closing the Shoppers World store. The owner of the Natick Mall (GGP Inc.) has been proactive in attracting new uses, specifically Wegmans (grocery store) and Dave & Buster's (restaurant and video arcade), to fill the J.C. Penney and Sears spaces .

At the same time, the suburban office market is seeing rising competition from urban centers. In November, 2017 Bose Corporation announced that they will be opening their first office in Boston (their headquarters will remain in Framingham). "Bose will join other suburban companies placing a flag in the city, including PTC and Reebok, which recently relocated from Needham and Canton, respectively, to the Seaport District. A number of tech and consumer-products companies, in particular, have expanded in Boston, hoping to attract more young workers." *Boston Globe, Nov. 6, 2017.*

The stakes are high. The continuing retail decline will reduce property values in The Triangle and the revenues that both municipalities depend upon. This window in time, while The Triangle has not seen more widespread closures and property values are still high, presents Natick and Framingham with the rare opportunity to plan for the future and re-envision The Triangle to adapt to 21st Century market realities.

The opportunity to continue and encourage the dynamic evolution of The Triangle into a mixed-use hub of commerce, with the inclusion of multi-modal transportation accommodations according to the Complete Streets policies of each municipality, is crucial to the future of The Triangle. At the same time, safe and efficient access to Exit 13 on the MassPike is essential to municipal and regional growth.

THE STUDY: PURPOSE AND GOALS

In 2013, the Massachusetts Department of Transportation (MassDOT) and the Metropolitan Planning Organization (MPO) initiated steps to address traffic congestion in the area, particularly around the MassPike Exit 13/Route 30/Speen Street area.



Figure 1.4: The Natick Mall is a key retail landmark within The Triangle.



Figure 1.5: Shoppers World are key retail landmarks within The Triangle.

Legend

-  Golden Triangle Boundary
-  Town Boundary
-  Streets
-  Parcel Boundary
-  Parking
-  Rail Trail
-  Water Bodies
-  Wetlands

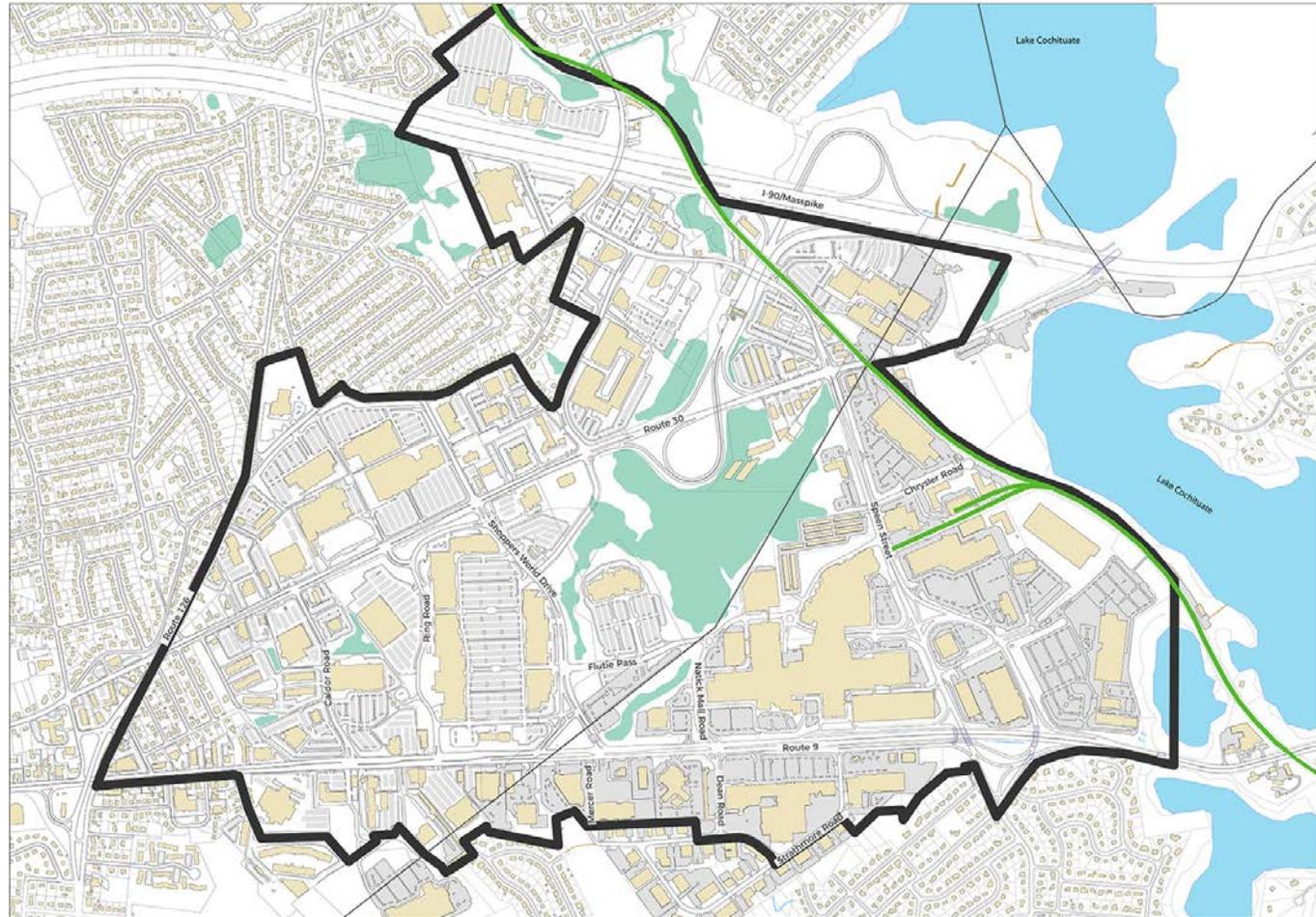


Figure 1.6: The Golden Triangle Study Area.

This Golden Triangle Planning Study (the Study) was commissioned by Framingham and Natick to examine and understand the area’s future development potential and the transportation/mobility and infrastructure improvements necessary to support that development. Information from this Study will provide important input to the MassDOT and MPO analyses. This Report (the Report) documents the analyses conducted for the Study and the resulting recommendations for new development, and improvements to infrastructure; vehicular, pedestrian, and bicycle circulation; and zoning to support that development.

The goals of the Study included:

- Conduct joint community planning for a regional economic center.
- Set the stage for future growth in a changing economy.
- Create a shared development vision for the future.
- Provide guidance for future infrastructure investments.
- Enhance the quality of life for residents of adjacent neighborhoods. In particular, protect Framingham and Natick neighborhoods from traffic and other impacts related to existing and potential future development and improve access to The Triangle from Natick neighborhoods south of Route 9.

This Study is intended to provide Natick and Framingham with a clear and achievable future vision for The Triangle, with specific focus on the Route 30, Route 9, and Speen Street corridors, as well as access to and from Exit 13 of the MassPike. This coordinated Study will help the two municipalities realize the desired development, anticipate impacts, and pursue solutions with regard to:

- Traffic, transportation, and walkability
- Infrastructure
- Connectivity to nearby neighborhoods
- Schools
- Zoning and land use
- Cohesive development
- Tax revenues

The vision is supported by a recommended implementation action plan for the two municipalities to follow.

THE THREE-LEGGED STOOL

The Study for The Triangle is based on a three-legged stool (Fig. 1.7) with recommendations for:

- Development Vision and Urban Design
- Transportation and Infrastructure Improvements
- Zoning and Regulatory Changes

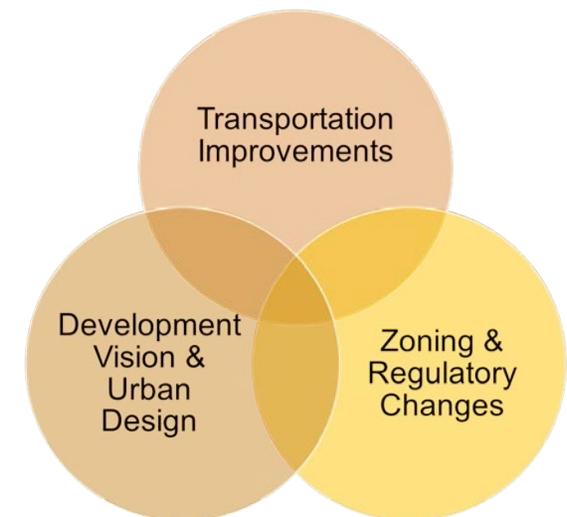


Figure 1.7: The Study and Plan are based on this 3-legged stool.

These three components are integrally linked - the development vision and growth projections have to be realistic in terms of both market realities and the amount of development that can be accommodated with transportation improvements, as well as in terms of the amount of development the two municipalities have the capacity to absorb and serve. Similarly, the development vision and urban design recommendations have to accommodate the necessary transportation improvements by providing a framework for increased internal vehicular, pedestrian, and bicycle connections throughout The Triangle. Lastly, the zoning and regulatory changes have to support and encourage the type and scale of development envisioned.

At the same time, this is a long-term vision for The Triangle that could take up to 20 years to realize. Therefore, flexibility is key to successful implementation. The vision has to have the flexibility to adapt to the changing retail environment as well as to changes in market conditions, transportation modes and technologies, and lifestyle choices. Today's complex retail market is experiencing changes, including the rise of internet shopping and the desire for "experience retail". And, an increasingly competitive office market must serve employees who prefer urban, walkable, live/work/play environments.

Projects successfully attracting investment today - for example, Market Street in Lynnfield, Legacy Place in Dedham, and Assembly Row in Somerville - encompass multiple uses, including retail, entertainment, office, residential, and open space. This Study focuses on creating direct pedestrian, bicycle, and vehicular connections between these multiple uses, both to create a more engaging and attractive environment and to reduce vehicular traffic on the major arterials serving The Triangle.

REPORT STRUCTURE

The Report structure is described below:

- Chapter 2 details the Public Process that was conducted for this Study.
- Chapter 3 examines the history of The Triangle, existing land use, urban design, infrastructure, transportation, and zoning.
- Chapter 4 describes current and projected future market conditions and assesses different potential growth scenarios.
- Chapter 5 sets out a connections and open space plan (the Framework Plan) as a framework for future development, as well as overarching design principles and examples of hypothetical/prototypical redevelopment.
- Chapter 6 details the transportation and infrastructure impacts of the proposed growth scenarios and outlines a series of short and long-term recommendations to accommodate that growth.
- Chapter 7 lays out a zoning and implementation strategy.

While these chapter topics are presented sequentially, they are, in fact, the product of an integrated and iterative process that involved assessing and modifying all of the topics simultaneously to ensure that they are mutually supportive and work together to achieve the desired outcomes.



02 PUBLIC PROCESS

- **STEERING COMMITTEE**
 - **STAKEHOLDER INTERVIEWS**
 - **ONLINE PRESENCE**
 - **COMMUNITY MEETINGS**
-

PUBLIC PROCESS

Implementation of the Study recommendations will require public/private support and participation. The public process detailed below was designed to ensure that the public was well informed on the Study, and had the opportunity to review the Report and recommendations and comment and ask questions along the way, in order to garner broad based consensus.

STEERING COMMITTEE

A Steering Committee (the Committee) composed of representatives from both Natick and Framingham was convened to review progress and provide guidance at key points in the Study. Members of the Committee included municipal officials and staff, as well as local property owners and businesses. The Committee met four times over the course of the Study (at least one additional meeting to review the Final Plan is anticipated). A summary of the presentation and discussion items for each meeting is shown below:

- Meeting 1 – June 27, 2017: Project introduction and interactive SWOT (Strengths/Weaknesses/Opportunities/Constraints) analysis (Fig. 2.1)
- Meeting 2 – August 23, 2017: Existing conditions, market study, existing build-out analysis, background for conceptual redevelopment plans
- Meeting 3 – October 23, 2017: Future build-out scenarios and typical municipal expenditures per capita and/or land use, potential land use subdistricts, connections and open space framework, prototypical redevelopment site plans & precedent photos, MassPike Exit 13 interchange redesign concept, and potential transit improvements
- Meeting 4 – December 12, 2017: More detailed Connections and Open Space Framework Plan, recommendations for long and short-term transportation improvements, revised growth scenarios, design principles, redevelopment concepts, and potential zoning strategy



Figure 2.1: Summary of Steering Committee Meeting SWOT Analysis.

STAKEHOLDER INTERVIEWS

Early in the process, the Consultant Team also held a series of one-on-one meetings with a number of stakeholders, including property and business owners and their representatives, as well as local realtors. These meetings provided further insight into The Triangle and an understanding of stakeholder ideas and concerns, as well as their future plans.

Stakeholders interviewed included:

- John Katzen – Cloverleaf Shopping Center
- Kyle Spellman & Peter Barbieri – Owner 323 Speen
- Garry Holmes - R.W. Homes Realty
- Katie Snyder – National Development
- Michael Brogan – The TJX Companies
- Ken Labarre – GGP (owners of The Natick Mall)
- David Cohen Pratt & Bruce Leader – Sherwood Plaza
- Tony Polimeno – Meditech
- Alex Antolino & Tyler Terhune – DDR (owners of Shoppers World)
- Craig Lizotte – MathWorks
- Jake Maliel – TA Realty
- Marc Verrault – Carruth Capitol

Key issues identified in these interviews included:

- Development of mixed-use and more residential is important for the future of The Triangle.
- All of the stakeholders intend to stay in The Triangle.
- The lack of good signage and wayfinding within The Triangle needs to be addressed.

- There has been some decline in sales but retail remains strong.
- Many of the existing stakeholders showed little interest in transit, although this seems to be a result of The Triangle not being well served by existing transit.
- Office space is aging and mostly not Class A.
- Corporate employees don't use Logan Express.
- There is interest in seeing the large central wetland become an amenity.
- Large companies experience strong competition for employees.
- There is a need for housing affordable to employees within The Triangle.

A Small Business Roundtable (the Roundtable) also was convened to provide a forum for smaller businesses to discuss their concerns and ideas for The Triangle with each other and the Consultant Team. Attendees at the Roundtable included:

- Paul Joseph - MetroWest Chamber of Commerce (convener)
- Lou Carrier – Distinctive Hospitality Group (Crowne Plaza & Hampton Inn)
- Jeremy Brandon – Avidia Bank
- Norman Gauvin – American Girl
- Anna Lockmer & Kurt Feilke – REI
- David Pratt & Bruce Leader – Sherwood Plaza
- Craig Tornifoglio & Tim Hannah, Jr. – Ken's Steakhouse

Key issues raised at the Roundtable included:

- Hotels are dependent on corporate clientele to meet occupancy goals.
- Hotel guests want to be shuttled around The Triangle because of the confusing and difficult existing circulation system.



Figure 2.2: Examples of the coUrbanize signs posing questions to pedestrians at Panera Bread, the Cochituate Rail Trail and Shoppers World.

- Retailing today is about convenience and experience.
- Internal circulation and connections are key issues, particularly around Route 9 and Speen Street.
- Transit has not played a big role in transportation decisions to date.
- Zoning and permitting regulations are complicated, particularly for small changes.

ONLINE PRESENCE

Framingham and Natick established an on-line platform (coUrbanize at www.courb.co/goldentri) to provide an easy way for residents and businesses to provide feedback. The on-line forum includes updates on project progress and products and allows participants to submit written comments and place site-specific comments on an area map (Fig. 2.3).

Both communities with the assistance of the coUrbanize team deployed a series of signs throughout the Golden Triangle with the goal of securing additional feedback from pedestrians (Fig. 2.2). The signs asked a variety of questions – in both English and Portuguese – to which pedestrians could text message their responses. The responses were then linked to the coUrbanize website platform and subsequent map. The signs were placed in the beginning of October and removed in the end of December.

As of the end of December, 2017, over the website had received over 4,600 visits from almost 3,400 different individuals (some visited more than once), who submitted approximately 400 comments. The full list of comments is included in the Addendum to this Report. The following is a summary:

55 percent of the comments were positive, 21 percent were neutral and 24 percent were negative.

The responses to the question “What brings you to the Exit 13/Golden Triangle area most often?” were:

- 45 percent home
- 33 percent shopping

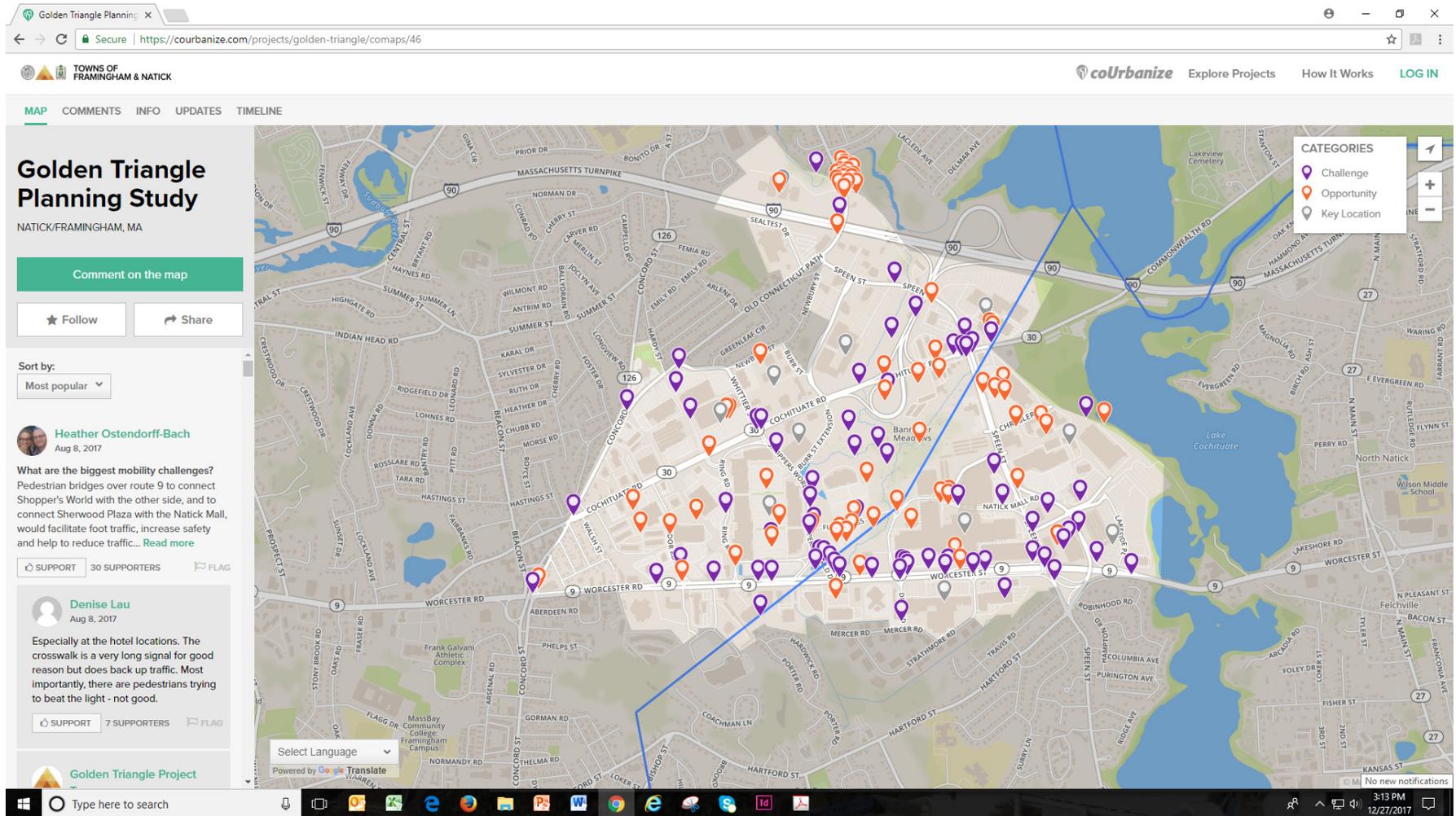


Figure 2.3: Screenshot of the coUrbanize website - the purple and orange markers indicate locations of specific comments and/or recommendations.



- 10 percent Restaurants/Entertainment
- 7 percent Work
- 4% Commute/Driving By

The approximately 400 comments are categorized below:

- Experience/Activity and Land Use (including restaurants, retail, entertainment, residential use): 9 percent
- Mobility (including traffic, transit, Cochituate Rail Trail, pedestrian and bicycle facilities, parking, and shuttles): 45 percent
- Miscellaneous (including aesthetics, maintenance, flooding, traffic-related noise, solar energy): 10 percent
- More general statements (primarily including reasons for visiting): 37 percent

A complete list of the comments submitted is included in the Public Process Addendum to this Report.



Figure 2.4: Land use map and preference board from public meeting.

COMMUNITY MEETINGS

The municipalities, together with the Consultant Team also held a series of community meetings to familiarize the community with the project and to solicit feedback.

Framingham and Natick held a joint Community Open House on October 23, at the McCauliffe Charter School. A PowerPoint presentation introducing the project played as a continuous loop and attendees circulated at their leisure through three interactive stations (described below) where they could use stickers and written comments to indicate their preferences.

- Land Use: Attendees used dots and wrote comments to answer “Which uses would you like to see here in the future?” and put stickers indicating types of land use on a map to respond to “Where would you like to see new development?” (Fig. 2.4)

- Transportation: Attendees used dots and wrote comments to answer “Which transportation ideas are most critical?” (Fig. 2.5)
- Development Character: Attendees attached photos of different types and scale of development and wrote notes indicating what they liked and didn’t like about the images. (Fig. 2.6)

There also was a table where people could submit additional comments on any topic related to the project. Additional meeting photos are shown in Figure 2.7.

Both municipalities also held their own community meeting to solicit feedback. Framingham held a meeting on November 13, 2017 at LifeTime Fitness. A brief presentation introduced the project, and then attendees were asked to respond to the following three questions:

- “How do you use/why do you come to the Golden Triangle?”
- “What is missing from the Golden Triangle that would encourage you to come more often?”
- “What other comments/concerns/desires should be considered in planning for the Golden Triangle?”

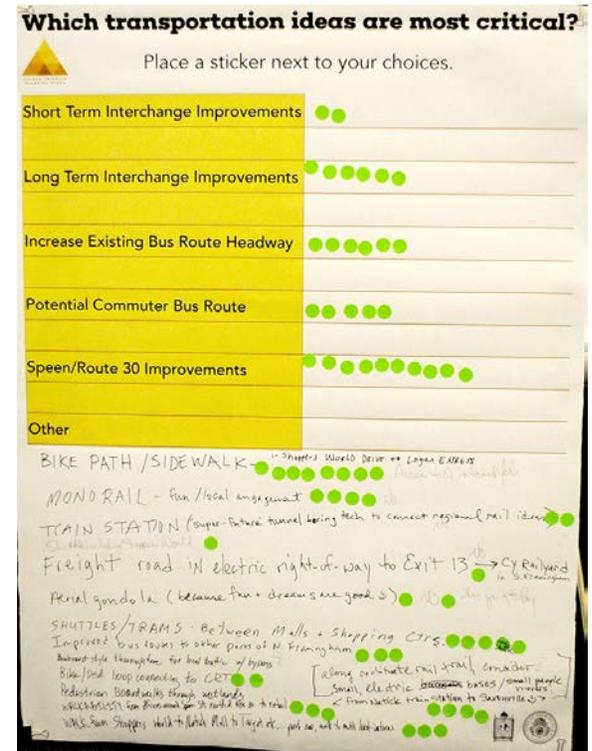


Figure 2.5: Transportation preferences board from public meeting.



Figure 2.6: Photos of development character with comments from participants



Natick held a similar meeting on December 21, 2017 at the National Guard Armory, using the same presentation and discussion questions. A second Natick meeting, with the same presentation and discussion questions, was held on January 11, 2018.



Figure 2.7: Attendees at the Community Open House were actively engaged in responding to questions posed at the three stations.

03 HISTORY & EXISTING CONDITIONS

The Existing Conditions chapter provides background information on the history of The Triangle, planning and urban design; market conditions, zoning; transportation, and infrastructure. This information provided the basis for defining and analyzing alternative development scenarios.

- HISTORICAL BACKGROUND
 - PLANNING & URBAN DESIGN
 - MARKET & ZONING ANALYSIS
 - TRANSPORTATION & INFRASTRUCTURE
-

HISTORICAL BACKGROUND

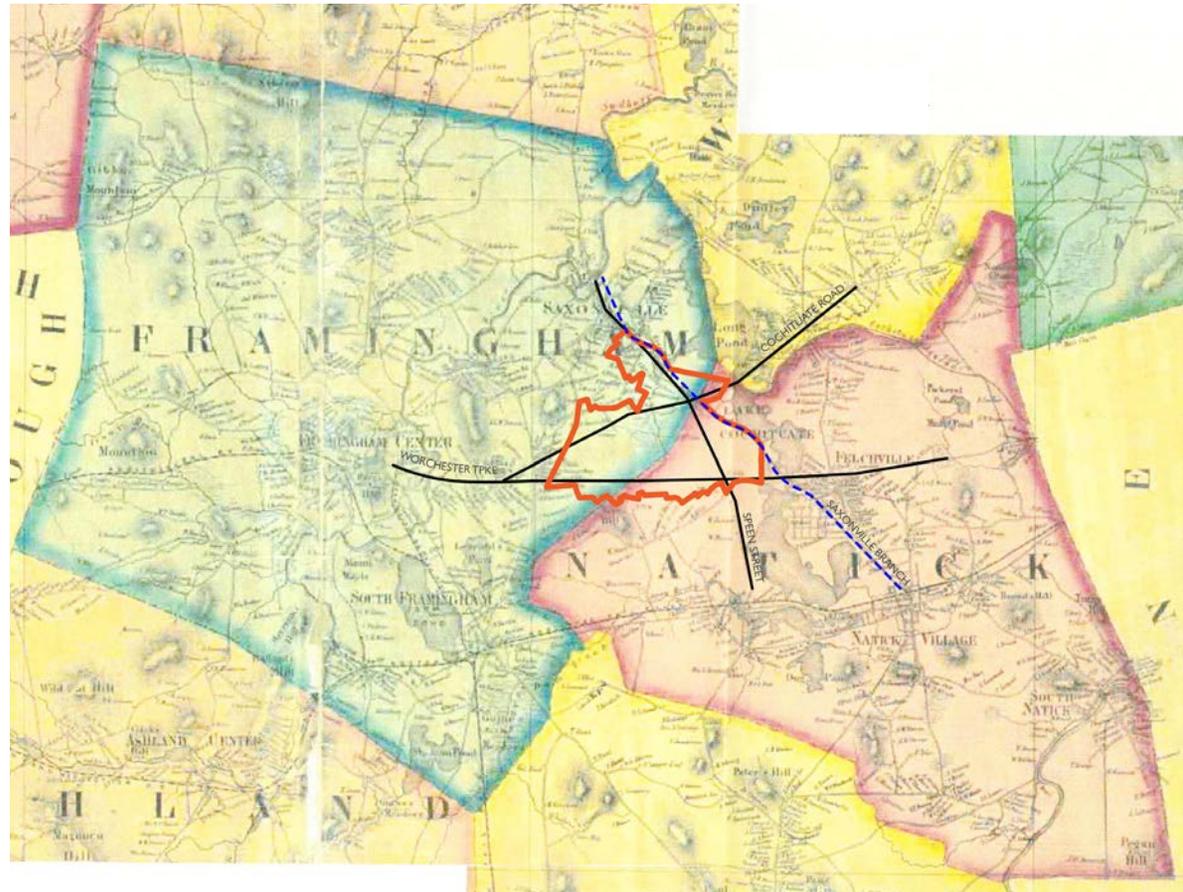


Figure 3.1: 1856 map with The Golden Triangle boundaries highlighted in red.

As shown on the 1856 map (Fig. 3.1), the origin of The Triangle is at least 150 years old - formed by the Worcester Turnpike (Route 9) on the south, Cochituate Road (Route 30) from the southwest corner to the northeast corner, and the Saxonville Branch (1846) and Speen Street from the southeast corner to the northwest corner. Mostly farmland, it was bound by Framingham Center and the Villages of Felchville and Saxonville, with Framingham Center further to the west.

Unlike the villages and the post World War II housing subdivisions in other parts of the two municipalities, this area never had a street grid with small blocks and sidewalks. Large farms became large commercial (both retail and office) development sites defined in part by major arterial streets.

The first major commercial development in The Triangle was Shoppers World in Framingham, a large open air shopping center that opened in 1951 (Fig. 3.2). Shoppers World was followed by Sherwood Plaza in Natick which opened in 1959 and a variety of stand alone retail establishments along Route 9. The Natick Mall opened in 1966 (Fig. 3.3) and was expanded in 2008.

Office development, both for single and multiple users began along Speen Street north of Cochituate Road in Framingham in the late 1970s with the opening of the 1, 3, 5, 20 and 30 Speen Street buildings from 1978 to 1981 and the TJX complex on Cochituate Road in 1979 (Fig. 1.2). That was quickly followed by the opening of the SCIEX buildings on Old Connecticut Path in 1981. The 111 Speen Street building currently occupied by Ameresco opened in 1985 and was followed by the current Meditech Building on Cochituate Road in 1989 (Fig. 1.3). The MathWorks Lakeside Campus (formerly Boston Scientific), currently under construction off of Superior Drive, is the first large scale office development on the Natick side of The Triangle.

Residential development in The Triangle has been limited until recently. The Lord Chesterfield Apartments, a series of six two-story buildings on the west side of The Triangle, opened in 1972. The Natick Mall expansion in 2008 included the new 215 unit Nouvelle condominium development. The Nouvelle, together with the 183 unit Cloverleaf and 407 unit Avalon Natick apartment buildings on the east side of Speen Street, completed in 2008 and 2013, have begun to transform this area into a mixed-use district, although with the exception of the Nouvelle, residential uses are not fully integrated. The Cloverleaf and Avalon Natick apartment complexes are tucked in behind commercial plazas. Poor pedestrian access and connections to the rest of The Triangle, especially the area west of Speen Street, makes these residential developments feel more like islands than a part of The Triangle.

New housing developed around the periphery of commercial parcels, has edged The Triangle toward mixed-use without changing the “superblock” development pattern. That pattern creates a challenge to repositioning The Triangle as the retail economy continues to rapidly evolve.

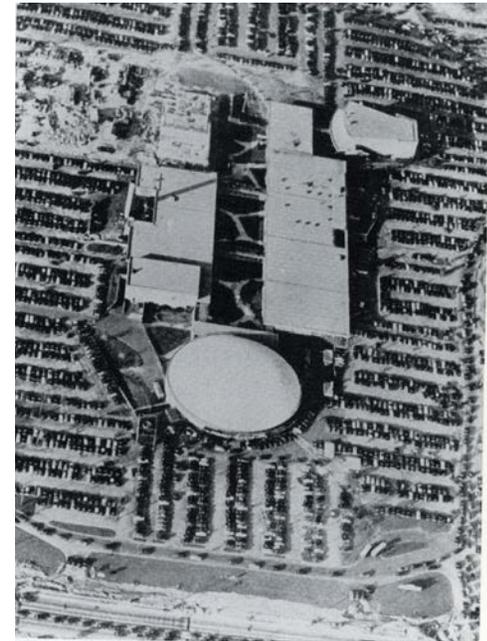


Figure 3.2: Opening day of Shoppers World, 1951.



Figure 3.3: The Golden Triangle in the early 1970s.

PLANNING & URBAN DESIGN

This section provides a physical description of The Triangle, including district scale, building scale and placement, parcel scale and ownership, visibility, and orientation. Together, these factors contribute to the attractiveness of The Triangle to potential residents, visitors, employees, business owners, and developers, and to the ability to develop or redevelop parcels for a variety of uses.

DISTRICT SCALE

The lack of through streets and the subsequent circuitous circulation through and around the area make the scale of The Triangle difficult to understand and maneuver for both drivers and pedestrians. To make the scale of The Triangle more understandable, and to put it into perspective, the size of The Triangle is shown relative to both the Natick and Framingham downtowns (Figs. 3.4 & 3.5) as well as to well known historic and new mixed-use districts. The mixed-use districts described on the following pages provide good illustrations of districts that have changed over time to respond to market conditions as well as to changes in lifestyle and amenity preferences.



Figure 3.4 New streetscape improvements in Downtown Framingham.



Figure 3.5: View of Downtown Natick.

NATICK CENTER & DOWNTOWN FRAMINGHAM

Downtown Framingham and Natick Center, as outlined in blue on the aerial photographs below (Figs. 3.6 & 3.7), are approximately 147 and 80 acres, respectively. Although greatly different from The Triangle in both scale and character, they are mixed-use environments very familiar to the readers of this Report. As shown, The Triangle is several times larger than both districts.

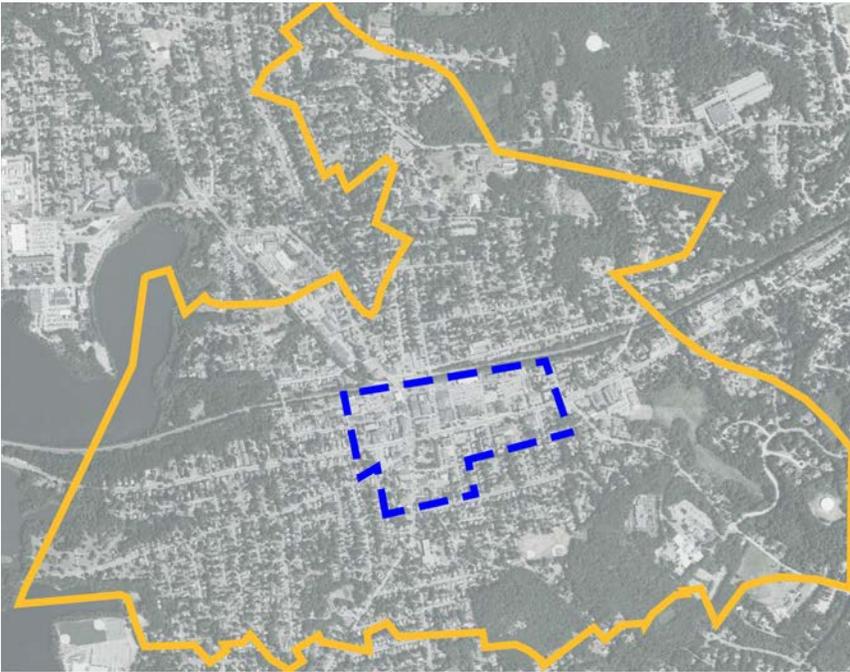


Figure 3.6: Scale comparison of The Triangle (outlined in gold) superimposed over downtown Natick (outlined in blue).

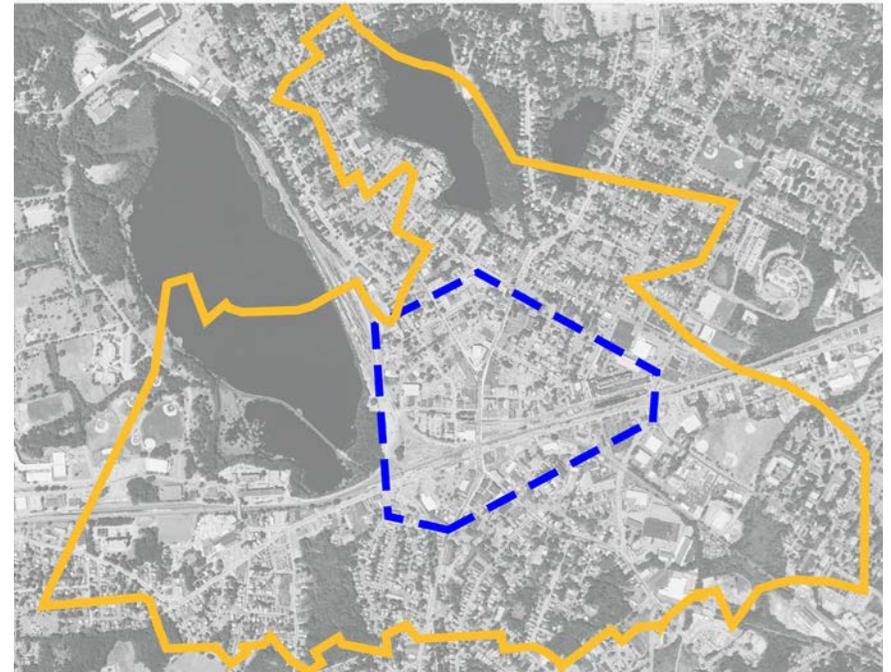


Figure 3.7: Scale comparison of The Triangle (outlined in gold) superimposed over downtown Framingham (outlined in blue).



Figure 3.8: Wide sidewalks, ground floor cafes and interesting storefronts create an attractive pedestrian environment along Boylston Street.

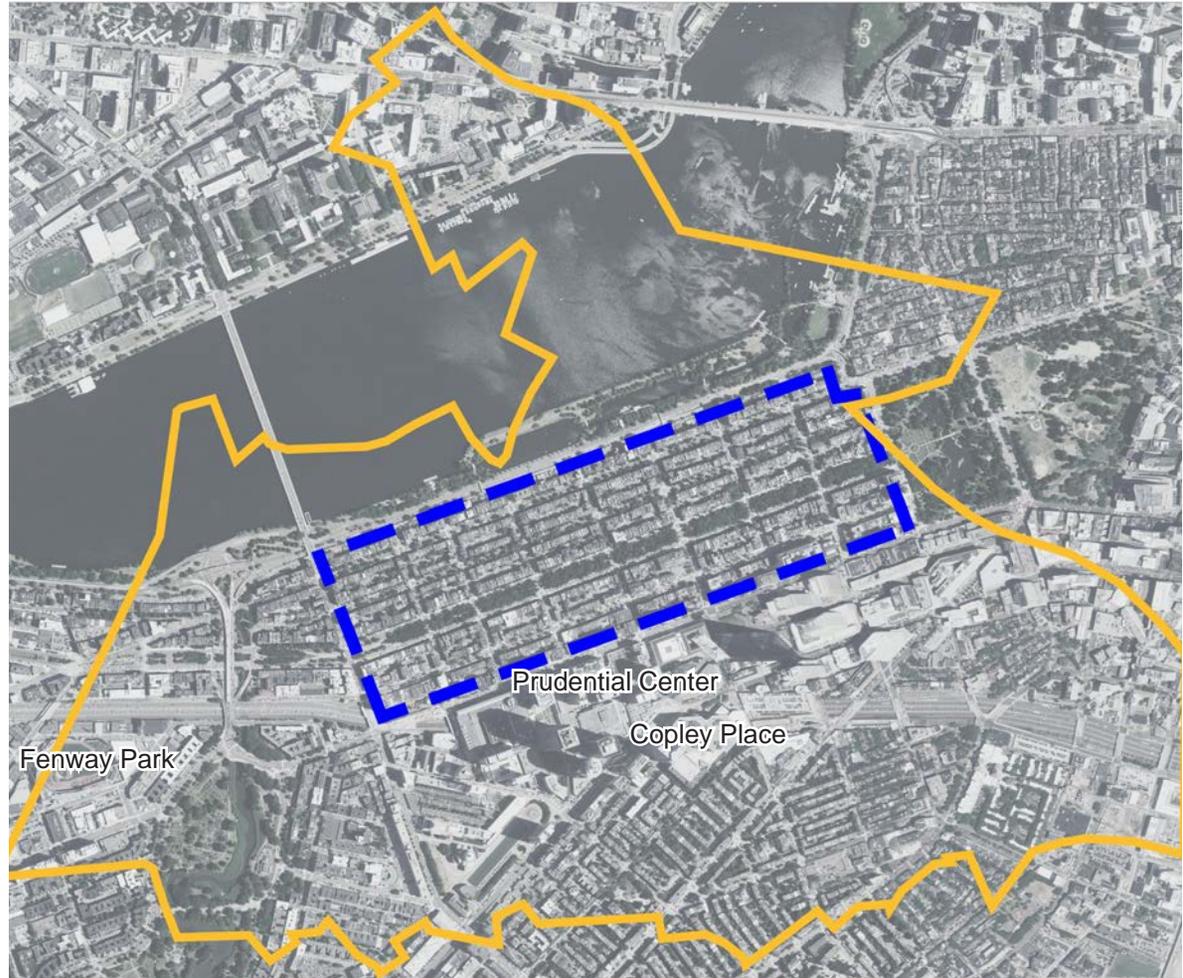


Figure 3.9: Scale comparison of The Golden Triangle (outlined in gold) superimposed over Boston's Back Bay (outlined in blue).

Boston's Back Bay is approximately 188 acres (Fig. 3.9). It was selected for comparison because it is a very pedestrian-friendly environment familiar to many people. Back Bay includes primarily residential development, but has retail and office uses along Newbury and Boylston Streets and is adjacent to the large mixed-use Prudential Center and Copley Place Malls. The distance from Massachusetts Avenue to Arlington Street (the farthest extent of the area outlined in blue), is considered

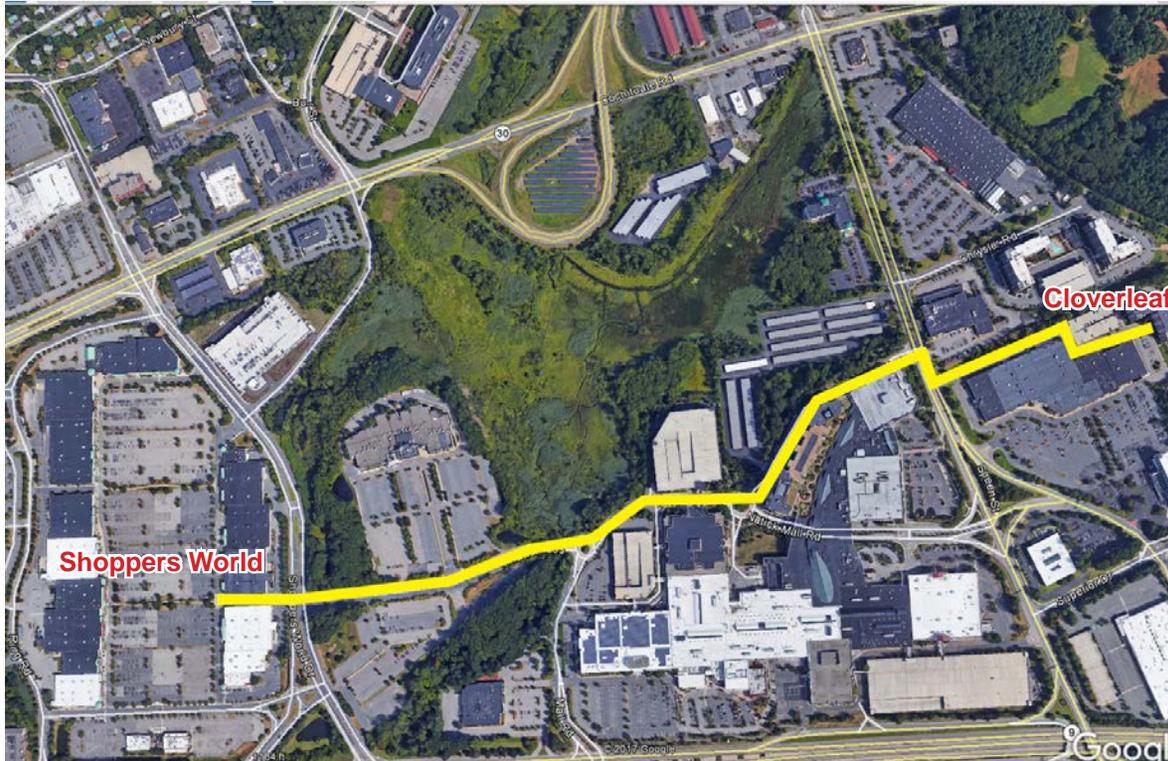


Figure 3.10: Pedestrian path (highlighted in yellow) from the Cloverleaf Apartments (on the right) to the front of Shoppers World stores is approximately 0.93 miles. The pedestrian path includes the path around the Natick Mall.

very walkable and is approximately 0.93 miles. The attractive streetscape (Fig. 3.8) enhances that walkability. As shown in Fig. 3.10, that same 0.93 miles would take a pedestrian in The Triangle from the Cloverleaf Apartments to the front of the eastern Shoppers World stores via Nouvelle Way (Fig. 3.11) and Flutie Pass (Fig. 3.12). By contrast, Route 9 from Lake Cochituate on the east to Route 126 on the west is approximately 1.83 miles, almost twice the distance (Fig. 3.13). As shown in the aerial on the facing page (Fig.3.9), the scale of The Triangle encompasses not only all of Back Bay, but also Fenway Park to the west, Prudential Center, Copley Place, much of the South End, and a small portion of Cambridge across the Charles River.



Figure 3.11: The Speed Street entrance to the Natick Mall pedestrian path and Nouvelle Way.



Figure 3.12: The Flutie Pass/ Shoppers World Drive intersection provides an uninviting pedestrian entrance to Shoppers World.



Figure 3.13: Route 9 (highlighted in yellow) from . Lake Cochituate on the east to Route 126 on the west is approximately 1.83 miles.

ASSEMBLY SQUARE



Figure 3.14: Scale comparison of The Triangle (outlined in gold) superimposed over Assembly Square (outlined in blue). The newer development, Assembly Row, is highlighted in green, while the older development is highlighted in orange.

Assembly Square (Fig. 3.14) is the home of a large new mixed-use redevelopment project in Somerville that includes high density commercial, office, and residential uses. The new development replaces primarily older industrial uses and vacant parcels. The older portion of the development is strip retail with surface parking (shown in orange on Fig. 3.14). The newly developed portion of the site has been

designed to create a walkable mixed-use environment known as Assembly Row (shown in green on Fig. 3.14). Assembly Row was designed with pedestrian scaled streets (Fig. 3.15), ground floor retail, restaurants, and entertainment uses with housing and office space above, and parking mostly in garages and behind buildings. The development also includes new open space to serve residents and shoppers as well as the broader community. While Assembly Square is only 139 acres, the approved Master Plan for the area includes approximately 5.7 million square feet of total development encompassing 2.8 million square feet of commercial space; 637,000 square feet of retail space including restaurants, cinema, and health club; 1,840 residential units; and up to a 170-room hotel, as well as the existing Assembly Square Marketplace and approximately 10,066 parking spaces. The plan allows a Floor Area Ratio of up to 10, served by the new Massachusetts Bay Transportation Authority (MBTA) Assembly Square Orange Line Station.



Figure 3.15: Pedestrian oriented street at Assembly Row.

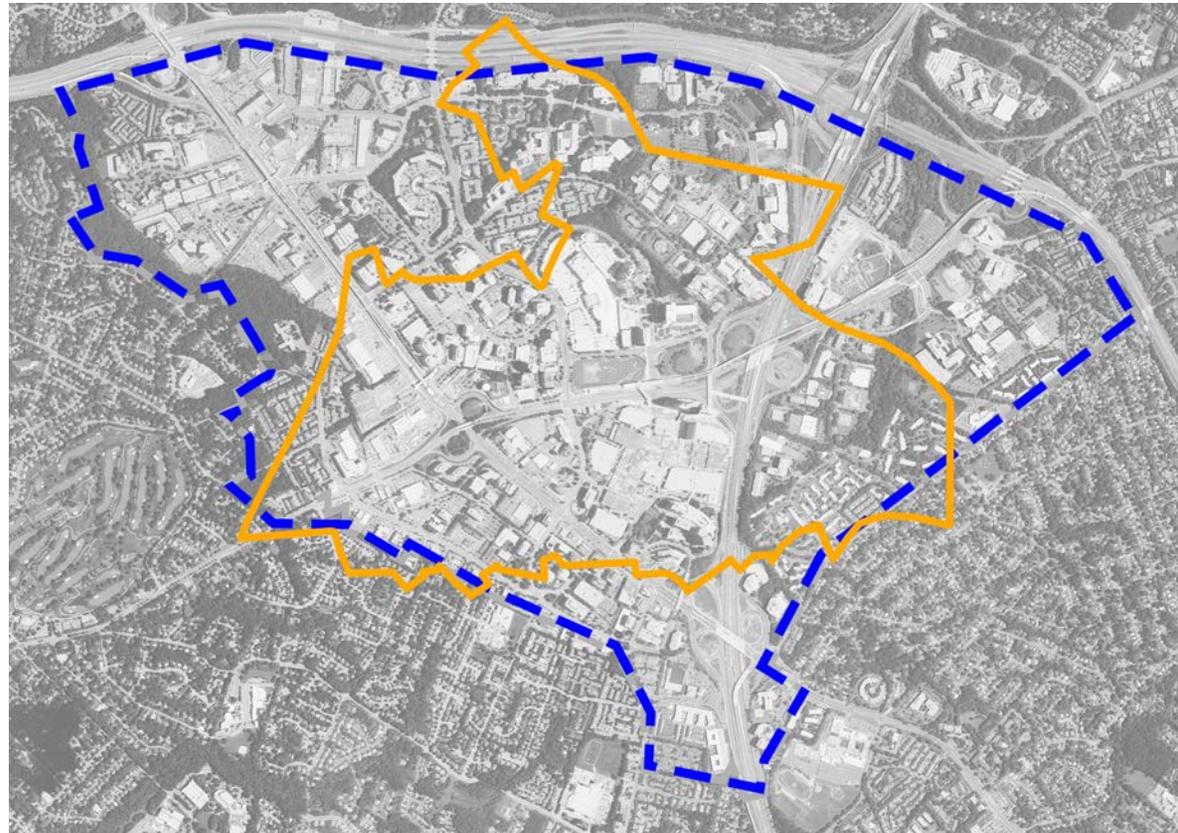


Figure 3.16: Scale comparison of The Golden Triangle (outlined in gold) superimposed over Tysons Corner (outlined in blue).

Although the 2000 acre Tysons Corner (Fairfax County Virginia) mixed-use district is larger and more densely developed than The Triangle (Fig. 3.16), it has several similarities and is a good example of how these older commercial districts can change over time. Tysons Corner was developed in 1968 for primarily non-residential uses and designed for a car-oriented culture. In 2014, Tysons Corner was the 12th largest central business district⁰¹ in the country, with 49 million square feet of development, including office, residential, retail, hotel, and industrial uses.

⁰¹ A Central Business District is the commercial and business center of a municipality. Tysons Corner is an example of what is referred to as an “edge city” - a concentration of business, shopping, and entertainment outside of a traditional downtown in what had previously been a residential or rural area.

Office use accounted for almost 60 percent of the square footage. The district had 105,000 jobs and only 17,000 residents, 167,000 parking spaces, a lack of parks, public facilities, and an auto-oriented single use pattern of development.

A 2010 expansion and redevelopment plan for Tysons Corner centered on creating “a livable urban center” with:

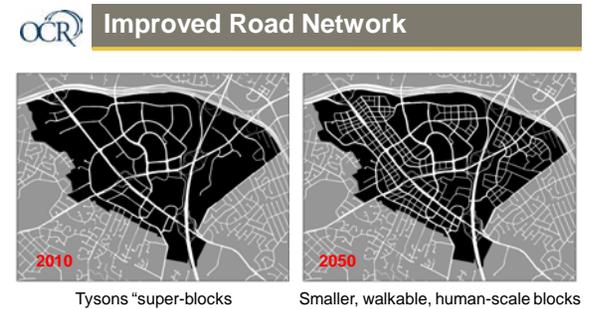
- Multi-modal transportation options with growth focused at Metro transit stations (the Metro Silverline opened in 2014)
- A focus on urban design and the pedestrian realm
- Transportation infrastructure coordinated with development
- Improved jobs/housing balance with a goal of 200,000 jobs and 100,000 residents

Designed as a “place where people want to live, work and play” the plan includes:

- A new grid of streets to break up superblocks into pedestrian scale and intersection improvements in surrounding neighborhoods (Fig. 3.17)
- Urban standards for buildings, services, roads, public facilities, and infrastructure (Fig. 3.18)
- Incorporation of parks, public facilities, cultural, and institutional uses

At full build-out, the plan will result in:

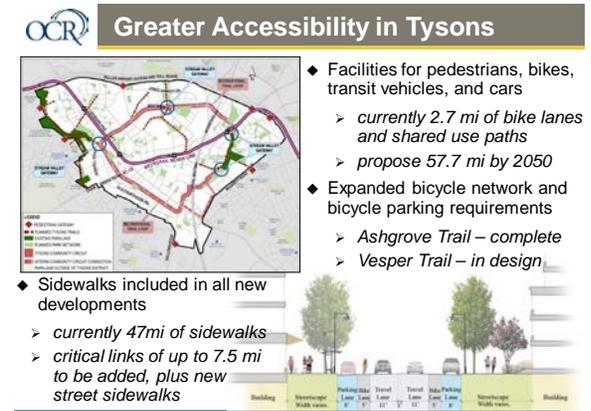
- 93 million sq. ft. of total development
- An increase of over 23,600 residential units
- An increase in the ratio of non-residential to residential from 3:1 to 3:2



- ◆ An urban street grid = pedestrian scale, more choices for vehicles, bicycles and pedestrians
- ◆ Intersection improvements in surrounding neighborhoods

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Figure 3.17: Slide from Transforming Tysons, a 2014 presentation on plans for Tysons Corner, illustrates a plan for breaking up some of the early super blocks. (Source: Fairfax County, VA Office of Community Revitalization)



- ◆ Facilities for pedestrians, bikes, transit vehicles, and cars
 - currently 2.7 mi of bike lanes and shared use paths
 - propose 57.7 mi by 2050
- ◆ Expanded bicycle network and bicycle parking requirements
 - Ashgrove Trail – complete
 - Vesper Trail – in design
- ◆ Sidewalks included in all new developments
 - currently 47mi of sidewalks
 - critical links of up to 7.5 mi to be added, plus new street sidewalks

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Figure 3.18: Slide from Transforming Tysons, a 2014 presentation on plans for Tysons Corner, illustrates a plan for creating a more pedestrian and bicycle friendly district. (Source: Fairfax County, VA Office of Community Revitalization)

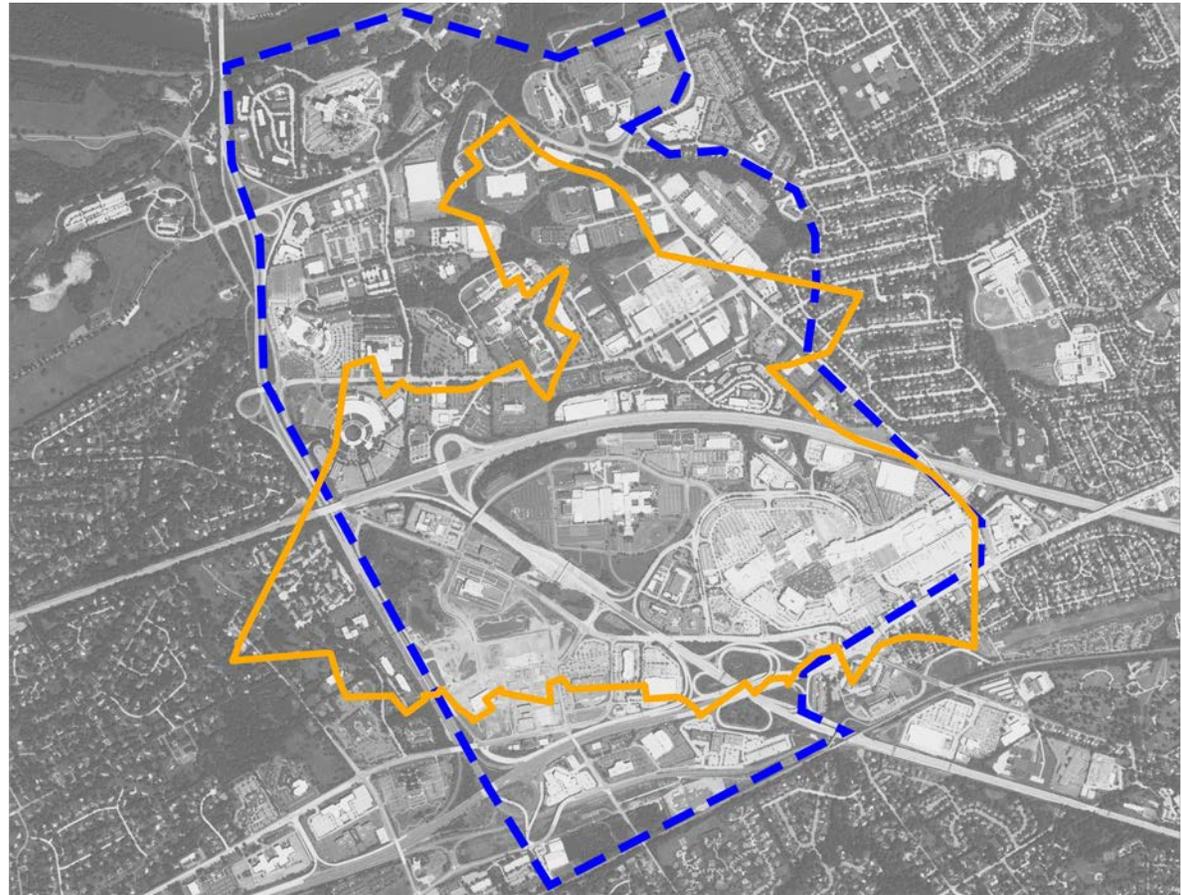


Figure 3.19: Scale comparison of The Golden Triangle (outlined in gold) superimposed over the King of Prussia district (outlined in blue).

The 1700 acre King of Prussia (Pennsylvania) district, is larger than The Triangle (Fig. 3.19), but has a similar development history. Development began in 1963 with an open air shopping mall known as The Plaza at King of Prussia (The Plaza). The Plaza prospered and by the late 1970s had become a partially enclosed super-regional mall anchored by department stores. A more upscale fully-enclosed

mall, The Court at King of Prussia (The Court), opened across the street in 1981. The Plaza was almost completely rebuilt as a fully enclosed two-story mall in the early 1990s with a pedestrian bridge connecting it to The Court. A 155,000 square foot retail connector and parking garage was opened in 2016.

The King of Prussia Mall is surrounded by several big-box stores, restaurants, hotels, and other businesses, including a United Artists Theatres and an iFLY indoor skydiving center. The new King of Prussia Town Center (Town Center) opened in 2016 as a lifestyle center that consists of Wegmans, LA Fitness, multiple big-box retailers, and a downtown area with dining, retail, and service establishments and a Town Square (Fig. 3.20). The Town Center is part of the Village at Valley Forge, a 122-acre mixed-use development under construction that will include retail, seven full-service restaurants, 1,000,000 square feet of commercial space (office and hotel) and up to 3,000 apartments and 132 townhouses, and the Children's Hospital of Philadelphia's "Specialty Care and Surgery Center".

The King of Prussia Rail Coalition (Coalition) was formed in 2015 by the King of Prussia district and Greater Valley Forge Transportation Management Association to garner regional support for the proposed extension of the Southeast Pennsylvania Transit Authority (SEPTA) Norristown High speed Rail Line to provide direct rail service from Philadelphia into King of Prussia. The Coalition seeks to build support from residents, commercial property owners, elected officials, employees, visitors, regional economic development and job growth agencies, chambers of commerce, and more to move the King of Prussia Rail proposal forward.

The King of Prussia mall represents another example of a mixed-use district reinventing itself to include more housing, a wider variety of uses, more transit, and a more walkable environment.



Figure 3.20: Model of the new King of Prussia Town Center with a public gathering space shown near the middle.

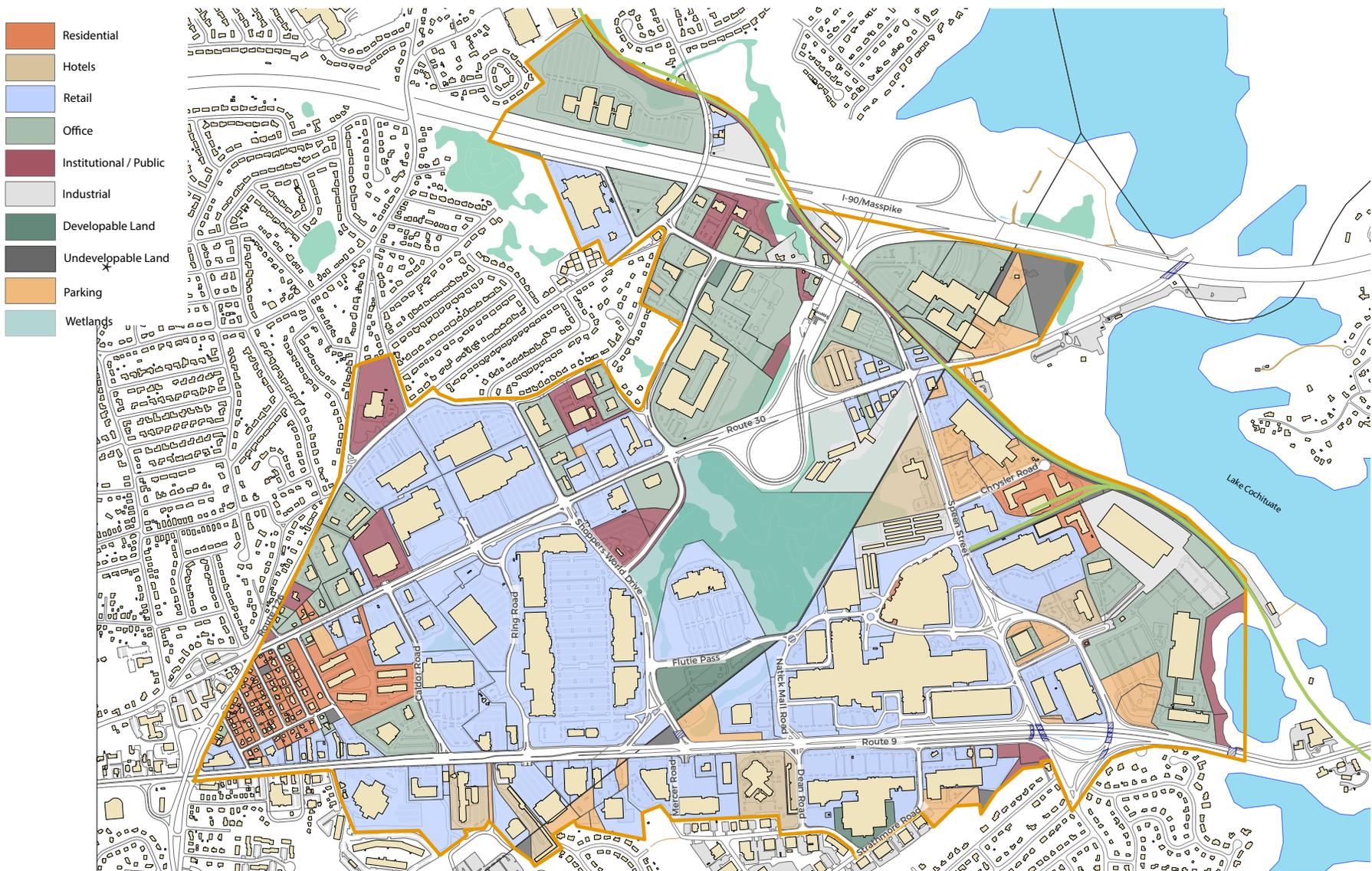


Figure 3.21: Land Use Map

**Note: Because land use was identified by parcel from Assessor's data, the parking category refers to parcels that contain only parking. Parcels that have parking to support another land use on the same parcel are categorized by the other land use.*

Figure 3.21 illustrates the existing land use throughout The Triangle. As is clear from the map, commercial uses are clustered in the middle of the The Triangle, extending from south of Route 9 to north of Route 30. Office uses are focused around Speen Street and the Exit 13 interchange, primarily north of Route 30, with the exception of the new MathWorks Lakeside Campus at Speen Street and Route 9. A cluster of smaller office buildings is located at the western end of Route 30, near Route 126.

Newer, multi-family housing is concentrated in Natick east Speen Street, between Route 9 and Route 30. The older, smaller scale housing is in Framingham on the western end of The Triangle, also between Route 9 and Route 30.

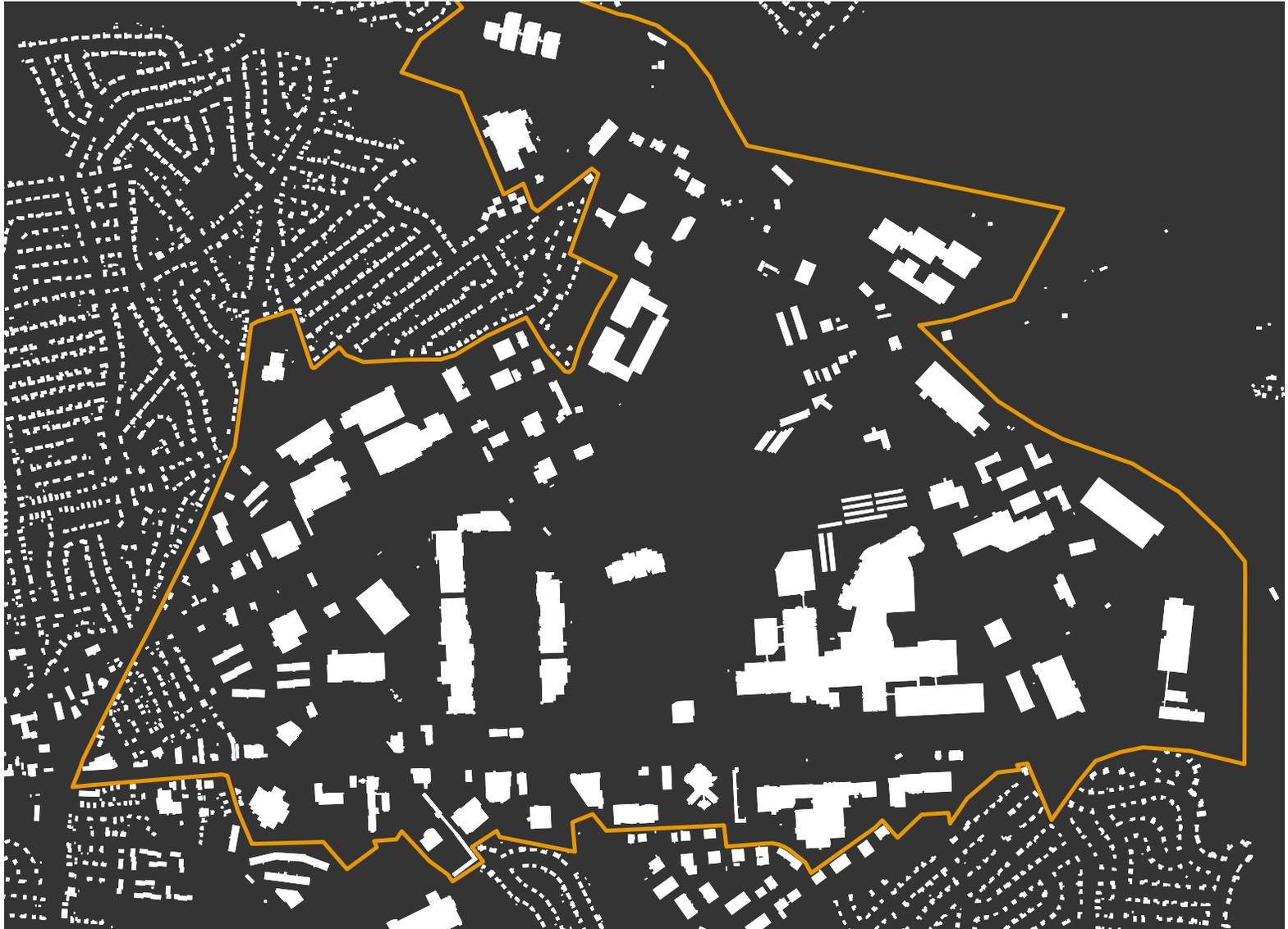
Hotels and institutional uses are scattered around The Triangle. A large wetland occupies the center of The Triangle (Figs. 3.22 & 3.23). Boardwalks through the wetland could be developed to provide pedestrian and bicycle connections across The Triangle and the wetland could provide a passive recreation amenity for adjacent uses.



Figure 3.22: View of the large wetland in the center of The Triangle.



Figure 3.23: View of the large wetland in the center of The Triangle.



Legend

 Golden Triangle Boundary

Figure 3.24: The Figure Ground diagram, with buildings shown in white, illustrates the irregular building pattern.

Figure 3.24 defines all of the buildings in white and all of the ground plane in black. The ground plane includes streets, sidewalks, parking lots, lawns, water, wetlands, woodlands, and all other forms of open space. The graphic is instructive in several respects:

- Parking dominates land use in the project area. In typical urban areas, streets are prominent in a figure ground graphic because they are well defined by adjacent buildings parallel to the street with consistent setbacks. In this image, the streets are barely discernible due to the multiple building setbacks to accommodate parking.
- The Triangle's edge conditions are graphically illustrated by the fine grained pattern of adjacent residential neighborhoods in Framingham to the northwest and Natick to the southeast juxtaposed against the large buildings and parking lots in The Triangle.
- It also is a graphic depiction of the history of mid-20th century to late 20th century retail: older commercial strip retail complexes along Route 9, the iconic Shoppers World open-air shopping mall, big box stores, and Natick Mall - an enclosed mall with large anchor tenants.
- The difficulty of developing east-west vehicular or pedestrian/bicycle routes through The Triangle is underscored by the juxtaposition of large building forms (e.g., Shoppers World and the Natick Mall) with large parking lots and the central wetlands area.

While these conditions can be appreciated from land use and ownership maps, the figure ground illustration in Figure 3.24 highlights the spatial layout of The Triangle and its surrounding environment.

BUILDING SCALE & DESIGN

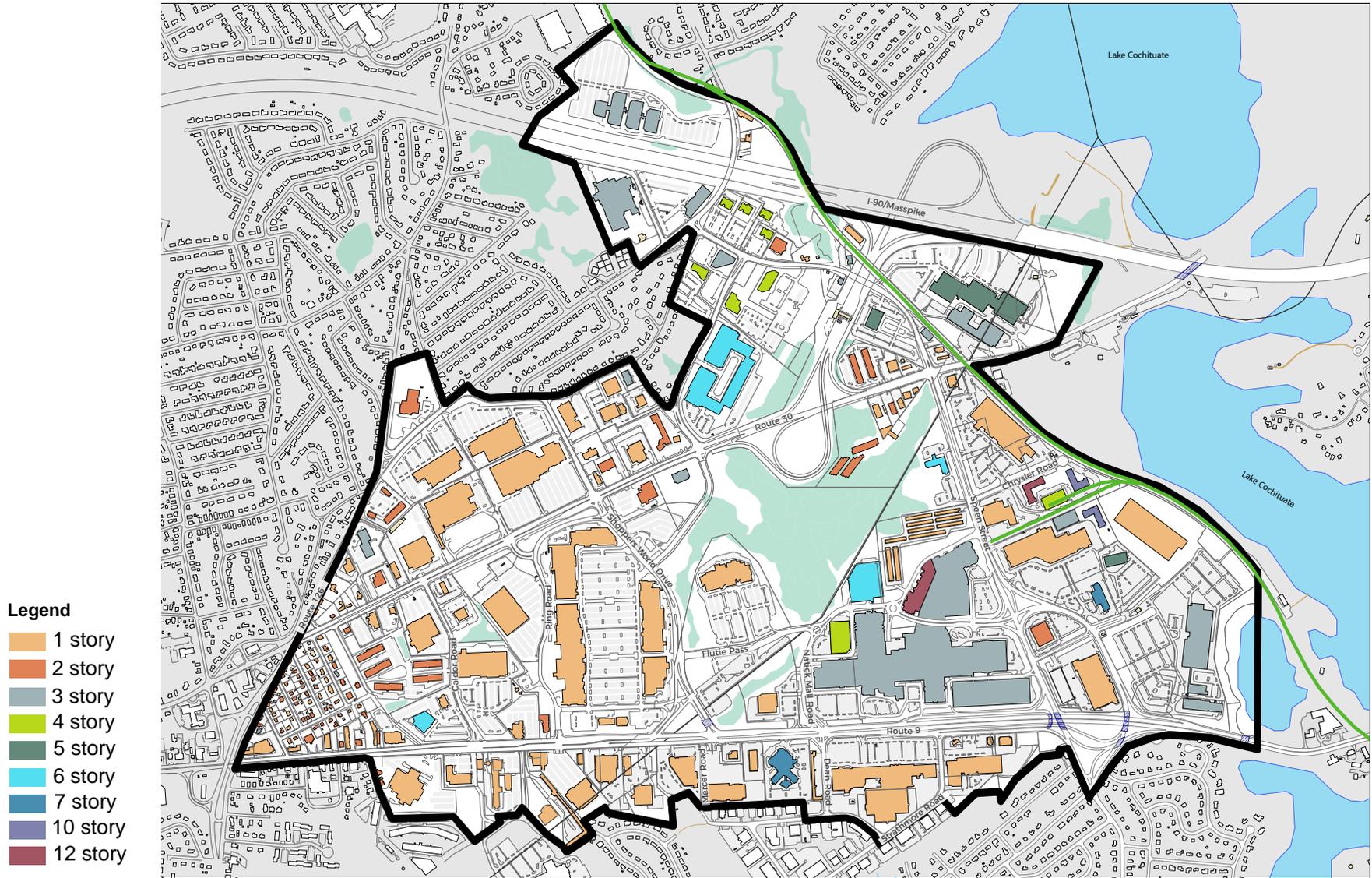


Figure 3.25: Plan of Building Heights.

There are a number of factors that define the scale and design of the existing buildings in The Triangle: height, footprint, massing, spatial relationship to the nearest street and to each other, building materials, and fenestration or visual permeability. In general, The Triangle is characterized by inconsistent building forms ranging from smaller single-use one story retail structures, to larger single story big box retail structures and associated single story retail mall complexes, to free standing mid-rise housing and office buildings. The majority of the lower buildings are clustered in the western sector of The Triangle, and the taller buildings are located along the Speen Street corridor and in the north-eastern sector north of Route 30 and east of Speen Street (Figs. 3.25, 3.28 & 3.29).

The buildings don't define the street edge, and the parking lots between buildings and the street edge create an uninviting pedestrian environment (Fig. 3.27). In some locations, buildings are sited at odd angles, rather than parallel, to the street edge. This arrangement can be disorienting for both drivers and pedestrians who use building façade alignments as a visual clue to the location and direction of streets and sidewalks. The scale, placement, and orientation of new structures should be considered from the point of view of district legibility as well as district connectivity and walkability.

In addition to the height, scale, and orientation of buildings in The Triangle, visual permeability or transparency (especially at the ground level pedestrian environment) is an important factor in the creation of safe, pedestrian-friendly environments. Many buildings in The Triangle are internally focused with largely blank walls on the exterior (Fig. 3.26); others feature large glass windows in the front but are separated from the street by large parking lots. The ideal condition is continuous sidewalks lined with facades that have a high degree of transparency providing "eyes on the street", light spill onto the sidewalks at night, and a visually interesting panorama for pedestrians passing by (see the Boylston Street photo (Fig. 3.8)).



Figure 3.26: The view from Shoppers World Drive is of the backs of stores, with no windows to create interest.



Figure 3.27: View of large building setbacks with one story buildings along Route 30.



Figures 3.28: View of three, four and five story buildings along the northern portion of Speen Street.



Figure 3.29: View of 3 and 4 story buildings along Old Connecticut Path.

The Ownership and Parcel Scale Plans (Figs. 3.30 & 3.31) illustrate similar conditions in slightly different ways. The ownership varies from larger single ownership parcels - The TJX Companies, DDR at Shoppers World, General Growth Properties at the Natick Mall, MathWorks, and others - to small single ownership parcels such as those clustered at the western end of Routes 9 and 30, and at the intersection of Route 30 and Speen Street. Mixed throughout The Triangle there are mid-sized parcels supporting various uses including big box retail outlets and office parks. The Parcel Scale Plan (Fig. 3.31) summarizes these scale differences in four categories: superblock, large parcel, medium parcel and small parcel.

The pattern of parcel size within The Triangle raises several issues to consider as the redevelopment potential is evaluated:

- The small parcels may be difficult to consolidate in order to create a parcel of sufficient size to accommodate desired new uses. Equally important is the geometry of the potential consolidations; many of them would result in triangular or irregular shapes difficult to develop efficiently.
- Many of the large and superblock parcels contain multiple businesses and it is unclear when and in what sequence current land uses might change. Flexibility is the key - potential redevelopment scenarios should be defined with the ability to be realized in different sequences within various access and circulation schemes.
- The superblocks, including the central wetland, are largely physically and visually impenetrable. Developing circulation and visual corridors through these parcels will be a guiding principle in considering near-term and long range redevelopment.
- Potential modification to the MassPike access ramps and feeder roads could, if feasible, contribute to future redevelopment opportunities or potential.

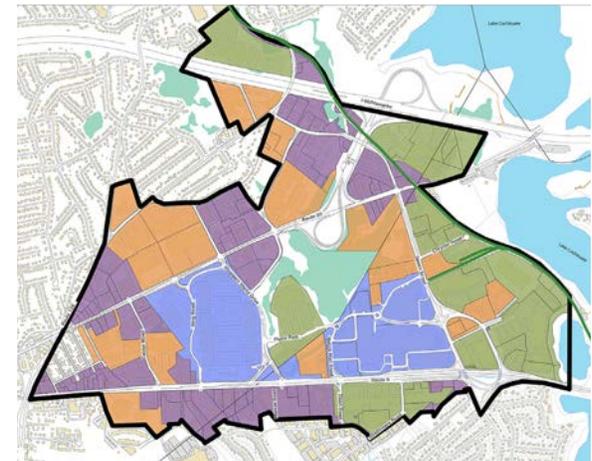


Figure 3.31: Parcel Scale Plan.



VISIBILITY & ORIENTATION

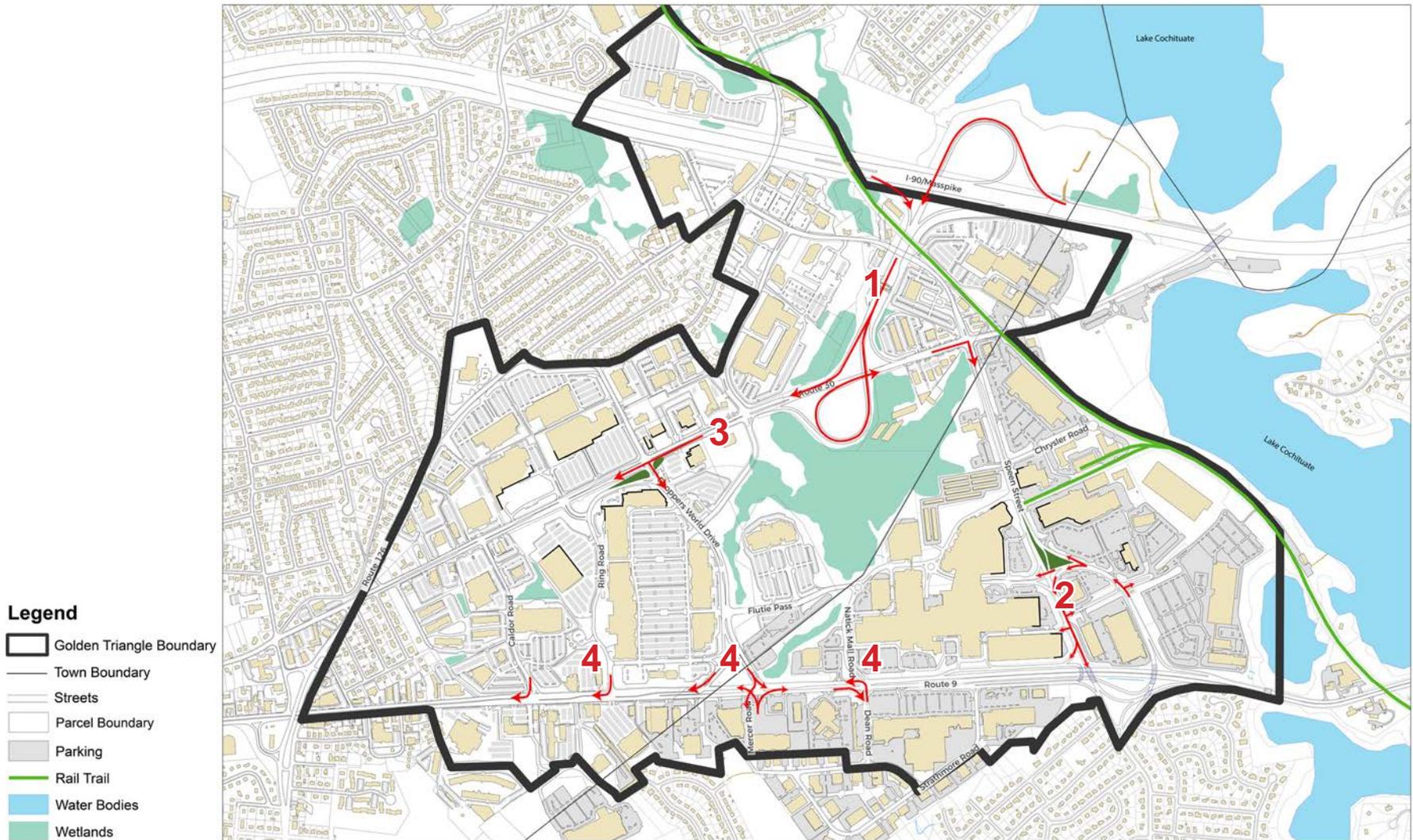


Figure 3.32: Wayfinding and Orientation Diagram: the red arrows indicate routes of travel. The numbers correspond to the numbered points on the page at right.

The Wayfinding and Orientation Diagram (Fig. 3.32) illustrates several obstacles to driver orientation upon entering The Triangle (the numbers below refer to the numbers on the map on page 42).

1. Leaving the MassPike at Exit 13 and proceeding to Speen Street is a bewildering experience involving a pair of loop ramps to a connection with Route 30 eastbound. For westbound MassPike drivers, that is 180 degrees from the original line of travel on the MassPike. At the fork on the ramp just north of Route 30, there is a large overhead highway sign, but the ground-mounted sign identifying the direction to either town is small and too close to the driver's decision point to be useful.
2. Heading north on Speen Street from Route 9 involves multiple closely spaced decision points and, as in point 1 above, the few directional signs are too small and too close to the decision points to be effective. Earth berms and landscaping that obscure destinations create an additional complicating factor in orientation (Figs. 3.33 and 3.34). The large Cloverleaf sign is one of the more visible signs (Fig. 3.35).
3. Approaching Shoppers World from the east on Route 30, the combination of building setbacks and dense foliage on low hanging branches obscure the entrance and entrance sign to the retail complex (Fig. 3.36).
4. Constraints to turning onto Route 9 from development on both the north and south sides frequently require drivers to turn in the opposite direction of their destination, and then make a U-turn.



Figure 3.33: Heading north on Speen Street from Route 9, with the Cloverleaf Marketplace on the right: overhead signs identify major roadways but not destinations.



Figure 3.34: Further north on Speen Street a small sign directing drivers to Natick Mall Road on the left is barely visible until the last second for making a decision.



Figure 3.35: A business listing sign directs customers into the Cloverleaf Marketplace on the right.



Figure 3.36: Heading east on Route 30 from Speen Street and MassPike Exit 13 with Shoppers World in the distance on the left.

The examples of poor wayfinding signage on the previous page are only three of many throughout The Triangle. A number of examples have been identified through the coUrbanize platform. A more detailed mapping and analysis of the points where information and improved sightlines can aid driver and pedestrian orientation should become the basis for a wayfinding program developed as a follow on to this Study.

The combination of large, irregular building setbacks, dense low foliage, topography, insufficient wayfinding signage for specific destinations, and lack of a comprehensive signage hierarchy make orientation to and within The Triangle a challenging experience. Specifying trees with higher canopies (allowing better views under the branches) and siting surface parking behind buildings would help with orientation.

SUMMARY PLANNING AND URBAN DESIGN FINDINGS

The following findings will provide important guidance to the development of potential development scenarios:

- The existing superblocks are to a great extent physically and visually impenetrable. The need for circulation and visual corridors through the blocks will guide redevelopment plans.
- The numerous small and irregularly shaped parcels would require consolidation in order for redevelopment to be possible.
- The existing buildings don't define the street edge, and the parking lots between buildings and the street edge, create an uninviting pedestrian environment. The scale, placement, and orientation of new structures should be considered from the point of view of district legibility as well as district connectivity and walkability.
- Many buildings in The Triangle are internally focused with largely blank walls on the exterior; others feature large glass windows in the front but are separated from the street by large parking lots. To create a more pedestrian friendly mixed-use district, redevelopment concepts should be designed with continuous sidewalks lined with facades that have a high degree of transparency providing "eyes on the street", light spill onto the sidewalks at night and a visually interesting panorama for pedestrians.
- Care should be given to improving wayfinding and orientation through building placement and signage.

ZONING & MARKET ANALYSIS

This chapter examines the underlying existing conditions found within The Triangle. Topics explored include socioeconomic indicators, land use assessment, zoning, and market indicators, all of which are essential for understanding The Triangle. Detailed information about the Study Area provides the appropriate context from which to judge implications resulting from potential development and changes in land use.

REGIONAL CONTEXT

The Triangle is a regional economic center comprised of a combination of large- and small-scale retail stores and centers, restaurants, entertainment, fitness, hotels/motels, large corporate offices, and residential developments. This 940 acre area has more than 10.3 million square feet of built space, most of which is dominated by retail stores and large office buildings. In fact, nearly 73 percent of the built space in The Triangle is dedicated to those two uses alone.⁰² As was depicted in an early section of the report, The Triangle is a very large area and by comparison much larger than most other nearby economic centers in terms of how much land it consumes. The unique mix of large-scale retail tenants, high-end specialty shops, and corporate campuses set along the MassPike, Route 30, and Route 9, make this area very attractive to both local patrons and out-of-town visitors.

The Triangle benefits from many positive attributes that make large retail and employment clusters successful. Below are a few attributes benefiting The Triangle today.

- **Traffic Counts and Accessibility.** While we may not like to believe retailers and brokers are still using traffic counts as a primary location factor, they are. The large majority of Massachusetts residents and Americans still drive as their primary means of getting from place to place. Heavily traveled roads like Route 9 and Route 30 are prime locations for retail development with good visibility and street frontage. The high traffic counts along these major east/west routes are still very attractive to retailers.
- **Proximity to Population and Employment Centers.** The Triangle is uniquely situated between the two largest cities in the Commonwealth, Boston and Worcester. During non-peak travel times, driving to this area from either city or points in between does not take more than thirty to forty-five

⁰² Calculation based on finished/rentable area of buildings, not gross floor area. Source: Towns of Framingham and Natick Assessor Data, 2017

minutes. The Triangle offers an opportunity for businesses looking for a location outside of the Boston core.

- **High Household Income.** Not only do Natick and Framingham have their own high income households, but they also happen to be surrounded by some of the wealthiest communities in Massachusetts. These high income households come with expendable income, some of which is spent in the local market.
- **Visibility and Notoriety.** Since the opening of Shoppers World in 1951, Sherwood Plaza in 1959 and the Natick Mall in 1966, The Triangle has benefited from a long history of serving the region as a major retail destination. Although some stores and household names have come and gone, The Triangle continues to reinvent itself to stay relevant in a rapidly changing marketplace. The area's long-term notoriety as a destination in MetroWest and its visibility from three major travel routes has helped it sustain over time and will likely continue to serve as such well into the future.
- **Specialty Stores.** Highway accessibility, proximity to Boston and higher income households are just a few reasons some specialty retail stores have located in The Triangle. Unique retailers like American Girl, REI, and Tesla have opened stores and sales rooms here and have helped create a destination not just for local shoppers, but those coming from elsewhere in the country. The TJX Companies recently opened Sierra Trading and Home Sense (Fig. 3.37), two new retail brands, at Shoppers World. The attraction of these stores creates a spin-off effect that benefits area restaurants, other retailers and hotels.

While there are many positive attributes to discuss related to The Triangle's long-term success, there are near- and long-term threats that need to be addressed to ensure the area continues to benefit both Natick and Framingham, as well as the broader region. A few potential threats worth noting include:

- **Changes in Consumer Preferences and Shopping Patterns.** It is true that online retail sales have an impact on traditional brick and mortar stores. Recent estimates show online sales representing about 8.5 percent of the total retail sales market. While Amazon is most often blamed, the



Figure 3.37: TJX recently opened Home Sense at Shoppers World.



Figure 3.38: New mixed-use commercial center at Legacy Place (Dedham).



Figures 3.39: New mixed-use commercial center at University Station (Westwood).



Figure 3.40: New mixed-use commercial center Market Street (Lynnfield).

company only accounts for 1.5 percent of the total retail sales market.⁰³ New studies on consumer spending patterns show unintended costs have risen elsewhere in the household budget that may be accounting for less spending in retail stores. For example, ten years ago the cost of cellphones, accessories, and service plans were a mere fraction of what they are today. In ten years, spending on cell phones and related items went from a \$10 billion market to a \$200 billion market in the U.S. alone.⁰⁴ At the same time, wages have stagnated and costs have multiplied, resulting in lower disposable income that can be used for the purchase of goods and services in the retail environment.

- **Declining Retail Sales.** For the reasons discussed in the previous bullet, retailers around the country are seeing declines in retail sales per square foot. This is leading to downsizing stores, business closings, and increased vacancy. Property owners and managers may also find it challenging to fill larger scale storefronts with retail tenants who need that much space. An additional issue for local municipalities is the decline in tax revenue since many communities calculate commercial tax revenue using an income approach. As sales decline, it is possible that retail tenants will no longer be able to afford current rents, thereby lowering the property's net operating income.
- **Regional Competition.** While The Triangle may be one of the largest clusters of retail development in Massachusetts, it is certainly not the only one. Within 30 miles of The Triangle there are at least ten major retail destinations, including large-scale indoor and outdoor malls that provide direct points of competition for retailers and restaurants in this area (Fig. 3.41). Fortunately, The Triangle has many positive attributes that allow it to be very competitive in an over-retailed environment, but area competitors will continue to chip away at market share if this area does not continue to evolve over time. The presence of unique retailers that offer both a shopping experience, as well as unique products, helps draw people to The Triangle. The addition of other uses such as housing, entertainment, corporate offices, and public spaces will help diversify the way land is used today. Some regional competitors are already integrating these concepts. Newer commercial centers such as Legacy Place (Dedham), University Station (Westwood), and Market Street (Lynnfield) have already integrated housing, offices, public space, and entertainment into their overall land use

03 "Amazon isn't the No. 1 villain in retail sector's demise." *MarketWatch*, August 3, 2017. <http://www.marketwatch.com/story/amazon-isnt-the-no-1-villain-in-retail-sectors-demise-2017-08-02>

04 "Amazon isn't the No. 1 villain in retail sector's demise." *MarketWatch*, August 3, 2017. <http://www.marketwatch.com/story/amazon-isnt-the-no-1-villain-in-retail-sectors-demise-2017-08-02>

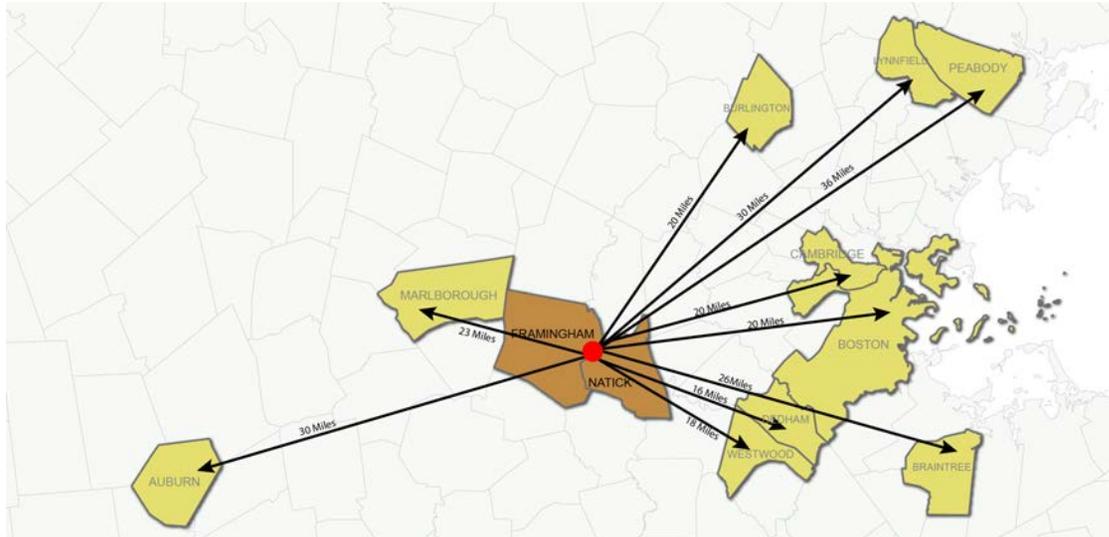


Figure 3.41: Map of regional competition with Golden Triangle.

mix as a way to diversify building tenants and separate themselves from other major commercial developments in the region (Figs. 3.38-3.40).

- **Traffic, Safety, and Accessibility.** Interviews with several property and business owners (see Chapter 1) in The Triangle revealed that traffic, safety, and the ease of getting around the area is having an impact on its attractiveness. While high traffic counts are generally a positive attribute for retailers, patrons still have to be able to get to the store in a reasonable amount of time with limited frustrations to make it worth their while. This is especially true given the cut through traffic on Routes 9, 126, and 30, which causes congestion in the area. Too many frustrating trips may result in patrons choosing other locations, stores, or purchase options in lieu of dealing with travel issues in The Triangle. Additionally, the scale of the buildings and fragmented walking patterns require the use of a vehicle to go between stores.
- **Losing Corporate Anchors.** There are several substantial corporate office tenants that call The Triangle home, bringing thousands of employees and out-of-town visitors to the area every day. Interviews with small businesses and those in the hospitality industry highlighted the important role these corporate neighbors play in supporting the local economy. Without their employees, the daytime population would drop and daytime spending in The Triangle would likely decline. Local hotels benefit from out-of-town guests who come in for meetings, or corporate events and conferences.

Losing these corporate anchors would have an impact on the many diverse businesses in The Triangle.

- **Remaining Flexible for the Future.** At some future point in time, it is likely existing businesses will leave The Triangle, opening up space to be backfilled by another use. Regulations, local politics, and disgruntled neighbors can put up barriers to creative thinking. It is important that property owners in both communities remain open and flexible as the marketplace changes to be ready to react to new proposals and play a cooperative role in helping fill vacant space in the future.

The positive attributes and potential threats all have implications for future land use and development decisions within The Triangle. Diversifying the way land and built space is used in The Triangle is the key to maintaining a sustainable center of activity. The marketplace is showing signs of a changing environment by introducing multi-family housing in and around the Natick Mall, bringing a new hotel and age-restricted housing to the former Sam's Club site and a proposal (which was ultimately abandoned) to create a large housing and entertainment complex at Shoppers World. Housing in The Triangle, which has primarily been focused on the Natick side of The Triangle, will soon be supported by a new Wegmans Supermarket which will anchor a corner of the Natick Mall formerly occupied by J.C. Penny.

SOCIOECONOMIC INDICATORS

Understanding the sociodemographic conditions, regulatory restrictions, and market indicators provides a baseline for better assessing how this area could transition in the future. The discussion that follows is intended to provide a set of baseline indicators for socioeconomic conditions in Framingham and Natick, an analysis of the land use patterns in The Triangle, an assessment of the zoning districts that span the study area, and a series of market indicators covering both towns.

POPULATION

Framingham is a large municipality by Massachusetts standards, with a population that is projected to grow 1 percent between 2016 and 2021 to reach a total population of 71,544 (Fig. 3.42).⁰⁵

⁰⁵ *Alteryx and RKG Associates, Inc. 2017*

Natick is a mature suburban community located to the east of Framingham. Natick has grown and changed significantly over time. Between 2000 and 2010, Natick’s population increased 3 percent, from 32,170 to 33,006 people.⁰⁶ The present population of Natick is 35,055 and is projected to rise to 35,731 (nearly a 2 percent increase) by the year 2021.⁰⁷

The projected population growth for Framingham and Natick mirrors that of Middlesex County and the State, which are projected to grow at 1 percent and 2 percent, respectively. The combined population of both Framingham and Natick surpasses 100,000 residents, making for a robust market for housing, retail, commercial, and employment activity. The continued growth of surrounding communities and the larger region are also positive indicators for the future health of The Triangle.

POPULATION BY AGE

The largest population segment in Framingham consists of residents between the ages of 45 and 64 years, an age group that accounts for nearly 25 percent of the municipality’s population. Similarly, Natick also has a large segment of residents between the ages of 45 and 64 years, accounting for nearly 30 percent of the total population.⁰⁸ Residents in this age group are typically considered to be in their peak earning and disposable income years, which often translates to consumer demand for a variety of purchases and services.

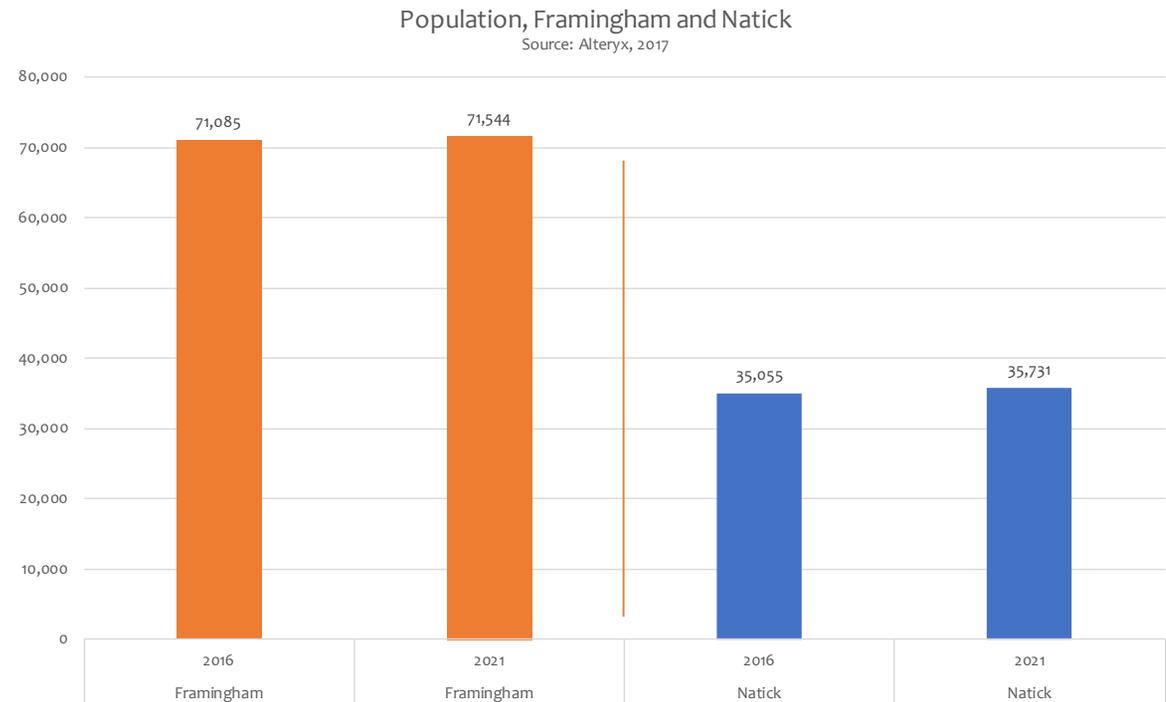


Figure 3.42: Population of Framingham and Natick

06 Minnesota Population Data Center, NHGIS, 2017

07 Alteryx and RKG Associates, Inc 2017

08 Alteryx and RKG Associates, Inc 2017

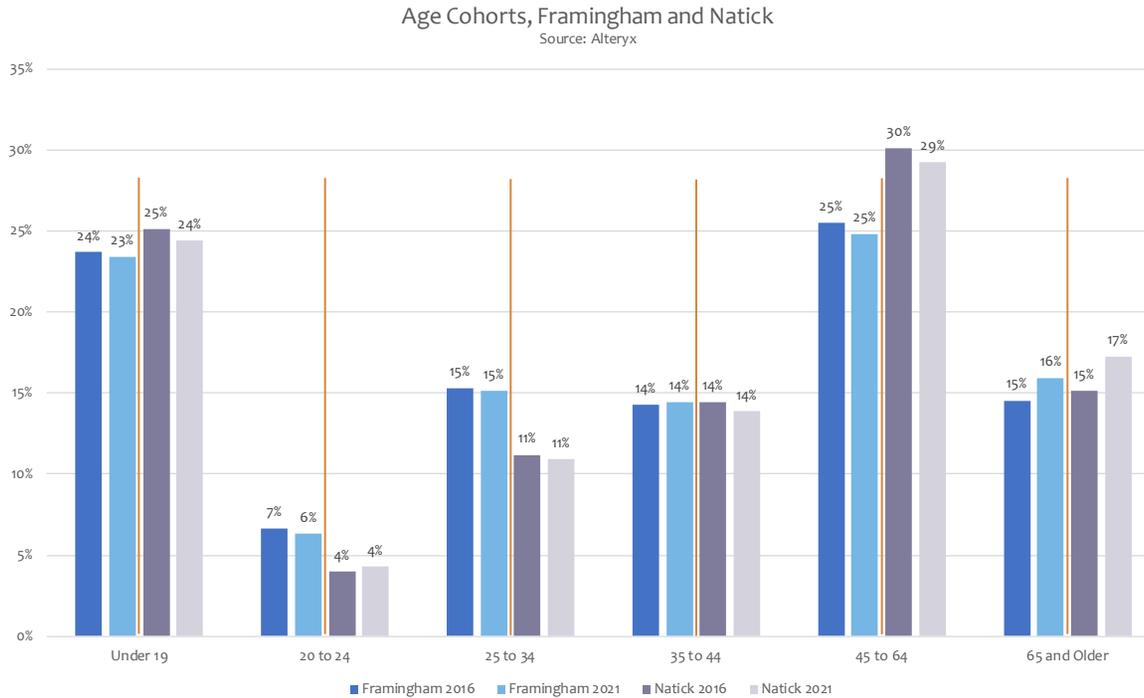


Figure 3.43: Age Cohorts of Framingham and Natick

Looking to the year 2021, both communities are projected to have relatively flat population growth for those residents between 25 and 64 years of age. The cohort expected to grow the most is seniors – defined here as the population 65 years and over (Fig.3.43).

Seniors are an important age group in both communities now and in the future. Estimates for 2016 indicate seniors comprise about 15 percent of the population in both Framingham’s and Natick’s total populations. Between 2016 and 2021, the senior population is expected to grow 10 percent in Framingham and 16 percent in Natick.⁰⁹ This is very much in line with population changes for Middlesex County, where the senior population is expected to grow by 16 percent as well. The growth in the senior population may have an impact on the housing supply, as many seniors would like to age in place, resulting in a lack of housing turnover. Or, conversely, some senior households may look to downsize as the need for larger single family homes diminishes, thereby creating potential demand for smaller housing units and opening up existing housing for turnover.

INCOME

Household income directly correlates with expendable income that can be used to support local businesses. Low household incomes can equate to a lower threshold for spending on housing and goods and services, while households with higher incomes can afford to spend more. The median household income in Framingham is \$71,132 and is expected to grow 19 percent to \$84,866 in 2021. Household incomes in Framingham are more evenly spread across the different income spectrums than in Natick. In 2016, about 17 percent of the population had an income of greater than \$150,000 which is much less than that of Natick, while 38 percent of the population had incomes below \$50,000 (Fig. 3.44).¹⁰

The median household income in Natick is \$99,189 and is expected to grow 16 percent to \$115,181 by 2021. The affluence of Natick is quite apparent. In 2016, 27 percent of the population had incomes over \$150,000 and this is expected to rise to 33 percent by the year 2021. Additionally in Natick, 24 percent of the population had an income below \$50,000 and that percentage is expected to shrink to 21 percent by the year 2021.¹¹

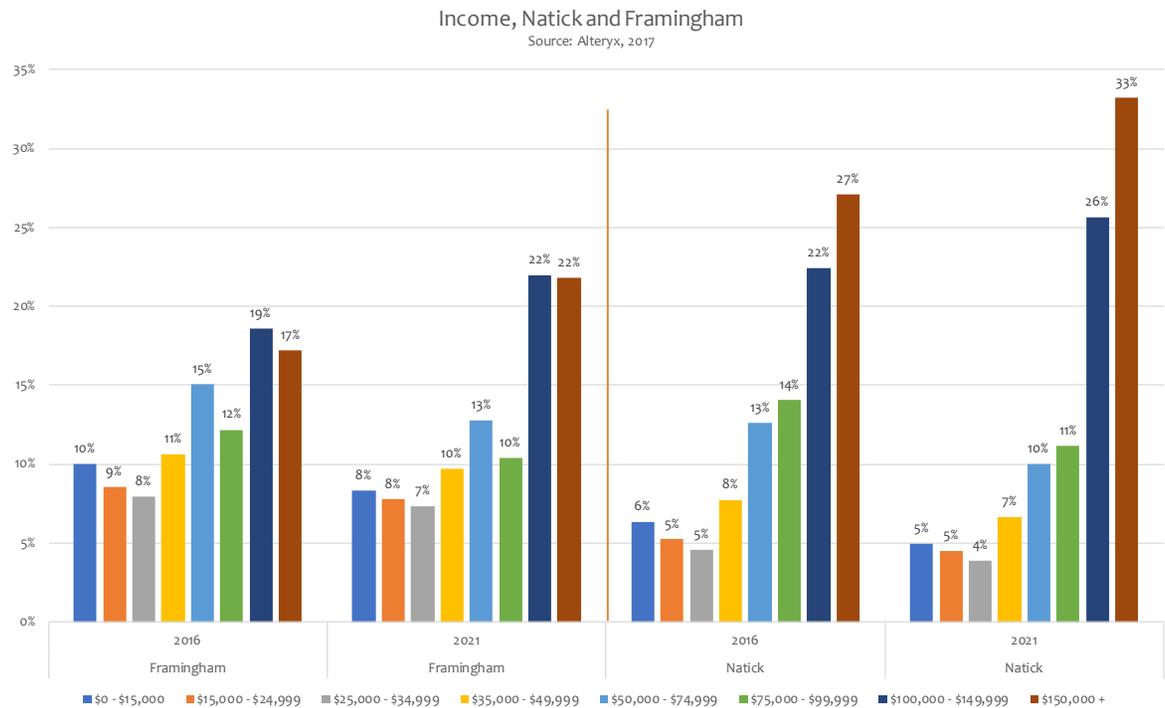


Figure 3.44: Median Household Income of Framingham and Natick.

10 Alteryx and RKG Associates, Inc 2017

11 Alteryx and RKG Associates, Inc 2017

LAND USE ASSESSMENT

Not surprisingly, 73 percent of the land within The Triangle study area is being used for retail or office purposes (Table 3.1).¹² This equates to nearly 600 acres of land, including buildings, parking lots, and internal circulation all related to and supporting, retail and office users. To put this in perspective, the new Assembly Row development (Somerville) - a mix of retail, office, and residential - utilizes forty-five acres of land; meaning thirteen Assembly Rows could fit in The Triangle on the land that is currently serving retail and office users. The vast amount of land dedicated to these uses in The Triangle is in large part due to the number of acres utilized for surface parking and the fact that most of the retail buildings are single-story structures at a lower density.

There are a few multi-family developments in The Triangle, including Nouvelle (Natick), Avalon (Natick), and Lord Chesterfield Apartments (Framingham). The Lord Chesterfield Apartments are made up of five multi-family buildings, while the Nouvelle is condominiums that were constructed as a component of the Natick Mall.

The Framingham side of The Triangle includes about nine acres of single-family residential housing located between Route 30 and Route 9. 533.08 Acres of The Triangle are located in Framingham (66 percent of total) and 273.26 acres are located in Natick (33 percent of total).

Source: Framingham and Natick Assessor's Data, RKG Associates

LAND USE CATEGORY	ACRES OF LAND			
	FRAMINGHAM	NATICK	TOTAL	% OF TOTAL
SINGLE-FAMILY	8.9	0.0	8.9	1.1%
MULTI-FAMILY	15.0	9.1	24.1	3.0%
HOTEL/MOTEL	8.9	22.8	31.7	3.9%
RETAIL	262.9	152.8	415.7	51.6%
OFFICE	137.7	38.7	176.4	21.9%
ENTERTAINMENT	20.4	0.0	20.4	2.5%
INDUSTRIAL	0.0	0.4	0.4	0.1%
RECREATION/CONSERVATION	32.6	1.0	33.7	4.2%
UTILITIES	1.3	0.0	1.3	0.2%
PUBLIC/INSTITUTIONAL	26.9	0.1	26.9	3.3%
SCHOOL	4.2	0.0	4.2	0.5%
RELIGIOUS FACILITY	1.1	0.0	1.1	0.1%
PARKING FACILITY	0.0	33.0	33.0	4.1%
VACANT	12.1	1.6	13.7	1.7%
UNDEVELOPABLE	1.0	13.7	14.7	1.8%
TOTALS¹²	533.08	273.26	806.34	100.0%

ZONING

Within The Triangle there are eleven base zoning districts and four overlay districts that regulate the types of uses and intensity of development, site layout and design, and building dimensions (Fig. 3.45)¹³. While the zoning in both municipalities has no doubt tried to respond to land use changes and market shifts over time, it can be challenging to develop a consistent and coordinated district with this many zoning options. In the case of Natick’s side of the study area, there are six base zones and four overlay districts alone. One section of the Natick Mall property has three different overlapping overlay districts. There are also challenges in both communities with zoning districts that split parcels due to zoning boundaries not following parcel lines. This is best illustrated with the Regional Center (RC) Overlay district boundaries in Framingham.

Permitting authorities in the two municipalities should coordinate on limiting the granting of Variances and Special Permits to ensure that the intent of the Master Plan is not undermined.

The parcels that front along the north side of Route 30 are only partially covered by the overlay district, which can lead to conflicting regulations and a disjointed development pattern. Figure 3.45 shows the location of the base zoning and overlay districts that regulate The Triangle.

ZONING DISTRICT KEY	
Framingham	
M	General Manufacturing
M 1	Light Manufacturing
P	Office/Professional
B	Business
R 1	Single Family
Natick	
IND I	Industrial I
IND II	Industrial II
COMM	Commercial I
COMM II	Commercial II
RSA	Residential Single-A
HMU I	Highway Mixed-use I
HMU II	Highway Mixed-use II

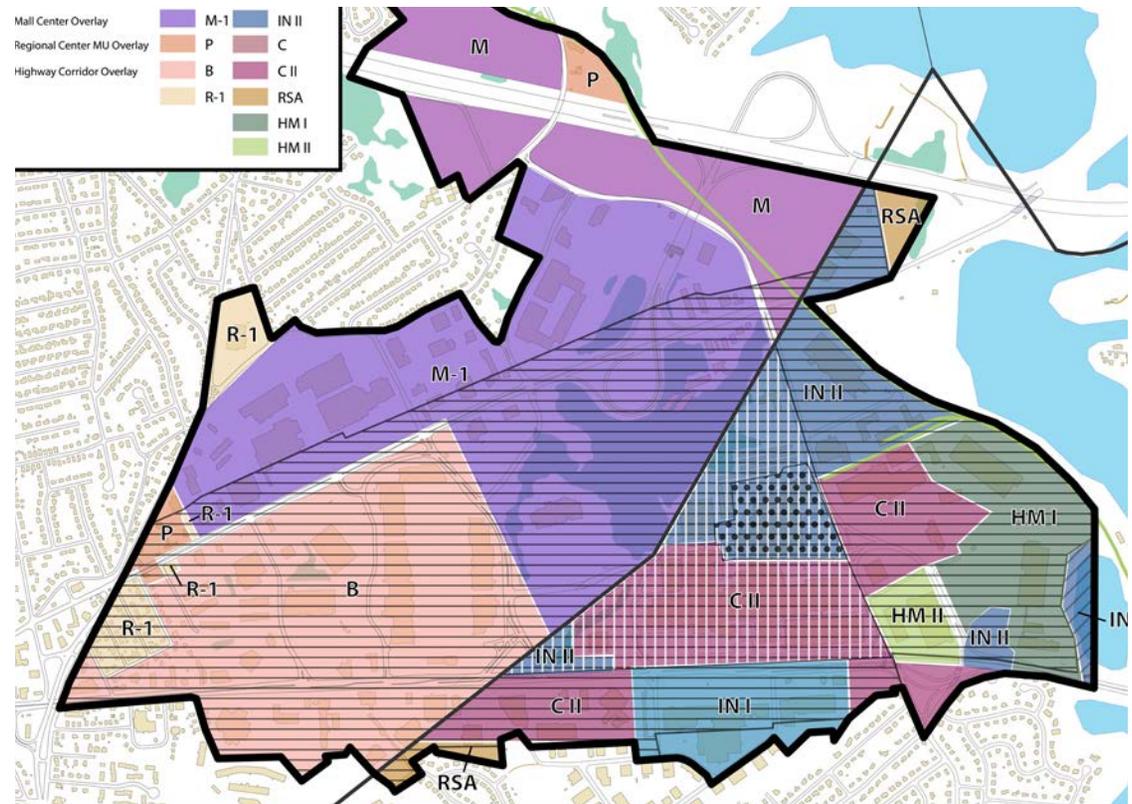


Figure 3.45: Golden Triangle Zoning Map.

13 Zoning information comes from Framingham’s Zoning Bylaw dated May 2017, and Natick’s Bylaw from February 2017

BASE ZONING DISTRICTS

Of the 11 base zoning districts that fall within The Triangle, five base zoning districts cover the Framingham side and six cover the Natick side. About 92 percent of the land in the study area is zoned in districts that allow primarily business/commercial uses or manufacturing/industrial uses. Table 3.2 provides a breakdown of the amount of land covered by each zoning district in The Triangle.

TABLE 3.2: BASE ZONING DISTRICT SUMMARY		
BASE ZONING DISTRICT	ACRES OF LAND	% OF TOTAL
FRAMINGHAM		
BUSINESS (B)	189.6	31.4%
GENERAL MANUFACTURING (M)	90.9	15.1%
LIGHT MANUFACTURING (M-1)	266.4	44.2%
OFFICE AND PROFESSIONAL (P)	10.4	1.7%
SINGLE FAMILY (R-1)	46.1	7.6%
TOTALS	603.4	100.0%
NATICK		
COMMERCIAL-II (CII)	139.5	39.6%
HIGHWAY MIXED-USE (HM-I)	45.1	12.8%
HIGHWAY MIXED-USE (HM-II)	9.4	2.7%
INDUSTRIAL (INI)	34.3	9.7%
INDUSTRIAL (INII)	104.3	29.6%
RESIDENTIAL SINGLE-A (RSA)	20.1	5.7%
TOTALS	352.7	100.0%

Source: Framingham and Natick Assessor's Data, RKG Associates
Note: Acreage differs from Land Use table because zoning district boundaries span public rights-of-way, roads, and water bodies.

PERMITTED USES

The following provides a general description of the uses permitted in each zoning district that apply to The Triangle across both municipalities. The description of uses has been pared down to focus on uses that are in The Triangle today, or those that may be likely to locate here in the future.

NATICK

Natick's base zoning districts allow a mix of commercial, retail, and industrial uses. As-of-right development and the use of special permit vary from district to district depending on the use. The Commercial II zoning district allows the widest range of use types with most commercial uses allowed as-of-right. The two Highway Mixed-use districts require special permits for most uses. In the Highway Mixed-use I district, uses proposed on parcels larger than 200,000 square feet in size are granted additional rights without having to go through a special permit process. This was likely designed to encourage parcel assembly and larger development footprints. Table 3.3 shows uses permitted in each of the six zoning districts on the Natick side of The Triangle.

FRAMINGHAM

Approximately 75 percent of the land on Framingham's side of The Triangle is zoned Business (B) or Light Manufacturing (M-1). The B District is the most flexible of the five districts on Framingham's side. Most commercial and retail businesses are allowed as-of-right, as are sit-down restaurants. Auto-related uses (gas stations, car washes, repair shops) are allowed through special permit, as are hotels and motels. This is the only district in The Triangle across both communities that allows mixed-use through a special permit. Interestingly, none of the districts in Framingham or Natick allow multi-family residential, though Natick has seen some new residential development and Framingham allows for residential development in the B District so long as it is part of a mixed-use development. The Cloverleaf and Avalon Natick residential developments were Chapter 40 (B) projects (Chapter 40 (B) enables local zoning Boards of Appeal to approve housing developments under flexible rules if at least 20-25 percent of the units have long term affordability restrictions).

TABLE 3.3: ALLOWABLE USES IN NATICK'S BASE ZONES

USES	BASE ZONING DISTRICTS					
	COMM. II	INDUS. I	INDUS. II	HWY MU I	HWY MU II	RES. A
RETAIL STORES	P	-	-	-	SP	-
PROFESSIONAL OFFICES	P	P	SP	P***	SP	-
COMM. ESTABLISHMENTS	P	-	-	P***	SP	-
HOTEL/MOTEL	P	-	SP	P***	SP	-
HEALTHCARE FACILITY*	P	P	P	P	SP	-
VEHICAL SHOWROOM/SALES	P	SP**	-	-	-	-
RESTAURANTS	P	-	-	P***	SP	-
INDOOR/OUTDOOR AMUSEMENT	SP	SP	SP	SP	SP	-
REPAIR GARAGE	SP	SP	-	-	-	-
GAS STATION	SP	SP	-	-	-	-
CAR WASH	SP	-	-	-	-	-
AUTOBODY SHOP	SP	SP	-	-	-	-
PRINT SHOP	P	P	P	P	SP	-
LIGHT MANUFACTURING	-	P	P	P	-	-
GENERAL INDUSTRIAL	-	-	P	P	-	-
VETERINARY HOSPITAL	P	-	-	-	-	-
OFF-STREET PARKING	P	P	P	P	SP	P
SINGLE-FAMILY DWELLING	P	P	P	P	P	P
MULTI-FAMILY DWELLING	-	-	-	-	-	-
MIXED-USE	-	-	-	-	-	-
FARM STAND	P	-	-	-	-	P
CHURCHES	P	P	P	P	-	P
SCHOOLS	P	P	P	P	P	P
DAYCARE	SP	SP	SP	SP	SP	SP
MUNICIPAL FACILITIES	P	P	P	P	-	SP
WIRELESS COMMUNICATION	SP	SP	SP	SP	SP	SP

P = Permitted Use

SP = Special Permit

**Anything greater than 2,500 sqft requires a special permit*

New development in the Highway MU II requires an overall site plan review and Special Permit from the Planning Board

***Special Permit for salesrooms that include vehicle repair and/or storage on site*

****Permitted use if minimum lot area is in excess of 200,000 sq. ft.*

TABLE 3.4: ALLOWABLE USES IN FRAMINGHAM'S BASE ZONES

USES	BASE ZONING DISTRICTS				
	BUSINESS	OFFICE/PROF.	LIGHT MANUF.	GEN. MANUF.	SINGLE-FAMILY
RETAIL STORES	P	P	P	P	-
PROFESSIONAL OFFICE	P	P	P	P	-
COMM. ESTABLISHMENTS	P	P	P	P	-
HOTEL/MOTEL	SP	-	SP	SP	-
VEHICAL SHOWROOM/SALES	SP	-	-	-	-
RESTAURANTS	P	SP	SP	SP	-
INDOOR/OUTDOOR AMUSEMENT	P	-	SP	SP	-
REPAIR GARAGE	SP	-	-	-	-
GAS STATION	SP	-	-	-	-
CAR WASH	SP	-	SP	SP	-
PRINT SHOP	-	-	-	P	-
R&D, LAB SPACE	-	-	P	P	-
VETERINARY HOSPITAL	P	-	SP	SP	-
OFF-STREET PARKING	SP	-	SP	SP	-
SINGLE-FAMILY DWELLING	P	P	-	-	P
MULTI-FAMILY DWELLING	-	-	-	-	-
MIXED-USE	SP	-	-	-	-
MUNICIPAL FACILITIES	P	P	P	P	P

There are very few differences between the two manufacturing districts in Framingham other than how industrial uses of differing intensities are treated. In the M-1 District, larger-scale warehousing facilities and recycling/refuse facilities tend to be by Special Permit or not allowed at all. In the General Manufacturing (M) District, many of the heavier industrial uses are allowed as-of-right or a few by Special Permit. Table 3.4 shows uses permitted in each of the five zoning districts on the Framingham side of The Triangle.

OVERLAY DISTRICTS

In addition to the eleven base zoning districts across The Triangle, there are also four overlay districts in total (Fig. 3.45 & Table 3.5). On the Natick side of the study area there are four overlay districts: Regional Center (RC) Overlay, Highway Corridor (HC) Overlay, Mall Center (MC) Overlay, and the Regional Center Mixed-use (RCP) Overlay. On the Framingham side of the Study Area there is one overlay district: the RC Overlay, which was developed in coordination with Natick and has virtually identical regulations. The following provides a brief description of the purpose, regulations, and differences from the base zoning districts they cover. For purposes of this report, the RC Overlay description applies to both Natick and Framingham.

REGIONAL CENTER (RC) OVERLAY (FRAMINGHAM & NATICK)

The over-arching goal for this overlay district is to encourage a mix of uses, including multi-family residential and provide bonus incentives to reward developers for improving property in the area. The unique attribute of the RC Overlay is that it is an attempt at inter-municipal collaboration between Framingham and Natick. After a joint planning effort, both Natick and Framingham adopted similar overlay districts (Regional Center) to try and create a unified district as properties redeveloped over time. The end result has unfortunately been less than satisfactory, as very little mixed-use development has occurred within the overlay district. This may be due to the relatively low density bonuses that can be achieved through developers providing added “public benefits” as part of their project.

Under the RC Overlay, a developer can qualify for bonus floor space by constructing a public park on part of the land, improving pedestrian circulation by building new sidewalks or pedestrian bridges/tunnels, improving traffic flow, providing transit amenities, contributing to off-site affordable housing, or building service roads or driveways that improve internal circulation. Each amenity has its own corresponding density bonus based on how much of the amenity is provided. For example, for every square foot of park space provided, the developer would gain an additional square foot of floor area. For every curb-cut closure, a developer would gain an additional 15,000 square feet of floor area. The maximum density achievable with the bonus provisions is a floor area ratio (FAR) of 0.40.

The RC Overlay district also includes provisions for mutual review of projects. If a project is larger than 50,000 square feet, an applicant in one municipality must submit a set of plans to the other municipality and schedule a meeting with the Planning Board at their request. If the project is less

than 50,000 square feet, the applicant must submit one set of plans to the other municipality and the Planning Board shall receive notification of all hearing dates on the proposed project.

One of the challenges presented by the RC Overlay is the complexity of the regulations. The sections in each municipality's Zoning Bylaw describing the regulations are very lengthy, the calculations for the density bonuses are complicated and the additional requirements such as landscaping and dimensional requirements are considered arduous for the amount of bonus received. It is also difficult to tell which uses are allowed above and beyond uses specifically listed as part of the underlying zoning districts.

HIGHWAY CORRIDOR (HC) OVERLAY (FRAMINGHAM)

The three remaining overlay districts described in this section are all in Natick. The first is the Highway Corridor (HC) Overlay. The HC Overlay District covers a small eleven-acre portion at the eastern edge of the study area. Similar to the RC Overlay, the HC Overlay offers opportunities for density bonuses as a way to encourage parcel consolidation and new development. Based on a review of Section 320 of the Natick Zoning Bylaw and Section III E of the Framingham Zoning By-Law there does not appear to be a significant difference between the regulation governing the RC Overlay and the HC Overlay.

MALL CENTER OVERLAY (NATICK)

The Mall Center (MC) Overlay District was established to provide more flexibility for uses associated with the property that encompasses the Natick Mall. The MC Overlay District was established so as to foster the implementation of significant infrastructure improvements within Natick and improve Natick's tax base. On top of the uses already allowed in the underlying zoning districts and in the RC Overlay, the overlay zoning also allows for hotel and motel use and "shopping mall uses," which are those commonly found in shopping malls. Similar density bonuses apply in the MC Overlay as were described in the section above on the RC Overlay, except the FAR in this overlay can be increased up to a maximum of 0.60. The density bonus is only applicable to one or more parcels equaling forty contiguous acres of land.

REGIONAL CENTER MIXED USE OVERLAY (NATICK)

The Regional Center Mixed-Use (RCP) Overlay District was established to encourage a mix of commercial and residential uses on the property occupied by the Natick Mall. The RCP Overlay appears to have been created to facilitate the development of the Nouvelle Residences. The portion of the RCP development devoted to multi-family housing is permitted by special permit and site plan approval by Natick’s Planning Board.

TABLE 3.5: OVERLAY DISTRICT SUMMARY TABLE	
OVERLAY ZONING DISTRICT	ACRES OF LAND
FRAMINGHAM OVERLAY DISTRICT SUMMARY	
REGIONAL CENTER OVERLAY	351
TOTALS	351
NATICK OVERLAY DISTRICT SUMMARY	
REGIONAL CENTER OVERLAY	329
HIGHWAY CORRIDOR OVERLAY	11
MALL CENTER OVERLAY	110
REGIONAL CENTER MU OVERLAY	18
TOTALS	467

Source: Framingham and Natick Assessor’s Data, RKG Associates

PARKING SCHEDULE

Parking requirements vary between the two municipalities. Natick has lower parking requirements for most key land use categories, while Framingham allows for a reduction in off-street parking space. Natick has a staggered parking ratio for multi-family residents where parking is tied to the size of the unit. For example, a studio or one-bedroom unit would require one space and a two-bedroom would

require one-and-a-half spaces. In Framingham, the parking ratio for all residential development is two parking spaces regardless of type or size.

In Natick, office uses are required to have one space for every 400 square feet of gross floor area (GFA), while Framingham requires more parking at one space for every 250 square feet for non-medical office and one space for every 150 square feet for medical office. The two municipalities are much closer in parking required for retail uses. Framingham requires one space for every 200 square feet of GFA, while Natick requires one space for every 250 square feet. The parking ratios for industrial and R&D uses are quite different, with Natick requiring one space for every 2,000 square feet, while Framingham requires one space for every 800 square feet.

Table 3.6 provides an overview of the parking regulations for uses in both Natick and Framingham.

PARKING REDUCTIONS

In Framingham, the Planning Board may grant a reduction in the number of off-street parking spaces by special permit. In order for the Planning Board to grant a special permit for reduction in off-street parking, the applicant must provide a parking report analyzing parking demand and offering parking demand reduction strategies. These strategies may include landbanking future spaces, a shared parking program, bicycle parking, Low Impact Development (LID), or other on-site amenities that could lead to a reduced demand for on-site parking. There is also a provision in the Framingham's Zoning By-Law that allows for a parking reduction if the development proposal results in a change of use that does not require as many parking spaces as the prior use.

In Natick, there is only one option available to reduce parking in the zoning districts in The Triangle. Applicants have the ability to request a parking reduction through the Special Permit Granting Authority (SPGA) of up to 10 percent if there is a finding of substantial hardship to the applicant. The Town does have a parking “fee-in-lieu” program, but that is only available to developments in the Downtown Mixed-use (DM) and Housing Overlay Option Plan (HOOP) districts.¹⁴

14 These zoning districts do not cover parcels in The Triangle.

TABLE 3.6: PARKING REQUIREMENT SUMMARY	
USE	SPACES REQUIRED
FRAMINGHAM PARKING REQUIREMENTS	
SINGLE- AND MULTI-FAMILY DWELLINGS	2 PER UNIT
HOTEL OR MOTEL	1 PER UNIT + 1 PER 2 EMPLOYEES
HEALTH CLUB/ENTERTAINMENT FACILITY	1 PER 3 OCCUPANTS
RESTAURANTS	1 PER 3 OCCUPANTS + 1 PER 2 EMPLOYEES
FAST FOOD	1 PER 2 OCCUPANTS + 1 PER 2 EMPLOYEES
MEDICAL OFFICE	1 PER 150 S.F. OF GROSS FLOOR AREA (GFA)
NON-MEDICAL OFFICE	1 PER 250 S.F. OF GFA
SERVICE ESTABLISHMENT	1 PER 200 S.F. OF GFA
RETAIL ESTABLISHMENT	
REGIONAL SHOPPING CENTER	
INDUSTRIAL / R&D	1 PER 800 S.F. OF GFA
NATICK PARKING REQUIREMENTS	
SINGLE- AND TWO-FAMILY DWELLINGS	2 PER UNIT
MULTI-FAMILY DWELLINGS	-
STUDIO & ONE-BED	1 PER UNIT
TWO-BED	1.5 PER UNIT
3+ BED	2 PER UNIT
OFFICES	1 PER 400 S.F. OF GFA
RETAIL STORES AND COMMERCIAL USES	1 PER 250 S.F. OF GFA
RESTAURANTS	1 PER 30 S.F. OF GFA OR 1 PER 3 SEATS
DRIVE-IN RESTAURANTS	1 PER 50 S.F. OF GFA (20 SPACE MIN)
HOTEL OR MOTEL	1 SPACE PER UNIT
INDUSTRIAL / R&D	1 PER 2,000 S.F. OF GFA OR 1 PER 3 EMPLOYEES

*Source: Framingham and Natick Zoning Bylaws
GFA - gross floor area*

MARKET INDICATORS

The following sub-sections offer an analysis of selected economic trends and market indicators in Framingham and Natick. This review presents baseline data and a framework to be considered in identifying redevelopment opportunities within The Triangle.

EMPLOYMENT TRENDS

Between 2010 to 2015, employment in Framingham increased 11 percent from 44,640 to 49,390.¹⁵ This compares to a 3 percent decline in employment in Natick over the same time-period. For this Study, the Framingham NECTA¹⁶ is used as a regional point of comparison to weigh the significance of local indicators in Framingham and Natick. The overall increase in employment within the NECTA was 8 percent, as employment rose from 159,420 to 171,530, between 2010 and 2015.

Looking more specifically at industry sector employment changes, most sectors saw an increase in employment throughout the NECTA, with the exception of manufacturing, wholesale trade, and information services. In Framingham, employment declined in information services; arts, entertainment, and recreation; as well as a small decline in accommodations and food services (Table 3.7). In Natick, employment losses were distributed across more industry sectors, including a 60 percent decline in wholesale trade employment.¹⁷ Within each community, as well as the NECTA, retail employment is strong, although it declined marginally in Natick from 2010 to 2015.¹⁸ Typically, wages and benefits for retail employees lags most other industry sectors.

¹⁵ Throughout most of this narrative, numeric data is rounded for ease to the reader.

¹⁶ NECTA (New England City and Town Area) includes Ashland, Framingham, Holliston, Hopedale, Hudson, Marlborough, Mendon, Milford, Natick, Southbridge, and Sudbury.

¹⁷ This may partially reflect a relocation of the BJ's Wholesale Club HQ from Natick to Westborough.

¹⁸ It is worth noting that employment in some industry sectors may not be fully represented through the ES-202 data due to suppression to protect very large employers. This may be the case in the professional and technical services industry sector.

TABLE 3.7: EMPLOYMENT TRENDS BY NAICS SECTOR FOR FRAMINGHAM AND NATICK, MA

SELECTED NAICS INDUSTRY SECTORS	2010 EMPLOYMENT			2015 EMPLOYMENT			PERCENT Δ 2010-2015 EMPLOYMENT		
	FR*	NK*	NECTA*	FR	NK	NECTA	FR	NK	NECTA
23 - CONSTRUCTION	1,188	458	6,149	1,485	634	9,220	25%	38%	50%
31-33 - MANUFACTURING	3,669	197	25,567	4,655	168	24,957	27%	-15%	-2%
22 - UTILITIES	0	0	474	0	0	552	NA	NA	16%
42 - WHOLESALE TRADE	1,808	1,433	8,554	2,242	569	7,304	24%	-60%	-15%
44-45 - RETAIL TRADE	4,536	6,157	20,088	4,749	5,792	20,544	5%	-6%	2%
48-49 - TRANSPORTATION AND WAREHOUSING	592	147	1,985	1,180	185	2,679	99%	26%	35%
51 - INFORMATION	2,066	0	6,000	1,909	0	5,744	-8%	NA	-4%
52 - FINANCE AND INSURANCE	622	398	3,756	730	378	4,009	17%	-5%	7%
53 - REAL ESTATE AND RENTAL AND LEASING	382	318	1,282	454	221	1,457	19%	-31%	14%
54 - PROFESSIONAL AND TECHNICAL SERVICES	3,897	2,755	14,999	4,076	2,979	17,062	5%	8%	14%
55 - MANAGEMENT OF COMPANIES AND ENTERPRISES	6,855	0	9,838	7,120	210	10,091	4%	NA	3%
56 - ADMINISTRATIVE AND WASTE SERVICES	2,164	1,164	8,183	2,977	1,354	10,292	38%	16%	26%
61 - EDUCATIONAL SERVICES	3,046	1,322	11,605	3,308	1,687	12,488	9%	28%	8%
62 - HEALTH CARE AND SOCIAL ASSISTANCE	7,674	3,077	19,376	8,158	2,988	22,440	6%	-3%	16%
71 - ARTS, ENTERTAINMENT AND RECREATION	321	400	1,931	263	437	2,167	-18%	9%	12%
72 - ACCOMMODATION AND FOOD SERVICES	3,225	1,849	11,018	3,174	1,951	11,216	-2%	6%	2%
81 - OTHER SERVICES, EX. PUBLIC ADMIN	1,070	752	4,407	1,064	662	4,450	-1%	-12%	1%
92 - PUBLIC ADMINISTRATION	1,511	NA	3,825	1,828	NA	4,228	21%	NA	11%
TOTAL	44,637	23,777	159,418	49,387	23,076	171,528	11%	-3%	8%

Source: US Census, MA Labor and Workforce Development and RKG Associates, Inc. (2017).

*FR: Framingham; NK: Natick; NECTA: New England City and Town Area.

As the NECTA includes numerous small communities, a comparison of trends was completed for Framingham and Natick relative to Middlesex County (Table 3.8). Between 2010 and 2015, employment in Middlesex County increased by 9 percent, or about 71,000 employees. This percent increase is slightly less than that of Framingham, but is ahead of Natick over the same time-period.

TABLE 3.8: EMPLOYMENT TRENDS BY NAICS SECTOR FOR FRAMINGHAM AND NATICK, MA, RELATIVE TO MIDDLESEX CO.

SELECTED NAICS INDUSTRY SECTORS	2010 EMPLOYMENT			2015 EMPLOYMENT			PERCENT Δ 2010 - 2015		
	FR*	NK*	MX CO.*	FR	NK	MX CO.	FR	NK	MX CO.
23 - CONSTRUCTION	1,188	458	30,161	1,485	634	38,338	25%	38%	27%
31-33 - MANUFACTURING	3,669	197	76,028	4,655	168	75,750	27%	-15%	0%
22 - UTILITIES	0	0	1,978	0	0	2,197	NA	NA	11 %
42 - WHOLESALE TRADE	1,808	1,433	35,698	2,242	569	34,598	24%	-60%	-3%
44-45 - RETAIL TRADE	4,536	6,157	76,012	4,749	5,792	78,291	5%	-6%	3%
48-49 - TRANSPORTATION AND WAREHOUSING	592	147	19,575	1,180	185	21,249	99%	26%	%
51 - INFORMATION	2,066	0	39,158	1,909	0	42,240	-8%	NA	8%
52 - FINANCE AND INSURANCE	622	398	25,721	730	378	26,202	17%	-5%	2%
53 - REAL ESTATE AND RENTAL AND LEASING	382	318	8,862	454	221	10,013	19%	-31%	13%
54 - PROFESSIONAL AND TECHNICAL SERVICES	3,897	2,755	110,064	4,076	2,979	125,449	5%	8%	14%
55 - MANAGEMENT OF COMPANIES AND ENTERPRISES	6,855	0	23,423	7,120	210	25,134	4%	NA	7%
56 - ADMINISTRATIVE AND WASTE SERVICES	2,164	1,164	48,261	2,977	1,354	53,151	38%	16%	10%
61 - EDUCATIONAL SERVICES	3,046	1,322	87,773	3,308	1,687	93,911	9%	28%	7%
62 - HEALTH CARE AND SOCIAL ASSISTANCE	7,674	3,077	101,247	8,158	2,988	118,590	6%	-3%	17%
71 - ARTS, ENTERTAINMENT AND RECREATION	321	400	10,489	263	437	12,383	-18%	9%	18%
72 - ACCOMMODATION AND FOOD SERVICES	3,225	1,849	53,513	3,174	1,951	61,525	-2%	6%	15%
81 - OTHER SERVICES, EX. PUBLIC ADMIN	1,070	752	26,930	1,064	662	26,284	-1%	-12%	-2%
92 - PUBLIC ADMINISTRATION	1,511	NA	26,371	1,828	NA	26,028	21%	NA	-1%
TOTAL	44,637	23,777	803,060	49,387	23,076	873,709	11%	-3%	9%

County wide, employment declines were seen in the manufacturing and wholesale trade sectors (similar to the NECTA) and in other services and public administration (dissimilar to the NECTA). For the industry sectors experiencing a decline in employment, the percentage losses were nominal. Similar to the NECTA, there were several industry sectors where the county experienced an increase in employment and Framingham and/or Natick realized a decline.

Source : US Census, MA Labor and Workforce Development and RKG Associates, Inc. (2017)
 *FR: Framingham; NK: Natick; MX CO.: Middlesex County

LOCATION QUOTIENTS

One measure of the relative strength of a local economy is measured through the employment Location Quotient (LQ). This takes stock of the employment in any one sector of the local economy as a percent of the total local economy. This is then expressed as a ratio to a much larger area, such as to Middlesex County (Table 3.9). An LQ of 0.8 to 1.2 generally indicates a balance in the local and larger economies for that industry sector. A ratio of less than 0.8 indicates under performance at the local level and a ratio of more than 1.2 indicates an over performance in that industry sector. A high LQ may suggest a competitive advantage, a clustering of like businesses and equate to opportunities for expansion (or a strength). A low LQ may portend opportunities in under-represented industries and an opportunity for relocation or expansion of others (both an opportunity and a potential threat).

For 2010 and for 2015, in both Framingham and Natick, there were several industry sectors where the LQ was strong relative to Middlesex County, notably including the retail sector in Natick and the management sector in Framingham. There were no industry sectors where both Natick and Framingham out-performed the county in 2010 and in 2015. Conversely there were several sectors where the LQ was weak, for both years and in both communities, including the construction, manufacturing, and finance sectors, along with educational services. There were eight industry sectors in Framingham that experienced a drop in their LQs between 2010 and 2015, while there were four such sectors in Natick.

A declining LQ, in Framingham, in such sectors as construction, professional/technical, and arts/entertainment, while the overall county employment in these sectors increased (2010 to 2015), represents a threat to growth for these sectors in Framingham. Additionally, the declining LQ's for these sectors in Framingham are coming from a point of weakness as in 2010 and in 2015 they under-perform Middlesex County. The Framingham retail LQ remained unchanged over the 2010 to 2015 time-period and the county experienced a three percent growth in employment. While Framingham is "holding its own" in this sector the countywide employment growth suggests that Framingham may run the risk of falling behind in the future. Another example includes the accommodations sector where the Framingham LQ is on par with the county, but has declined by nearly 16 percent, while countywide employment has increased by 15 percent; or, Framingham is not keeping pace in this sector. Another industry sector of concern is health services. Although the Framingham LQ out-performs the county, its representation has declined by nearly 11 percent while countywide employment growth has been 17 percent.

As measured by their LQ's, the construction sector and the retail sector in Natick are keeping pace with (or marginally improving relative to) countywide employment gains. One sector of concern is the real estate sector which has declined from out-performing the county in 2010 to just being on par with the county in 2015, experiencing a 31 percent decline in its LQ in a sector with a 13 percent employment growth countywide. This decline is the result of a small loss in Natick's real estate sector employment, and a large gain in Middlesex County's employment figures. The two combined account for the drop in Natick's competitive advantage within this industry sector compared to the County as a whole.

Key

Under

Over

TABLE 3.9: COMPARATIVE LOCATION QUOTIENTS FOR FRAMINGHAM (FR) AND NATICK (NK), RELATIVE TO MIDDLESEX CO.

SELECTED NAICS INDUSTRY SECTORS	2010 LQ		2015 LQ		% Δ 2010-2015 IN LQ	
	FR*	NK*	FR	NK	FR	NK
23 - CONSTRUCTION	0.71	0.51	0.69	0.63	-3.3%	22.1%
31-33 - MANUFACTURING	0.87	0.09	1.09	0.08	25.2%	-4.0%
22 - UTILITIES	NA	NA	NA	NA	NA	NA
42 - WHOLESALE TRADE	0.91	1.36	1.15	0.62	25.8%	-54.1%
44-45 - RETAIL TRADE	1.07	2.74	1.07	2.80	0.0%	2.4%
48-49 - TRANSPORTATION AND WAREHOUSING	0.54	0.25	0.98	0.33	80.6%	30.0%
51 - INFORMATION	0.95	NA	0.80	NA	-15.8%	NA
52 - FINANCE AND INSURANCE	0.44	0.52	0.49	0.55	13.3%	4.5%
53 - REAL ESTATE AND RENTAL AND LEASING	0.78	1.21	0.80	0.84	3.4%	-31.0%
54 - PROFESSIONAL AND TECHNICAL SERVICES	0.64	0.85	0.57	0.90	-9.8%	6.4%
55 - MANAGEMENT OF COMPANIES AND ENTERPRISES	5.27	NA	5.01	0.32	-4.8%	NA
56 - ADMINISTRATIVE AND WASTE SERVICES	0.81	0.81	0.99	0.96	22.8%	18.4%
61 - EDUCATIONAL SERVICES	0.62	0.51	0.62	0.68	-0.2%	33.7%
62 - HEALTH CARE AND SOCIAL ASSISTANCE	1.36	1.03	1.22	0.95	-10.8%	-7.1%
71 - ARTS, ENTERTAINMENT, AND RECREATION	0.55	1.29	0.38	1.34	-31.8%	3.7%
72 - ACCOMMODATION AND FOOD SERVICES	1.08	1.17	0.91	1.20	-15.8%	2.9%
81 - OTHER SERVICES, EX. PUBLIC ADMIN	0.71	0.94	0.72	0.95	0.2%	1.1%
92 - PUBLIC ADMINISTRATION	1.03	NA	1.24	NA	20.5%	NA
TOTAL	NA	NA	NA	NA	NA	NA

Source : US Census, MA Labor and Workforce Development and RKG Associates, Inc. (2017). *FR: Framingham; NK: Natick

EMPLOYMENT PROJECTIONS & SPACE NEEDS

On the other hand, employment in the education sector in Natick, as measured by the change in its LQ, has increased by nearly 34 percent while countywide employment has grown by seven percent.

Employment projections, prepared by the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), for the NECTA were used as the benchmarks for estimating future employment changes in Framingham and Natick (Table 3.10). It is presumed that the two communities' employment bases will experience changes that are similar to the larger NECTA region within each industry sector. For example, if the educational services sector within the larger NECTA is projected to grow 5 percent through the year 2025, it is assumed that a similar percent change would be experienced in Framingham and Natick. Using these inputs and assumptions, it is projected that Framingham's total employment would grow to 51,860 by 2025 and the employment in Natick would grow to 24,230.

Projected employment growth within each industry sector was converted into an annual estimate of space needs (square feet) based on industry standards of how much space an employee may need.¹⁹ The projected employment change between 2015 and 2025 could result in an annual demand for 14,830 square feet of new space in Framingham and 17,600 square feet of new space in Natick. If the projected decline in space demands for the manufacturing sector is excluded, the annual projection for additional space in Framingham would increase sharply.

This projected annual growth in space needs does not necessarily equate to demand for newly constructed space. It is likely that a portion of the additional demand for space may be realized through the increased utilization of existing space, or by vacancies or available properties. Any significant demand for newly built space would likely result from the expansion of existing industries (beyond the market indicators) or entry into The Triangle of new industries.

¹⁹ Space needs standards drawn from Urban Land Institute and others.

TABLE 3.10: PROJECTED EMPLOYMENT AND SF NEEDS FOR FRAMINGHAM AND NATICK								
ESTIMATED EMPLOYMENT AND SF NEEDS BY INDUSTRY SECTOR ANNUAL 2015-2025	FRAMINGHAM				NATICK			
	AVG SF PER EMP	2025 EMPLOY	CHANGE FROM 2015	EST. GROSS ANNUAL DEMAND - SF	AVG SF PER EMP	2025 EMPLOY	CHANGE FROM 2015	EST. GROSS ANNUAL DEMAND - SF
OFFICE / FLEX								
INFORMATION	175	1,989	80	1,403	175	NA	NA	NA
FINANCE/INSURANCE	200	769	39	774	200	398	20	401
REAL ESTATE	200	460	6	118	200	224	3	57
PROF/TECH	175	4,435	359	6,277	175	3,241	262	4,588
ADMIN/WASTE SERVICES	200	3,171	194	3,870	200	1,442	88	1,760
SUBTOTAL		10,823	677	12,442		5,305	373	6,806
INSTITUTIONAL								
HEALTH CARE/SOCIAL ASSIST.	150	8,892	734	11,013	150	3,257	269	4,034
SUBTOTAL		8,892	734	11,013		3,257	269	4,034
COMMERCIAL								
ARTS & ENTERTAINMENT	150	283	20	300	150	470	33	498
RETAIL TRADE	175	4,877	128	2,244	175	5,948	156	2,737
ACCOMMODATIONS/FOOD	175	3,371	197	3,444	175	2,072	121	2,117
OTHER EXC. PUBLIC ADMIN	150	1,143	79	1,181	150	711	49	735
SUBTOTAL		9,674	424	7,169		9,202	360	6,087
INDUSTRIAL								
CONSTRUCTION	150	1,553	68	1,025	150	663	29	437
MANUFACTURING	1,000	4,422	(233)	(23,275)	1,000	160	(8)	(840)
WHOLESALE TRADE	750	2,251	9	673	750	571	2	171
TRANSPO/WAREHOUSING	1,000	1,238	58	5,782	1,000	194	9	907
SUBTOTAL		9,464	(98)	(15,796)		1,588	32	675
TOTAL		38,853	1,737	14,828		19,352	1,034	17,601

Source: US Census Bureau, MA Labor and Workforce Development and RKG Associates, Inc. (2017)

COMMUTING PATTERNS (2010)

In 2010, the total resident workforce in Framingham was 36,117 and nearly one-third of those residents also worked in Framingham (Table 3.11). Approximately 38 percent worked in communities closer to Framingham, with 9 percent each in Boston and in Natick. Data from the American Community Survey (ACS) estimates that in 2010 there were slightly more than 47,210 jobs in Framingham, with 25 percent (11,820) held by Framingham residents. Approximately 5 percent of the Framingham jobs were held by residents of Boston and another 4 percent by residents from Natick. Approximately 50 percent of people employed by businesses in Framingham commuted from a location outside Framingham, Natick and immediate surrounding communities. This may speak to the possibility for employees to relocate and live in Framingham and Natick in the future, providing there is the availability of desired residential stock at affordable price points. Potential changes in commuting patterns will have implications for transportation recommendations in later phases of this Study.

TABLE 3.11: COMMUTING PATTERNS FOR FRAMINGHAM (2010)

WORKERS IN RESIDENCE & PLACE WHERE THEY WORK					JOBS IN PLACE & PLACE WHERE WORKERS RESIDE				
WORKERS IN RESIDENCE	#	WORKPLACE	# OF WORKING RESIDENTS	% OF TOTAL RESIDENTS	LOCAL JOBS	#	JOBS IN	# OF JOBS HELD BY RESIDENTS	% OF JOBS HELD BY RESIDENTS
FRAMINGHAM	36,117	FRAMINGHAM	11,820	32.7%	FRAMINGHAM	47,212	FRAMINGHAM	11,820	25.0%
		TOP TEN	13,667	37.8%			TOP TEN	12,920	27.4%
		BOSTON	3,152	8.7%			BOSTON	2,318	4.9%
		NATICK	3,151	8.7%			NATICK	1,844	3.9%
		NEWTON	1,352	3.7%			MARLBOROUGH	1,694	3.6%
		WELLESLEY	1,095	3.0%			ASHLAND	1,510	3.2%
		WALTHAM	1,089	3.0%			WORCESTER	1,450	3.1%
		MARLBOROUGH	1,011	2.8%			MILFORD	1,113	2.4%
		CAMBRIDGE	907	2.5%			NEWTON	796	1.7%
		SUDBURY	780	2.2%			SHREWSBURY	788	1.7%
		WAYLAND	573	1.6%			HOPKINTON	743	1.6%
		ASHLAND	557	1.5%			SOUTHBOROUGH	664	1.4%
		REMAINDER	10,630	29.4%			REMAINDER	22,472	47.6%

Source: American Community Survey (2006-2010) ; RKG Associates, Inc. 2017

In 2010, Natick’s total resident workforce was comprised of 17,480 workers and nearly 26 percent held jobs in Natick (Table 3.12). Almost 50 percent of the Natick resident workforce commuted to communities closer to Natick for employment, including nearly 10 percent to Framingham. Approximately 16 percent commuted into Boston for work. Similarly, the ACS estimates Natick had 23,970 jobs in 2010, with nearly 19 percent held by Natick residents and 13 percent held by residents of Framingham. Nearly 50 percent of the jobs in Natick were held by residents living outside of Natick and the immediate surrounding communities. This too may represent an opportunity for residential relocations.

TABLE 3.12: COMMUTING PATTERNS FOR NATICK (2010)

WORKERS IN RESIDENCE & PLACE WHERE THEY WORK				JOBS IN PLACE & PLACE WHERE WORKERS RESIDE					
WORKERS IN RESIDENCE	#	WORKPLACE	# OF WORKING RESIDENTS	% OF TOTAL RESIDENTS	JOBS IN	#	JOBS IN	# OF JOBS HELD BY RESIDENTS	% OF JOBS HELD BY RESIDENTS
NATICK, MA	17,481	NATICK	4,503	25.8%	NATICK	23,973	NATICK	4,503	18.8%
		TOP TEN	8,662	49.6%			TOP TEN	8,095	33.8%
		BOSTON	2,799	16.0%			FRAMINGHAM	3,151	13.1%
		FRAMINGHAM	1,844	10.5%			BOSTON	896	3.7%
		NEWTON	873	5.0%			MARLBOROUGH	643	2.7%
		WELLESLEY	752	4.3%			ASHLAND	637	2.7%
		NEEDHAM	580	3.3%			WORCESTER	619	2.6%
		CAMBRIDGE	516	3.0%			MILFORD	527	2.2%
		WALTHAM	438	2.5%			HOLLISTON	492	2.1%
		WATERTOWN	298	1.7%			FRANKLIN TOWN	405	1.7%
		WESTON	294	1.7%			NEWTON	374	1.6%
		BURLINGTON	268	1.5%			WALTHAM	351	1.5%
		REMAINDER	4,316	24.7%			REMAINDER	11,375	47.4%

Source: American Community Survey (2006-2010) ; RKG Associates, Inc. 2017

RETAIL INDICATORS

Retail development comprises about 45 percent of the rentable square feet of space in The Triangle. Much of that retail development can be found in large-scale retail centers like the Natick Mall, Sherwood Plaza, Shoppers World, and the Cloverleaf Mall. These retail centers are comprised of large anchor tenants (typically clothing and general merchandise stores) and filled in with several smaller retail tenants. Restaurants and drinking establishments total about 82,500 square feet of rentable space in The Triangle, but make up less than 1 percent of the total. Given the amount of retail space in The Triangle, one would expect to see a higher vacancy rate than the 95 percent average occupancy across the Study Area.²⁰ This speaks to the excellent job property owners, managers, and commercial brokers are doing to fill vacant spaces as they come on the market. This also speaks to the desirability of this location. Figure 3.46 highlights the location of retail and restaurant establishments across The Triangle.

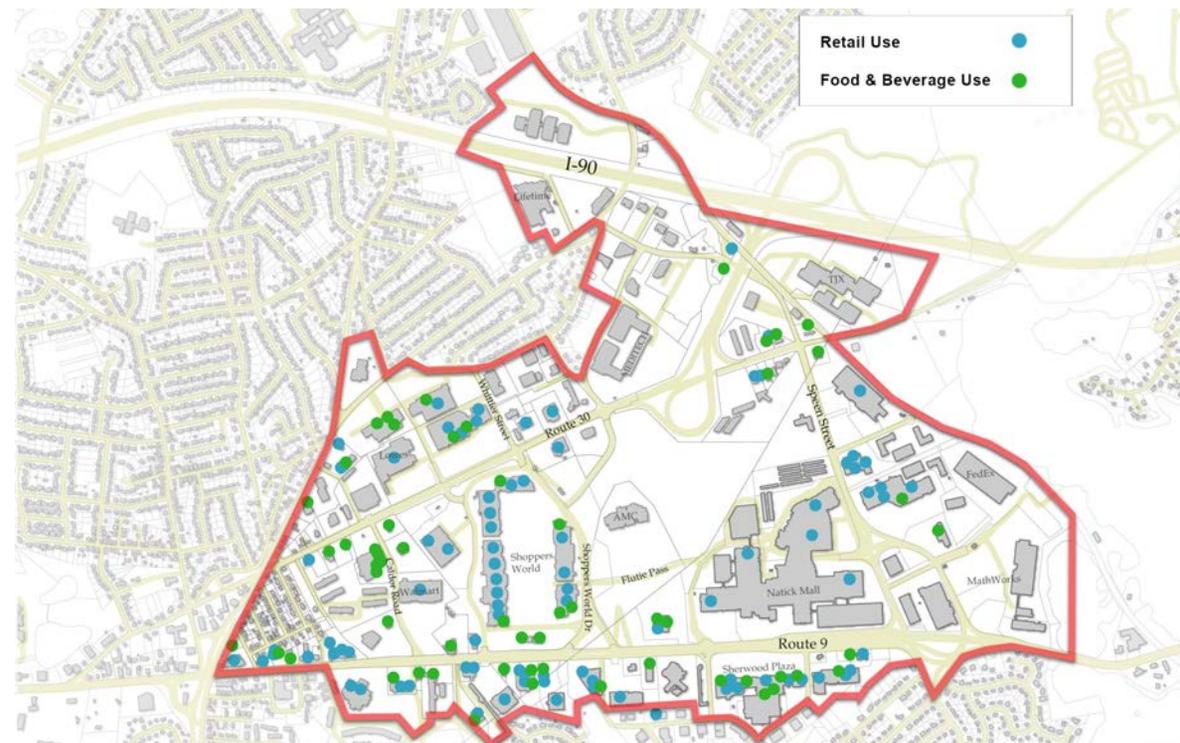


Figure 3.46: Retail and Restaurant Establishments in The Triangle.

20 CoStar, 2017.

03 HISTORY & EXISTING CONDITIONS

Framingham and Natick together far outstrip the national average when it comes to retail square feet per capita. The national average for retail square feet per capita is between 42 and 45 square feet per capita. The two communities combine for an average of 62 square feet per capita, with Natick far exceeding the threshold with a figure as high as 92 square feet per capita (Table 3.13). To gain insight on the retail market and demand generation, RKG reviewed 2016 retail spending demand and sales patterns for Framingham and Natick, organized by selected merchandise/retail lines (Tables 3.14 & 3.15).

Both communities are net importers of retail sales, meaning they are destination draws for retail activity, extending beyond the spending capacities of the local households. This is not surprising considering The Triangle is one of the largest retail destinations in the Commonwealth outside of Downtown Boston. For the two communities, the combined estimate of retail space is nearly 6,700,000 square feet with almost 1,000 stores.²¹

While Framingham is a net importer of retail sales, with local spending exceeding local demand by more than \$418 million, there are still some categories where Framingham is underserved, or where sales leakage is evident. This includes food stores, apparel and accessories, some specialty retail, and dining/drinking.

A similar analysis for Natick indicates that on average the Natick market imports more than \$491 million in retail sales across all merchandise lines. However, as with Framingham, there are some retail sectors that do not meet local household demand, including grocers, some specialty retail, and dining/drinking. There are also some categories where Framingham and Natick out-perform the market and a greater cluster of stores could generate more of a destination for that merchandise line, such as furniture.

New retail demand, or the repositioning of existing retail space in The Triangle, is the result of new household and employee spending, coupled with the potential to recapture a portion of these leaked sales. The increased spending and recapture could lead to additional opportunities for select retail lines. However, it should be noted that some of the store types where sales leakage has been identified may represent “brick and mortar” stores that are experiencing increased competition from e-commerce.

TABLE 3.13: SUMMARY RETAIL METRICS			
RETAIL METRICS (2016 \$)	FRAMINGHAM	NATICK	TOTAL/AVG
RETAIL DEMAND	\$942,246,586	\$694,135,941	\$1,636,382,527
RETAIL SALES	\$1,345,122,535	\$1,184,697,630	\$2,529,820,165
(UNDER)/OVER	\$402,875,949	\$490,561,689	\$893,437,638
HH DEMAND	\$34,890	\$47,753	\$39,391
RETAIL SF	3,370,244	3,296,084	6,666,329
EST. STORES	490	492	982
RETAIL SF / CAPITA	47.69	91.82	62.34

Source: US Census, ESRI, Dun & Bradstreet, ULI and RKG Associates, Inc. (2017)

²¹ This estimate represents a municipality-wide figure, not The Triangle alone.

TABLE 3.14: RETAIL INDICATORS BY MERCHANDISE LINE FOR FRAMINGHAM (2016 DOLLARS)

EST. RETAIL DEMAND & SALES	FRAMINGHAM					
	DEMAND/HH FOR CITY	DEMAND	SALES	(UNDER)/OVER	STORE COUNT	EST. SF OF RETAIL
TOTAL	\$34,890	\$942,246,586	\$1,345,122,535	\$418,596,649	490	3,370,244
FURNITURE & HOME FURNISHINGS STORES	\$1,155	\$31,199,575	\$58,884,137	\$27,684,562	28	235,111
FURNITURE STORES	\$649	\$17,515,799	\$37,250,170	\$19,734,371	14	124,167
HOME FURNISHINGS STORES	\$507	\$13,683,776	\$21,633,967	\$7,950,191	14	110,943
ELECTRONICS & APPLIANCE STORES	\$2,908	\$78,535,859	\$139,918,575	\$61,382,716	49	474,300
BLDG MATERIALS, GARDEN EQUIP. & SUPPLY STORES	\$2,412	\$65,141,460	\$65,689,007	\$547,547	30	171,479
BLDG MATERIAL & SUPPLIES DEALERS	\$2,226	\$60,102,901	\$62,480,672	\$2,377,771	25	156,202
LAWN & GARDEN EQUIP & SUPPLY STORES	\$187	\$5,038,559	\$3,208,335	(\$1,830,224)	5	15,278
FOOD & BEVERAGE STORES	\$8,865	\$239,401,123	\$204,637,282	(\$34,763,841)	47	341,107
GROCERY STORES	\$7,580	\$204,704,395	\$166,539,167	(\$38,165,228)	27	302,798
SPECIALTY FOOD STORES	\$448	\$12,092,596	\$2,282,936	(\$9,809,660)	4	4,521
BEER, WINE & LIQUOR STORES	\$837	\$22,604,132	\$35,815,179	\$13,211,047	16	33,788
HEALTH & PERSONAL CARE STORES	\$2,570	\$69,415,033	\$66,125,446	(\$3,289,587)	31	171,754
CLOTHING & CLOTHING ACCESSORIES STORES	\$2,891	\$78,084,321	\$60,020,983	(\$18,063,338)	58	172,732
CLOTHING STORES	\$2,080	\$56,171,156	\$37,503,038	(\$18,668,118)	37	136,375
SHOE STORES	\$341	\$9,204,300	\$7,176,276	(\$2,028,024)	6	21,746
JEWELRY, LUGGAGE & LEATHER GOODS STORES	\$471	\$12,708,865	\$15,341,669	\$2,632,804	15	14,611
SPORTING GOODS, HOBBY, BOOK & MUSIC STORES	\$1,613	\$43,549,612	\$60,328,008	\$16,778,396	33	259,679
SPORTING GOODS/HOBBY/MUSICAL INSTR STORES	\$1,408	\$38,013,059	\$52,320,072	\$14,307,013	25	232,534
BOOK, PERIODICAL & MUSIC STORES	\$205	\$5,536,553	\$8,007,936	\$2,471,383	8	27,146

Note: Shaded rows indicate merchandise lines where Framingham is underserved, or where sales leakage could warrant new or expanded stores.

TABLE 3.14: RETAIL INDICATORS BY MERCHANDISE LINE FOR FRAMINGHAM (2016 DOLLARS) <i>Continued</i>						
GENERAL MERCHANDISE STORES	\$5,831	\$157,478,929	\$534,736,054	\$377,257,125	19	1,135,972
DEPARTMENT STORES EXCLUDING LEASED DEPTS.	\$4,354	\$117,584,044	\$477,765,783	\$360,181,739	13	946,071
OTHER GENERAL MERCHANDISE STORES	\$1,477	\$39,894,885	\$56,970,271	\$17,075,386	6	189,901
EST. RETAIL DEMAND & SALES	DEMAND/HH FOR CITY	DEMAND	SALES	(UNDER)/OVER	STORE COUNT	EST. SF OF RETAIL
MISCELLANEOUS STORE RETAILERS	\$1,871	\$50,525,160	\$31,006,278	(\$3,798,182)	49	179,298
FLORISTS	\$110	\$2,965,844	\$545,886	(\$2,419,958)	3	1,820
OFFICE SUPPLIES, STATIONERY & GIFT STORES	\$543	\$14,653,181	\$10,622,753	(\$4,030,428)	16	48,285
USED MERCHANDISE STORES	\$112	\$3,017,800	\$4,552,061	\$1,534,261	11	17,178
OTHER MISCELLANEOUS STORE RETAILERS	\$1,107	\$29,888,335	\$31,006,278	\$1,117,943	19	129,193
FOOD SERVICES & DRINKING PLACES	\$4,774	\$128,915,514	\$123,776,765	(\$5,138,749)	146	228,812
SPECIAL FOOD SERVICES	\$182	\$4,907,276	\$1,207,011	(\$3,700,265)	4	3,772
DRINKING PLACES - ALCOHOLIC BEVERAGES	\$247	\$6,673,539	\$3,205,882	(\$3,467,657)	4	8,015
RESTAURANTS AND OTHER EATING	\$4,345	\$117,334,699	\$119,363,872	\$2,029,173	138	217,025

Source: US Census, ESRI, Dun & Bradstreet, ULI and RKG Associates, Inc. (2017)

Note: Shaded rows indicate merchandise lines where Framingham is underserved, or where sales leakage could warrant new or expanded stores.

TABLE 3.15: RETAIL INDICATORS BY MERCHANDISE LINE FOR NATICK (2016 DOLLARS)

EST. RETAIL DEMAND & SALES	NATICK					
	DEMAND/HH FOR TOWN	DEMAND	SALES	(UNDER) /OVER	STORE COUNT	ESTIMATED SF OF RETAIL
TOTAL	\$47,753	\$694,135,941	\$1,184,697,630	\$491,263,144	492	3,296,084
FURNITURE & HOME FURNISHINGS STORES	\$1,610	\$23,396,457	\$154,071,784	\$130,675,327	31	536,006
FURNITURE STORES	\$902	\$13,110,218	\$141,573,361	\$128,463,143	21	471,911
HOME FURNISHINGS STORES	\$708	\$10,286,239	\$12,498,423	\$2,212,184	10	64,094
ELECTRONICS & APPLIANCE STORES	\$4,074	\$59,225,234	\$77,415,479	\$18,190,245	29	262,425
BLDG MATERIALS, GARDEN EQUIP. & SUPPLY STORES	\$3,437	\$49,964,439	\$60,498,528	\$11,235,544	16	154,587
BLDG MATERIAL & SUPPLIES DEALERS	\$3,164	\$45,992,147	\$60,498,528	\$14,506,381	14	151,246
LAWN & GARDEN EQUIP & SUPPLY STORES	\$273	\$3,972,292	\$701,455	(\$3,270,837)	2	3,340
FOOD & BEVERAGE STORES	\$11,869	\$172,532,153	\$133,407,546	(\$39,124,607)	34	224,916
GROCERY STORES	\$10,127	\$147,198,827	\$107,788,034	(\$39,410,793)	17	195,978
SPECIALTY FOOD STORES	\$597	\$8,671,229	\$4,598,856	(\$4,072,373)	6	9,107
BEER, WINE & LIQUOR STORES	\$1,146	\$16,662,097	\$21,020,656	\$4,358,559	11	19,831
HEALTH & PERSONAL CARE STORES	\$3,518	\$51,140,928	\$67,529,061	\$16,388,133	33	175,400
CLOTHING & CLOTHING ACCESSORIES STORES	\$3,941	\$57,291,852	\$206,147,252	\$148,855,400	132	680,764
CLOTHING STORES	\$2,826	\$41,080,045	\$168,970,261	\$127,890,216	92	614,437
SHOE STORES	\$453	\$6,580,102	\$14,880,478	\$8,300,376	20	45,092
JEWELRY, LUGGAGE & LEATHER GOODS STORES	\$663	\$9,631,705	\$22,296,513	\$12,664,808	20	21,235
SPORTING GOODS, HOBBY, BOOK & MUSIC STORES	\$2,179	\$31,674,969	\$49,861,987	\$18,187,018	33	219,845
SPORTING GOODS/HOBBY/MUSICAL INSTR STORES	\$1,897	\$27,568,374	\$48,189,376	\$20,621,002	31	214,175
BOOK, PERIODICAL & MUSIC STORES	\$283	\$4,106,595	\$1,672,611	(\$2,433,984)	2	5,670
GENERAL MERCHANDISE STORES	\$7,926	\$115,216,811	\$285,756,744	\$170,539,933	13	646,319
DEPARTMENT STORES EXCLUDING LEASED DEPTS.	\$5,932	\$86,229,293	\$226,291,555	\$140,062,262	7	448,102
OTHER GENERAL MERCHANDISE STORES	\$1,994	\$28,987,518	\$59,465,189	\$30,477,671	6	198,217
MISCELLANEOUS STORE RETAILERS	\$2,584	\$37,558,205	\$49,196,192	\$11,637,987	58	208,393
FLORISTS	\$166	\$2,414,682	\$1,150,460	(\$1,264,222)	8	3,835

Note: Shaded rows indicate merchandise lines where Natick is underserved, or where sales leakage could warrant new or expanded stores.

03 HISTORY & EXISTING CONDITIONS

	DEMAND/HH FOR CITY	DEMAND	SALES	(UNDER)/OVER	STORE COUNT	EST. SF OF RETAIL
OFFICE SUPPLIES, STATIONERY & GIFT STORES	\$747	\$10,855,395	\$13,820,010	\$2,964,615	15	62,818
EST. RETAIL DEMAND & SALES						
USED MERCHANDISE STORES	\$155	\$2,257,293	\$2,207,060	(\$50,233)	7	8,329
OTHER MISCELLANEOUS STORE RETAILERS	\$1,516	\$22,030,835	\$32,018,662	\$9,987,827	28	133,411
FOOD SERVICES & DRINKING PLACES						
SPECIAL FOOD SERVICES	\$249	\$3,618,072	\$1,295,592	(\$2,322,480)	4	4,049
DRINKING PLACES - ALCOHOLIC BEVERAGES	\$351	\$5,101,312	\$3,578,571	(\$1,522,741)	2	8,946
RESTAURANTS AND OTHER EATING	\$6,014	\$87,415,509	\$95,938,894	\$8,523,385	107	174,434

Source: US Census, ESRI, Dun & Bradstreet, ULI and RKG Associates, Inc. (2017). Note: Shaded rows indicate merchandise lines where Natick is underserved, or where sales leakage could warrant new or expanded stores.

A review of retail properties for lease in The Triangle indicates nearly 96,000 square feet of space available (Table 3.16). Nearly all asking lease rates were advertised as negotiable. Despite the destination dominance of The Triangle for retail activity, some vacant storefronts remain, which is not atypical of any market.

Although a limited sample of offerings, the available 18,800 square feet of retail in Framingham represents an eight-year supply from the previously estimated annual demand over the 2015 to 2025 period, around 2,250 square feet/year. For Natick, the available 77,200 square feet accounts for an approximate 28-year supply from the estimated annual demand of 2,740 square feet.

As noted, retail in The Triangle is a destination draw and the opportunity for additional development likely exceeds this numeric analysis. In any event, the addition of residential and office uses in The

RETAIL MARKET FOR LEASE	TOTAL SF	AVAILABLE SF	AVAILABLE %	ASK \$/SF
FRAMINGHAM				
271 WORCESTER RD	10,000	3,000	30.0%	\$ 27.00
231 WORCESTER RD	2,567	2,576	100.4%	NEG
150 WORCESTER RD	24,400	3,000	12.3%	NEG
140 WORCESTER RD	5,274	2,976	56.4%	NEG
655 COCHITUATE RD	7,200	7,200	100.0%	NEG
SUBTOTAL	49,441	18,752	37.9%	NA
NATICK				
321 SPEEN ST	3,775	3,775	100.0%	NEG
1274 - 1298 WORCESTER ST	333,000	65,000	19.5%	\$ 21.50
1398 WORCESTER ST	8,425	8,425	100.0%	NEG
SUBTOTAL	345,200	77,200	22.4%	NA
TOTAL	394,641	95,952	24.3%	NA

Source: LoopNet Services and RKG Associates, Inc. (2017)

Triangle, as well as in the two communities, would result in an increase in consumer spending demand which could support existing stores/venues as well as serve to attract new ones.

OFFICE & INDUSTRIAL INDICATORS

The Triangle is fortunate to have a healthy mix of large corporate office users and smaller niche office users. The Triangle is anchored by corporate campuses for The TJX Companies, MathWorks, Mediatech, Ameresco and a major distribution center for FedEx. Today, the Framingham side of The Triangle supports most of the office users. Buildings are mostly located in the area around the intersection of Speen Street and Old Connecticut Path.

The Triangle has about 3.2 million square feet of office space within its boundaries. This accounts for about 32 percent of the rentable built space in the area. The MathWorks Lakeside campus that is currently under construction on the Natick side of The Triangle is not reflected in these figures. That campus is expected to build out around 450,000 square feet of office space and bring in 1,600 employees. Figure 3.47 highlights the location of office and medical office users (indicated with blue and red dots, respectively).

TABLE 3.17: OFFICE MARKET TRENDS FOR FRAMINGHAM & NATICK				
OFFICE MARKET METRICS	3RD QT 2013	3RD QT 2014	3RD QT 2015	3RD QT 2016
FRAMINGHAM - NATICK				
TOTAL SF	7,400,007	7,418,417	7,233,839	7,247,673
VACANCY RATE	8.5%	16.4%	11.6%	12.9%
ASK \$/SF	\$ 20.31	\$ 21.41	\$ 21.78	\$ 23.84
ABSORPTION SF	(119,096)	11,264	29,511	25,512
METROWEST				
TOTAL SF	52,793,574	54,083,716	55,919,509	55,953,648
VACANCY RATE	15.1%	16.6%	14.8%	15.9%
ASK \$/SF	\$ 21.06	\$ 22.52	\$ 23.50	\$ 24.19
ABSORPTION SF	(71,313)	49,731	167,786	(177,018)
ALL SUBURBAN				
TOTAL SF	111,522,273	113,074,907	116,336,681	119,042,589
VACANCY RATE	16.3%	17.0%	16.4%	17.4%
ASK \$/SF	\$ 19.59	\$ 21.25	\$ 21.48	\$ 22.24
ABSORPTION SF	(82,830)	548,844	(87,036)	70,603

Over the last four years there was a marginal decline of 2 percent in the office inventory for the Framingham-Natick combined market area. This is compared to a 6 percent increase in the MetroWest region (which includes Framingham-Natick) and an overall increase of 6.7 percent throughout the larger Suburban Boston market. Since 2014, the overall office vacancy rate in the Framingham-Natick market has been declining, with rates hitting a low in 2017 of 9.3 percent.²² This is lower than that of the larger MetroWest market. Conversely, the asking lease rates for the three market areas are similar, low to mid \$20's per square foot, although the greatest percent increase was realized in the Framingham-Natick market at more than 17 percent (Table 3.17).

Source: CB Richard Ellis and RKG Associates, Inc. (2017)

22 Worcester Business Journal, June 22, 2017. "Office Vacancy Rates Strong in Framingham, Natick."

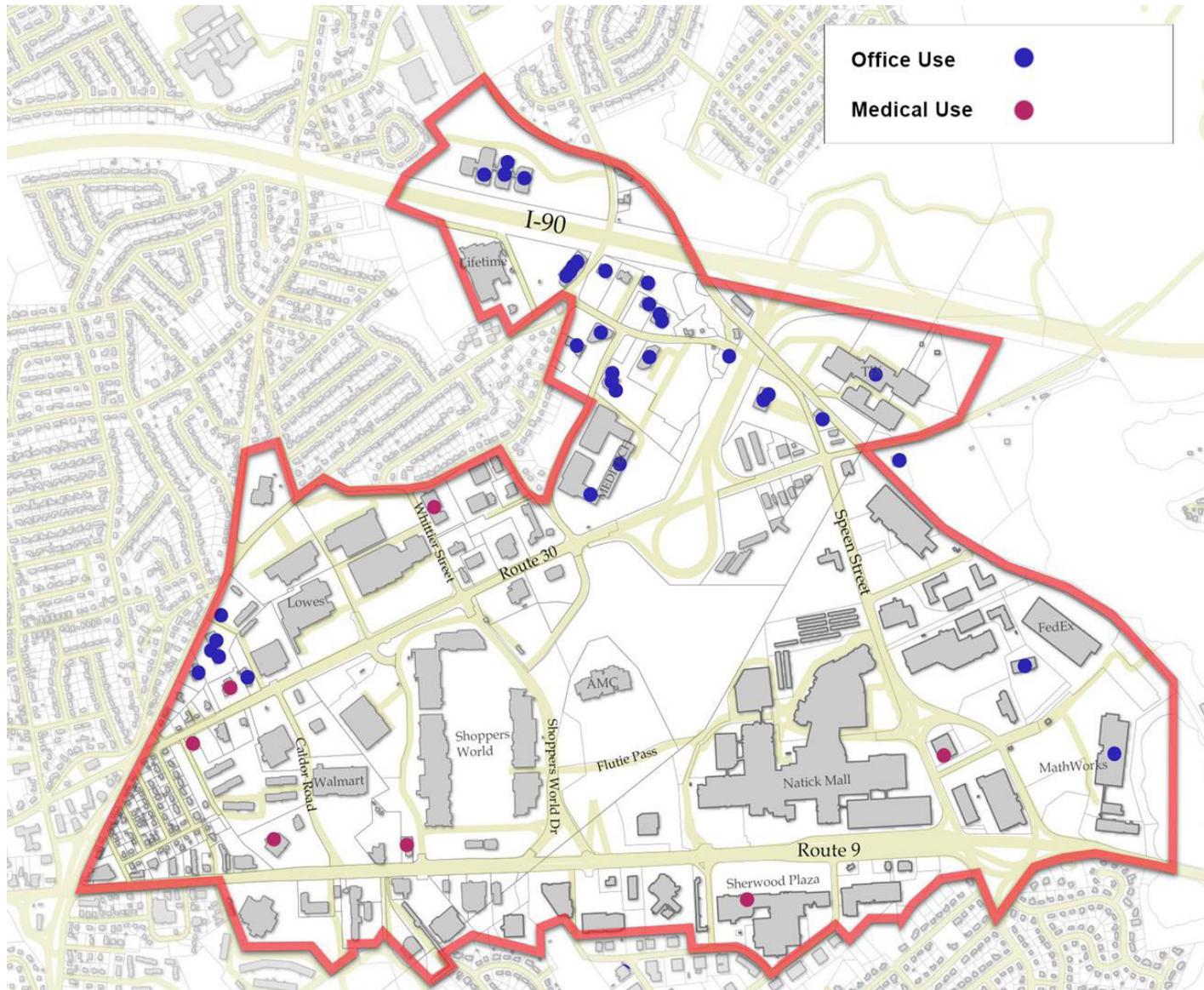


Figure 3.47: Offices and medical offices in The Triangle.

A review of office space for lease from LoopNet listings within The Triangle²³ indicates there is 220,000 square feet available (Table 3.18). Space ranges from as little as 170 square feet to as much as 150,000 square feet. Most of the asking lease rates were presented as negotiable; however, where an actual rate was offered, the average for those properties was around \$22.55/square foot. This is in line with CB Richard Ellis (CBRE) figures for The Triangle for the third quarter (QT) of 2016.

TABLE 3.18: OFFICE SPACE FOR LEASE IN THE TRIANGLE				
OFFICE MARKET FOR LEASE	TOTAL SF	AVAILABLE SF	AVAILABLE %	ASK \$/SF
FRAMINGHAM				
161 WORCESTER RD	120,000	6,537	5.4%	\$ 25.00
233 COCHITUATE RD	8,100	1,600	19.8%	\$ 14.00
260 COCHITUATE RD	26,000	6,534	25.1%	NEG
945 CONCORD ST	17,900	5,000	27.9%	NEG
205 NEWBURY ST	56,865	6,500	11.4%	\$ 22.50
10 SPEEN ST	32,704	170	0.5%	\$ 63.33
1 SPEEN ST	65,293	15,326	23.5%	NEG
20 SPEEN ST	32,709	2,590	7.9%	\$ 25.00
40 SPEEN ST	32,673	5,064	15.5%	\$ 23.00
3 SPEEN ST	74,600	17,435	23.4%	NEG
150 SPEEN ST	10,942	1,741	15.9%	\$ 16.75
550 COCHITUATE RD	450,000	2,000	0.4%	NEG
SUBTOTAL	927,786	70,497	7.6%	NA
NATICK				
1085 WORCESTER RD	5,536	1,510	27.3%	\$ 17.75
TOTAL	933,322	72,007	7.7%	NA

Similar to the office market, there has been a decline in industrial space in the Framingham-Natick market, but the loss was most pronounced between 2013 and 2016, with a decline of about 5 percent. This compares to a 2 percent increase in the MetroWest area and a 0.1 percent decline throughout suburban Boston. The vacancy rate for industrial space has been declining for all three geographies and is less than 10 percent for Framingham-Natick. The MetroWest region is still above 10 percent vacancy. Typical industrial lease rates have risen and are just above \$7/square foot in the Framingham-Natick area. Lease rates are a little higher in the larger MetroWest market and a little lower in the suburban Boston market.

Source : LoopNet Services and RKG Associates, Inc. (2017)

²³ This includes those properties bounded by Concord Street, Speen Street, and along Route 9.

While there is very little industrial space in The Triangle, it is worth noting there is a small industrial park in Natick just south of Sherwood Plaza along Mercer Road, and Strathmore Road.

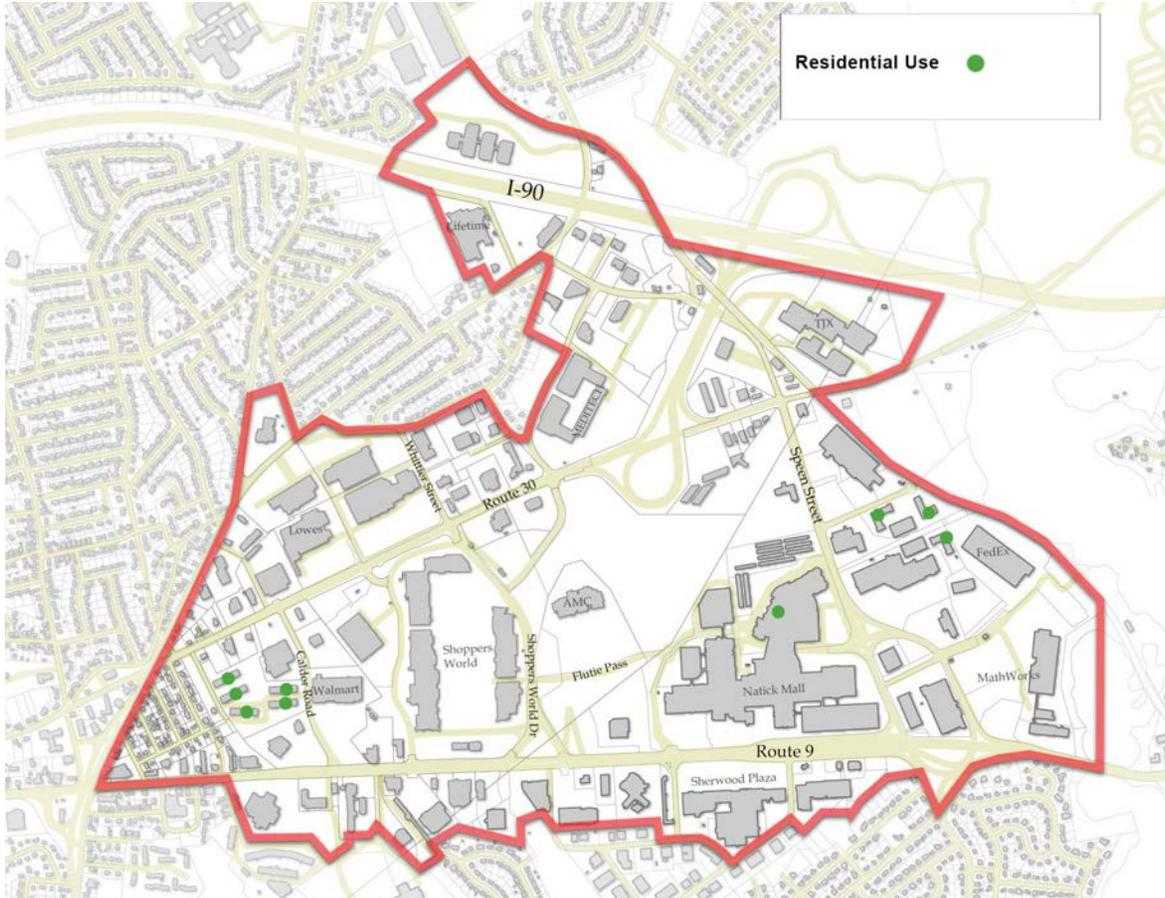
While limited in size and in its ability to expand, this industrial park has become a home for small start-up companies looking for space outside the Boston core where prices and competition for space are driving businesses outward. The continued success and possible future expansion, of this industrial park add to The Triangle's daytime population draw supporting local restaurants and businesses nearby. Table 3.19 summarizes industrial market trends in Framingham and Natick.

TABLE 3.19: INDUSTRIAL MARKET TRENDS FOR FRAMINGHAM AND NATICK				
INDUSTRIAL MARKET METRICS	3RD QT 2013	3RD QT 2014	3RD QT 2015	3RD QT 2016
FRAMINGHAM-NATICK				
TOTAL SF	3,727,169	3,327,169	3,530,143	3,542,858
VACANCY RATE	12.6%	11.7%	11.5%	8.6%
ASK \$/SF	\$ 6.32	\$ 7.17	\$ 6.92	\$ 7.01
ABSORPTION SF	(32,797)	(5,789)	9,499	(25,276)
METROWEST				
TOTAL SF	28,521,321	28,175,063	29,044,907	29,100,417
VACANCY RATE	17.9%	15.1%	13.4%	10.5%
ASK \$/SF	\$ 6.11	\$ 6.41	\$ 6.91	\$ 7.55
ABSORPTION SF	131,410	201,260	57,291	262,302
ALL SUBURBAN				
TOTAL SF	144,137,128	143,191,088	142,855,400	143,934,898
VACANCY RATE	16.1%	14.6%	10.3%	8.3%
ASK \$/SF	\$ 6.56	\$6.83	\$ 6.80	\$ 6.82
ABSORPTION SF	685,204	751,425	785,448	938,744

Source: CB Richard Ellis and RKG Associates, Inc. (2017)

RESIDENTIAL INDICATORS

While the large majority of land in The Triangle is comprised of non-residential uses, the number of multi-family residential units has grown quite a bit over the last ten years with the addition of the Nouvelle condominiums at the Natick Mall and the Avalon (Natick) and Cloverleaf Apartment rental developments. From a multi-family housing development perspective, Natick has about 3.5 times the amount of rentable space as Framingham with more on the way as part of the planned National Development project at the old Sam’s Club site (1225 Worcester Street). Currently, 830,000 square feet of rentable space (about 8 percent of the total) in The Triangle is occupied by multi-family residential uses.



The Framingham side of The Triangle includes the Lord Chesterfield Apartments, 250 apartments spread across five two-story buildings built in the early 1970s. A mixed-use project that included a multi-family component was proposed in Framingham at 19 Flutie Pass, which is still vacant. Framingham’s western side of The Triangle also includes some single-family neighborhoods that make up about 1 percent of total built square footage. Figure 3.48 identifies multi-family residential use within The Triangle.

Figure 3.48: Multi-family residential use map of The Triangle.

TENURE

Within Framingham there is a close balance between owner and renter-occupied housing, as 52 percent of the housing stock is owner-occupied and 46 percent is renter-occupied. Additionally, 3 percent of the housing stock is vacant. The expected growth in total units between 2016 and 2021 is 1 percent, with owner-occupied units growing also by 1 percent (Fig. 3.49).

Natick has significantly more owner-occupied housing than rental housing. Based on data from Alteryx, about 68 percent of the housing stock is owner-occupied and 30 percent is renter-occupied. Additionally, two percent of the housing stock is vacant. The expected growth in total units between 2016 and 2021 is three percent, with owner-occupied units also growing by three percent.²⁴ These figures are for all of Framingham and Natick.

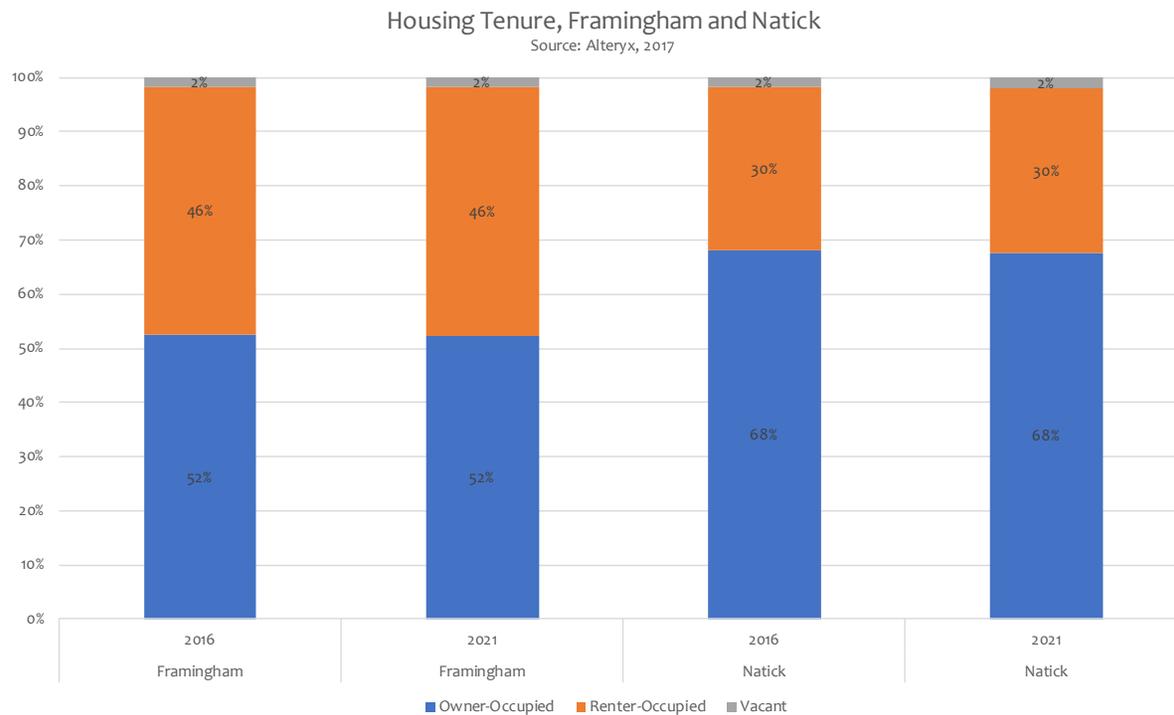


Figure 3.49: Framingham and Natick Housing Tenure (includes all of Framingham and Natick).

UNITS IN STRUCTURE

Across all of Framingham, there is a diverse array of multi-family units. Single-family homes make up 51 percent of the housing stock and multi-family homes account for 49 percent. About 20 percent of the multi-family housing units are in structures with greater than 20 units. The density of housing units in a structure is much greater in Framingham than Natick; nearly 31 percent of housing units are in developments with more than 5 units (Fig. 3.50). Based on Alteryx projections, structures with 10 to 19 units are expected to increase by 3 percent by 2021.

Nearly 63 percent of the housing stock in Natick is comprised of single-family homes. Between 2016 and 2021, the number of single-family homes is expected to increase by 3 percent (the percentage of total units will not change). While multi-family housing plays a role within the community, developments with more than 5 units only account for 19 percent of the total housing stock.²⁵

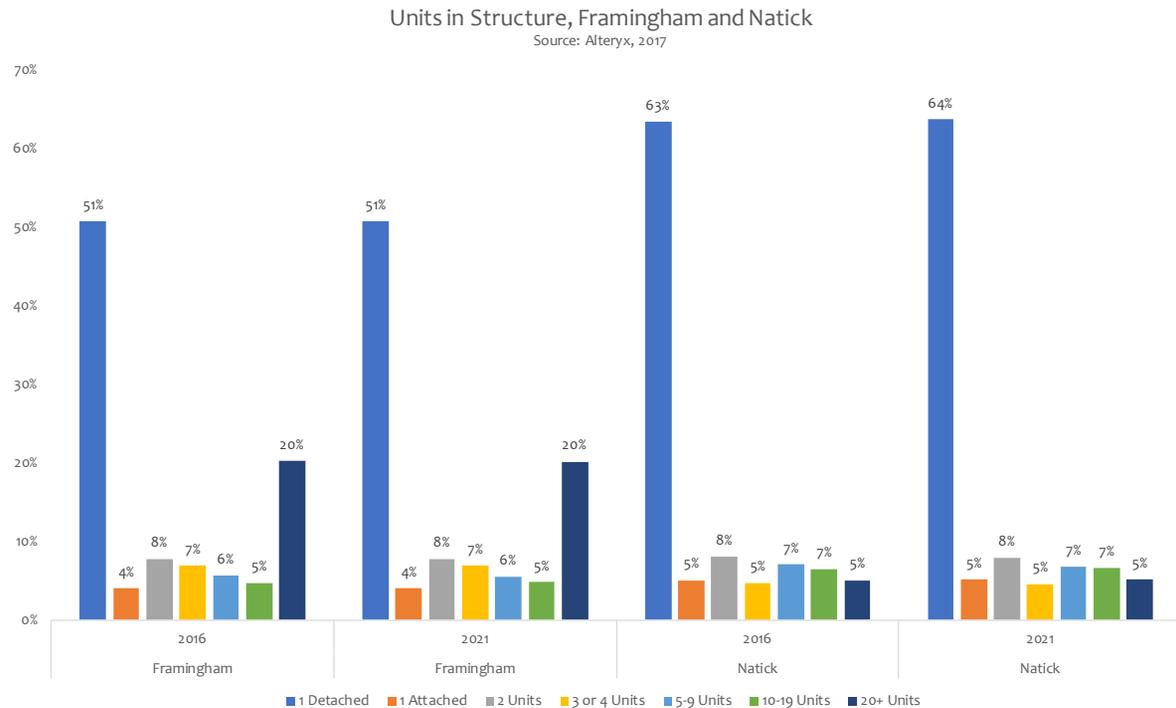


Figure 3.50: Framingham and Natick Units in Structure.

HOUSING VALUE

SINGLE FAMILY HOMES

Data from Warren Information Services indicates that over the 2005 through April 2017 time-period, the median sales value for a Framingham single-family home decreased from \$487,680 to \$410,000, or 16 percent²⁶. Over the same time, single-family sales in Natick increased 9 percent, or by about \$40,000. While the sales values have recovered from the lows realized during the Great Recession, they have yet to reach the peak that occurred just before the Recession (Figure 3.51).

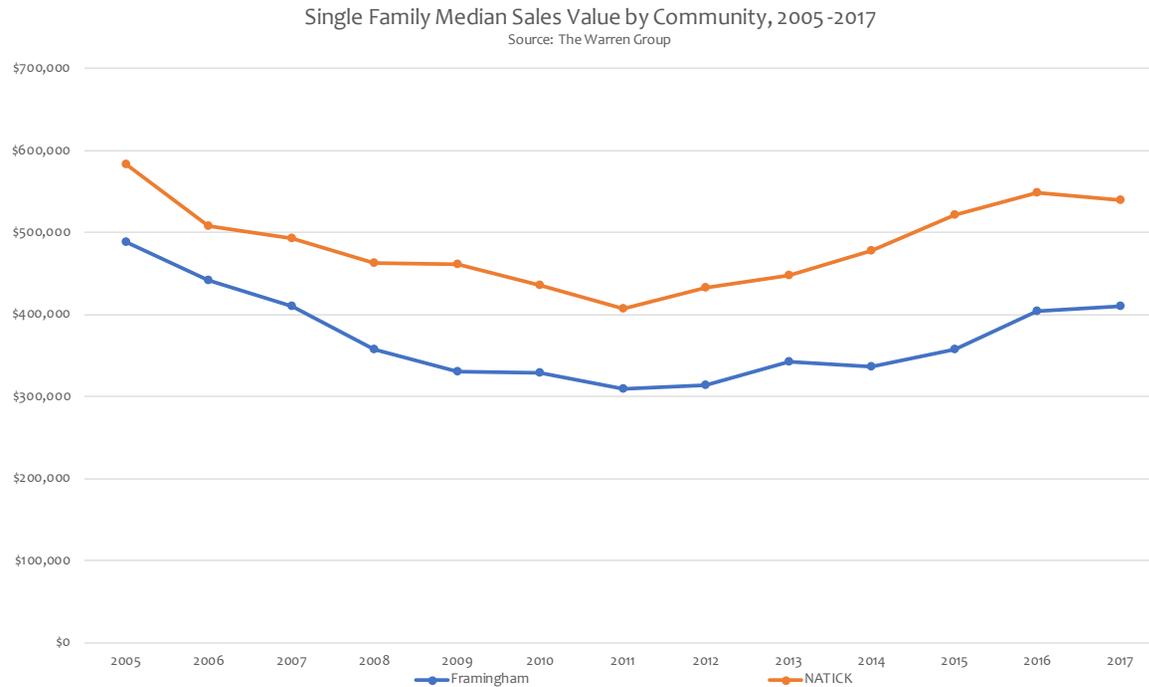


Figure 3.51: Single Family Median Sales Value by Community, 2005-2017.

26 All median sales values have been inflated to 2017 dollars.

CONDOMINIUMS

Between 2005 and 2017, the median value of condominium sales in Framingham declined 30 percent, falling from \$262,890 to \$185,000. The median sales value in Natick decreased 1 percent, falling from \$304,419 in 2005 to \$300,000 in 2017 (Fig. 3.52)²⁷.

Over the 2005 to 2016 time-period, the average number of residential sales in Framingham (single-family and condominium) was 734 units annually. This compares to 524 units annually in Natick. The number of units sold in both communities declined during the Great Recession and current activity (2016) remains below the 2005 activity levels.

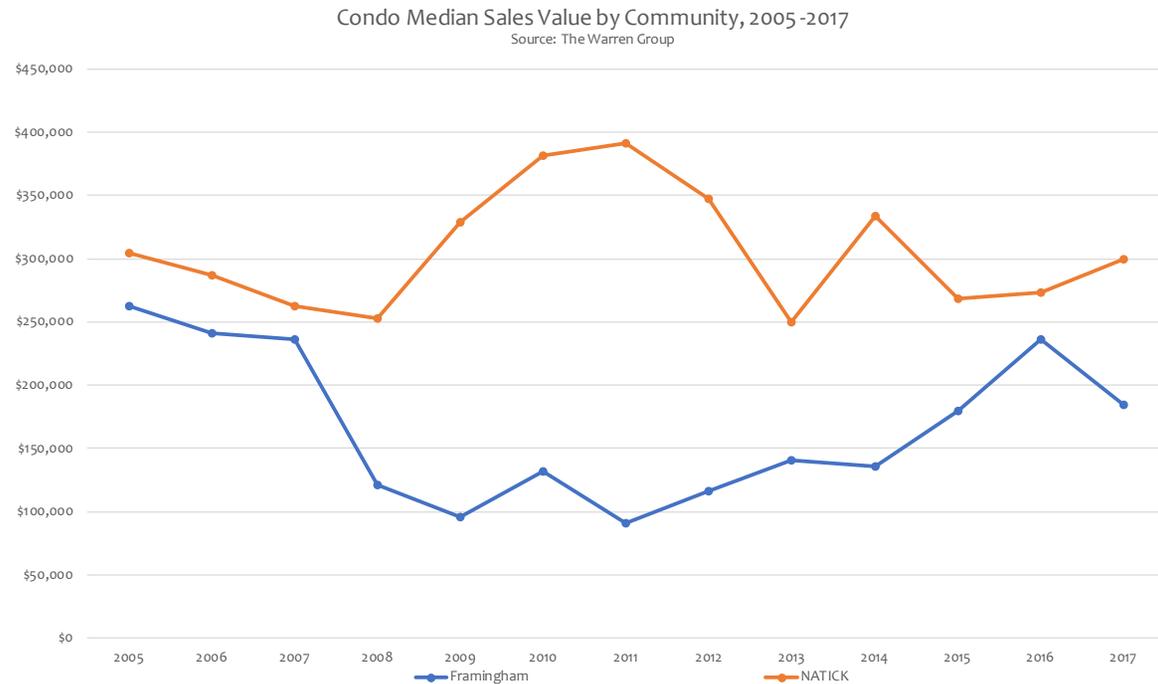


Figure 3.52: Condo Median Sales by Community.

²⁷ All median sales values have been inflated to 2017 dollars.

CONTRACT RENT

Figure 3.53 below presents contract rents for Natick and Framingham between 2000 and 2016. In Framingham, the greatest increase in rents occurred for units with rents greater than \$1,000 per month, a 169 percent increase.²⁸ The sharp increase indicates that rents have risen considerably overtime in Framingham.

In Natick, the greatest increase in rents also occurred for units with rents greater than \$1,000 per month, with a 352 percent increase. This increase is a drastic change, but is understandable given the popularity of Natick and its associated demand for housing, pushing rents upwards.

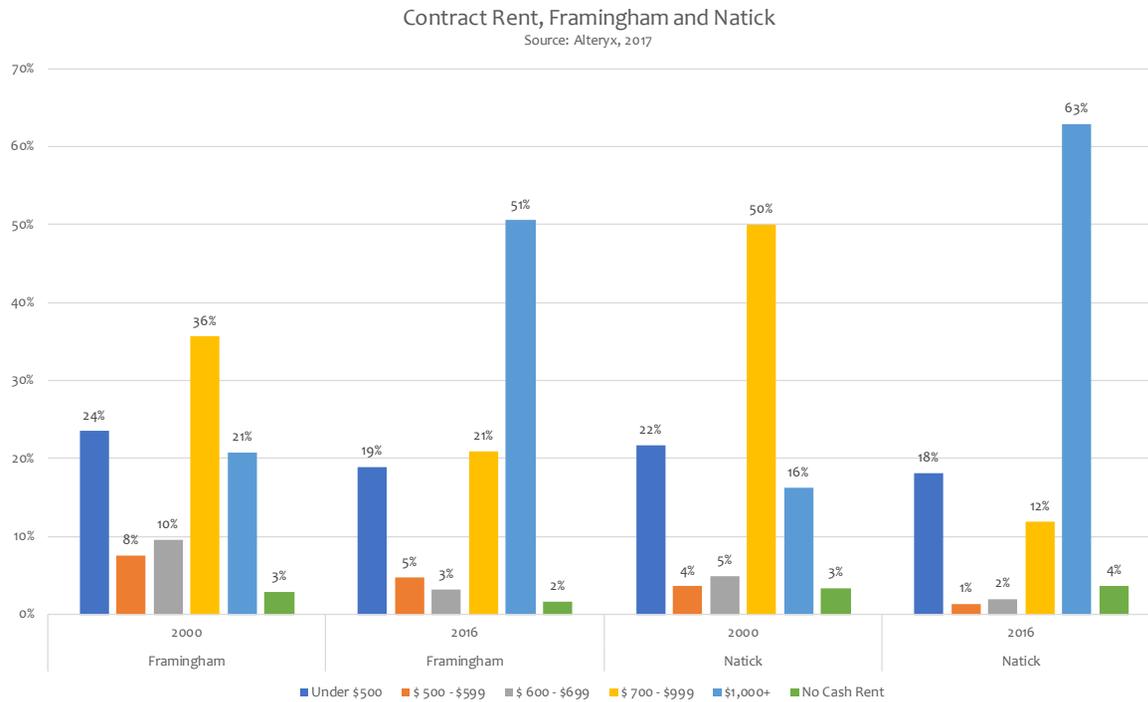


Figure 3.53: Contract Rent.

FORECLOSURES

As the Great Recession began to take hold in 2008, a general trend nationwide was that foreclosure proceedings and actions began to rise. The two metrics that indicate significant foreclosure activity are the foreclosure ratio and the total number of foreclosures. The foreclosure ratio is the ratio between the actual number of foreclosure petitions to the number of actual foreclosure sales. A high foreclosure ratio indicates that a foreclosure was acted upon and the lender has taken possession.

Based on data provided by the Warren Group, as the local housing market improved in Natick and Framingham, foreclosure activity continued to decline (Fig. 3.54). When the Great Recession took full effect in 2009, the foreclosure ratio in Framingham and Natick was 35 percent and 15 percent, respectively. Over the last five years, the foreclosure ratio and number of foreclosures has fallen significantly. In 2016, Framingham and Natick were 10 percent and 4 percent, respectively.²⁹

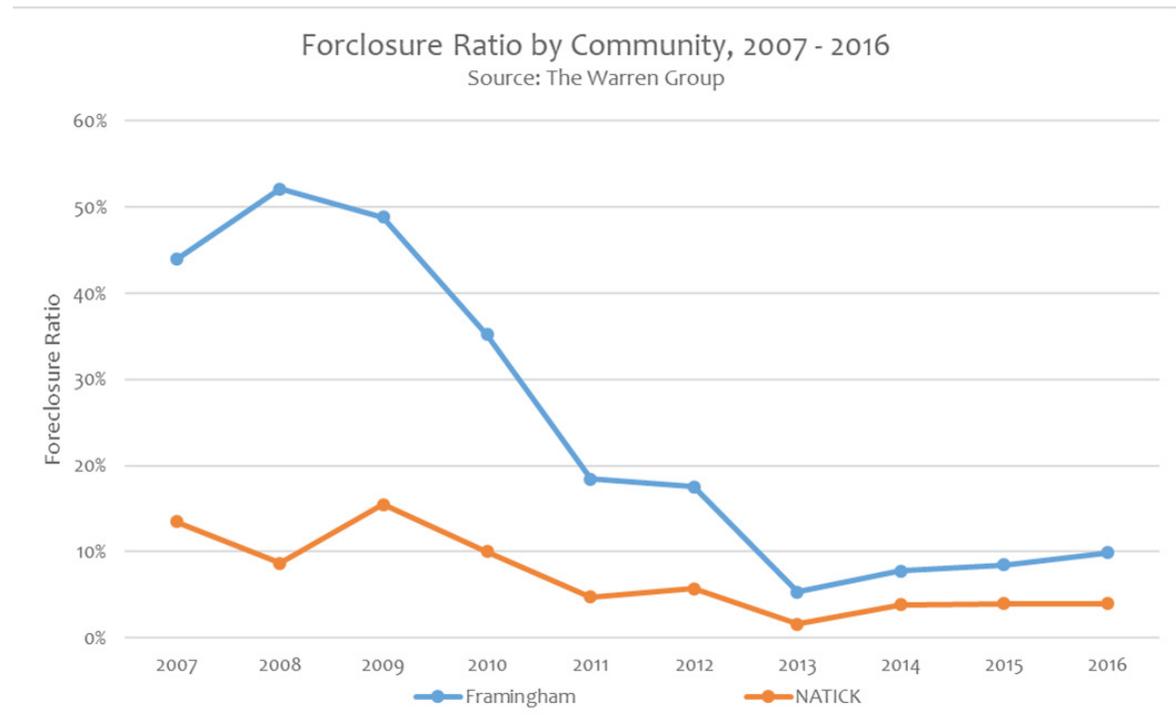


Figure 3.54: Foreclosure Ratio, 2007-2016.

29 The Warren Group, 2017.

BUILDING PERMITS

Building permit data tells the story of general development activity in a community. This data provides the average dollar value of the improvements (expressed as an estimate of construction costs). Significant building costs can indicate either large renovations or new construction. According to available building permit data from the Massachusetts State Data Center, Framingham and Natick permitted 693 and 1,100 respective units of housing between 2006 and 2015. The majority of units permitted were multi-family buildings of five units or greater. Within Natick, there were 708 units permitted in developments of five units or greater between 2006 and 2015, while in Framingham 322 units were permitted in these types of multi-family buildings.³⁰

PROJECTED HOUSING DEMAND

This section estimates annual demand for housing in Framingham and Natick over the next five years based on household forecasts obtained from Alteryx and key characteristics from U.S. Census data. The annual demand is allocated to owners and renters by age, income and pricing. Understanding current and future housing demand is essential to creating a policy that addresses documented needs. The housing demand by tenure analysis provides insights into demographic cohorts that are experiencing changes in demand. This information is essential because it can help to inform decisions about how best to address housing supply, especially in Framingham and Natick where there is a rapid economic transformation and market momentum that is changing the housing landscape. As part of the analysis, Framingham and Natick were aggregated together to determine the total demand generated from the joint economic area.

Aggregate households in Framingham and Natick are forecast to increase to 42,409 in 2021, indicating a net gain of 778 units from 2016. The housing stock is expected to be composed of 59 percent owner-occupied units and 41 percent renter units.

30 *Massachusetts Data Center, 2017*

DEMAND FOR OWNERSHIP UNITS

Table 3.20 shows the estimated change in demand for year-round ownership units in Framingham and Natick between 2016 and 2021. The analysis takes into consideration age (head of household), income and affordable home value.

DEMAND BY INCOME LEVEL

Nearly all the positive demand for year-round ownership units in the combined Framingham and Natick area is derived from households with incomes exceeding \$100,000 (23 percent increase since 2016, or an aggregate increase of 2,303 households). This increased demand holds true across all age groups in the income bracket of over \$100,000, with the highest concentration in the greater than 65 age group.

Conversely, demand for year-round ownership units in Framingham and Natick is projected to decrease at the lower end of the income spectrum. Significant losses are found in the income brackets under \$100,000 per year, especially in the income bracket under \$40,000. Between 2016 and 2021, demand for year-round ownership units is projected to decrease 16 percent for households with incomes between \$75,000 and \$100,000, or a total loss of 504 households. Demand will decrease 12 percent for households with incomes under \$40,000, or a total loss of 723 households.³¹

TABLE 3.20: AGGREGATED FRAMINGHAM & NATICK ANNUAL HOUSEHOLD DEMAND FOR HOUSING 2016-2021					
HOUSEHOLD PROJ.	OWNER HOUSEHOLDS		RENTER HOUSEHOLDS		TOTAL HH'S
	# OF HH'S	OWNER-OCC. %	# OF HH'S	RENTER-OCC. %	
2016	24,482	59%	17,149	41%	41,631
2021	24,885	59%	17,524	41%	42,409
FIVE YEAR GROWTH IN HH	403	-	375	-	778
AVG. ANNUAL CHANGE	81	-	75	-	156
FIVE YEAR CHANGE, %	1.65%	-	2.19%	-	1.87%

Source: Alteryx, U.S. Census, and RKG Associates, 2017

DEMAND BY AGE COHORT

The estimated changes in demand for year-round ownership units by age also yield interesting insights, as shown in Table 3.21. The greatest increase in demand is expected to come from households where the head of household is 65 years or older (12 percent increase from 2016, or a total increase of 692 households). The growth of the senior population may have potential implications on municipal and regional services and priorities. Following the 65 years and over age cohort are households where the head of household is age 55 to 64 (3 percent increase in demand since 2016 or a total increase of 141 households). In both these age cohorts, households with incomes greater than \$100,000 make up the largest increase in demand for ownership units.

On the other end of the spectrum, it is estimated that a decrease in demand for year-round ownership units will come from households where the head of the household is between 45 and 54 years (total loss of 325 households, or 6 percent) and from householders under 35 years of age (total loss of 134 households, or 3 percent).³²

TABLE 3.21 - AGGREGATED FRAMINGHAM AND NATICK ANNUAL OWNER DEMAND BY AGE, INCOME, AND VALUE (2016-2021)

DIFF. 2016 AND 2021	AGE GROUPS					TOTAL	% CHANGE FROM 2016	HOME VALUES BASED ON INCOME
	UNDER 35	35 - 44	45 - 54	55 - 64	GREATER THAN 65			
LESS THAN \$40,000	-154	-125	-207	-161	-77	-723	-12%	UP TO \$190,000
>\$40,000 AND <=\$60,000	-133	-66	-119	-84	-8	-389	-13%	\$150,000-\$285,000
>\$60,000 AND <= \$75,000	-80	-64	-76	-79	15	-284	-14%	\$225,000 - \$360,000
>\$75,000 AND <= \$100,000	-102	-141	-185	-142	67	-504	-16%	\$285,000 - \$475,000
GREATER THAN \$100,000	315	424	261	607	695	2,303	23%	GREATER THAN \$475,000
AGGREGATE TOTAL	-134	29	-325	141	692	403	2%	
% CHANGE FROM 2016	-3%	1%	-6%	3%	12%			

Source: Alteryx, and RKG Associates, Inc. 2017

32 Alteryx and RKG Associates, Inc. 2017

DEMAND FOR RENTAL UNITS

DEMAND BY INCOME LEVEL

Table 3.22 shows the estimated change in renter demand for year-round rental units in Framingham and Natick between 2016 and 2021. Once again, the most apparent change in demand is at the highest income threshold of over \$100,000 per year (24 percent increase since 2016, or a total increase of 1,621 renter households at the income level). For this income bracket, the increased renter demand holds true across all age groups and the highest concentration is in the age cohort of over 65 years.

All other income cohorts are projected to experience a decrease in demand. A large decrease in demand occurs in the income bracket of \$75,000 to \$100,000, with a 15 percent decrease or 315 households. Significant losses are expected in the income bracket containing households with annual incomes less than \$40,000: a loss of 484 households is projected between 2016 and 2021.³³ Based on these projections, demand for apartments will come from the higher end of the rental market and could be an indicator to developers to continue building luxury product.

DIFF. 2016 AND 2021	AGE GROUPS							
INCOME RANGE	UNDER 35	35 - 44	45 - 54	55 - 64	GREATER THAN 65	TOTAL	% CHANGE FROM 2016	HOME VALUES BASED ON INCOME
LESS THAN \$40,000	-117	-79	-136	-103	-48	-484	-10%	\$500 TO \$1,000
>\$40,000 AND < = \$60,000	-82	-41	-82	-56	-2	-264	-12%	\$1,000 TO \$1,500
>\$60,000 AND < = \$75,000	-57	-37	-53	-47	11	-183	-13%	\$1,500 TO \$1,875
>\$75,000 AND < = \$100,000	-63	-93	-112	-93	45	-315	-15%	\$1,875 TO \$2,500
GREATER THAN \$100,000	238	309	194	404	477	1,621	24%	MORE THAN \$2,500
AGGREGATE TOTAL	-81	58	-190	105	483	375	2%	
% CHANGE FROM 2016	-3%	2%	-5%	3%	12%			

Source: Alteryx, and RKG Associates, Inc. 2017

DEMAND BY AGE COHORT

Looking further at the projections by age group, it is estimated that the greatest increase in demand for year-round rental units will come from seniors age 65 and older (12 percent increase), again with the greatest increase projected to take place at the \$100,000 or more income level. Demand for rental units will increase 3 percent for households whose head of household is between the ages of 55 and 64, particularly households with incomes greater than \$100,000. This demand increase is similar to that for ownership units.

As is the case for the change in demand for year-round ownership units in Framingham and Natick, a decrease in demand for rental units is projected to come from households where the head of the household is between 45 and 54 years (5 percent decrease, or total loss of 190 households), as well as those households whose householder is under the age of 35 (three percent decrease, or total loss of 81 households). Demand from householders age 35 to 44 is anticipated to increase by two percent, which could be the result of increasing employment in professional service sectors, or price increases for ownership units outpacing what householders can afford to pay.

Future demand for mixed-use and multifamily development in the Golden Triangle exists. It is likely that the demand for units may first be filled by residents over the age of 55, and then to a lesser degree by younger professionals in their early earning years. A positive outcome of the shifts in living preferences is the types of places and living arrangements that are attractive to younger professionals are also attractive to older residents too. By building exciting, amenity-rich, active, mixed-use neighborhoods, both Towns have the opportunity to capitalize on the demand coming from older residents and also increase their capture rate of younger professionals who may be leaving Framingham and Natick for other locations.

SUMMARY ZONING AND MARKET ANALYSIS FINDINGS

The following findings will provide important guidance to the development of potential development scenarios:

- The zoning in The Triangle consists of eleven base zoning districts and four overlay districts which currently inform existing uses. Considerations regarding future development opportunities and trends may result in recommendations for zoning changes.
- Some municipalities surrounding The Triangle have high median household incomes which provides a robust consumer base for potential retail establishments.
- Large employers occupy a significant amount of existing office space in The Triangle. Consultation with existing users on potential future changes can help align uses to maximize community and economic returns.
- A projected increase in housing demand for both ownership and rental units by demographic groups with incomes above \$100,000 is a catalyst for expanding housing within The Triangle.

TRANSPORTATION & INFRASTRUCTURE

This section details the existing transportation, infrastructure and utilities, and brownfields areas in The Triangle. Existing traffic volume, geographical information system (GIS) data for existing utilities, pedestrian and bicycle facilities and Synchro³⁴ networks for some intersections were obtained from Framingham and Natick as well as private firms that are conducting or have recently conducted analysis in either community. The section also includes information on proposed public improvement projects.

TRANSPORTATION

Three major state numbered roadways run through The Triangle: Route 9, Route 30 and Route 126. Other major local roadways include Speen Street and Old Connecticut Path. The district is served by MetroWest Regional Transit Authority (MWRTA) buses as well as roadway, sidewalk, and limited bicycle facilities.

Route 9 is also known as Worcester Road in Framingham and Worcester Street in Natick and forms the southern boundary of the Study Area. Per the Massachusetts Department of Transportation (MassDOT) published road inventory data, Route 9 is classified as an urban principal arterial. It is oriented in the east-west direction and consists of two to three lanes in each direction. Left and/or right turning lanes are present at some intersections. Sidewalks are present on both sides of the Route 9.

Route 30, also known as Cochituate Road, is also classified as an urban principal arterial. It is oriented in the east-west direction and consists of two to three lanes in each direction. Left and/or right turning lanes are present at some intersections. Sidewalks are present on both sides of Route 30.

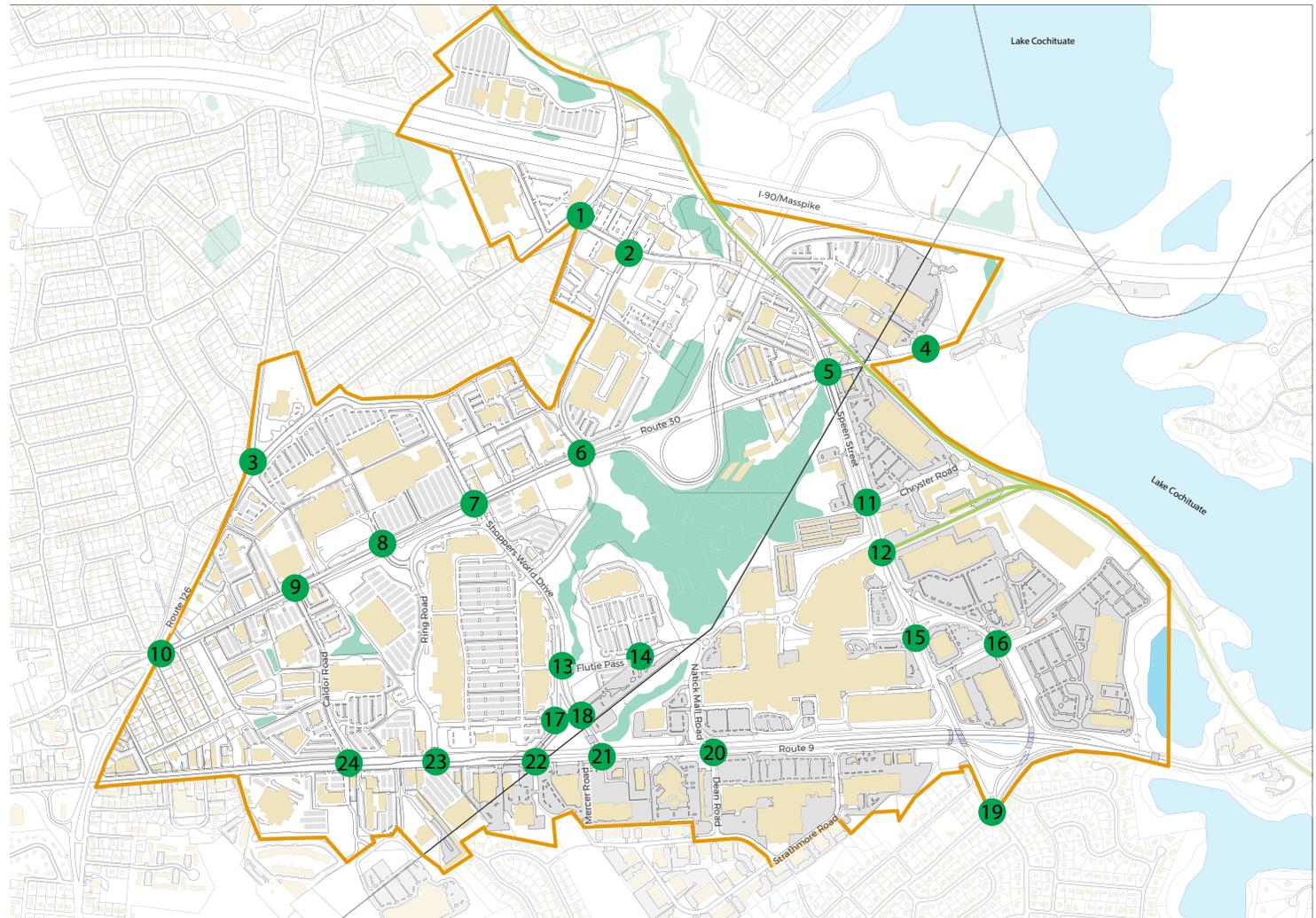
Speen Street forms the eastern boundary of the Study Area and is classified as an urban principal arterial. Speen Street is oriented in the north-south direction and varies between two to three lanes and consists of left and/or right turning lanes at some intersections.

Route 126, also known as Concord Street, is located to the north of the Study Area. It is classified as an urban minor arterial and is oriented in the north-south direction. It consists of one 12'-0" lane in each direction and approximately 6'-0" shoulders on both sides of the road. Turning lanes are present at some intersections. Sidewalks are present on both sides of the roadway.

The lack of connectivity throughout The Triangle, including pedestrian and bicycle facilities as well as east-west roads between Route 9 and Route 30, is a key concern for this Study and was mentioned repeatedly in comments on coUrbanize.

34 *Synchro software conducts traffic analysis to determine Levels of Service*

Old Connecticut Path, classified as an urban minor arterial, is located on the north side of The Triangle. It consists of a single lane in each direction with a minimum width of 12'-0". Sidewalks are located on both sides of the street.



Note: Although Google Maps shows a connection from Mercer Road north to Route 9, that connection does not exist. A plan for making that connection using the existing power line right-of-way would extend Mercer Road to intersection 22.

Figure 3.55: Golden Triangle intersections analyzed.

VEHICULAR TRAFFIC

WSP researched the existing transportation data available, including the existing vehicular traffic volumes and operations within The Triangle.

STUDY AREA INTERSECTIONS

Twenty four signalized intersections were selected for inclusion in the vehicular analysis of The Golden Triangle. The locations are identified below and illustrated in Figure 3.55.

1. Old Connecticut Path @ Speen Street/Office Drive
2. Speen Street @ Leggatt McCall Connector
3. Old Connecticut Path @ Concord Street (Route 126)
4. Cochituate Road @ East TJX Drive
5. Cochituate Road (Route 30) @ Speen Street
6. Cochituate Road (Route 30) @ Burr Street
7. Cochituate Road (Route 30) @ Whitier Street/Shoppers World Drive
8. Cochituate Road @ Shoppers World Way/Ring Road
9. Cochituate Road @ Caldor Road
10. Cochituate Road @ Concord Street/ (Route 126)
11. Speen Street SB @ Storage Driveway/Chrysler Road
12. Speen Street @ Nouvelle Way/Retail Driveway
13. Shoppers World Drive @ Flutie Pass /Shoppers World Driveway
14. Flutie Pass @ AMC Main Driveway/AMC South Parking Lot
15. Speen Street SB @ Speen Street NB/Natick Mall Road
16. Speen Street NB @Superior Drive/Prime Parkway
17. West Couplet @ Ring Road
18. East Couplet @ Ring Road/AMC South Parking Lot
19. Speen Street @ Hartford Street/Route 9 EB ON Ramp
20. Worcester Street (Route 9) at Dean Road/Natick Mall Road;
21. Route 9 @ Shoppers World Drive
22. Route 9 @ West Couplet /Bob's Discount Furniture Driveway
23. Route 9 @ Ring Road/Bed Bath and Beyond Driveway
24. Route 9 @ Caldor Road

EXISTING TRAFFIC VOLUMES

Turning movement counts at the Study Area intersections were obtained from the Natick 2030+ Master Plan and several Traffic Impact and Access Studies (TIASs) conducted for private developers in the area.

Several TIASs were obtained from Framingham and Natick and the consultants that performed the studies. The counts in these studies ranged from the year 2010 to 2016. Turning Movement Counts (TMC) and Automatic Traffic Recorder (ATR) volumes were included from the studies listed below:

- MathWorks Lakeside Campus Parking Garage Traffic Impact and Access Study; Natick, MA; (February, 2013)
- Lifetime Athletic Traffic Impact and Access Study; Framingham, MA; (February 2014)
- Sherwood Plaza South Phased Master Plan Redevelopment Traffic Impact and Access Study; Natick, MA; (April, 2014)
- Retenancing of the JC Penny Building as a Wegman's Grocery Store Traffic Impact & Access Evaluation; Natick, MA; (December, 2015)
- AMC South Parking Lot Redevelopment at Shoppers World; Framingham and Natick, MA; (June, 2016)
- TJX Expansion and Parking Garage Environmental Notification Form; Framingham, MA; (November, 2016)

Daily traffic volume data was only available for limited locations and is summarized in Table 3.23. Automatic Traffic Recorder (ATR) volumes are shown in the table.

Seventy-two-hour ATR counts were conducted at Old Connecticut Path, west of Speen Street in 2013 (Thursday through Saturday). The 2013 ATR counts indicate that on a typical weekday, approximately 8,900 vehicles per day (vpd) travel along Old Connecticut Path, west of Speen Street. Commuter peak hours represent approximately 8 to 10 percent of the daily traffic along Old Connecticut Path. The traffic volumes along Old Connecticut Path, west of Speen Street, are heavier in the eastbound direction in the mornings and heavier in the westbound during the evenings. On Saturdays, Old Connecticut Path west of Speen Street carries 6,200 daily vehicles, including 540 vehicles during the midday peak hour.

ATR counts were conducted for a period of 72 hours along the Route 9 westbound off-ramp to Speen Street, the Route 9 eastbound off-ramp to Speen Street and Speen Street northbound, south of the Route 9 eastbound off-ramp. On a typical weekday, the ADT at the Route 9 westbound off-ramps to Speen Street

TABLE 3.23: EXISTING TRAFFIC VOLUMES				
LOCATION	YEAR	WKDAY ADT (VPD ¹)	AM PEAK HOUR VOLUME (VPH ²)	PM PEAK HOUR VOLUME (VPH ²)
OLD CONNECTICUT PATH, WEST OF SPEEN STREET	2013	8,900	710	930
ROUTE 9 WB OFF-RAMP TO SPEEN STREET	2011	11,860	765	880
ROUTE 9 EB OFF-RAMP TO SPEEN STREET	2011	3,380	215	185
SPEEN STREET NB, SOUTH OF ROUTE 9 EB OFF-RAMP	2011	14,205	1,125	945

was 11,860 with heavier traffic volume during the PM peak. Similarly, the ADT on Route 9 eastbound off-ramp to Speen Street was 3,380 vehicles per day with heavier AM traffic volumes. The Speen Street northbound ADT volumes were approximately 14,200 vehicles per day with a heavier northbound volume in the AM peak.

¹ Average Daily Traffic (ADT) expressed in vehicles per day

² Peak hour traffic volume expressed in vehicles per hour

TMCs at each of the Study Area intersections were obtained from the previous TIAs assembled as part of the Natick 2030+ Master Plan or supplemental counts conducted by Vanasse Hangen Brustlin Inc. (VHB) for Framingham. TMC data ranged from the year 2010 to 2017; TMCs were conducted in different months of the year. To arrive at the 2017 baseline existing volumes, appropriate seasonal adjustments and background growth rates were applied to the counts wherever necessary to create a 2017 existing traffic network.

TMCs obtained from other TIAs contained seasonally adjusted volumes at the intersections. However, raw counts were supplied by VHB at several locations. The nearest MassDOT continuous count station to the Study Area was found to be Station 307 located on the Boston Worcester Turnpike in Westborough. Based on the data obtained from the count station, April volumes are 4 percent higher than an average month. Therefore, no seasonal adjustments were made to volumes collected on Concord Street in April 2011. Similarly, VHB collected TMCs at a few Route 9 intersections in February, 2016. Per count station 307, February volumes were 5 percent lower than an average month. These volumes were increased by 5 percent to match average month traffic volumes. TMCs at the intersection of Route 9 at Concord Street were conducted in March 2017. March volumes were found to be 1 percent lower than an average month and were increased by 1 percent to represent average monthly traffic volumes at the intersection.

The seasonally adjusted volumes were then grown at a rate of one percent per year from the year they were collected to the existing year 2017.

PEAK HOUR OPERATING CONDITIONS

The traffic operations of The Triangle intersections were analyzed using methodologies from the 2010 Highway Capacity Manual (HCM). Level of Service (LOS) and delays were calculated and are summarized below. Synchro 9™ software was used as the analysis tool for determining the LOS at the Study Area intersections. Synchro implements the methods specified in the 2010 HCM to analyze intersection capacity and determine LOS.

LOS is an index that is intended to reflect a traveler’s experience on different types of transportation facilities. LOS ranges from A (free flow, unconstrained travel) to F (severe congestion, long delays) (Table 3.24) and it serves as an indicator of driver discomfort, frustration, fuel consumption and lost time. For operations at intersections, which are the controlling factor for The Triangle’s local roadway system, LOS is based on the HCM-based calculation of “control delay,” which is the average amount of time that a vehicle will spend stopped at a given intersection or intersection approach. LOS control delay values are given in Table 3.24. It is important to note that the LOS criteria described in Table 3.24 is for motorized vehicles only.

Signalized intersection analysis is based upon the capacity of each lane group and the correlating control delay associated with the intersection. Capacity is a measurement of the ability of an intersection design to accommodate all movements within the intersection. Capacity is a function of physical geometry and signalization conditions.

Delay is the measure of the user quality of service and it is based on the relationship between capacity and demand. For unsignalized intersections, delay values apply only to the controlled movements, since the main street movements are not restricted. Synchro 9 software was used as the analysis tool for determining the unsignalized LOS at the Study Area intersections. Synchro implements the methods of the HCM to analyze intersection capacity and determine LOS.

TABLE 3.24: LEVEL OF SERVICE CRITERIA	
LEVEL OF SERVICE	AVERAGE DELAY IN SECONDS AT SIGNALIZED INTERSECTIONS
A	≤ 10 SECONDS
B	>10 AND ≤ 20 SECONDS
C	>20 AND ≤ 35 SECONDS
D	>35 AND ≤ 55 SECONDS
E	>55 AND ≤ 80 SECONDS
F	>80 SECONDS

Source: Highway Capacity Manual, 2010

LOS Measures of Effectiveness (MOEs) results are shown in Figure 3.56 for AM and PM peaks. It should be noted that the operations along Route 9 reflect the soon to be implemented traffic signal timings, phasing and coordination information. During the AM peak, of the 24 Study Area intersections, only the intersection of Cochituate Road (Route 30) at Whitier Street and Shoppers World Drive experienced LOS F conditions and the intersections of Route 30 at Speen Street and Speen Street at Hartford Street/Route 9 operate at LOS E.

Five of the 24 Study Area intersections have an LOS of F and two of the 24 Study Area intersections have an LOS of E during the PM peak. Four of these intersections are located along Route 30 and three on Route 9. Pedestrian (ped) and bicycle volumes recorded during the PM peak at these intersections are shown in parenthesis. As shown, the combined pedestrian and bicycle volumes at most of the locations are less than 20 per hour (likely due to the poor bicycle and pedestrian connectivity noted in coUrbanize), yet for four out of these seven locations (indicated by an *), the intersection includes an exclusive pedestrian phase that the Synchro analysis considers called every cycle which results in worse LOS and likely more lengthy delays than will be observed in the field.

LOS F:

- Cochituate Road (Route 30) @ Speen Street (PM ped & bike volume = 18 pedestrians and/or bicycles/hour)
- Cochituate Road (Route 30) @ Whitier Street/Shoppers World Drive (PM ped. volume = 5/hour)*
- Cochituate Road @ Shoppers World Way/Ring Road (PM ped & bike volume = 4/hour)*
- Worcester Street (Route 9) at Dean Road/Natick Mall Road (PM ped & bike volume = 10/hour)*
- Worcester Street (Route 9) @ Caldor Road (PM ped & bike volume = 49/hour)

LOS E:

- Concord Street (Route 126) @ Cochituate Road (Route 30) (PM ped & bike volume = 14/hour)*
- Route 9 @ Ring Road /Bed Bath and Beyond Driveway (PM ped & bike volume = 24/hour)



Legend

- AM PM LOS
- A-C D-E F
- State Top 200 Crash List
- Golden Triangle Boundary
- Municipal Boundary
- Streets
- Parcel Boundary
- Parking
- Rail Trail
- Water Bodies
- Wetlands

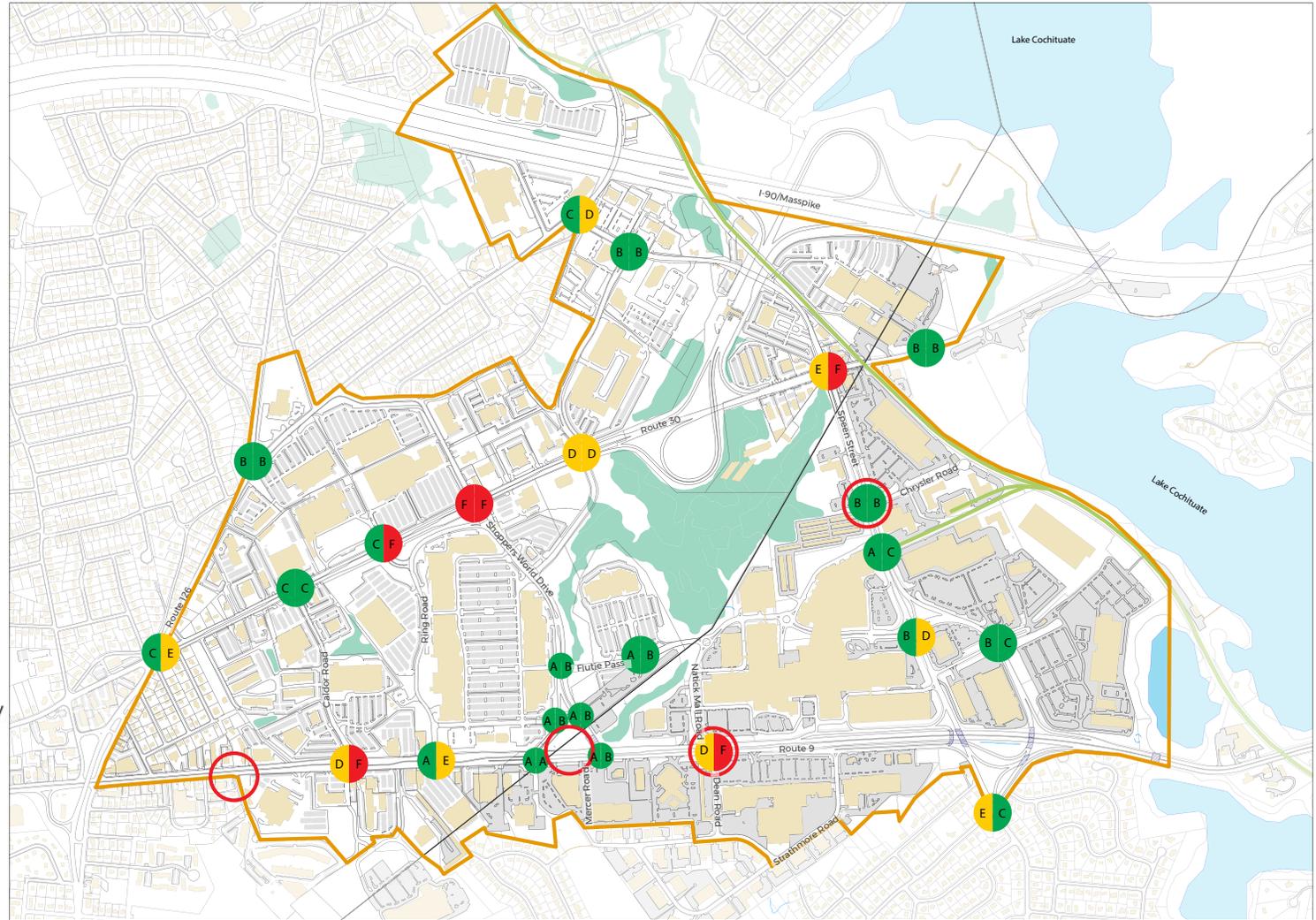


Figure 3.56: AM and PM peak intersection level of service (LOS).

SAFETY ANALYSIS AND HIGH CRASH LOCATIONS

There are four intersections in The Triangle on the MassDOT's statewide top 200 crash location list between 2011 and 2013:

- 81. (tied) Speen Street and Cloverleaf Marketplace Shopping Center (Natick);
- 81. (tied) Worcester Road (Route 9) at Dinsmore Avenue (Framingham);
- 154. Route 9 and Dean Road (Natick); and,
- 178. Route 9 and Shoppers World (Natick/Framingham)

Traffic crash incidence is particularly high at intersections along Route 9 and Speen Street and at locations adjacent to shopping centers and commercial strip development. This reflects high traffic volumes along these corridors. The intersection of Speen Street and Cloverleaf Market Shopping Center is essentially an unsignalized intersection located within a highway interchange with associated high speed traffic. Similarly, it is likely that the high rate of crashes at the unsignalized intersection of Route 9 at Dinsmore Avenue is associated with the heavy volume, high speed nature of Route 9 in that area and the difficulty of vehicles turning onto and off Route 9 onto an unsignalized roadway.

The signalized intersection of Route 9 and Dean Road experiences an LOS of F during the PM peak which indicates congestion at this high volume, multiple lane, multiple approach intersection. Although a more detailed review of the crash data would be required to confirm, it is possible that the crashes are occurring at some of the uncontrolled right turn merge points. As with the other intersection outlined above, unsignalized merges are difficult to maneuver safely with high volume, high speed conflicting traffic. The traffic signal improvement project on Route 9 has likely included modifications to improve safety. Something as simple as providing more adequate clearance times can reduce crash experience.

ROADWAY, INTERSECTION, AND TRAFFIC ISSUES

The following are issues related to roadways, intersections, traffic operations and roadway safety. These issues have been identified through field observations, evaluation of traffic operations, review of previous documents (both private development analyses and publicly-funded studies), input from respective municipal representatives and comments from stakeholders. Several comments related to the roadway and intersections were posted by the public on the online coUrbanize forum. Where appropriate, they are represented in this text and in recommendations in Chapter 6. Although some were more detailed than the scope of this Study, they are available in the coUrbanize addendum to this Report for future reference.

CORRIDOR RELATED ISSUES

- Heavy commuter traffic volumes on Route 9 result in congestion and queuing.
- Access to the MassPike and Route 9 ramps attract heavy traffic from Speen Street, resulting in congestion and queuing despite wide roadways and intersections.
- Difficult access onto and off the MassPike interchange ramps creates weaving conflicts, which are exacerbated by frequent curb cuts and poor access management along Cochituate Road. Stakeholders are concerned that regional access is limited by the traffic in this vicinity.
- Parking management at the Natick Mall, restructured parking for scooters, bikes to increase capacity.
- The lack of wayfinding signage and obstructed views to buildings both cause drivers to make last minute turn decisions.

INTERSECTION RELATED ISSUES

- Ramp access to the MassPike attracts heavy traffic and results in congestion and queuing at Speen Street/Cochituate Road, despite multiple lanes and wide intersection approaches.
- Minimum pedestrian crossing times contribute to deteriorating LOS at Route 9 intersections within the Study Area.
- Location of several retail driveways leading on to Route 9 creates connectivity and safety concerns.
- Lack of coordinated signal timing at several intersections leads to queuing of vehicles at intersections and reduced throughput.

- Left turn waiting times to access major retail developments are high at traffic signals, especially near Sherwood Plaza.

PUBLIC TRANSPORTATION

Public transportation in The Triangle, including both local bus service and connections to the MBTA for regional commuter rail, is provided by the MWRTA. The public transit routes within the Study Area are illustrated in Figure 3.57.

MBTA

The MBTA serves Framingham and Natick via the Framingham/Worcester Commuter Rail Line, running from South Station (Boston) to Union Square (Worcester) via Framingham and Natick. The line stops (from east to west) at South Station, Back Bay, Yawkey Way, Boston Landing, Newtonville, West Newton, Auburndale, Wellesley Farms, Wellesley Hills, Wellesley Square, Natick Center, West Natick, Framingham, Ashland, Southborough, Westborough, Grafton and Worcester. The train stations are located on Waverly Street (Route 135) in Framingham and on West Central Street (Route 135) and North Main Street (Route 27) in Natick. They are accessible to The Triangle via MWRTA bus route number 4N and MWRTA bus route numbers 10 and 11 respectively. Trains run every 30 to 35 minutes during the peak periods.

MWRTA

THE MWRTA was initiated in 2006 by the state legislature to help serve the public transportation needs of the 32-town corridor known as the I-495/MetroWest corridor. There are currently seven MWRTA bus routes – Routes 1, 2, 3, 4N, 9, 10 and 11 - that serve at least some portion of The Triangle (fig. 3.57). These routes in turn provide connections to additional MBTA bus routes and the commuter rail system. The MWRTA headquarters is at the Blandin Hub in downtown Framingham.



Legend

Bus Routes

- Route 1
- Route 2
- Route 3
- Route 4
- Route 9
- Route 10
- Route 11

- - - Golden Triangle Boundary
- Municipal Boundary
- Streets
- ▭ Parcel Boundary
- ▭ Parking
- Rail Trail
- ▭ Water Bodies
- ▭ Wetlands

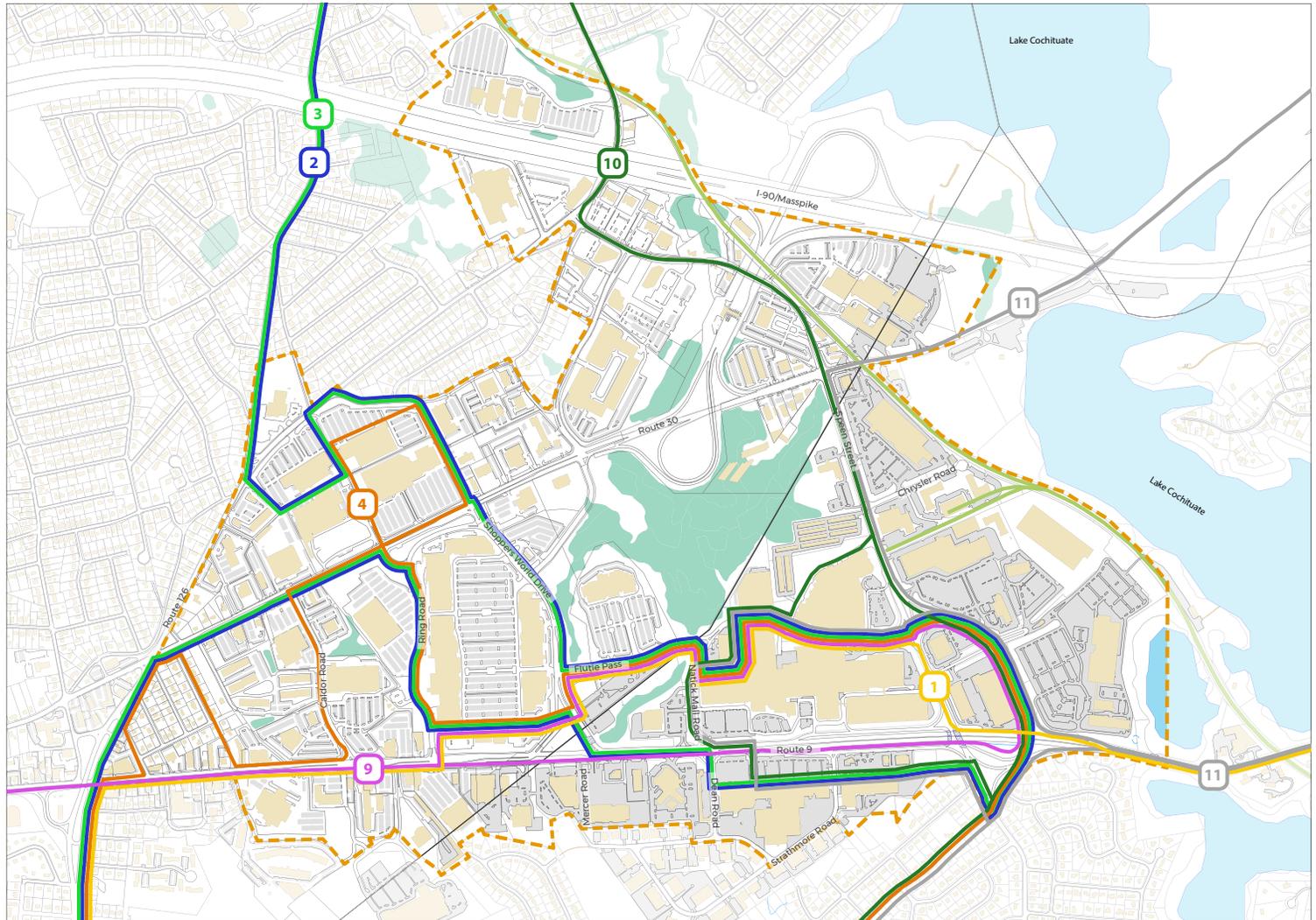


Figure 3.57: Public transportation within The Triangle as of February 2018.

Route 1 services stops between Blandin Hub located in Framingham and the Woodland MBTA Station in Newton with stops within The Triangle at Flutie Pass (in Framingham) and Natick Mall/Macy's (in Natick). Weekday service begins at approximately 5:30 AM (eastbound) or 6:30 AM (westbound) and buses run approximately every half hour. The service runs until approximately 8:20 PM (eastbound) and 8:45 (westbound). Only four round trips go west of Natick Mall/Macy's and weekend service is not available for this route.

Route 2 services stops between Blandin Hub and Pearl Street, both located in Framingham, with stops within The Triangle at Target/Whitier Street, Shoppers World Shelter East, Natick Mall/Macy's, Shoppers World Shelter, Kohl's, Route 30 & Route 126 Concord Street. Weekday service begins at 6:30 AM and ends at 7:55 PM. Buses run approximately every 60 minutes. Buses run approximately every hour between 9:30 AM and 4:30 PM on Saturdays.

Route 3 services stops between Blandin Hub and Danforth Museum, with intermediate stops within The Triangle at Route 30 & Route 126, Concord Street, Walmart, Sherwood Plaza, Natick Mall / Macy's, Shopper's World East, Target / Whitier Street and Stop & Shop. Weekday buses run approximately every 55 minutes between 6:15 AM and 6:55 PM. Weekend service begins at 8:25 AM and buses run approximately every 60 minutes until 3:36 PM.

Route 4N services stops between Blandin Hub and the Banana Lot in Framingham with intermediate stops within the Study Area at MathWorks Lakeside, Natick Mall (Macy's Bus Shelter), Shoppers World Bus Shelter, Kohl's Bus Shelter, Stop & Shop/BJ's Wholesale Club, Walmart and Route 9 West/Beacon Street. Weekday service begins at 6:15 AM and buses run every 40 minutes until 6:55 PM. Saturday service begins at 8:25 AM and buses run every 75 minutes until the end of service at 3:36 PM.

Route 9 services stops between Blandin Hub and Bus Shelter on High Street near Framingham State University in Framingham with intermediate stops at Natick Mall (Macy's bus shelter), Flutie Pass, Shoppers World and Route 9/ Route 30 within the Study Area. Service begins at 5:50 AM and buses run approximately every 20 minutes until 8:09 PM. Weekend service is not available for this route.

Route 10 services stops between Blandin Hub and Sherwood Village (Mill Street) in Natick with intermediate stops within the Study Area at Speen Street at Route 30, TJX, Natick Mall (Macy's Shelter) and Sherwood Plaza. Weekday service begins at 6:30 AM and four buses service this route in the AM and four buses service the route in the PM until the end of service at 7:10 PM. Weekend service is not available for this route.



Figure 3.58: Map of the MetroWest region.



Figure 3.59: The Logan Express facility.

Route 11 services stops between Blandin Hub and Beaver Street at Second Street in Framingham with intermediate stop at Speen Street at Mill/Pond Streets within The Triangle. Route 11 services begin at 6:30 AM and end at 7:15 PM on weekdays. Four buses serve the AM and PM routes. Service begins at 8:10 AM and ends at 4:05 PM on Saturdays. Three buses service Route 11 in the AM and PM during Saturdays.

MWTMA

The MetroWest Transportation Management Association (MWTMA) is a part of the Massachusetts Coalition of Transportation Management Associations (MATMA), also known as MassCommute. The MWTMA is partners with MetroWest Chamber of Commerce, nuride (a ride-sharing/commuting system), Marlborough Chamber of Commerce, 495/MetroWest Partnership, and the MetroWest Regional Transit Authority.

The MWTMA is a member-based non-profit organization that focuses on transportation-related issues in the MetroWest region (Fig. 3.58) and provides sustainable commuting solutions to the large employers located here. The MWTMA is a program of both the MetroWest and Marlborough Regional Chambers of Commerce and focuses on a vital component of the success of the region: transportation.

MWTMA serves the communities of the MetroWest region, including Framingham and Natick and advocates the use of alternate modes of transportation, including carpooling, vanpooling, public transit, and walking/biking. The goal of the MWTMA is to reduce traffic congestion, improve air quality, and increase awareness of sustainable transportation. The MWTMA advocates for sustainable transportation options in the area and collaborates with community leaders to strengthen the economic growth of the area. The result improves the quality of life for people living and working in MetroWest, one of the most dynamic regions in the Commonwealth of Massachusetts.

LOGAN EXPRESS

Logan Express provides bus connections into Logan Airport from its facility located at 11 Burr Street Extension in The Triangle. The facility, constructed in 2015, was built with four floors, but was designed to support two additional parking decks (Fig. 3.59). Buses leave Framingham starting at 3:15 AM and every

half hour from 4:00 AM to 11:00 PM. Trips from Logan start at 6:30 AM and occur every half hour until midnight with an additional trip at 1:15 AM. Weekend service occurs for slightly shorter hours with 60 minute headways.

PETER PAN BUS LINES

Peter Pan Bus Lines runs limited daily service from the MWRTA bus shelter on the southern portion of Ring Road to Boston, Worcester and Springfield.

PUBLIC TRANSPORTATION ISSUES

- Long headways on most routes and minimal or lack of service on weekends.
- As can be seen in Figure 2.54, portions of The Triangle are not well served.
- Lack of safe or convenient pedestrian connections from potential users to bus stops.
- The northern end of the Study Area is only served by MWRTA Route 10 which has no stops north of Route 30. This results in lengthy walks for a significant portion of The Triangle.
- Parcels on the south side of Route 9 have few opportunities for transit resulting in long walks and necessitating crossing Route 9 in many cases.

PEDESTRIAN AND BICYCLE ACCOMMODATIONS

Figure 3.60 shows the existing and planned bicycle accommodations within The Triangle. Figure 3.61 shows the sidewalk coverage in The Triangle. The portion of the Cochituate Rail Trail to the north of Route 30 in Framingham has been constructed.

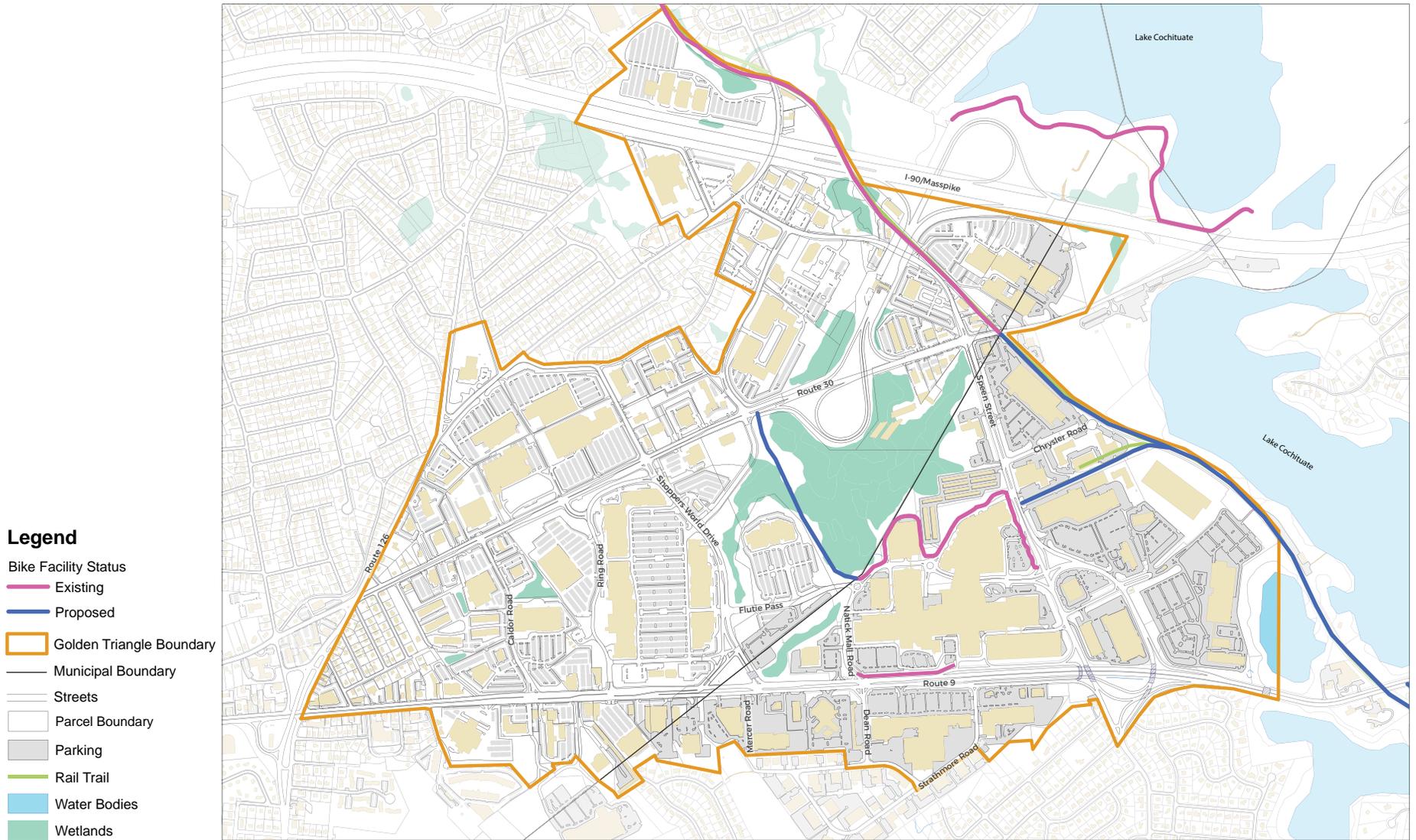


Figure 3.60: Bicycle Accommodations (existing and proposed) within The Triangle.

Source: MassGIS 2013

Data presented may be slightly different from the existing conditions because data was generated in the year 2013.

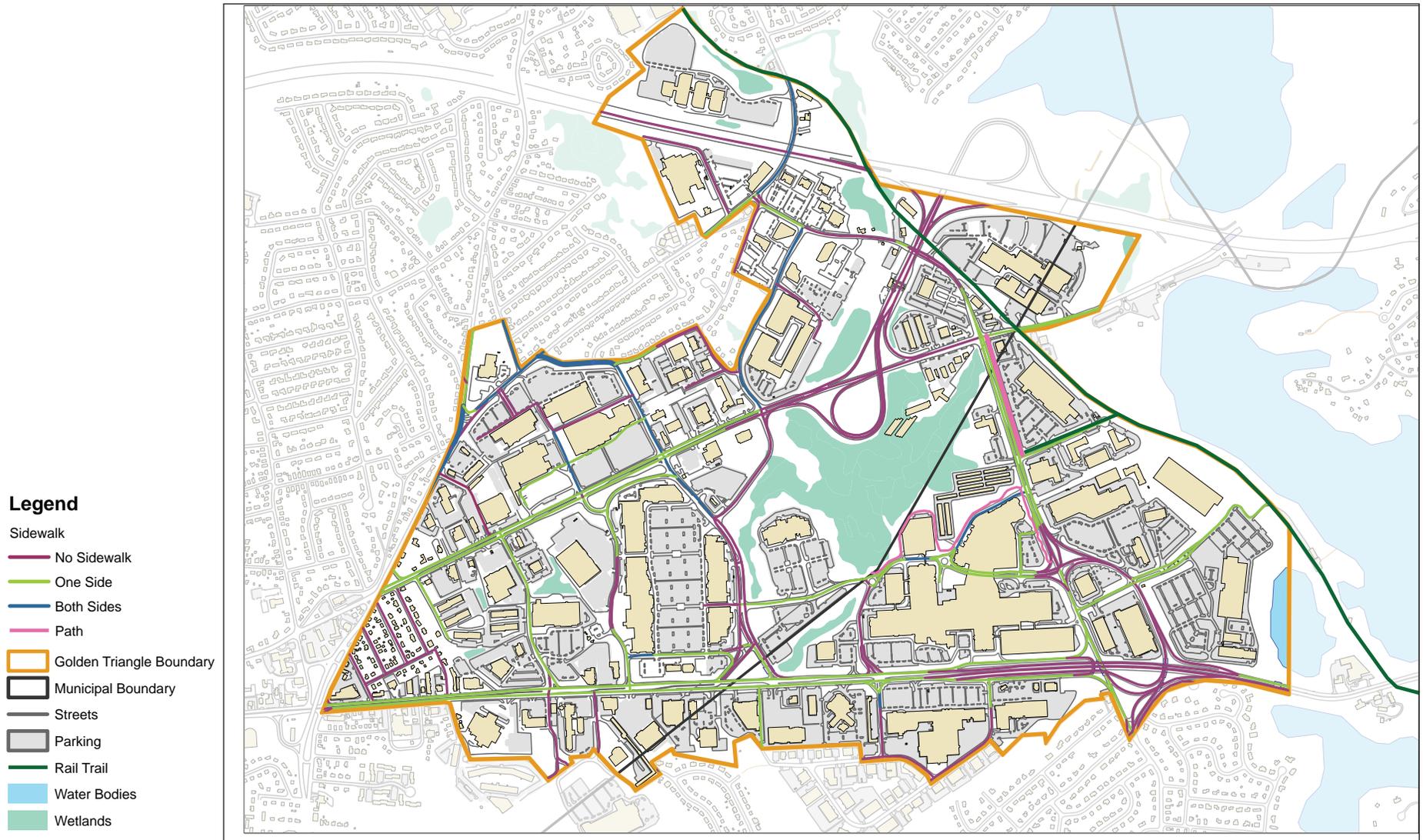


Figure 3.61: Existing Sidewalk Coverage within The Triangle.

Source: MassGIS 2014

Data presented may be slightly different from the existing conditions because data was generated in the year 2014.

PEDESTRIAN AND BICYCLE RELATED ISSUES

- Multiple lanes, wide roadways, and ramp interfaces create an uncomfortable pedestrian and bicycle environment on Speen Street.
- Poor access management and difficulty traveling in the vicinity of the MassPike interchange ramps create a hostile pedestrian and bicycle environment on Route 30.
- Little or no pedestrian facilities are provided in the Study Area north of Route 30 and many developments provide no pedestrian connections into their sites.
- Lack of connections through “big-box” developments (Post office, Lowe’s, Stop & Shop, BJ’s).
- Crosswalks and sidewalks dead end at various locations along Ring Road in the Shoppers World area.
- Isolated developments are located on Old Connecticut Path north of MassPike with no pedestrian connections or transit connections.
- Bicycle and pedestrian connectivity between retail developments, and to the Framingham commuter rail station, were commonly raised on the coUrbanize webpage.
- Missing roadway regulatory signs, crosswalks, lack of ADA compliant crosswalks at intersections are some of the safety related issues within The Triangle.

PROPOSED PUBLIC CAPITAL INVESTMENT PROJECTS

The following are planned or proposed transportation system projects that would entail investment in the transportation system using public funding. Most of the projects have funding identified, as discussed below and therefore have a high likelihood of implementation. They will significantly improve the Study Area's transportation network in coming years. These projects also include other infrastructure improvements such as stormwater management.

COCHITUATE RAIL TRAIL (CRT)

The project entails the construction of a shared-use path with overlook areas. The Study Area encompasses a 2.4-mile stretch of the abandoned Saxonville Branch of the former Boston and Albany Railroad (now CSX) and a 0.25-mile connection to Speen Street known as the Wonder Bread Spur (Fig. 3.62). The project follows the existing railroad right-of-way from Cochituate Road (Route 30) in Framingham to the Natick Center MBTA Commuter Rail Station. Pedestrian improvements include construction of a 100-foot single span prefabricated steel bridge over Route 30 that will meet ADA requirements, construction of a single span prefabricated steel truss pedestrian bridge over Route 9 combined with stormwater management design and additional path access locations. No motorized vehicles are allowed on the CRT. The approximate estimated cost for the entire project is \$9,000,000 and the 25 percent design plans are approved.

A pedestrian bridge over Speen Street from the end of the Wonder Bread spur to the Natick Mall has been studied in the past and is currently being studied again.



Figure 3.62: Planned Cochituate Rail Trail in Natick.

Source: Cochituate Rail Trail Functional Design Report, BETA, 2014

ROUTE 30 ARTERIAL SEGMENT STUDY IN FRAMINGHAM & NATICK LOCATION: ROUTE 30 (COCHITUATE ROAD)

In 2013, Central Transportation Planning Staff (CTPS) completed a corridor study of Route 30 from Ring Road in Framingham to the TJX driveway in Natick (Fig. 3.63). The Study Area is shown in Figure 2.59. The Study purpose was to address significant mobility, congestion and safety issues for pedestrians, bicycles, and motorists in the segment. The study provided alternatives to address the operational and safety issues that would need to be addressed after the completion of the Cochituate Rail Trail (CRT) project in the near future. The following issues were identified:

- Trail crossings should follow pedestrian desire lines
- Bicyclists should not have to walk their bikes to an intersection
- Crossings should avoid busy driveways
- Crossings should avoid site conditions that pose risks for trail users, e.g., crossing busy Route 30 at-grade.

The Study identified three options for closing the gaps in the existing bicycle and pedestrian circulation, including recommendations for signs and markings; traffic signal retiming schemes at four signalized intersections; traffic management options for the Route 30 segment between Speen Street and the MassPike on ramp; and six medium- and long-term concepts for reconfiguring the connection of Speen Street and Route 30 to the MassPike, including adding a second westbound traffic lane to Route 30 from the TJX driveway to the MassPike connector.

The preferred alternative for pedestrian and bicycle accommodations entails construction of new sidewalks and multiuse paths around the outer loop of the MassPike connector south of Route 30 for accessing businesses near the Route 30 and Speen Street intersection, as well as the CRT. The Study also analyzed four crossing options to improve safety for trail users at the Route 30 crossing. The Study concluded that getting CRT users to cross Route 30 at the existing track alignment using grade separation (overpass or underpass) was the preferred alternative. Other improvement recommendations included installing side-



Figure 3.63: Route 30 Arterial Segment Study Area in Framingham and Natick.
 Source: Route 30 Memo, CTPS, 2013

walk buffers, installing countdown timers at signals to help pedestrians make informed decisions about crossing the road, shared bicycle lane markings (“sharrows”) on pavements and fine-tuning traffic signals on Route 30 from Beacon Street to Burr Street and Speen Street. Additional lane geometry modifications to improve safety at various commercial driveways were also suggested.

ROUTE 9 ROADWAY IMPROVEMENTS

Roadway improvements on Route 9 include Framingham-Natick Adaptive Signal Control on Route 9 Transportation Improvement Plan (TIP) project. This project includes installation of adaptive traffic control signal

equipment, vehicle detection, communication equipment and managing software at five traffic signals (3 in Framingham and 2 in Natick). Adaptive traffic control is a traffic management strategy in which traffic signal timing changes, or adapts, based on actual traffic demand. This is accomplished using an adaptive traffic control system consisting of both hardware and software. The budget for this project is approximately \$414,000 and is funded by the congestion mitigation and air quality funds. The project was completed in the summer of 2017.

HIGHWAY SAFETY IMPROVEMENTS IN THE TOWN OF FRAMINGHAM

A stormwater and drainage project to improve storm water infrastructure at the Route 9 and Route 126 interchange is listed on the State TIP webpage. The estimated total contract cost is \$2,875,000 and the project is in the preliminary design phase.

The existing utilities information was obtained from GIS layers provided by both Framingham and Natick. The available data is summarized on the next few pages.

UTILITIES

STORMWATER SYSTEM

Storm drainage in The Triangle is accomplished by catch basins with direct connections to nearby drainage systems.

FRAMINGHAM

The stormwater system on the Framingham side of The Triangle collects to the large wetland area in the middle of The Triangle. The wetland area is a tributary to Lake Cochituate. The major trunk line, approximately 48 inches in diameter, travels down Cochituate Road. Based on preliminary calculations, this 48

inch line has additional capacity of 960 cubic feet per second when analyzed at a 25-year design storm; more than enough capacity to handle any future development.

NATICK

The Natick side of the Project Area is made up of two major truck lines. One approximately 24 inch line travels from Speen Street east down Superior Drive and outfalls to Lake Cochituate. Another large system runs north down Speen Street and outfalls to the large wetland area in the middle of The Triangle. This system also collects drainage area from Chrysler Road, including the Home Depot Property, in an approximately 36 inch pipe. This pipe’s existing capacity could not be determined with no existing invert data available.

WATER SUPPLY SYSTEM

Existing water service to The Triangle is supplied by a water system with a diameter of 12 inches, located along Worcester Road and Cochituate Road. Hydrant flow test data for four locations was received from Framingham; two of the locations are in The Triangle: a line of undetermined size at Worcester Road and Shoppers World and another line of undetermined size at Cochituate Road at Burr Street. These tests show that within the Study Area the system has reasonable fire flow (Table 3.25). Due to these lines having reasonable flow, the 12 inch lines are adequate if they are in good condition. When future development is considered, additional tests should be performed, along with water line cleaning or lining.

TABLE 3.25: WATER SUPPLY TESTING INFORMATION					
TEST LOCATION	TEST DATE	FLOW (GPM)	STATIC PRESSURE (PSI)	RESIDUAL PRESSURE (PSI)	CALCULATED @ 20 PSI RESIDUAL PRESSURE
WORCESTER ROAD AND SHOPPERS WORLD	06/16/2016	1,400	85	80	5,590 GPM
COCHITUATE ROAD AT BURR STREET	06/16/2016	1,420	92	82	5,000 GPM

SEWER SYSTEMS

FRAMINGHAM

The 24 inch polyvinyl chloride (PVC) sewer line that travels out of Framingham along the Cochituate system area includes all of Framingham in The Triangle, as well as Natick from Speen Street west. Using GIS data of the land uses in these areas, the 24 inch sewer system area was split into the land use categories of residential, hotel, retail, office, industrial and institutional. Title 5 estimated flows were then applied to the different land uses to get a combined sewer flow. Based on the calculated Title 5 flows and after applying a peaking factor of two, the existing 24 inch line appears to have adequate capacity for the existing flows. This analysis also shows that the existing 24 inch pipe could have additional capacity to handle more flows. Further analysis with actual flow tests would need to be done to confirm that the existing pipe could accommodate the flows generated with that type of development that is proposed.

NATICK

The sanitary sewer system for the existing development east of Speen Street collects in an approximately 18-inch line from Chrysler Road and Superior Drive to a system that travels south down Speen Street to outside The Triangle to an MWRA sewer line that travels east parallel to the B&A Worcester rail road tracks.

The sanitary sewer system for the existing development east of Speen Street collects in an approximately 18-inch line from Chrysler Road and Superior Drive to a system that travels south down Speen Street to outside The Triangle to a Massachusetts Water Resources Authority (MWRA) sewer line that travels east parallel to the B&A Worcester rail road tracks.

The 18-inch PVC sewer line that travels out of The Triangle down Speen Street to an MWRA sewer line includes all the area in Natick for The Triangle east of Speen Street. Using GIS data of the land uses in these areas, the 18 inch sewer system area was split into the land use categories of residential, hotel, retail, office, industrial and institutional. Title 5 estimated flows were then applied to the different land uses to get a combined sewer flow. Based on the calculated Title 5 flows and after applying a peaking factor of

two the existing 18 inch line appears to have adequate capacity for the existing flows. This analysis also shows that the existing 18 inch pipe could have additional capacity to handle more flows. This system could also contain flows from parcels outside The Triangle; therefore further analysis with actual flow tests would need to be done to confirm that the existing pipe could accommodate the flows generated with that type of development that is proposed.

ELECTRICAL SYSTEMS

Electric and utility pole information is not available from the City of Framingham. Natick provided utility pole data. This data shows there are several poles located along Speen Street, Worcester Road, Superior Drive, and Chrysler Road. There are also several light poles located along Worcester Road, Speen Street, Superior Drive, and Chrysler Road. The utilities pole services in the Natick side of The Triangle are owned by Eversource, but no information is provided as to what is on the poles.

GAS SYSTEMS

No Gas utility data was available for Framingham or Natick.

UTILITY RELATED ISSUES

- Flooding occurs at the northeast corner of the wetlands area and at the intersection of Route 30 at Speen Street. Flooding at the end of the MassPike ramp to Route 30 westbound where it meets and along Route 30 westbound, and at the intersection of Route 9 and Route 126, has also been noted on CoUrbanize.
- Although there are water service connections available in The Triangle, water main information and fire flow tests were not provided for Natick. Data for Framingham indicate adequate flow on that side of The Triangle.

- No GIS sewer information is provided for the Shoppers World area or the “big box” retail area north of Route 30.
- Although limited electrical data was provided, consideration should be given to installing utilities underground rather than on pole moving forward.

BROWNFIELD SITES

Online research revealed that only one area has been identified as a brownfields site. Cochituate Rail Trail – Lots 3b, 14a and 250 in Framingham were identified as brownfield sites in historic brownfield documents. The City of Framingham has been successful in obtaining grants to study and spur development of these sites. It is important to note that brownfield issues are less likely in The Triangle because there is no major industrial history in this area other than the railway lines.

SUMMARY TRANSPORTATION AND INFRASTRUCTURE FINDINGS

This section outlined the existing transportation infrastructure, drainage and utilities within The Triangle and identified the following key issues to be addressed during design and analysis of redevelopment alternatives:

- During the peak hours, a number of locations experienced congestion, most significantly at Route 30 at Speen Street and at the MassPike interchange itself. In order to support future development, improvements should be considered.
- The presence of the MassPike interchange results in a hostile environment for pedestrians and bicyclists. Opportunities to reduce the scale of the traffic infrastructure in this area should be considered.
- Safety analysis indicated four high crash locations within the Study Area. Three out of these four locations were on Route 9 and one was on Speen Street.
- Framingham and Natick and MassDOT have been involved in several traffic signal improvement projects on Route 9 and Route 30 to provide optimal operations given the existing infrastructure.
- Consideration should be given to improving pedestrian and bicycle connectivity within The Triangle, preferably on both sides of the street where it is not currently available. Improving transit, bicycle, and pedestrian connectivity to the commuter rail stations and within The Triangle would encourage the use of alternative transportation modes. Support for these facilities, and incorporating them into future projects, should be considered when development opportunities are presented.
- Where information is available, utilities are adequate to accommodate future growth. All redevelopments will need to comply with local and state regulations to ensure that adequate water supply is available and that capacity exists for the resulting wastewater. When projects are redeveloped in the area of Route 30 and Speen Street, special attention should be given to the stormwater in light of existing flooding occurrences. When possible, underground power, cable and telephone should be considered.



04 BUILD-OUT ANALYSIS

- **INTRODUCTION**
 - **BUILD OUT SCENARIOS**
 - **FUTURE SCENARIO MODELING**
-

BUILD OUT ANALYSIS

INTRODUCTION

Changes in development intensity and the mix of uses within The Triangle will inevitably occur over time. While it is difficult to say if The Triangle will become more or less intensely developed and how much of a shift in uses the area may see, it is nevertheless important to look at the range of possibilities to gauge and plan for potential impacts. One of the primary reasons for conducting this Study of The Triangle was to better understand how current and future development may impact the transportation system, and what mitigation measures should be planned to accommodate these changes. In order to understand these impacts, both positive and negative, the Consultant Team created a model to test different development scenarios. These outputs were then used as inputs to the transportation model to better understand what transportation improvements would be needed to accommodate land use changes in the future.

BUILD-OUT SCENARIOS

Within The Triangle's boundary, there is just over 10.3 million square feet of existing development. Approximately 4.6 million square feet (45 percent) is on the Natick side, and 5.7 million square feet

ASSESSOR'S USE CATEGORIES	EXISTING BUILT SQUARE FOOTAGE		
	NATICK	FRAMINGHAM	TOTAL
RESIDENTIAL	648,903	257,526	906,429
OFFICE	537,400	2,734,874	3,272,274
RETAIL	2,672,583	2,033,659	4,706,242
INDOOR REC/ENTERTAINMENT	41,658	205,300	246,958
STORAGE, WAREHOUSE, DISTRIBUTION	285,578	103,428	389,006
HOTEL/MOTEL	438,944	162,732	601,676
EXEMPT	0	201,287	201,287
TOTALS	4,625,066	5,698,807	10,323,873

Note: Exempt parcels are those that are classified by the Assessing Department as tax exempt, and could include town-owned land, state or federal buildings and land, utilities and rights-of-way, churches, educational institutions, or non-profit organizations.

(55 percent) is on the Framingham side. Table 4.1 illustrates the breakdown of square footage of built space by land use category in both Natick and Framingham.

To better understand the build-out potential of The Triangle under the existing zoning districts and overlay districts, an effective Floor Area Ratio (FAR) was developed for each district. The FAR calculation illustrates how much development could take place on a parcel of land after taking into account setbacks, landscaping requirements, and surface parking requirements. The FAR number is then multiplied by the total square footage of the parcel, resulting in the amount of developed space that could occur on a given parcel of land. This exercise was completed for each of the base zoning districts and the overlay districts to compare the existing development intensity in The Triangle to the maximum development potential allowed by zoning regulations.

The results of this analysis showed a difference of only 50,000 square feet when comparing existing development to what could be developed under the existing zoning (Table 4.2). Across the entirety of the Golden Triangle, development intensity has largely followed what one might expect to see based

on the dimensional regulations in the existing zoning. It is interesting to compare what exists today in each zoning district to what is possible from a development intensity standpoint, noting some base zoning districts appear to be underdeveloped while others have been developed at an intensity greater than what the base zoning may allow.

This is likely the result of some developments being approved and constructed under the various overlay districts that cover portions of The Triangle where FAR increases

TABLE 4.2 BUILDING SQUARE FOOTAGE COMPARISON			
ZONING DISTRICTS	BUILT SQUARE FOOTAGE COMPARISON		
	EXISTING CONDITIONS	BUILD-OUT	DIFFERENCE
COMMERCIAL II (CII)	1,906,511	772,890	(1,133,621)
INDUSTRIAL I (INII)	1,572,542	1,115,775	(456,767)
RESIDENTIAL A (RSA)	13,721	159,183	145,462
HIGHWAY MIXED-USE I (HMUI)	634,515	1,017,207	382,692
INDUSTRIAL (INI)	379,653	345,111	(34,542)
HIGHWAY MIXED-USE II (HMUII)	118,124	67,881	(50,243)
LIGHT MANUFACTURING (M-1)	2,075,056	1,984,103	(90,953)
GENERAL MANUFACTURING (M)	1,583,824	1,090,770	(493,054)
OFFICE & PROFESSIONAL (P)	51,384	124,655	73,271
SINGLE FAMILY (R-1)	87,247	258,444	171,197
BUSINESS (B)	1,901,296	3,434,705	1,533,410
TOTAL	10,323,873	10,370,726	46,853

can be approved in return for specific mitigation measures. In other cases, this could be the result of special permits, negotiations with the Planning Board, or a variance granted for dimensional relief.

To better understand the build-out potential of the overlay districts within The Triangle, the Consultant Team modeled the maximum FAR allowances on parcels covered by the overlays.

This exercise resulted in an additional five million square feet of development potential above what is currently built on parcels that fall within the overlay districts. This indicates that the overlay districts are vastly underutilized from a build-out perspective. The total development capacity of parcels covered by the overlays, as well as parcels that fall only under a base zoning district, is just over 15.3 million square feet.

FUTURE SCENARIO MODELING

In addition to establishing baseline modeling results for existing conditions and current zoning capacity, the Consultant Team also modeled three scenarios which looked at how the future land use mix in The Triangle could potentially change over time and what impact that might have on future tax revenue, jobs, housing units, and population. The Triangle is home to over 4.7 million square feet of retail space, with everything from a large regional mall, to big box stores, to strip malls, to individual small-scale retailers. Recognizing and acknowledging the shift retail is currently undergoing and the scaling back of the over-retailed marketplace, the Consultant Team devised a set of future scenarios that attempt to model potential changes in the land use mix and gauge the potential impacts those changes could have on the two municipalities. The scenarios attempt to model the following assumptions which may have an impact on The Triangle over time:

- **Decline in Retail:** It is assumed that some retail spaces will transform over time, likely shifting to a mix of uses which could include additional office, entertainment, and residential. This shift has already occurred on the Natick side of The Triangle with the introduction of the Nouvelle at the Natick Mall (Fig. 4.1) and the Wegman's grocery store currently under construction (Fig. 4.2).



Figure 4.1: Mixed-use development in The Triangle includes Nouvelle at the Natick Mall.



Figure 4.2: The J.C. Penny space at the Natick Mall is being converted to a Wegman's supermarket.

- **Mix of Uses:** As the redevelopment and repositioning of built space occurs over time, it is likely that the use mix will shift away from single use structures to more of a mixed-use approach. This is evidenced by the new development proposal on the former Sam's Club (PACE Membership Warehouse, Ford Distribution) site in Natick where the site of a single use building is being transformed to accommodate residences and a hotel.
- **Growth in The Triangle:** New development and redevelopment in The Triangle is likely to increase the overall square footage of built space over time. Modeling for an additional percentage of growth will help both municipalities understand what improvements might be necessary to accommodate that growth so there can be requests and advocacy for those improvements over time.

The following sections detail the various development and land use mix scenarios that were modeled as part of this Study. It should be noted that only the existing conditions, 10 percent growth, and 20 percent growth scenarios were used as inputs to the transportation model discussed in Chapter 6.³⁵

DECLINING RETAIL SCENARIOS

Between the two municipalities there is over 4.7 million square feet of retail space in The Triangle. Based on recent trends in the retail market, some companies with larger retail anchors or big box stores have been scaling back and closing underperforming assets. These changes have impacted retail spaces in The Triangle, but not to the extent seen in other retail hubs around the Commonwealth or the United States. Still, it is important to recognize that some of the retailers in The Triangle today may not be there in the future and planning for that change is important to reduce vacancy for both property owners and the municipalities. Not taking action and failing to proactively plan for the eventual changes in the retail landscape will have a negative impact on tax revenues in both communities. The decline in retail sales, increasing vacancy, and eventual decline in tax revenue will not only have

³⁵ *These two scenarios were recommended for modeling by Framingham and Natick staff and confirmed by the project Steering Committee*

a negative fiscal impact on both communities, but will also create a negative image and perception of the area as a whole. All of which will directly conflict with both communities' goals of greater vibrancy, activity, and regional competitiveness for The Triangle.

To that end, the Consultant Team modeled three declining retail scenarios to better understand how much space and tax revenue could be lost if a percentage of the overall retail space remained vacant for some time. It is assumed that a higher retail vacancy rate would drive down the income derived by property owners, therefore lowering their earned income from the asset, thereby lowering the assessed value of the commercial property. The lower assessed value would then translate into lower commercial tax receipts to each community. Table 4.3 shows the baseline existing condition information and how a decline in retail space might impact the assessed values and tax receipts in each scenario. The figures of 8 percent, 10 percent, and 15 percent decline in retail square footage are based on a low, medium, and high vacancy rate that are typically seen in declining or underperforming

TABLE 4.3 RETAIL DECLINE SCENARIOS - DIFFERENCE BETWEEN EXISTING CONDITIONS & SCENARIOS				
	EXISTING CONDITIONS	8% DECLINE	12% DECLINE	15% DECLINE
SQUARE FEET	10,323,873	-376,499	-564,749	-705,936
ASSESSED VALUE	\$1,548,986,200	-\$9,015,565	-\$13,523,347	-\$16,904,184
TAX RECEIPTS	\$35,843,781	-\$176,632	-\$264,947	-\$331,184

retail markets.

SHIFTING USE SCENARIOS

The second set of scenarios attempts to take into account what might happen if retail space declined over time, and the redevelopment or repositioning of that space resulted in an additional five percent growth in overall square footage in The Triangle. For example, it is unlikely that a property owner or developer would purchase a vacant big box store for redevelopment and construct a new building with an equivalent number of square feet in its place. It is far more likely that the new development

would have a different mix of uses and be larger in size than the previous building to ensure the developer makes money on the deal after paying for acquisition, demolition, and the construction of a new building.

This set of build-out scenarios assumes the same retail decline figures as noted above (8 percent, 12 percent, and 15 percent), but takes into account a five percent increase in overall built square footage in The Triangle. The Consultant Team assumed that the additional five percent of built space would be allocated evenly across office, residential, and indoor entertainment/recreation uses, as those seem to be the most likely uses to locate in The Triangle as part of any redevelopment scenario. In some cases it may be possible to convert vacant retail space to another use, in other cases it may be more feasible to demolish a retail building and redevelop. The model does not determine what will happen with vacant retail spaces, only that there is a shift in uses under these scenarios from retail to residential, office, and entertainment.

Table 4.4 shows the baseline existing condition information and how a shift in land uses with a five percent growth factor might impact the assessed values and tax receipts in each scenario. The results of this model show the same amount of built square footage under each shifting use scenario. The Consultant Team assumed a five percent maximum increase in square footage above what exists today in The Triangle. Assessed values on the other hand could change based on the type of new uses that may backfill space vacated by retailers. This is the result of other uses such as residential, office, or entertainment having a higher assessed value per square foot when compared to retail. In other words, as retail square feet declines and other higher value uses are built, it results in an in-

TABLE 4.4 SHIFTING USE SCENARIOS - DIFFERENCE BETWEEN EXISTING CONDITIONS & SHIFTING USE SCENARIOS WITH 5% GROWTH

	EXISTING CONDITIONS	8% DECLINE	12% DECLINE	15% DECLINE
SQUARE FEET	10,323,873	+516,194	+516,194	+516,194
ASSESSED VALUE	\$1,548,986,200	+\$112,275,817	+\$122,919,392	+\$130,902,073
TAX RECEIPT	\$35,843,781	+\$3,315,917	+\$3,759,832	+\$4,092,769

crease in overall assessed values.

GROWTH SCENARIOS

The final set of scenarios model two levels of potential growth of overall square footage in The Triangle; one at 10 percent and the other at 20 percent. The increment of growth in square footage over and above what exists today was allocated across five different land use categories which included residential, office, retail, recreation and hotel uses. To determine how best to allocate the new growth across these five land use categories, the Consultant Team researched recently approved and constructed mixed-use developments across Massachusetts and New Hampshire to determine an appropriate use mix for new development in The Triangle (Allocation #1). New large-scale mixed-use developments in suburban locations tend to have a much higher percentage of retail (56 percent) because they are often constructed in locations that do not have as high of a retail presence as what exists in The Triangle today.

Recognizing that the land use mix of new development in The Triangle will likely incorporate other uses with less of an emphasis on retail, the Consultant Team developed a second set of land use allocation assumptions that more heavily favored residential, office and entertainment uses (Allocation #2). This allocation more closely resembles what is occurring in The Triangle with more recent development and redevelopment proposals, namely Nouvelle, BJ's redevelopment (1225 Worcester Street), Wegmans, the proposed 40B at Cloverleaf Plaza, and the recently proposed but tabled Flutie Pass mixed-use development. Table 4.5 shows the two different land use allocations used for the 10

TABLE 4.5 LAND USE ALLOCATION FOR NEW GROWTH

USE TYPE	ALLOCATION #1	ALLOCATION #2
RESIDENTIAL	21%	40%
OFFICE	17%	20%
RETAIL	56%	25%
ENTERTAINMENT	1%	10%
HOTEL	5%	5%

percent and 20 percent growth scenarios.

Applying the two different land use allocations to the 10 and 20 percent growth scenarios yields the same increase in total square feet (1.032 and 2.064 million, respectively), but different assessed values and tax revenues. This is the result of allocating a higher percentage of new growth to residential and entertainment uses under Growth Scenario #2, which have a higher average assessed value than retail and office uses.³⁶

It is estimated that the two 10 percent growth scenarios would generate between \$3.5 and \$3.7 million in additional tax revenue for the two municipalities over time. It is estimated that the two 20 percent growth scenarios would generate between \$7.2 and \$7.4 million in additional tax revenue. Tables 4.6 and 4.7 compare the 10 percent and 20 percent scenarios to each other and to the existing conditions in The Triangle. Table 4.8 provides a summary of all ten scenarios that were modeled as part of the build-out analysis process.

TABLE 4.6 GROWTH SCENARIOS - DIFFERENCE BETWEEN EXISTING CONDITIONS & SCENARIOS

	EXISTING CONDITIONS	10% GROWTH #1	10% GROWTH #2
SQUARE FEET	10,323,873	+1,032,387	+1,032,387
ASSESSED VALUE	\$1,548,986,200	+\$166,130,851	+\$171,745,572
TAX RECEIPTS	\$35,843,781	+\$3,529,103	+\$3,703,865

TABLE 4.7 GROWTH SCENARIOS - DIFFERENCE BETWEEN EXISTING CONDITIONS & SCENARIOS

	EXISTING CONDITIONS	20% GROWTH #1	20% GROWTH #2
SQUARE FEET	10,323,873	+2,064,775	+2,064,775
ASSESSED VALUE	\$1,548,986,200	+\$337,465,670	+\$343,491,144
TAX RECEIPTS	\$35,843,781	+\$7,230,467	+\$7,407,731

³⁶ Average assessed value per square foot calculated from Framingham and Natick 2017 assessor databases.

TABLE 4.8: SCENARIO SUMMARY TABLE - DIFFERENCE BETWEEN EXISTING CONDITIONS AND ALL SCENARIOS MODELED

	SQUARE FEET	ASSESSED VALUE	TAX RECEIPTS
EXISTING	10,323,873	\$1,548,986,200	\$35,843,781
8% RETAIL DECLINE	-376,499	-\$9,015,565	-\$176,632
12% RETAIL DECLINE	-564,749	-\$13,523,347	-\$264,947
15% RETAIL DECLINE	-705,936	-\$16,904,184	-\$331,184
8% USE SHIFT	+516,194	+\$112,275,817	+\$3,315,917
12% USE SHIFT	+516,194	+\$122,919,392	+\$3,759,832
15% USE SHIFT	+516,194	+\$130,902,073	+\$4,092,769
10% GROWTH #1	+1,032,387	+\$166,130,851	+\$3,529,103
10% GROWTH #2	+1,032,387	+\$171,745,572	+\$3,703,865
20% GROWTH #1	+2,064,775	+\$337,465,670	+\$7,230,467
20% GROWTH #2	+2,064,775	+\$343,491,144	+\$7,407,731

POTENTIAL COST IMPACTS

The Consultant Team used the results of the modeling exercise for existing conditions, 10 percent growth #2, and 20 percent growth #2 as inputs into the transportation model in Chapter 6. The build-out model also was used to calculate potential changes in population, employment, housing units, property tax revenue, and service costs to both municipalities. While increases to tax revenues are important, both communities wanted to ensure that municipal service costs would not outpace potential revenues.

As shown in Table 4.9, service costs increase with additional development, but net tax revenue from The Triangle still outpaces municipal service costs. The largest impact on municipal service costs comes from new residential development. Residents tend to use more municipal services than commercial businesses, particularly when it comes to services such as education, parks and recreation, library, trash collection, and administrative services. Both the 10 percent and 20 percent growth scenarios allocate 40 percent of the new growth to residential land uses, which drives up the cost of

TABLE 4.9 IMPACT MEASUREMENTS ACROSS GROWTH SCENARIOS			
	EXISTING CONDITIONS	10% GROWTH #2	20% GROWTH #2
TOTAL SQUARE FEET	10,323,873	11,356,260	12,388,647
POPULATION	2,198	2,969	3,898
RESIDENTIAL UNITS	1,059	1,319	1,732
EMPLOYEES	35,878	37,655	40,401
TAX RECEIPTS	\$35,843,781	\$39,547,646	\$43,251,512
SERVICE COSTS*	\$26,936,076	\$30,643,195	\$35,520,276
NET FISCAL IMPACT	\$8,907,705	\$8,904,452	\$7,731,236

**Note: Service Costs - Municipal service costs are based on an average cost model per resident and per employee. Students per unit calculations were based on a ratio of 0.11 students per residential unit as provided by the Framingham and Natick School Departments.*

municipal services compared to the increases in commercial development.

If the land use mix favors more commercial development in the future, tax receipts could be higher with lower overall service costs making the net fiscal impact more positive. While a heavier focus on commercial development is possible, it seems that the strong residential market in the Greater Boston area is creating a higher demand for residential development particularly in outlying suburbs that already have a substantial amount of retail and commercial development. ***The net fiscal impact comparison does not take into account any reduction in sales tax receipts from the decline in retail (as detailed in Table 4.3) should retail increase and not be backfilled by other use types.***

It is worth noting that the build-out model does not include revenue streams such as local excise taxes on vehicles, local options sales tax, reductions in vacancy which could drive up tax revenues, and assessed values on new construction that will be higher per square foot than what is currently built in The Triangle today. These additional revenue sources would increase the net fiscal benefit to both communities, and possibly bring in more revenue overall than



05 DEVELOPMENT VISION & URBAN DESIGN

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 - CONNECTIONS & OPEN SPACE FRAMEWORK
 - DEVELOPMENT OPPORTUNITIES
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 - CYCLE TRACK ANALYSIS FOR ROUTES 9 & 30
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DEVELOPMENT VISION & URBAN DESIGN

INTRODUCTION

The Vision for The Triangle is that of a vibrant mixed-use district that attracts residents, shoppers, employees and employers to live, work, shop, and play in a well-connected environment that encourages walking and bicycling between destinations and minimizes the need for auto usage (Figs. 5.1 and 5.2). This chapter sets out a series of design principles for future development, a connections and open space framework, and a series of hypothetical development concepts for parcels representing different development opportunities. The principles, connections framework and development concepts represent a long-term view of the future of The Triangle, and are intended to provide a structure for working with property owners on development opportunities as they emerge over time. The recommendations in this chapter were developed to accommodate phased implementation, with the idea that, in many cases, public realm improvements would be implemented with adjacent development projects. The phasing sequence could play out in a variety of ways over the long-term as development opportunities respond to changes in the market and lifestyle choices.

DESIGN PRINCIPLES

There are a number of Design Principles that have guided the development of an Open Space and Connections Framework for The Triangle, as well as providing the basis for how alternative futures might play out over the next 10 to 20+ years. These principles, incorporated into plans and recommendations throughout this chapter, include:

- Ensure that new development is sensitive to adjacent neighborhoods in Natick and Framingham and improves the quality of life for residents of both municipalities.
- Expand mixed-use development, including retail, office, residential, entertainment, and open space.
- Create an attractive, safe/convenient pedestrian and bicycle environment with good pedestrian, bicycle, vehicular and transit connections between destinations.



Figure 5.1: Assembly Row in Somerville, MA: a recent example of a vibrant, mixed-use district with retail, office, residential, and entertainment uses; and an attractive, walkable pedestrian environment.



Figure 5.2: Recent example of a vibrant, mixed-use district with retail, office, residential, entertainment uses; an attractive, walkable pedestrian environment and a central open space in Storrs, CT.

- Create new amenities (e.g., open space, Cochituate Rail Trail and other greenways, entertainment, transit) and take advantage of those amenities when planning and marketing new development. Introduce new placemaking elements - including plazas, sculptures and other art installations - to attract both children and adults.
- Site buildings to define the street edges.
- Create development sites that are flexible to accommodate multiple uses as the market changes over time and to accommodate a variety of phasing sequences.
- Site lower scale buildings at neighborhood edges to provide a buffer.
- Site retail in locations with good visibility (e.g., Routes 9 & 30 and Speen Street).
- Site corporate office parks along MassPike.
- Expand and clarify a transit shuttle route.

CONNECTIONS AND OPEN SPACE FRAMEWORK

The Aspirational Connections and Open Space Framework Plan (the Framework Plan) shown in Figure 5.3 provides the framework for mobility (vehicular, pedestrian, bicycle and transit) and a development parcelization grid sized and configured to accommodate multiple forms of mixed-use development. The roadway network and parcelization grid are designed to be flexible enough to be built out in different sequencing scenarios.

This Framework Plan represents the aspirational vision for the future of The Triangle and should be used to guide development and the creation of improved connections throughout The Triangle. Individual development proposals, while not necessarily exactly replicating the Framework Plan, should allow for, and contribute to, the realization of a similar open space and connections network. Development proposals should be required to clearly detail how they accommodate and/or provide new, pedestrian-friendly streets and site buildings to reinforce the street edges.

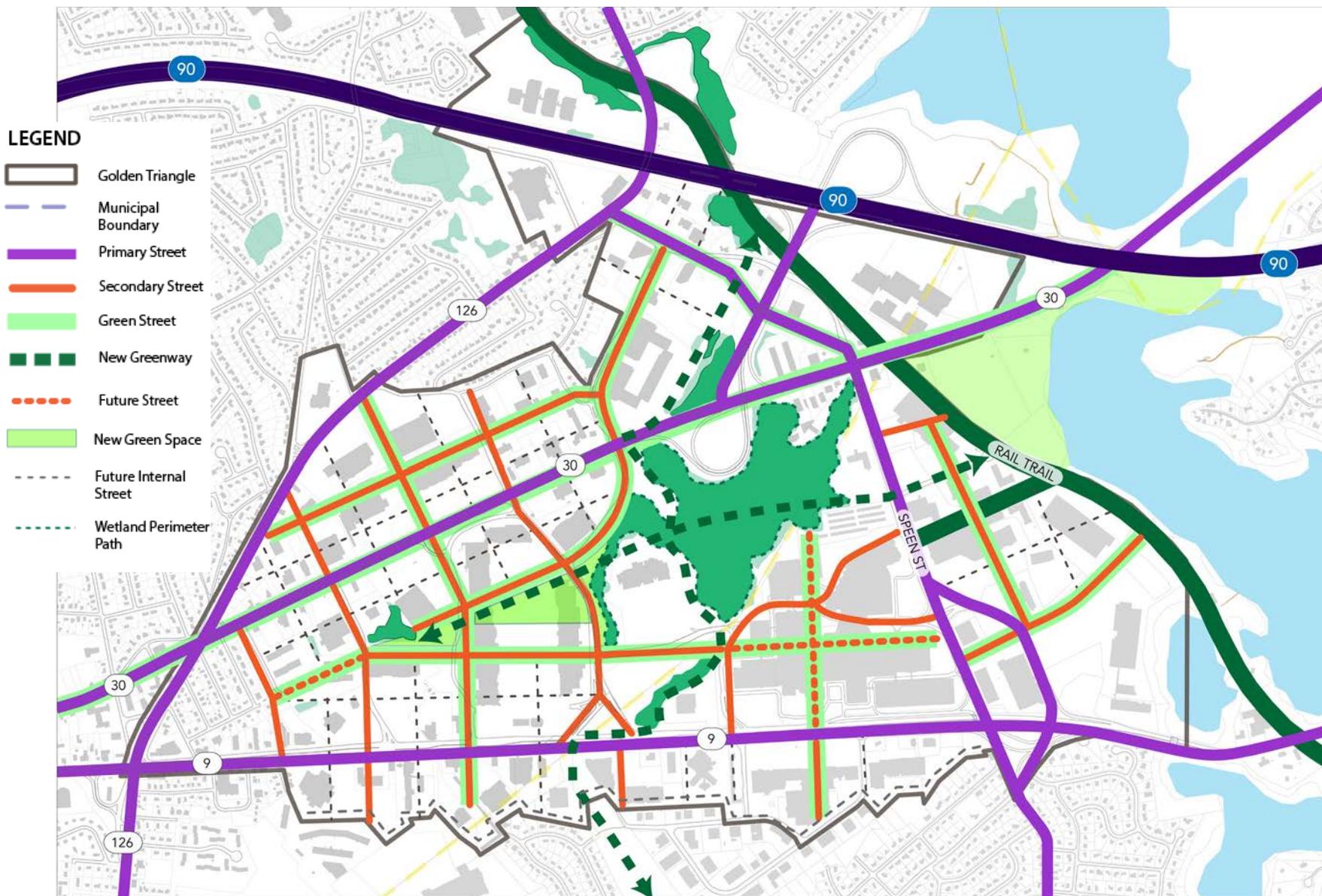


Figure 5.3: Aspirational Connections and Open Space Framework Plan.



Figure 5.4: Boardwalk greenway through a wetland.



Figure 5.5: Pedestrian and bicycle greenway adjacent to new residential development.



Figure 5.6: Active, pedestrian-friendly street with wide sidewalks and cafe seating.

The components of The Framework Plan are:

- A continuous north-south and east-west greenway system utilizing existing open space (i.e., the central wetlands – Bannister’s Meadows, the Cochituate Rail Trail and Wonderbread Spur, the pathway around the Natick Mall and other identified wetlands) in combination with the patchwork of wooded areas bordering and linking the wetlands. These two major greenway corridors will include a wide multi-use path and pedestrian boardwalks through Bannister’s Meadows (Figs. 5.4 and 5.5). The community also expressed an interest in a pathway around Bannister’s Meadows. Much of this land is privately owned. A more detailed study to determine the feasibility of a perimeter pathway, including the availability of relatively flat land for constructing the path, permitting issues, and future ownership and maintenance responsibility is recommended. The municipalities should consider opening discussions with Eversource regarding building trails under Eversource power lines, both north and south of Route 9.
- New continuous east-west pedestrian-friendly “complete streets” (shown as green streets on The Framework Plan) between Route 9 and Route 30 and north of Route 30. Streets that are likely to happen in the longer-term are labeled “future street.” These new streets would function as active front door streets for new mixed-use development – walkable streets that link housing to jobs, retail, and entertainment and that have nodes of gathering spaces (Fig. 5.6).
- Redefined parcels lining the new streets of a size and geometry that can accommodate various building typologies – in other words, conventional city blocks (Fig. 5.3).

The existing roadway system is shown on Figure 5.8.

As discussed in Chapter 2: Existing Conditions, the introduction of a comprehensive wayfinding and signage system (for vehicles, pedestrians and bicycles) throughout The Triangle will be important to improving mobility and creating a more comprehensible and attractive district.

MASSPIKE EXIT 13 INTERCHANGE

The potential reconfiguration of the MassPike Exit 13 interchange would create benefits for both the potential north-south greenway and for development opportunities in the Route 30/Speen Street Exit



Figure 5.7: Diagram of proposed changes to MassPike Exit 13. Letters refer to the text at right.

13 area (Fig. 5.7). This long-term reconfiguration, described in detail in Chapter 6, is recommended to accommodate the long-term 20 percent growth scenario. While the reconfiguration is included in The Framework Plan, it is just one element of that Plan. The full implementation of the remaining elements of The Framework Plan are not dependent on that reconfiguration. The existing Exit 13 configuration is shown in Fig. 5.8.

Location letters in the following description refer to Figure 5.7. Currently, there are two problematic locations on the proposed greenway (A & B) where the pedestrian/bicycle path crosses Speen Street and Route 30. Reconstruction of the interchange would facilitate these two crossings, create new



Figure 5.8: Existing roadways within The Triangle greatly limit opportunities for east-west connections and discourage pedestrian and bicycle activity.

potential development parcels (E), and improve access to adjacent parcels. Some existing parcels on Route 30 (D) would have new frontage on Speen Street as well, which could improve their redevelopment potential, and subsequently the redevelopment potential of nearby parcels (C).

Several access modifications will be required as a result of this reconfiguration. Access to the G parcels from Speen Street will need to be maintained, and a new access road from Speen Street to the TJX campus (F) will need to be created. This will require a land swap with a portion of the abandoned former Speen Street right-of-way and a reconfiguration of the Ameresco parking lot (G).

DEVELOPMENT OPPORTUNITIES

Redevelopment opportunities in The Triangle can be roughly categorized into five typologies:

- Large transformative parcels such as shoppers World and Natick Mall
- Large single-ownership parcels with multiple buildings, such as the office park on Old Connecticut Path north of the MassPike, MathWorks Lakeside Campus and the TJX Headquarters
- Big box parcels such as Walmart, Home Depot, Target and Lowes
- Small to medium size strip commercial parcels such as the Cloverleaf Mall and Sherwood Plaza
- Small Parcels, such as the parcels on the southeast quadrant of the Route 30/Speen Street intersection, which could be consolidated to create a more attractive development opportunity.

In addition, there is the redevelopment opportunity opened up by the potential long-term MassPike Exit 13 interchange reconfiguration. Each of these six typologies represents different opportunities for the creation of active, pedestrian friendly, mixed-use development and for the creation of pedestrian/bicycle greenways, a series of internal east-west and north-south streets, and a grid of blocks and parcels sized to accommodate multiple development scenarios in varying sequences.



Figure 5.9: A pedestrian-friendly, two-sided street lined with mixed-use..

Potential redevelopment of properties representing three of these typologies is illustrated on the following pages. The conceptual redevelopment plans were prepared to illustrate how the design principles and Connections and Open Space Framework could be accommodated on a variety of parcel types. The selection of individual parcels does not imply the imminent redevelopment of any of these parcels. Conceptual plans were developed by the Consultant Team in discussion with the Client, but did not involve the individual property owners.

BIG BOX PARCELS: CONNECTIVITY AND POTENTIAL REDEVELOPMENT SEQUENCE

Figures 5.10 through 5.12 provide a hypothetical example of how a new mobility and parcelization system, consistent with the design principles, could be developed incrementally as individual property owners make redevelopment plans.

In this example, one of the big box parcels (Target - outlined in red on Fig. 5.10) is positioned for redevelopment. These single-owner big box parcels tend to have one or only a limited number of tenants. They are therefore less complex and more likely to change in the short-term than either the larger multi-use parcels or the small parcels that would require consolidation for an efficient redevelopment.

A new east-west street (shown in yellow on Fig. 5.11) links and creates new pedestrian-friendly street frontage. The parcel can be developed incrementally and internal streets or alleys (shown as dotted lines) can provide additional access. The new east-west street could be created with an easement along the rear of the parcel. An incentive or density bonus zoning provision could be used to encourage developers to build the road, to grant easements for the construction of connecting internal streets, and/or to pay into a fund that could be used by the municipalities to build connecting streets.

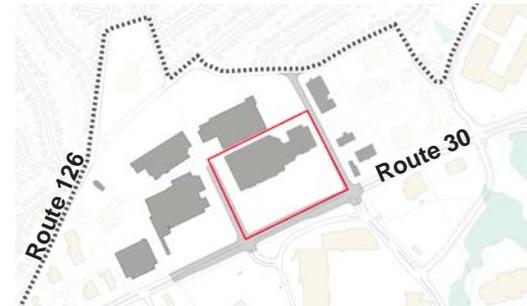
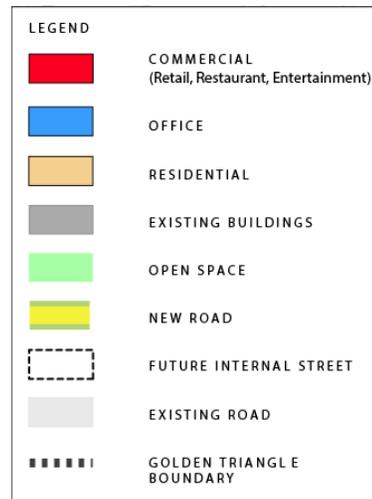


Figure 5.10: Existing conditions with the Target parcel outlined in red.

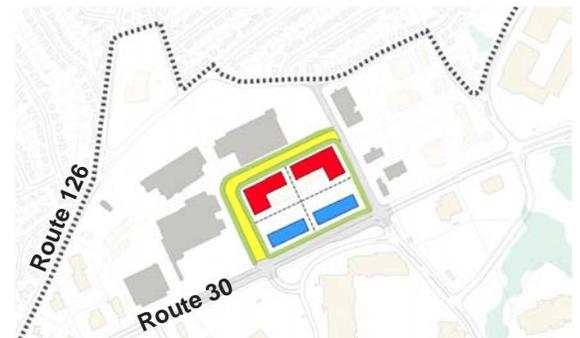


Figure 5.11: Potential redevelopment of parcel with new east-west street connecting to north-south street.



Figure 5.12: Potential redevelopment of four big box parcels with a continuous new east-west street.

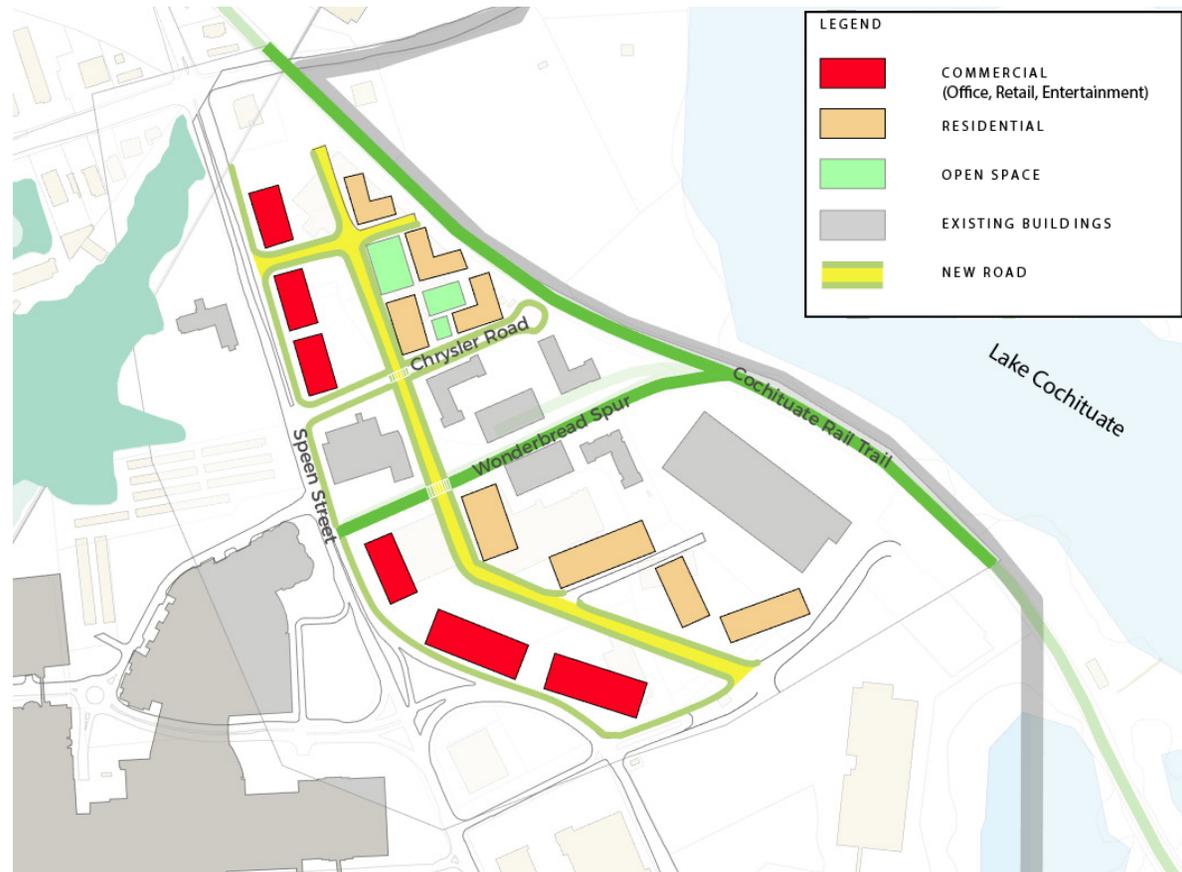


Figure 5.13: A hypothetical redevelopment of the Cloverleaf Mall and Home Depot includes a new pedestrian-friendly north-south street, from TJX to MathWorks, lined with mixed-use development.

New development along Route 30 is sized for commercial/retail use with office above. Buildings along the new east-west internal street are sized for either office or housing over retail.

Over time, this roadway and parcelization system could be extended to create a new district with a continuous pedestrian friendly internal east-west street (Fig. 5.9 and 5.12). Two to three story town-house buildings are shown along the east side of Route 126 to provide a sensitive transition to the adjacent residential neighborhood.

MEDIUM SIZE STRIP COMMERCIAL CENTER POTENTIAL REDEVELOPMENT

The Cloverleaf Mall is a good example of a medium size strip commercial center. If, over time, the Speen Street sites of Home Depot and the Cloverleaf Mall are redeveloped, a street and parcelization plan could be developed incrementally to reflect the basic design principles described previously and create a new “urban village.” The centerpiece would be a new north-south “complete street” (a pedestrian-friendly two-lane street with parking, in-street bike lanes and wide sidewalks) linking the MathWorks and TJX campuses. The new north-south street is shown lined with buildings sized for commercial uses (office, retail and entertainment) on the west, with housing facing the lake and the Cochituate Rail Trail on the east (Fig. 5.13).

LARGE TRANSFORMATIVE PARCEL POTENTIAL REDEVELOPMENT

A conceptual redevelopment plan was prepared for the Shoppers World site to illustrate the potential for redeveloping an existing single-use superblock site with minimal pedestrian amenities into a mixed-use, pedestrian-friendly development consistent with the design principles outlined earlier in this chapter. While redevelopment of a large transformative parcel would have the greatest impact on The Triangle, the scale of the parcel and number of tenants makes the redevelopment complex, and less likely to redevelop in the near-term.

Therefore, the conceptual redevelopment plan was designed to be easily phased to provide the owner with greater flexibility. For the sake of illustration, a three-phase development sequence is shown on Figures 5.14 through 5.17. Redevelopment of Blocks A, B, and C could happen in any order, and redevelopment of each one could happen in one or two phases.

The key elements of the plan include:

- Two new east-west pedestrian-friendly streets lined with active mixed-use development (housing over retail) and connecting the far western section of The Triangle with Flutie Pass and Burr Street and the eastern side of The Triangle, and a new north-south internal street (Fig. 5.24). The new

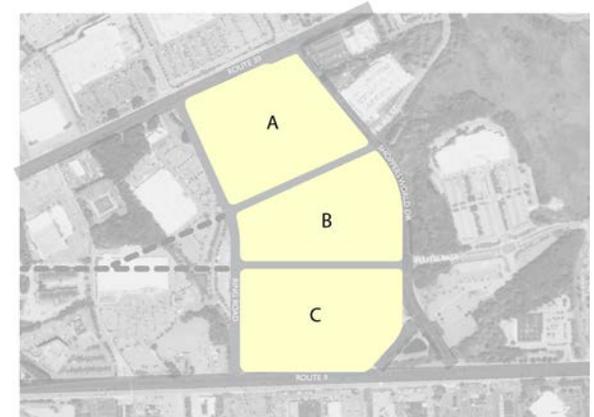


Figure 5.14: Potential redevelopment blocks within the Shoppers World site.

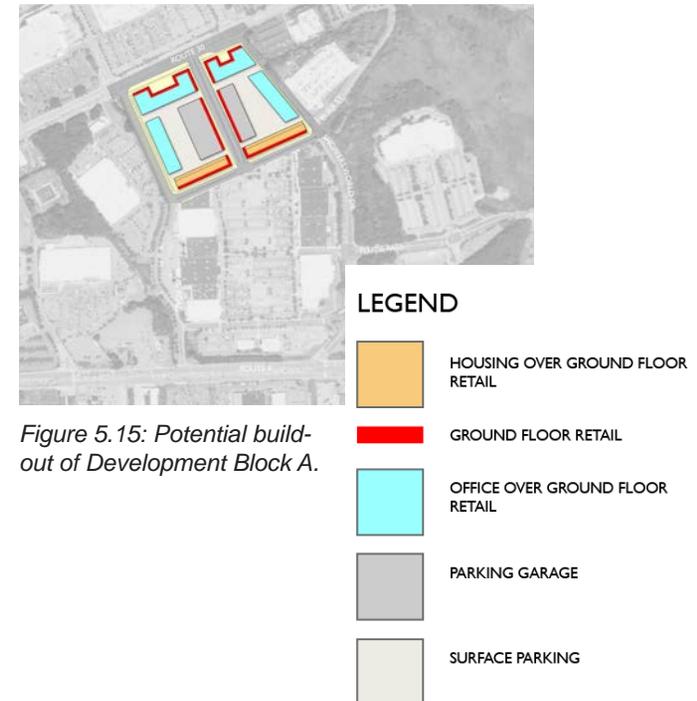


Figure 5.15: Potential build-out of Development Block A.



Figure 5.16: Potential build-out of Development Block C.



Figure 5.17: Potential build-out of Development Block B.



Figure 5.18: Central green surrounded by housing.

north-south street provides a pedestrian connection from Routes 9 and 30 to the new open space, as well as space for pedestrian amenities such as seating and tables for outdoor cafes (Fig. 5.15). ***The two new east-west roads and the new north-south road divide the Shoppers World property into six large blocks which can be developed independently in multiple sequences.***

- Commercial and office uses fronting on Route 9 and Route 30.
- Surface and structured parking in the interior of the parcels.

Development Block A extends Burr Street to the west through the Shoppers World site and establishes the northernmost segment of a new north-south street. Both the new east-west and north-south streets establish a connection with the remaining Shoppers World complex. The buildings are scaled for office over ground floor retail on Route 30, housing over retail facing the new Burr Street extension, and surface parking with two parking garages over retail in the center of the block. Buildings along Route 30 are sited to face a frontage road parallel to Route 30 that creates a more attractive pedestrian environment and improves vehicular circulation. The frontage road concept is described in more detail on page 173.

At the opposite end of Shoppers World facing Route 9 (Block C), a similar land use scenario could be developed with a new east-west road extending Flutie Pass to the west. A new frontage road is shown parallel to Route 9 (Fig. 5.16).



Figure 5.19: Outdoor performance venue.



Fig5.20: Outdoor entertainment venue.



Figure 5.21: Walkways between buildings provide seating and tables.



Figure 5.22: Central green surrounded by mixed-use.



Figure 5.23: Central green surrounded by mixed-use.

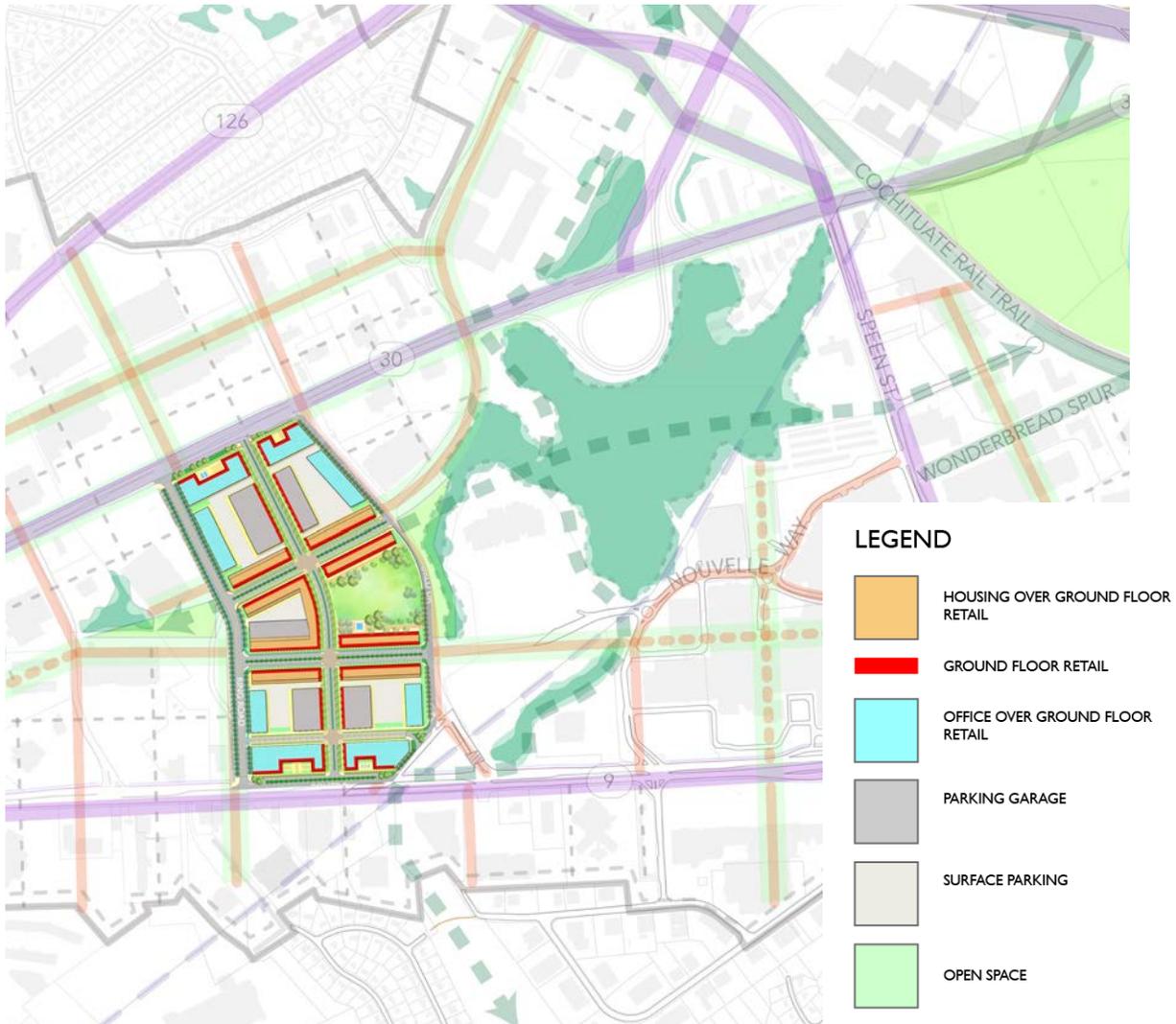


Figure 5.24: Shoppers World hypothetical mixed-use redevelopment plan with a large central green and new east-west streets contributing to the Framework Plan.



Figure 5.25: Street level view of potential new mixed-use development on Route 9 at existing Shoppers World site. The rendering illustrates a one-way frontage road separated from Route 9 by a tree row. The frontage road, parallel parking, bike lane, and tree row buffer pedestrians from Route 9 traffic. Active store fronts and a small plaza with cafe tables and trees enhance the pedestrian environment.

Block B unites the central portion of the new north-south road with both of the new east-west roads. This land use scenario is scaled for housing over retail, with much of it facing into a new village square or common (Fig. 5.18). The major new open space terminates the east-west greenway connections to the Cochituate Rail Trail (Fig. 5.24). Outdoor entertainment uses could complement the AMC Theatre to the east (Figs. 5.19 and 5.20).

The overall plan includes approximately the same amount of retail space as the existing Shoppers World, in addition to new office and residential uses. Figures 5.21 through 5.23 and 5.27 through 5.29 provide images of similar development in other locations.

The sum could be a lively mixed-use district with three new pedestrian and bicycle friendly streets, and a major new open space framed by housing with ground floor retail, opening out toward Bannister’s Meadows and its series of paths and boardwalks.

POTENTIAL FRONTAGE ROAD ON ROUTE 9 AND/OR ROUTE 30

As discussed in the previous pages, a redevelopment option for parcels facing Route 9 and/or Route 30 involves creating a more pedestrian-friendly environment by siting new commercial buildings further from these busy roads with a separation zone that includes a landscaped setback, a narrow frontage road with on-street parallel parking, and a wide sidewalk with a curbside tree lawn (Figs. 5.25, 5.26 and 5.30). Plazas and landscaped setback zones could be interspersed with the new buildings (Figs. 5.27 through 5.29). This design has the advantage of creating a greater buffer between pedestrians and traffic on busy streets, providing additional space for plazas and pedestrian amenities, and

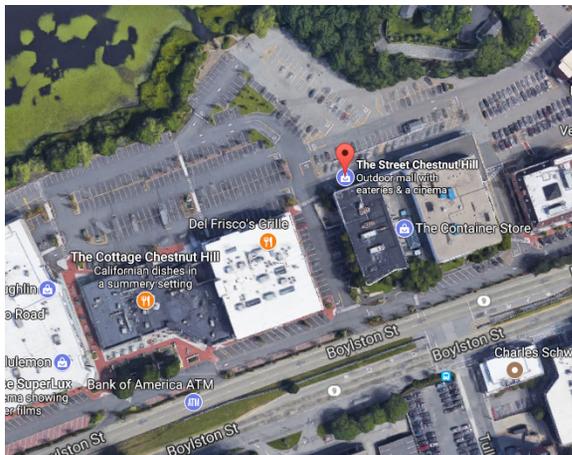


Figure 5.26: Aerial view of similar frontage road at The Street in Chestnut Hill, MA.



Figure 5.27: Occasional larger setbacks provide opportunities for open space and recreational amenities, gathering spaces, seating and cafe tables.



Figure 5.28: Larger setbacks allow for gathering spaces and amenities consistent with restaurant and entertainment uses.



Figure 5.29: attractive walkways between buildings draw people through the development and provide seating areas.

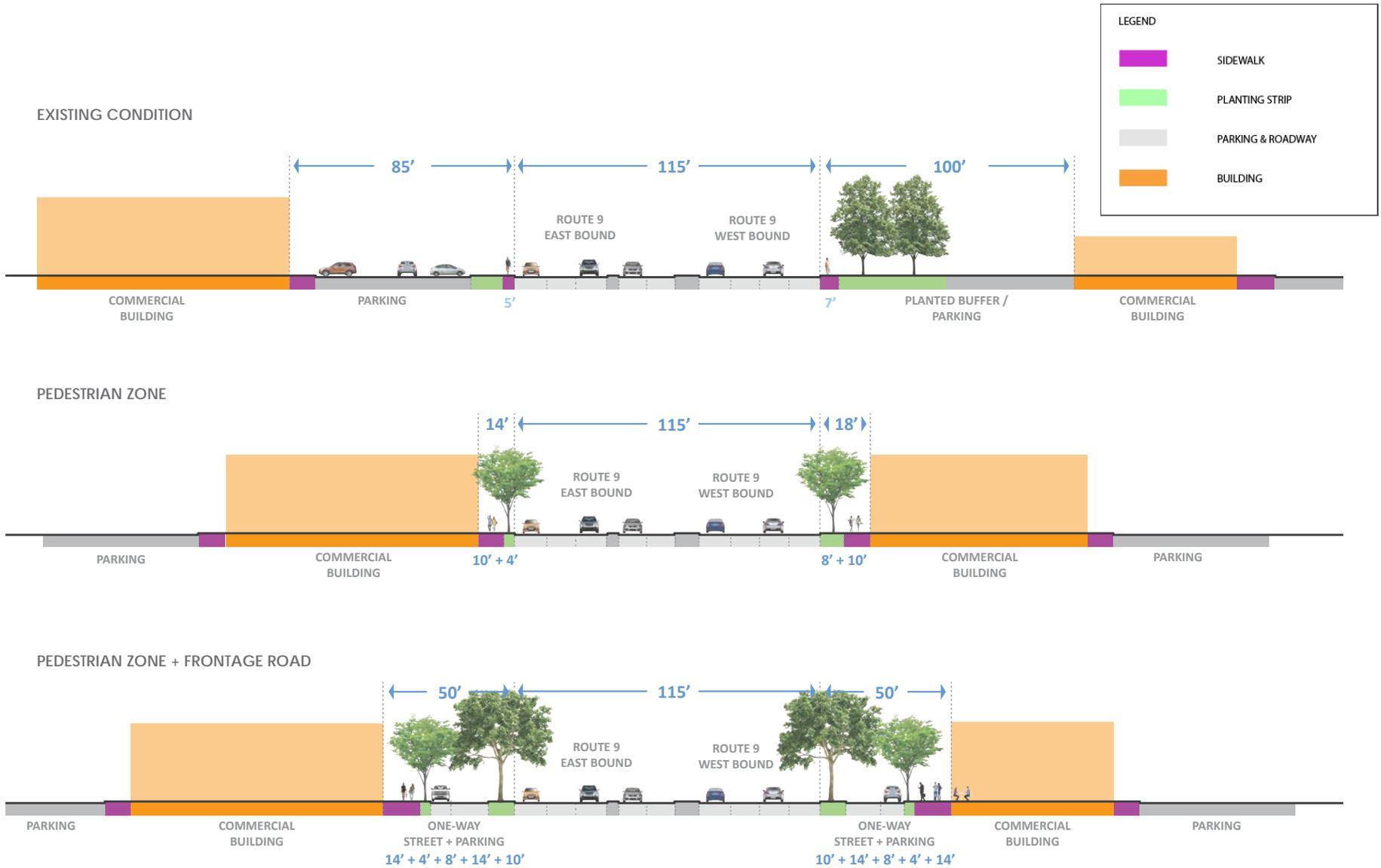


Figure 5:30: Cross sections illustrate (from the top) typical existing building placement on Route 9 with narrow sidewalks and large parking lots; placement of the buildings closer to the street with wide sidewalks and landscaping in front of the buildings and parking behind; suggested frontage road, landscaping and wide sidewalks in front of the buildings, and parking behind.

reducing the need for drivers to exit onto Routes 9 and 30 to reach other nearby destinations. This configuration was mentioned favorably on the coUrbanize website as a way to improve the pedestrian environment, as well as pedestrian and vehicular connections and circulation. The exact design of the frontage road will need to be developed in greater detail and will need to be flexible to accommodate different site conditions and redevelopment plans.

Alternatively, new buildings could be sited at the back of a wide sidewalk, separated from the road by a four or eight foot tree lawn. This layout would provide less of a buffer for pedestrians, but would create a more attractive pedestrian environment than exists today, with a consistent building wall and parking in the rear of the buildings (Fig. 5.30).

POTENTIAL SERVICE ROAD AND PEDESTRIAN CONNECTION SOUTH OF ROUTE 9

The commercial parcels located on the south side of Route 9 share a number of characteristics (Fig. 5.31):

- Every parcel has its own curb cut on Route 9, a number of which can accommodate only right-in/right-out vehicular access.
- In general, buildings are set back from the street to accommodate surface parking in the front, although several buildings are located very close to the front property line.
- There is very little vehicular connectivity between the individual parcels; and, many of the parcels are not connected to one of the north-south streets crossing Route 9. As a consequence, many drivers wishing to move from



Figure 5.31: Aerial view of multiple curb cuts and typical building siting south of Route 9 showing the difficulty of providing a continuous internal connection at the rear of the parcels.

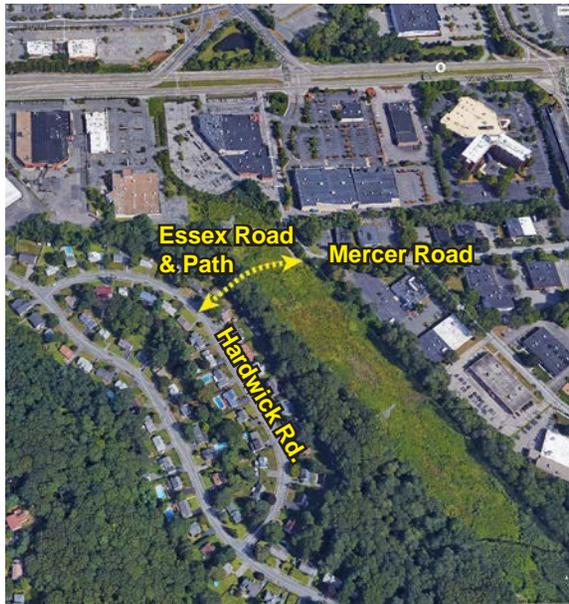


Figure 5.32: Aerial view of connecting path from Hardwick and Essex Roads to Mercer Road.



Figure 5.33: Pedestrian bridge connecting Mercer Road to path on Eversource utility corridor.

one commercial site to another, or who wish to turn left (west) on Route 9, must take indirect routes that add to the congestion on Route 9.

Future redevelopment on the south side of Route 9, where possible, should include the frontage road configuration described on the previous pages. However, because redevelopment on a number of parcels may not happen for many years, the potential for an east-west access road connecting all or most of these parcels at the rear of properties was examined (Fig. 5.3). Three factors complicate the introduction of such an access road:

- There are changes in elevation between some of the parcels, making connections more difficult.
- Some buildings are positioned very close to the rear lot line; and, some of these buildings have service/loading facilities in the rear.
- The rear lot lines are irregular and jagged in some instances, complicating the geometry of an east-west road.

There are, however, opportunities for a series of short east-west streets connecting some of the parcels to one another and to one of the north-south streets that have a signalized intersection at Route 9. A more detailed study of the property boundaries, topography and delivery/access requirements of individual businesses is necessary in order to develop a specific plan for these connecting roads. At a minimum, as parcels redevelop, property owners should be encouraged to create these connections, as well as to consolidate curb cuts. In addition, the issues involved in extending public ownership of Mercer Road to its intersection with Route 9 should be assessed.

There is also a desire for a pedestrian connection to The Triangle from the Natick neighborhood to the south. This connection was mentioned a number of times at the Natick Community Meeting on December 21, 2017 and on coUrbanize. Today, an unofficial path has been created from the end of Essex Road, a short street that extends east from Hardwick Road (Fig. 5.32). Essex Road ends at the Eversource utility corridor, just to the west of Mercer Road. A pedestrian bridge was constructed (by the Natick Trails Committee) over a small watercourse to connect a path across the utility corridor to Mercer Road. Options for defining the legal status of the path should be explored with the intention of creating a more definitive connection.

In summary, recommendations for connections on the south side of Route 9 include:

- Longer-term: Encourage the introduction of a frontage road as properties are redeveloped.
- Shorter-term: Work with property owners to study the feasibility of, and implement, segments of a connecting road at the rear of parcels.
- Shorter-term: Explore options for defining the legal status of the pedestrian path from Essex Street with the intention of creating a more definitive connection.

CYCLE TRACK ANALYSIS FOR ROUTES 9 & 30

In order to facilitate easy bicycle access throughout The Triangle, the potential for a cycle track on Routes 9 and 30 was examined to keep cyclists well protected from nearby vehicular traffic. A cycle track is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk (Fig. 5.34). Figure 5.35 illustrates major and minor physical constraints to the incorporation of a cycle track along Routes 9 and 30. Two potential widths for the cycle track were examined:

- One with a minimum buffer along the street edge (full width: 2' buffer + 6.5' cycle track + 1.5' separation + 6 sidewalk = 16' width)
- One with a tree-lined street buffer (full width: 6' tree lawn + 6.5' cycle track + 1.5' separation + 6' sidewalk = 20' width)

The constraints for both widths are essentially the same along the corridors, although a survey scale analysis would be necessary to confirm this. Based on the physical width constraints, the corridor was divided into three categories (Fig. 5.35):

- Yellow: Few to no physical width constraints to the incorporation of a cycle track along the corridor



Figure 5.34: Example of a cycle track.

- Orange: Minor physical width constraints that can be negotiated through minor regrading/wall installation or adjustment of parking/drive aisle widths
- Red: Major physical width constraints that would need parcel redevelopment or major site level building/parking reconfigurations to accommodate full cycle track width.

This GIS level analysis reviewed available horizontal width along Routes 9 and 30 based on curb lines, sidewalks, building footprints and parking data layers from GIS. It did not take into account other physically constraining elements such as guardrails, street trees, utility poles, or other elements typically reviewed at a survey scale level of detail.

Based on the review, the majority of Route 30 could feasibly accommodate a one-way cycle track on both the east and westbound sides of the road. The primary conflicts are at the on and off-ramps for the MassPike Exit 13 and a few physical constraints at the western end of The Triangle near Route 126. The potential long-term reconfiguration of the MassPike Exit 13 Interchange illustrated in Chapter 6 would remove the primary physical constraint for successful connection of the cycle track to the Cochituate Rail Trail (Fig. 6.5).

Both the north and south sides of Route 9 would be more challenging based on current development. It appears possible to connect from Speen Street to the west side of Shoppers World through some regrading of existing slopes or installation of retaining walls along the route. However, the abutment and overpass constraints at the intersection with Speen Street (“the beetleback”) make direct connection to the Cochituate Rail Trail extremely difficult via Route 9. An alternative connection could be made via the Wonder Bread Spur and along the existing bike route that directs cyclists south along Speen Street at the Nouvelle Way intersection.

West of Shoppers World there are a number of physical constraints, including existing buildings, that create obstacles to installation of a cycle track on either side of Route 9.

In summary, in the long-term, as more of The Triangle is redeveloped, and the Exit 13 Interchange is realigned, many of the more difficult physical constraints to developing the cycle track could be resolved, making it more possible to develop continuous cycle tracks on both Routes 9 and 30 that

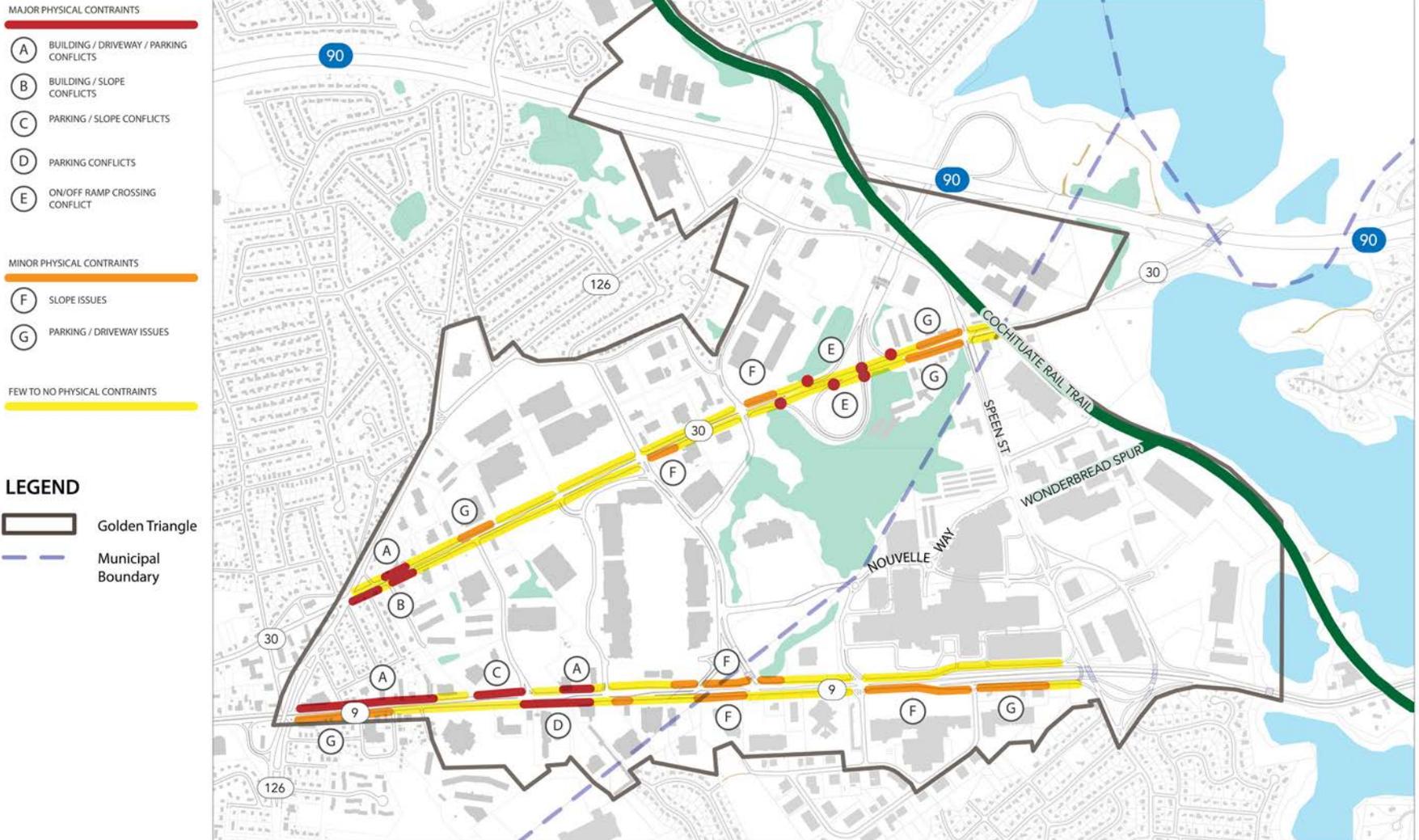


Figure 5.35: Diagram illustrating physical constraints to the development of a cycle track on Routes 9 and 30.

connect to other bicycle facilities on the east and west. In the short-term, consideration should be given to developing a short cycle track on Route 9 that connects via the Natick Mall path on the west side of Speen Street to the Wonderbread Spur and Cochituate Rail Trail on the east and to Ring Road or Shoppers World Drive on the west. This short cycle track would provide a connection to much of The Triangle for cyclists on the Cochituate Rail Trail and for Triangle residents living on the east side of Speen Street.

SUMMARY RECOMMENDATIONS

- Ensure that new development is consistent with and helps to implement the Framework Plan. Development proposals should be required to clearly detail how they accommodate and/or provide new, pedestrian-friendly streets that create new connections through The Triangle with buildings sited to reinforce the street edges.
- Review new development proposals for consistency with this Report, including inclusion of mixed-use, connections, open space, driveway consolidation, pedestrian and bicycle facilities, placemaking elements, zoning and design principles.
- Encourage mixed-use development including retail, office, entertainment and residential uses.
- Work with property owners and developers to facilitate desired development.
- Finalize and adopt the zoning recommendations in Chapter 6.
- Pursue funding for the design and construction of the greenways through the wetlands.
- Design and implement a wayfinding and signage program throughout The Triangle.
- Work with property owners and developers to develop a continuous north-south and east-west greenway system utilizing existing open space (i.e., the central wetlands – Bannister’s Meadows, the Cochituate Rail Trail and Wonderbread Spur, the pathway around the Natick Mall and other identified wetlands) in combination with the patchwork of wooded areas bordering and linking the wetlands, including a wide multi-use path and pedestrian boardwalks through Bannister’s Meadows.

- Consider opening discussions with Eversource regarding building trails under Eversource power lines, both north and south of Route 9.
- Conduct a more detailed study to determine the feasibility of a perimeter pathway around Bannister’s Meadows, including the availability of relatively flat land for constructing the path, permitting issues, and future ownership and maintenance responsibility.
- Consider providing an incentive or density bonus zoning provision to encourage developers to build connecting roads, to grant easements for the construction of connecting internal streets, and/or to pay into a fund that could be used by the municipalities to build connecting streets.
- Encourage developers to incorporate the frontage road concept for new development on parcels facing Route 9 and/or Route 30. This involves creating a more pedestrian-friendly environment by siting new commercial buildings further from these busy roads with a separation zone that includes a landscaped setback, a narrow frontage road with on-street parallel parking, and a wide sidewalk with a curbside tree lawn.
- On the south side of Route 9:
 - Work with property owners to study the feasibility of, and implement, segments of a connecting road at the rear of parcels, as well to consolidate driveways.
 - Explore options for defining the legal status of the pedestrian path from Essex Street to Mercer Road with the intention of creating a more definitive connection.
 - Encourage the introduction of a frontage road as properties are redeveloped.
- In the short-term, consider developing a short cycle track on Route 9 that connects via the Natick Mall path on the west side of Speen Street to the Wonderbread Spur and Cochituate Rail Trail on the east and to Ring Road or Shoppers World Drive on the west. In the long-term, as obstacles are removed by future redevelopment the potential redesign of MassPike Exit 13, consider developing a continuous cycle track on both Routes 9 and Route 30.



06 TRANSPORTATION & UTILITIES

- **INTRODUCTION**
 - **ANTICIPATED FUTURE TRANSPORTATION CONDITIONS**
 - **POTENTIAL INFRASTRUCTURE IMPROVEMENTS**
 - **FUTURE CONDITIONS TRAFFIC VOLUMES**
 - **BUILD CONDITIONS INTERSECTION CAPACITY ANALYSIS**
 - **TRANSPORTATION RECOMMENDATIONS**
 - **ANTICIPATED FUTURE UTILITY CONDITIONS**
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-

TRANSPORTATION & UTILITIES

INTRODUCTION

This section details the transportation, infrastructure and utility needs expected in the future in The Triangle. Anticipated future transportation infrastructure, traffic volumes and utility needs were determined based on growth projections detailed in Chapter 3.

ANTICIPATED FUTURE TRANSPORTATION CONDITIONS

As outlined in Chapter 2: Existing Conditions, several areas of congestion have been identified through operational analysis as well as the public input process. With any future growth, whether local trips or through traffic, additional traffic delays are anticipated in the following areas:

- **MassPike Exit 13:** The ramp access to the MassPike attracts heavy traffic and results in congestion and queuing along Route 30 and Speen Street, despite multiple lanes and wide intersection approaches. Difficult access onto and off the MassPike interchange ramps creates weaving conflicts, which are exacerbated by frequent curb cuts and poor access management along Cochituate Road. Stakeholders within The Triangle have expressed their concerns regarding regional access being limited by the traffic in this vicinity. In addition, the scale of the MassPike interchange results in a hostile environment for pedestrians and bicyclists.
- **Speen Street:** Speen Street experiences significant congestion during peak periods, primarily as a result of traffic spillback from the MassPike interchange, but also due to high volumes of traffic circulating around Route 9 and local businesses.
- **Route 30:** The Route 30 corridor experiences peak hour congestion in the vicinity of the MassPike Interchange as well as at the signalized intersections to the west as a result of the high volumes of traffic using Route 30 to access the MassPike and local turning traffic.
- **Route 9:** Due to the high volume of commuter traffic in addition to the high volume of turns into and out of local businesses, Route 9 experiences peak hour congestion, especially when pedestrians attempt to cross Route 9.

POTENTIAL INFRASTRUCTURE IMPROVEMENTS

Infrastructure improvements within The Triangle are needed in order to accommodate future growth in The Triangle as well as to address some existing congestion points. Potential infrastructure improvements have been developed by MassDOT as well as by the project team for this study.

ROUTE 30 AT SPEEN STREET



The intersection of Route 30 with Speen Street (Fig. 6.1) was identified by the Boston region MPO as a critical intersection for improvement. Delays, queues and congestion at the Route 30 and Speen Street intersection inhibit safe and free-flow access to and from the retail establishments.

Short term improvements suggested by the MPO involve optimizing the AM and PM peak signal timings at the intersections. However, the MPO study shows that this will result in only minor improvements in capacity. The MPO study suggested adding a lane in the westbound direction of Route 30 at the intersection. The lane would begin at the TJX driveway, cross Speen Street and continue as an additional third lane between Speen Street and the I-90 on ramp, making the ramp two-lane. This change resulted in a 25 percent reduction in delay per vehicle and up to 40 percent reduction in queue lengths per the MPO study. The MPO also developed several long-term grade separated alternatives.

*Figure 6.1: Existing Route 30 at Speen Street
Source: MPO Study*

In 2014, MassDOT Office of Transportation Planning evaluated a new improvement scenario for the intersection. This alternative included a displaced left turn configuration at the intersection of Route 30 and Speen Street to improve operations by separating the northbound left turn to the west of the intersection (Fig. 6.2).

The displaced left turn design removes the conflict between the heavy northbound left turn from Speen Street onto Route 30 and the southbound through volumes along Speen Street. Removing that conflict allows more vehicles to be processed at one time reducing delays at the intersection. In order to work, the northbound left turns would turn left south of the intersection (in the vicinity of the existing Courtyard by Marriott) into a roadway that will run parallel to Speen Street on its west side. As shown in Figure 3, once the Speen Street northbound left turning traffic reaches the intersection with Route 30, it will proceed through the intersection at the same time as the north and southbound through traffic. In addition, because the eastbound right turn lane from Route 30 eastbound to Speen Street southbound will be located alongside the new left turn alignment, that traffic can also proceed at the same time. The more vehicles that can be processed in a single signal phase, the more green time available at the traffic signal.

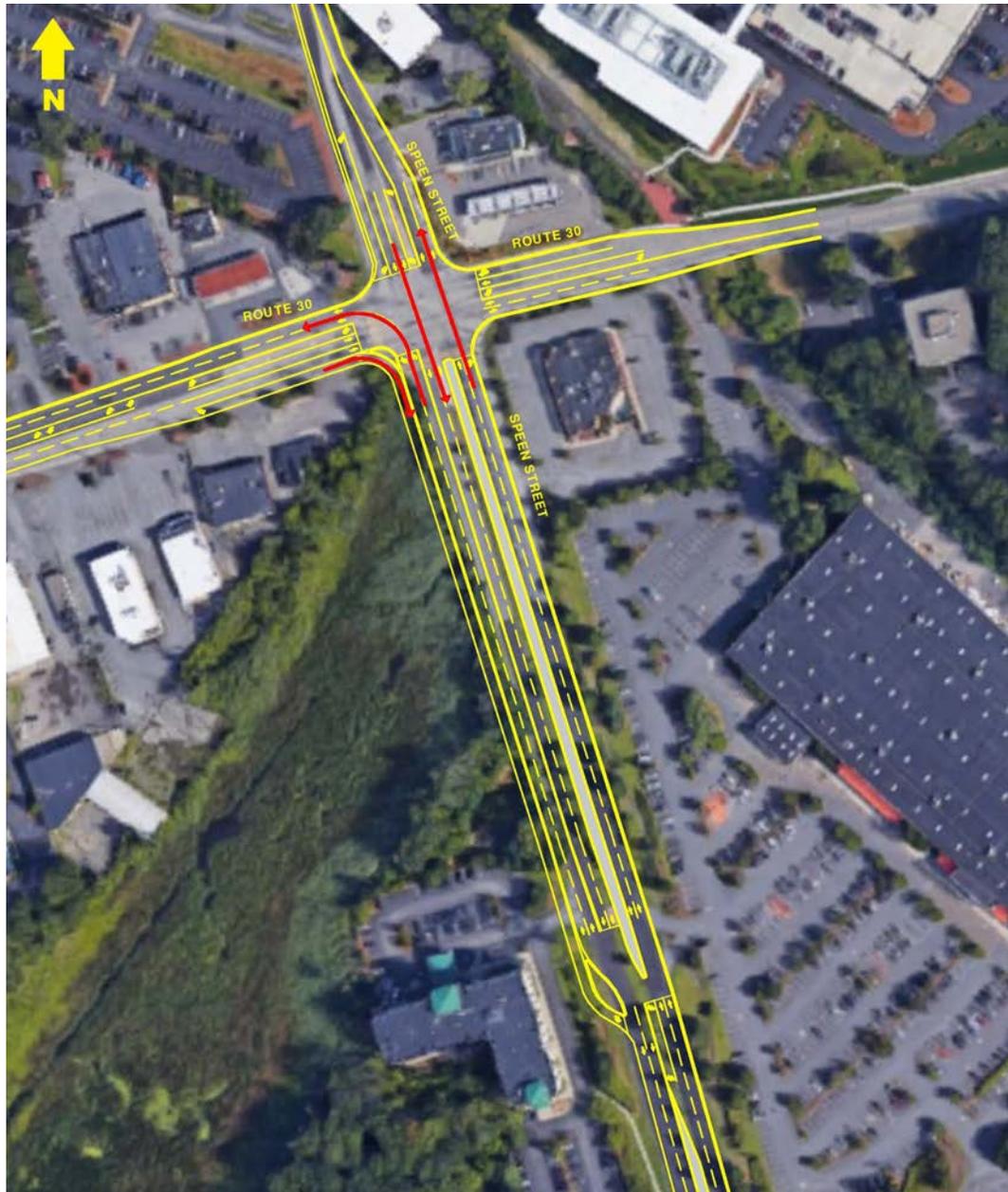


Figure 6.2: Concurrent Traffic Movements at Displaced Left Turn. This drawing represents a very conceptual layout; the final layout and right-of-way would be determined during future design phases.

CONNECTIONS TO I-90 (MASSPIKE) EXIT 13 INTERCHANGE

To improve circulation of traffic and relieve congestion, new alternatives to the MassPike interchange were investigated. The recent removal of the toll plazas presents an opportunity as traffic no longer needs to pass that point in order to access the MassPike; additional right-of-way on which to consider alternatives is provided.

POTENTIAL DIRECT RAMP CONNECTIONS FROM SPEEN STREET TO MASSPIKE

In order to reduce traffic at the existing ramp termini at Route 30, other local access points were considered. The existing Speen Street alignment was investigated as a potential connection to reduce the volume at the existing interchange intersection. Because a fair number of Golden Triangle employers, as well as residents just outside of the Golden Triangle, are located on Speen Street, this connection would be desirable.

Because the existing Speen Street alignment is located too close to the split to and from the eastbound and westbound sides of the MassPike, any connection at this point would not be able to provide access to the westbound side of the MassPike. However, there could be a potential direct connection from Speen Street to the ramp to the eastbound MassPike (to points east). There potentially could be another connection from the MassPike eastbound (from points west) directly to Speen Street. Based on data from local employers, approximately 25 percent of office employees are coming from the west and could use that connection; and approximately 25 percent of office employees are likely to use the connection to the east.

A conceptual layout for these potential connections would have some challenges (Fig. 6.3). There are two structures located to the west of the existing MassPike ramps. A ramp connecting from the MassPike eastbound off ramp to Speen Street would be located very close to these structures. Additional design would need to occur in order to determine the impacts to the right-of-way as well as these structures.

The Cochituate Rail Trail follows an alignment to the north of Speen Street and would have to be crossed by the at-grade ramps to/from Speen Street. A potential layout of such a crossing is illustrated

in Figure 6.3. Further study would be required to determine whether the rail trail crossing could be grade separated. Finally, the TJX driveways located immediately adjacent to the potential on-ramp location would need to be relocated in such a concept to reduce conflicts at that location.

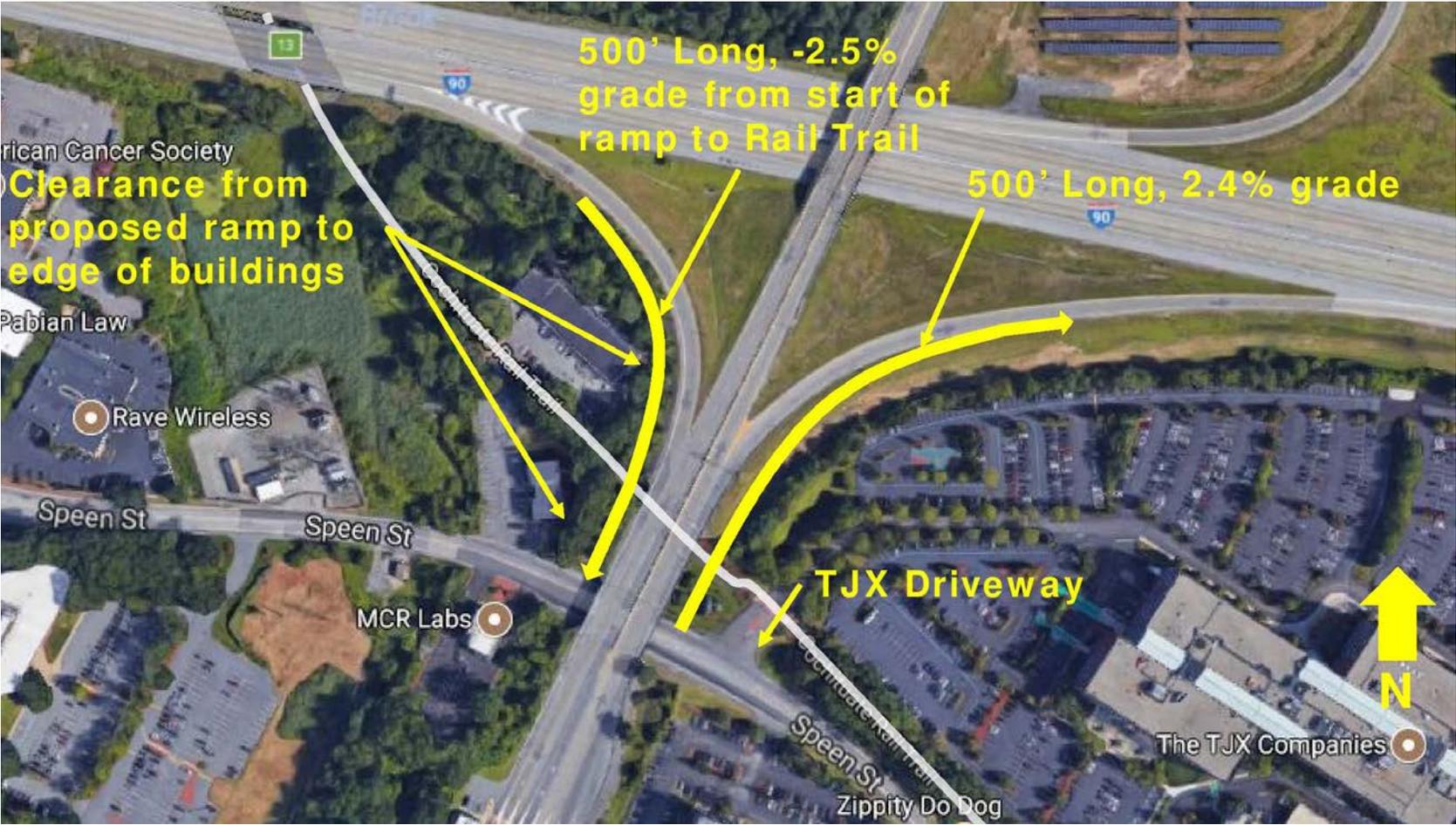


Figure 6.3: Potential Ramp Alignments to and from Speen Street

POTENTIAL SPEEN STREET RELOCATION



Figure 6.4: Potential Ramp Connection Intersections with Existing Speen Street

In order to provide a direct connection to accommodate more of the traffic with destinations along Speen Street, another longer-term alternative was developed. This, or a similar longer term alternative would be required to accommodate the 20 percent growth scenario described in Chapter 4: Build Out Analysis. If Speen Street were relocated so that it crossed the MassPike ramps alignment approximately 375 feet further to the south, full access to both directions of the Massachusetts Turnpike ramps may be accommodated. This shifting of alignment would require significant land acquisition, design and construction costs as well as significant political support. The benefit of accommodating traffic to and from Speen Street at Speen Street would be a reduction in traffic at the intersection of the ramps with Route 30. If enough traffic were reduced at Route 30, the connection to the MassPike ramps could be designed as a signalized intersection, not a highway interchange. This modification would provide a safer connection for bicyclists and pedestrians while maintaining an acceptable level of service for vehicles.

As shown in Figure 6.4, the relocated Speen Street would be located to the south of the previous location of the toll plaza (since removed). The actual ramp alignment may actually be able

to be accommodated within the right of way that had been taken up by toll plaza previously.

The potential realignment of Speen Street would extend north from the existing intersection of Route 30/Speen Street to the south of the building at 111 Speen Street and continue west underneath the MassPike ramp connection before turning to the north and reconnecting with the current Speen Street alignment approximately 250 feet east of the intersection of Speen Street at Leggatt McCall Road. ***Although this concept would require significant right-of-way acquisition and potential wetlands impacts, it is the preferred long-term concept.***

OTHER INTERCHANGE CONCEPTS

Other interchange concepts were also considered. Another opportunity that is presented with the removal of toll plazas is that exits could potentially change locations or each direction could provide connections at different locations. However, in this immediate vicinity, there is not enough right-of-way available to relocate a west-bound ramp location. In addition, it is likely that a ramp system created to connect to another arterial would create similar problems at a new location and would not serve The Triangle as well.

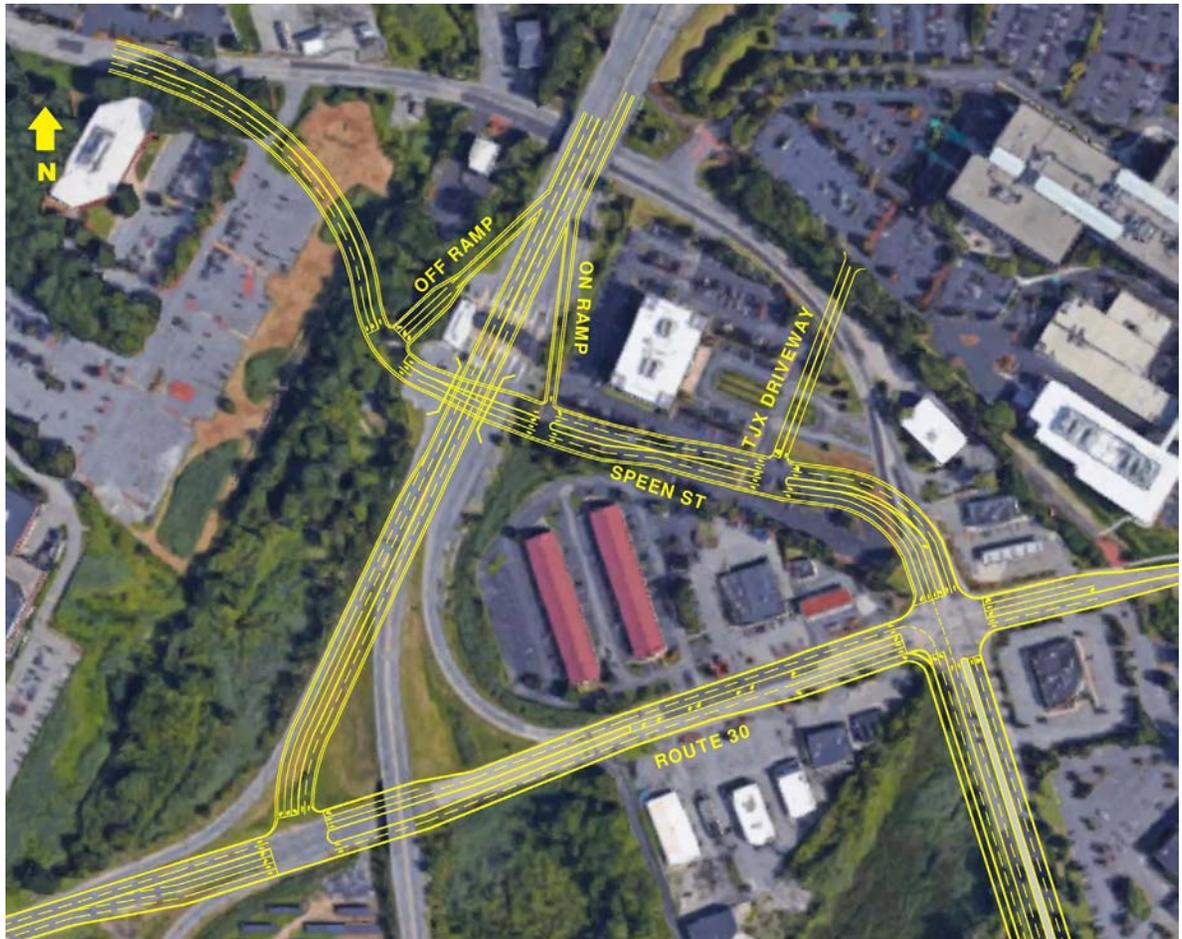
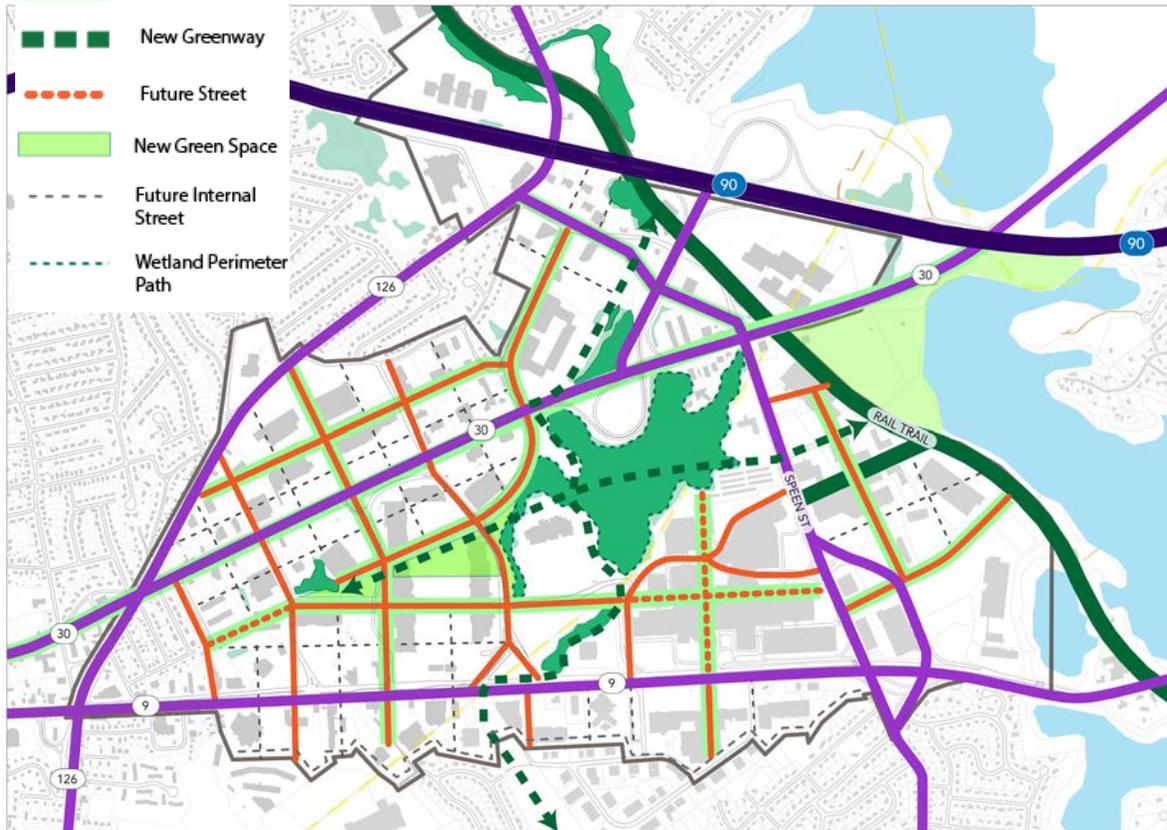


Figure 6.5: Potential Interchange Configuration at I-90 and Route 30/Speen Street. This drawing represents a very conceptual layout; the final layout and right-of-way would be determined during future design phases.

A service road concept was considered on the south side of the MassPike to attempt to provide additional access to the area. Although there is right-of-way available along the MassPike to accommodate a service road, there is not currently space available in the vicinity of the arterials to accommodate ramp connections. For example, the location of Cherry Street would preclude a connection from a service road to Concord Street. Therefore, this option was dropped from further consideration.

LEGEND

-  Golden Triangle
-  Municipal Boundary
-  Primary Street
-  Secondary Street
-  Green Street
-  New Greenway
-  Future Street
-  New Green Space
-  Future Internal Street
-  Wetland Perimeter Path



NEW ROADWAY CONNECTIONS

The existing roadway system within The Triangle is such that only Route 9 and Route 30 provide an east-west connection. Therefore, traffic from major commercial, office and retail establishments use these major arterials for even short trips within The Triangle and compete with commuter traffic. Additional roadway connections would accommodate vehicular, bicycle and pedestrian trips within each of the large development blocks. The proposed roadway connections would connect nearby land uses east-west, thereby creating a grid system within The Triangle. This roadway system will reduce the strain on the major arterials and lead to reduction of the turning traffic at the intersections along the major arterials. Potential roadway and greenway connections are shown on Figure 6.6 and discussed in more detail in Chapter 5.

Figure 6.6: Potential Roadway Connection Locations

IMPROVEMENT IN PEDESTRIAN AND BICYCLE ACCOMMODATIONS

As outlined in Chapter 3: Existing Conditions, there are plans to construct the next section of the Cochituate Rail Trail between the Natick Center MBTA Commuter Rail Station in Natick, MA and Route 30 in Framingham, MA. In addition, a connection from the Cochituate Rail Trail to the commercial properties to the west along Speen Street along an existing path, called the Wonder Bread Spur, is also planned. It is recommended that either a connection to a nearby signalized intersection be provided or that a mid-block crossing with traffic control (HAWK³⁷ or Rectangular Rapid Flashing Beacon) be installed to provide a safe crossing to the properties to the west of Speen Street. This type of connection will also address a concern raised on coUrbanize that there are inadequate pedestrian crossing location. Potential pedestrian crossings are shown on Figure 6.7 below. The graphic on the left illustrates an unsignalized crossing with supplemental signage. The graphic on the right illustrates a potential recommended treatment for this location on Speen Street as it includes a refuge island in the center of the street and provides a Rectangular Rapid Flashing Beacon.

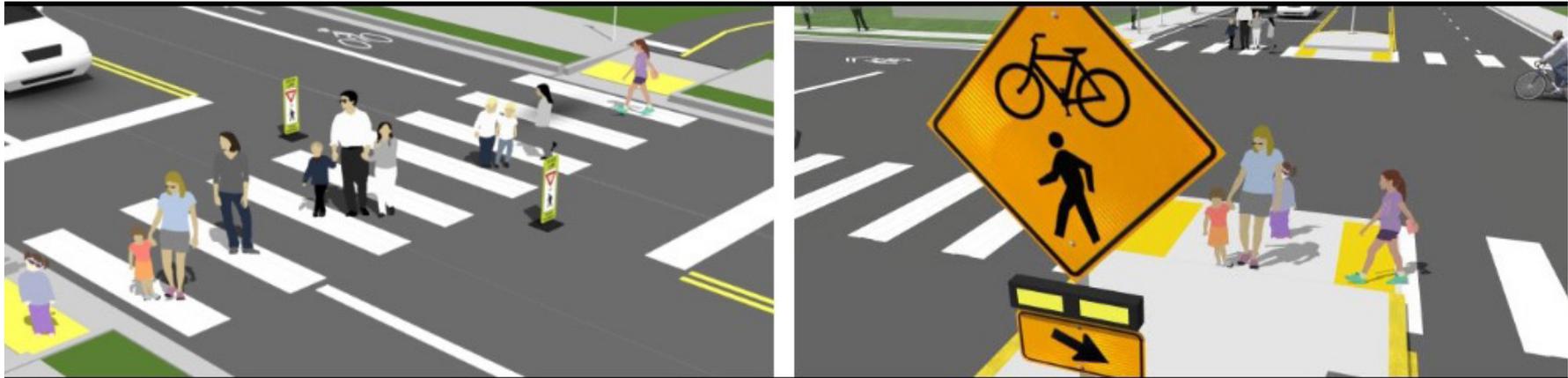


Figure 6.7: Examples of Unsignalized Pedestrian Crossings: at left, supplemental signage; at right, refuge island and rectangular rapid flashing beacon

37 High-Intensity Activated CrossWalk

The coUrbanize comments regarding the inhospitable pedestrian and cyclist environment in the vicinity of the MassPike ramps would be addressed if the interchange were downgraded to a signalized intersection with slower speeds and vehicles under traffic signal control. In the event that an improvement of that type is not pursued, or in the short term while it is being pursued, the municipalities could work with MassDOT to improve the pedestrian and cyclist experience through this area.

Chapter 4 evaluates the potential for cycle tracks along Route 9 and Route 30 to further encourage bicycling as an alternate mode of travel. Based on this analysis, there is the potential for the provision of a cycle track for a stretch of each roadway. Until connections to other facilities are built, the cycle tracks would leave commuter cyclists in inhospitable environments at either end. However, the provision of any facility would encourage shorter trips to be made by bicycle.

As outlined in Chapter 4, in addition to vehicular connections throughout the district, pedestrian and bicyclist connections are also recommended. Connections between land uses can easily be completed on bicycle or on foot if the facilities are put in place. Key to the success of these connections is a commitment by the municipalities to snow removal to allow for safe passage during all seasons. The municipalities should work with private property owners to ensure that public paths on private property are also cleared.

Both Framingham and Natick participate in the MassDOT Complete Streets program. It is recommended that both municipalities continue to incorporate Complete Street concepts into the public and private roadways within The Triangle. As noted in Chapter 2, there are many disconnects in the existing pedestrian and bicycle network. It is recommended that these users needs be incorporated into any infrastructure projects as well as any redevelopment in The Triangle.

TRANSIT IMPROVEMENTS

Chapter 2: Existing Conditions details the public transportation issues within The Triangle. Potential improvements in bus routes and the potential introduction of a Bus Rapid Transit (BRT) service are described below. As described on the following pages, property owners will need to become major players in transit improvements, including lobbying MassDOT and the MWRTA for improvements, providing employee incentives for commuting by transit and providing on-site transit amenities.

MWRTA BUS ROUTES

The Triangle Consultant Team met with the MetroWest Regional Transit Authority (MWRTA) to discuss future transit operations. The MWRTA has identified a number of locations where insufficient bus stops are likely the result of low ridership. Along Route 9, there are no pullout areas for the buses, so the bus will dwell in a travel lane of Route 9 while passengers enter and exit the bus. In addition, at many locations, there is not a sidewalk for passengers to either wait on or land on when exiting the bus and thus passengers are dropped in the street itself. Finally, there are locations without cross-



Legend

- Potential Bus Stop
- Potential Bus Route
- ⋯ Golden Triangle Boundary
- Municipal Boundary
- Streets
- Parcel Boundary
- Parking
- Rail Trail
- Water Bodies
- Wetlands

Figure 6.8. Potential Bus Service Improvements. Potential bus stop locations are conceptual; exact locations would be determined based on land uses at the time of implementation and could be moved as land uses change.

walks for passengers to get to destinations on the opposite side of the street. All of these issues are pointed to as reasons that ridership is not higher. The MWRTA has indicated that because individual projects and property owners are not required to fully accommodate transit, many do not. The MWRTA recommends that pull out areas for bus stops, shelters/overhangs and pedestrian amenities be required in all development projects. With the right amenities, transit ridership on existing routes would be expected to increase.

The northern end of The Triangle is served only by Massachusetts Bay Transit Authority (MBTA) Bus Route 10 with no stops north of Cochituate Road. A review of the transit map (Fig. 5.9) reveals that a commuter bus that extends along Speen Street and connects to the commuter rail station could provide last mile service for employees in The Triangle and then pick up residents in the corridor for the return trip to the commuter rail station. This route could be reversed in the afternoon to best serve riders. Based on a review of typical peak hour travel times, it is likely that this shuttle would connect to either the Natick or West Natick commuter rail station to provide the most efficient ride (approximately seven minutes either to or from TJX during a typical Wednesday at 5:15pm with no stops), as a connection to the Framingham commuter rail station would likely increase the trip length by five minutes each way. The exact routing and stops would be determined based on future development patterns (and therefore potential ridership) and peak hour traffic delays in order to provide the most efficient service.

As outlined in Chapter 2: Existing Conditions, a number of the routes only operate from Monday through Friday and have infrequent headways. Shorter bus service headways, improving weekend services and providing better pedestrian connections to bus stops within The Triangle to serve the potential ridership will result in lower congestion on roadways and improved transit utilization. Careful thought as to the placement of bus pullouts will also reduce the impact a bus stopping has on the traffic operations.

This will reduce the current strain imposed by single occupancy cars on the arterials and will improve their levels of service.

LOGAN EXPRESS

The Logan Express garage is frequently at capacity. The municipalities should work with MassPort to incorporate additional parking capacity onto the existing site.

POTENTIAL BUS RAPID TRANSIT (BRT)

Over the years, the potential for Bus Rapid Transit has been raised for a number of corridors. The MassPike right-of-way seems adequate to accommodate such a service from the western suburbs into Boston. However, such a service would not likely change the trip patterns in The Triangle significantly because commuters would still have to drive to transit stops and may require trips within The Triangle similar to those taken today.

More recently, the potential for BRT along Route 9 has been raised as a way to encourage alternate modes of travel. Similar to a BRT along the MassPike, a BRT along Route 9 would still require patrons to travel to the stations, likely by vehicle, which may not result in a significant decrease in travel through the Golden Triangle. Unlike the MassPike, Route 9 does not have the right-of-way available consistently to accommodate BRT without the loss of general vehicular travel lanes. It would likely be difficult to convince the traveling public that such a dramatic change to the use of the right-of-way is a good idea. While the BRT along Route 9 would be difficult to implement as a result of reduced vehicular capacity **and** the resulting political opposition, the option should remain under long-term consideration.

The potential for a BRT within The Triangle was examined. The one right-of-way where BRT may make sense would be along the Cochituate Rail Trail (CRT). Because the right-of-way of the CRT varies, it may only be able to accommodate the path along with a singular BRT lane (not for general traffic). The BRT routes could be designed to travel along the CRT right-of-way for the critical direction in order to provide the most efficient route from the station to key employers, but then use local roadways for the return trip to the station. This potential would face many challenges as the CRT is currently only permitted as a path and major roadway crossings are not designed to accommodate vehicular traffic.

TRANSPORTATION TECHNOLOGIES

The technology of transportation is rapidly changing. Not long ago, traffic signals were set up to allow the main street to have a green traffic signal indication for a set time and then the side street for a set time regardless of the time of day or traffic patterns. Improvements in traffic signal technology have greatly increased the efficiency with which vehicles can be processed by constantly adapting to the current demand. The Route 30 and Route 9 corridors have recently undergone traffic signal upgrades that ensure that optimal performance is being reached.

Moving into the future, the potential for connected and autonomous vehicles will change the transportation landscape. If a vehicle is able to communicate with traffic signals to determine whether the signal will be green or red when the vehicle arrives, that vehicle can accelerate or decelerate accordingly, creating more efficiency and consistency in the traffic stream, and likely leading to greater capacity and safety. The signal system will see a platoon of vehicles coming and turn green to process the most vehicles per cycle.

Autonomous vehicles are expected to be able to travel at closer distances to other vehicles which will increase the capacity and efficiency of our infrastructure. However, the ability to send a driverless vehicle to run an errand or pick up a child may increase the number of vehicle trips made per household. Or, the lengthy commute by car may be less an imposition if the worker can sleep or work during that commute. These items may increase the number of trips or length of trips and result in more vehicles on the road to take up that increased capacity. Another challenge is the increase in empty trips. People may choose to get dropped off at the door of each destination, resulting in an empty vehicle that then needs to go somewhere to either park or just drive around until the person is ready to be picked up. The individual will not experience the delay and congestion that results from this trip, but the system will. If the congestion can be addressed, driverless vehicles could reduce the need for vast areas dedicated to vehicle storage, potentially freeing up land for other uses.

Moving forward, it is important that all infrastructure projects in The Triangle continue to contemplate this upcoming technology to ensure that the traffic operations in The Triangle remain as efficient as possible. Although it is not currently known exactly how these technologies will affect the capacity or demand on the roadway network, future traffic signal projects should be compliant with US DOT guidance on automated and connected vehicles.

FUTURE CONDITION TRAFFIC VOLUMES

Two potential build out scenarios were contemplated for future transportation analysis based on the build-out analysis detailed in Chapter 3:

- 10 percent growth in built square footage of all land uses
- 20 percent growth in built square footage of all land uses

Trip generation was calculated for each alternative based on the net additional square footage compared to existing land use. Both growth scenarios assume that all land uses see growth in built area and assessed value. Also, the growth scenarios have been allocated square footage based upon likely future development patterns. As discussed in Chapter 3: Build-Out Analysis, it is likely that future development patterns would include a more diverse mix of land use and not be as retail-centric.

TRIP GENERATION

The net increase in Build condition square footage compared to existing conditions for each of the following land uses was calculated for the two growth scenarios (i.e., 10 percent growth and 20 percent growth).

- Residential
- Office
- Retail
- Indoor Recreation/Entertainment
- Storage, Warehouse and Distribution
- Hotel/Motel
- Exempt or Other

The vehicular trips generated by the net square foot increase for each of the above-mentioned land uses was calculated using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition.

Daily, weekday AM Peak, weekday PM Peak and Saturday Peak trip generation was determined for the land uses shown in Table 6.1.

TABLE 6.1: TRIP GENERATION LAND USE & SQ.FT. FOR THE TWO GROWTH SCENARIOS			
LAND USE	ITE LAND USE CODE (LUC)	10% GROWTH	20% GROWTH
RESIDENTIAL	LUC 220/LUC 230	175 UNITS/175 UNITS	350 UNITS/350 UNITS
OFFICE	LUC 710	206,478 SF	412,955 SF
INDOOR RECREATION/ ENTERTAINMENT	ITE ARTICLE	103,239 SF	206,477 SF
HOTEL/MOTEL	LUC 310	147 UNITS	295 UNITS
RETAIL	LUC 826	258,097 SF	516,194 SF

LUC : Land Use Code

10 PERCENT GROWTH DEVELOPMENT

When calculating the trip generation of the 10 percent growth development, the trip generation of the individual components was reduced to account for a number of factors (e.g. cross trips, multi-modal trips) that are anticipated to be included in the future redevelopment of space. ITE data indicates that up to 20 percent of trips to a mixed-use district could be expected to be internal trips and alternate mode trips.

In order to ensure acceptable levels of service at most study area intersections, the number of trips generated by each of the above-mentioned land uses was reduced by 20 percent to account for increased transit use in the Golden Triangle as well as the cross trips between the different proposed land uses and existing uses in the area. For example, if additional residential square footage is developed adjacent to the Natick Mall, those residents will likely shop at the new Wegmans and other retail creating a cross trip that would not leave the immediate area. In addition, it is likely that employees in area office space may be interested in living in nearby residential units creating a cross trip that would not impact nearby arterials.

Finally, with the provision of a dedicated transit connection to and from the commuter rail station as well as a bicycle connection via the Wonder Bread Spur to the Cochituate Rail Trail and new potential pedestrian amenities, some residents will use these alternate modes to travel to the commuter rail and other communities that it connects to.

This 20 percent reduction of new trips represents only four percent of all trips to the area which is a reasonable goal for the number trips switching from vehicular travel to alternate modes. The adjusted trip generation values are shown in Table 6.2 and Table 6.3.

Approximately 13,200 additional daily vehicular trips would be expected to be generated for the 10 percent growth alternative. About 600 vehicles are added to the network during the AM peak and 1,000 vehicles are added to the network during the PM peak hour. The actual impact on Route 30, Route 9 and Speen Street could be significantly less as new connector roadways will reduce the demand on these arterials by providing connections between sites within The Triangle. Retail trips that currently enter and exit Route 30 at a number of points in the future will be able to conduct many linked trips within The Triangle, reducing the volume impact of both proposed AND existing trips on those arterials.

Figure 6.9 illustrates the existing vehicular trip generation of The Triangle with the added 10 percent growth alternative. The second column illustrates that both the existing and future trips can be reduced by as much as 20 percent by having a mix of uses; vehicular, pedestrian and bicycle accommodations between sites; and transit connections among uses and as a first mile/last mile connection to the commuter rail. When the different types of trips to the existing and future developments are combined (the last column), the resulting vehicular impact on Route 9, Route 30, and Speen Street can be less than what is currently traveling there today (first column). An exact transit ridership number is not available, but anecdotal information indicates that it is currently very low.

TABLE 6.2: VEHICULAR TRIP GENERATION - 10 % GROWTH

TRIPS	DAILY	WEEK-DAY AM PEAK	WEEK-DAY PM PEAK
RESIDENTIAL			
IN	872	25	106
OUT	872	108	54
TOTAL	1744	133	160
OFFICE			
IN	911	227	42
OUT	911	31	204
TOTAL	1822	258	246
INDOOR RECREATION/ENTERTAINMENT			
IN	N/A	27	273
OUT	N/A	0	168
TOTAL	N/A	27	441
HOTEL/MOTEL			
IN	526	46	40
OUT	526	33	42
TOTAL	1052	79	82
RETAIL			
IN	4290	83	231
OUT	4290	53	294
TOTAL	8580	136	525

LUC : Land Use Code
 Note: N/A indicates data not available

Trip Reduction Benefits from Improvements to Alternate Travel Modes

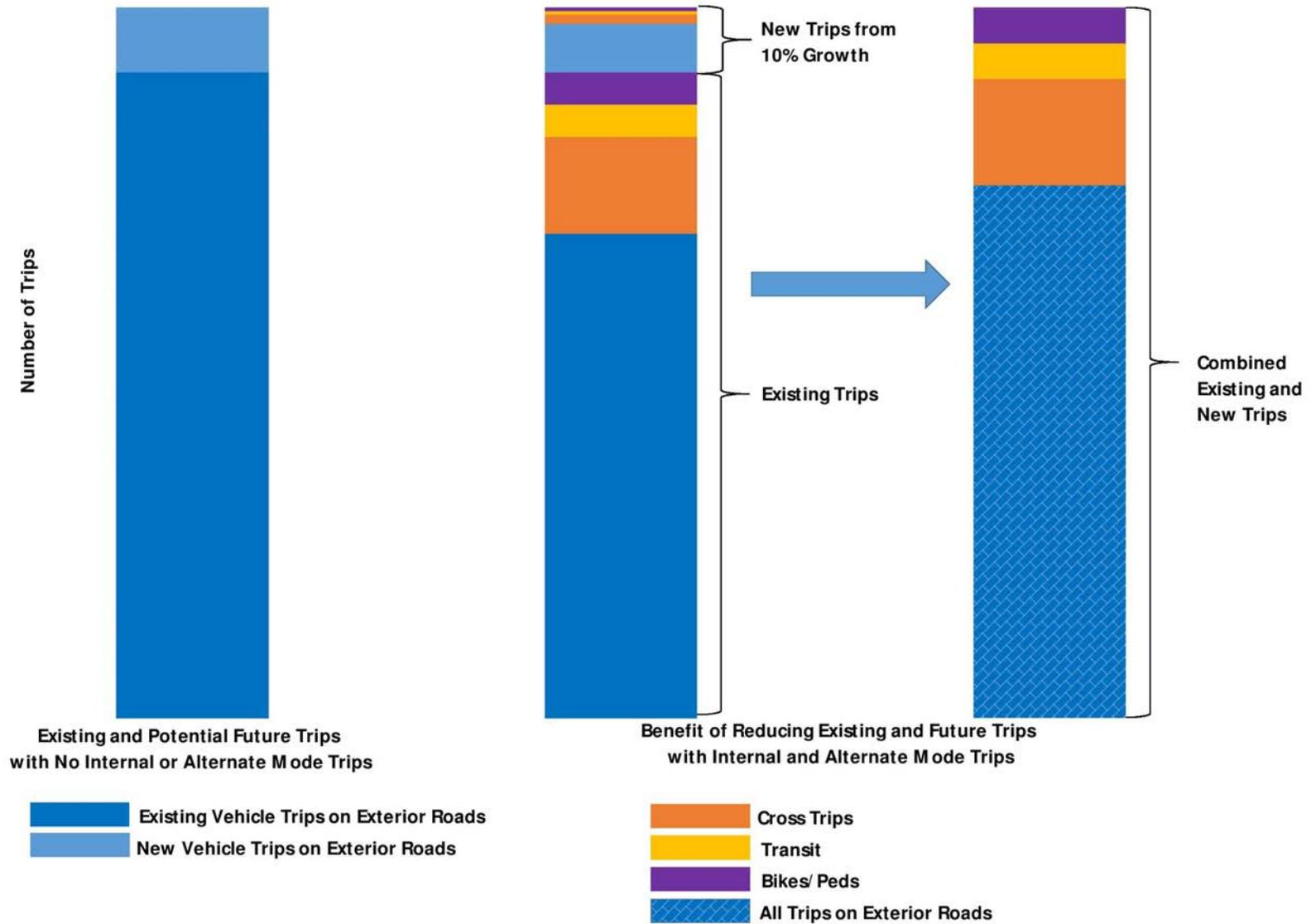


Figure 6.9. Example of benefit of tools to reduce vehicular trips
 Note: The graph is hypothetical, based on evidence from other similar projects, but does not represent any actual or specific data.

20 PERCENT GROWTH DEVELOPMENT

Due to limitations in capacity of the roadway network, it is anticipated that an additional reduction in expected vehicular trips would be required for a 20 percent development program in order to keep the majority of study area intersections operating at acceptable levels of service. The 20 percent development program results in the need to reduce vehicular impacts at existing and proposed development in the Golden Triangle by eight percent (or 40 percent of new development only). As outlined above, with a true Mixed-use development with pedestrian, bicycle and transit connections to other uses in the area as well as to the commuter rail, the vehicular trips in the Golden Triangle can be reduced.

Approximately 21,000 additional daily trips are expected for the 20 percent growth alternative. About 1,000 vehicles are added to the network during the AM peak and 2,300 vehicles are added to the network during the PM peak hour.

TRIP DISTRIBUTION

The anticipated trips were distributed throughout the network. Residential trips were distributed based on the local residence journey to work (JTW) data published by the United States Census Bureau. Office trips were distributed based on the trip distribution data provided by two large local employers. Retail and entertainment trips were distributed based on existing traffic patterns.

The additional trips were added to the existing traffic volumes at the intersections to arrive at 10 percent build and 20 percent build volumes. Volume spreadsheets are included in the Appendix.

TABLE 6.3 : VEHICULAR TRIP GENERATION - 20% GROWTH

TRIPS	DAILY	WEEKDAY AM PEAK	WEEKDAY PM PEAK
RESIDENTIAL - LUC 220/230 - 412955 SF - 350 UNITS			
IN	1309	37	158
OUT	1309	163	82
TOTAL	2618	200	240
OFFICE - LUC 710 - 206478 SF			
IN	1366	340	63
OUT	1366	46	307
TOTAL	2732	386	370
INDOOR RECREATION/ENTERTAINMENT - 103239 SF			
IN	N/A	43	438
OUT	N/A	0	268
TOTAL	N/A	43	706
HOTEL/MOTEL - LUC 310 - 51620 SF - 147 UNITS			
IN	790	69	61
OUT	790	50	63
TOTAL	1580	43	124
RETAIL - LUC 826 - 258097 SF			
IN	6863	133	370
OUT	6863	85	470
TOTAL	13726	218	840

LUC : Land Use Code
 Note: N/A indicates data not available

BUILD CONDITIONS INTERSECTION CAPACITY ANALYSIS

10 PERCENT GROWTH ALTERNATIVE

As outlined in Chapter 3, some of the operational issues along the Route 30 and Route 9 corridors were being improved through traffic signal optimization. However, due to the heavy traffic along these arterials, congestion will continue into the future. Traffic congestion is a problem today, and it is recommended that implementation of the improvements outlined for the 10% growth level should begin in the short-term to accommodate existing traffic as well as future growth. With redevelopment at the 10 percent growth level, and to accommodate current traffic demand, the following infrastructure changes are required:

- The displaced left turn lane configuration at Route 30 and Speen Street.
- Mixed-use redevelopments that capture trips internally (both future development trips as well as trips between existing uses and future uses).
- Connections between parcels within The Triangle to accommodate vehicles, pedestrians and bicyclists.
- Incorporation of transit amenities into redevelopment projects as well as at existing demand locations.
- Provision of a new commuter shuttle connecting to the Commuter Rail with limited stops.

Although interchange connections were investigated for the 10 percent growth alternative, the modifications proposed by MassDOT at the intersection of Route 30 and Speen Street will improve the operations of the area without a significant investment into temporary interchange improvements.

20 PERCENT GROWTH ALTERNATIVE

In order to accommodate the 20 percent growth alternative, all of the tools described above will continue to be required. In addition, to accommodate the future traffic growth, an interchange redesign would need to be considered. A concept that includes ramp connections to Speen Street while maintaining a grade separated connection over it to reach Route 30 (described previously) would ensure that the traffic volumes at Route 30 are reduced enough to contemplate an at-grade intersection.

This would allow a design that would better serve bicycle and pedestrian traffic and open up potential development parcels.

Transit opportunities in The Triangle will need to be continually expanded as development comes on line. Evaluation of routes and headways, stop locations and amenities, and pedestrian connections to potential destinations will need to be evaluated periodically to ensure that transit is a viable alternate mode for employees, residents and visitors to The Triangle.

ANTICIPATED FUTURE UTILITY CONDITIONS

The anticipated demand on utilities in The Triangle as a result of the contemplated development programs was reviewed. The findings are summarized below.

STORMWATER SYSTEM

As described in Chapter 3, storm drainage in The Triangle is accomplished by catch basins with direct connections to nearby drainage systems. Because the existing impervious surface is not anticipated to increase as a result of the redevelopment and may in fact decrease with the introduction of new open space, the existing stormwater system should continue to operate as in the existing condition. As indicated, there is currently a drainage concern at the intersection of Route 30 and Speen Street and flooding at the end of the MassPike ramp to Route 30 westbound where it meets and along Route 30 has been noted on coUrbanize. Drainage improvements would be included as an important component of reconstruction of the intersection in order to address existing grade issues at this intersection. Flooding at the intersection of Route 9 and Route 126 was also identified on coUrbanize and should be further examined.

WATER SUPPLY SYSTEM

Hydrant flow test data in the study area shows that the lines have reasonable fire flow. When future development is considered, additional tests should be performed along with water line cleaning or lining to ensure that adequate pressure remains available.

SEWER SYSTEMS

Similar to the methodology used to determine the estimated flows for the existing condition, the land use square footage anticipated under each of the future development conditions was determined. Title 5 estimated flows were then applied to the different land uses to get a combined sewer flow. Based on the calculated Title 5 flows and after applying a peaking factor of 2, the existing 24-inch line in Framingham and the 18-inch line in Natick appear to have adequate capacity for the proposed future condition flows. Because the Natick system may include flows from parcels outside The Triangle, further analysis with actual flow tests would need to be done to confirm that the existing pipe could accommodate the flows generated with the type of development that is proposed on that line.

ELECTRICAL SYSTEMS

Existing electric and other utility information on poles was not available. Therefore, no existing deficiencies were determined. Moving forward, in order to create a more pedestrian friendly, dense, Mixed-use Golden Triangle, it is recommended that where possible, utilities be placed underground as parcels are redeveloped.

GAS SYSTEMS

No gas utility data was available from Framingham or Natick.

OTHER UTILITY CONCERNS

It remains a concern that no GIS sewer information is provided for the Shoppers World area or the “big box” retail area north of Route 30. Framingham should attempt to gather plans for incorporation into the overall utility network and ultimately GIS layers.

BROWNFIELD SITES

There are currently no recommended developments proposed on the identified brownfields site (Cochituate Rail Trail – Lots 3b, 14a, and 250 in Framingham were identified as brownfield sites in historic brownfield documents).

SUMMARY RECOMMENDATIONS

As shown, in order to meet the goals of 10 to 20 percent increase in developed space in The Triangle, a number of steps need to happen to reduce the vehicular traffic conflicts. Recommended actions for municipalities to include:

TRANSPORTATION INFRASTRUCTURE

- The municipalities should work with MassDOT and their legislative delegation to secure funding for the infrastructure that is needed to reach the desired growth. Specifically, MassDOT should be approached regarding:
 - Providing bus pull outs and shelters along Route 9 and Route 30 in order to encourage use of transit. Incorporating the transit accommodations into any infrastructure projects.



- Providing funding for the proposed commuter route which will provide a first mile/last mile transit connection from the Commuter Rail to the Golden Triangle.
- Accommodating pedestrians and bicyclists in infrastructure projects.
- Committing to snow removal to allow for safe passage during all seasons. The municipalities should work with private property owners to ensure that public paths on private property are also cleared.
- Designing and constructing the displaced left turn concept at the intersection of Route 30 and Speen Street.
- Interchange improvements required to meet the long-term 20% growth goals of this study, including providing more direct access to Speen Street in order to reduce traffic at the ramp connection to Route 30. The realignment of Speen Street, which eliminates the need for a grade separated Route 30/MassPike intersection, is the preferred long-term concept.
- Transit opportunities in The Triangle will need to be continually expanded as development comes on line. Evaluation of routes and headways, stop locations and amenities, and pedestrian connections to potential destinations will need to be evaluated periodically to ensure that transit is a viable alternate mode for employees, residents and visitors to The Triangle.
- The municipalities should work with MassPort to incorporate additional parking capacity onto the existing Logan Express site.
- Property owners will need to become major players in transit improvements, including lobbying MassDOT and the MWRTA for improvements, providing employee incentives for commuting by transit and providing on-site transit amenities.

- The municipalities should continue to monitor changes in transportation technology to ensure that the transportation system accommodates new technologies and traffic operations in The Triangle to remain as efficient as possible.

ZONING AND PERMITTING (TO SUPPORT TRANSPORTATION)

- The municipalities should include zoning that allows for the mixed-use types of projects that will result in lower exterior trip generation.
- When permitted, projects should be required to include pedestrian, cyclist and transit accommodation as well as provide appropriate connections to adjacent properties, either through constructing those connections as described in detail in Chapter 5, or providing easements and paying into a fund to allow them to be constructed at a later date when adjacent properties are redeveloped.
- Development projects should be required to join the Transportation Management Association (TMA) which joins together employers and then uses that larger employment base to support transit, carpooling and other tools to reduce single occupant vehicular traffic.

UTILITIES

- All redevelopments will need to comply with local and state regulations to ensure that adequate water supply is available and that capacity exists for the resulting wastewater.
- When projects are redeveloped in the area of Route 30 and Speen Street, and in other locations where flooding has been observed, special attention should be given to the stormwater in light of existing flooding occurrences.
- When possible, underground power, cable and telephone should be considered.



07 ZONING

- **INTRODUCTION**
 - **ZONING BACKGROUND**
 - **NEW ZONING PRINCIPLES**
 - **ZONING RECOMMENDATIONS**
 - **SUMMARY RECOMMENDATIONS**
-

ZONING

INTRODUCTION

The focus of this chapter is on recommendations for changes to existing zoning to allow and encourage the development actions described in Chapter 5.

ZONING BACKGROUND

Zoning is one of the primary mechanisms municipalities in Massachusetts have for controlling land use and the built environment. For the most part, development in The Triangle has closely followed the intensity, dimensional and use regulations found in the zoning bylaws of both Natick and Framingham. Most parcels tend to have single use, single building structures set back far from the street surrounded by large surface parking lots. More recent redevelopment projects are beginning to see the value in mixing use types, varying the dimensions of new structures and looking at how to integrate structured parking as a way to maximize the development potential of a particular site. Both communities have been working with developers on recent proposals to use setbacks and landscaping to create more pedestrian-friendly pathways that seek to encourage walking between points in The Triangle instead of forcing people to rely on personal vehicles to get to their destination. This is especially important as more development projects and proposals are looking at integrating residential uses in The Triangle, where residents could walk to work, shopping, restaurants and entertainment if safe and comfortable walking routes are established.

CHALLENGES WITH THE EXISTING ZONING

The Triangle is regulated by eleven different base zoning districts and four overlay districts each with their own set of use regulations and dimensional controls (Fig. 6.1). The overlay districts as written today do not include enough incentive to make a more attractive option when compared to the base zoning districts. As was noted in Chapter 4: Build-Out Analysis, The Triangle is largely built-out using the standards established in the base zoning districts while the overlay districts remain underutilized. If the vision for this area is to incentivize improvements to private property and investment in infrastructure and amenities, then zoning should be changed to encourage these actions to occur.

Figure 6.1 shows the location of the base zoning districts and the overlays covering The Triangle today. It is worth noting that several parcels in the Golden Triangle are split by base zoning and/or overlay district zoning boundaries. This creates further confusion and inconsistencies in the development pattern and built environment across The Triangle. A full description of the existing zoning can be found in Chapter 2: Existing Conditions.

One of the underlying challenges with the overlay districts is the use regulations largely mirror that of the base zoning district that lies beneath them. This creates challenges for certain development types like mixed-use and multi-family residential which are critical components to ensuring there is a healthy and sustainable mix of uses that is attractive in today's marketplace. For example, multi-family residential development on its own is not allowed in any of the base zoning districts. Framingham's Business (B) district allows multi-family but only as a component of a mixed-use development. The existing zoning contradicts the new direction both municipalities want to employ in The Triangle, which is to create a place where people can live, work, play, and do business. The very nature of the allowable uses in the base zoning districts make this new concept for The Triangle very difficult.

The other existing challenge with the different base zoning districts in The Triangle is the variations in dimensional controls, particularly along the Natick and Framingham municipal boundary where different base zoning districts abut one another. Setbacks, development intensity, landscaping requirements and allowable height vary across base zoning districts. If a property owner or developer chooses

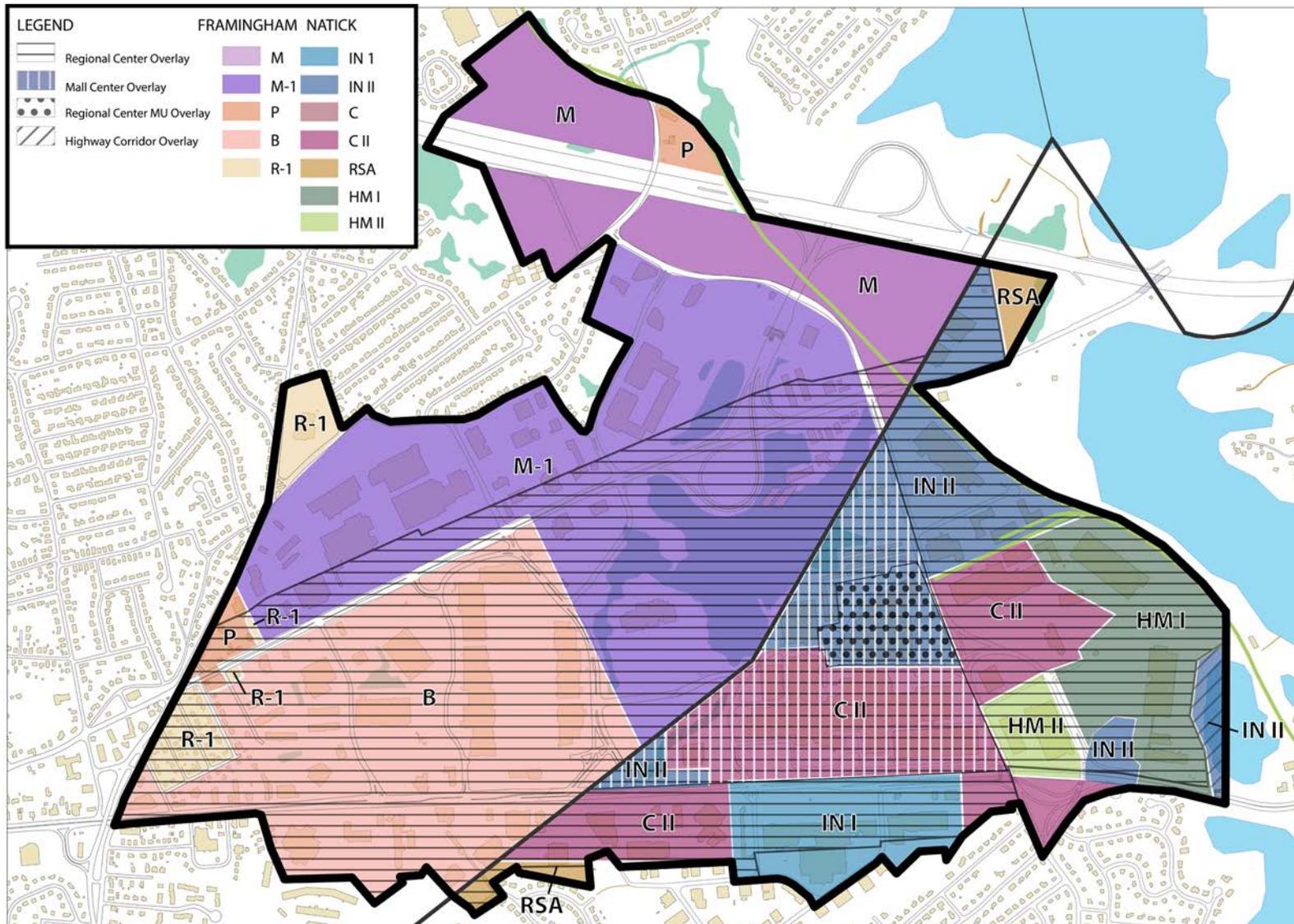


Figure 6.1 Existing Zoning.

not to utilize the Regional Center Overlay, there is little consistency in the built form or placement of structures, parking and landscaping on a given site. Framingham's recent improvements to their base zoning districts in terms of parking, landscaping, and dimensional requirements will help produce some better results for new development that opts to use the base zoning. This still leaves challenges with consistency for parcels adjacent to the municipal border where conflicting base zoning districts remain. To help illustrate the challenge, diagrams of a hypothetical build-out of a 40,000-square foot parcel of land in The Triangle in Framingham's Business zoning district and in Natick's Commercial II district were developed. After taking into account all of the setback, landscaping and parking requirements in Natick's zoning bylaw, the space available for a building footprint is severely limited in size and placement (Fig. 6.2). Framingham's Business zoning district provides more flexibility in front setbacks and height and allows for a mix of uses in the same structure (Fig. 6.3). These two zoning districts are located directly adjacent to one another along Route 9 on the southern side of The Triangle. Under current zoning, these results are plausible and mimic to some degree the development pattern on either side of the municipal boundary line.

NEW ZONING PRINCIPLES

In order to mitigate for some of the unintended consequences that could result from the existing base zoning and overlay districts in The Triangle, a series of zoning principles was developed to help guide the creation of new zoning language across both municipalities.

The goal of the zoning principles is to create a unified look and feel for the entirety of The Triangle so the area looks and acts like a cohesive district, rather than having zoning that divides development at the municipal boundary.

The zoning principles for The Triangle include:

- Encourage and allow a more diverse mix of uses.
- Break up large blocks or parcels into smaller walkable segments.
- Concentrate height and density in specific locations.

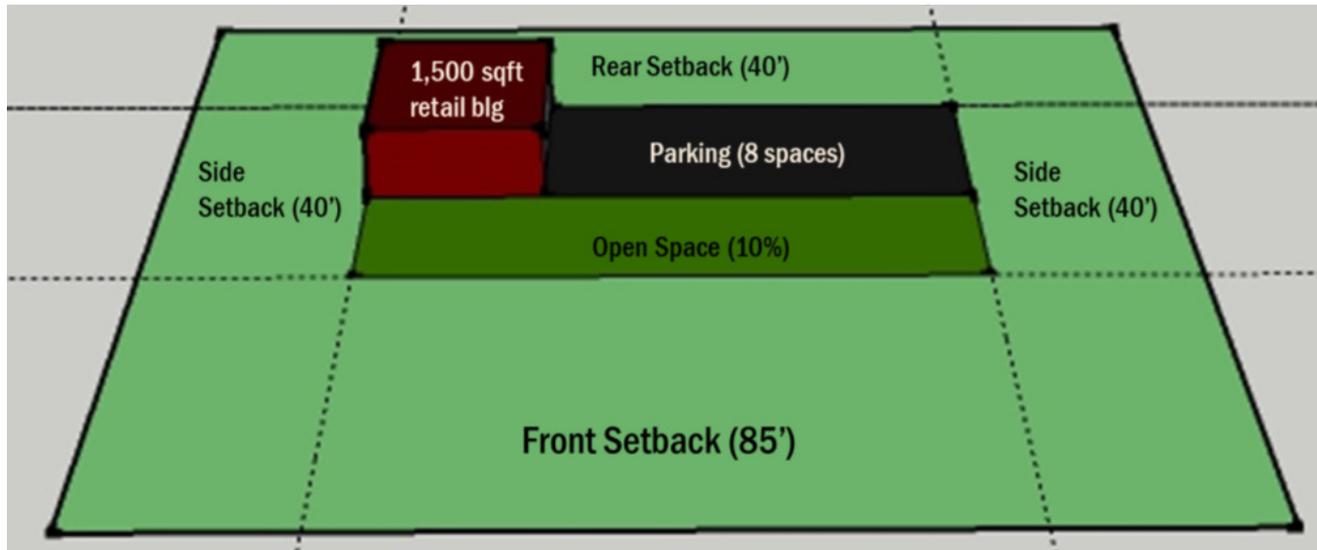


Figure 6.2: Potential build-out of a 40,000 SF parcel in Natick's Commercial II district.

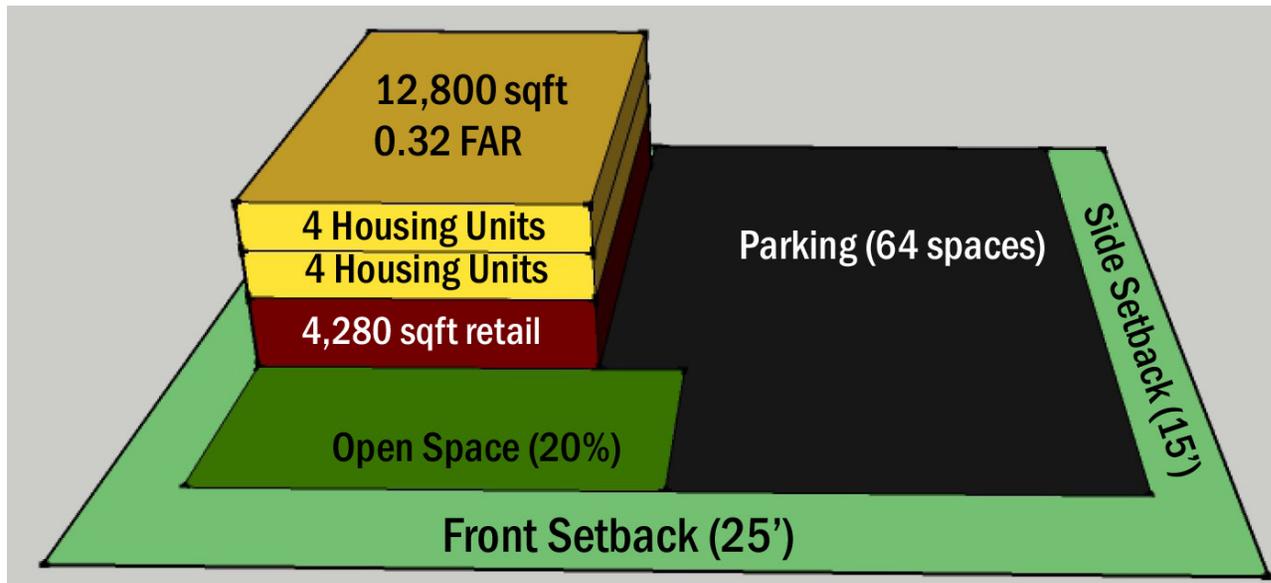


Figure 6.3: Potential build-out of a 40,000 SF parcel in Framingham's Business district.

- Create Transition Zones between high and low intensity development to lessen the visual impact on neighboring residents in Framingham and Natick and to open up transportation access and connectivity to adjacent neighborhoods in Natick.
- Consider a form-based zoning approach, creating building envelopes using dimensional standards within which development can occur by-right. Such an approach may move away from dictating density through Floor Area Ratio numbers. (Natick's existing zoning relies on FAR-based regulations; the impact of eliminating FAR regulations will require further study.
- Establish building setbacks that relate to the type of street on which the parcel fronts.
- Encourage front yard setbacks to be used for landscaping, sidewalks, shared use paths, pedestrian spaces, or a frontage road along Routes 9 and 30 and move away from only have parking in the front setback.

These zoning principles establish a set of guidelines with which to develop more detailed zoning language for specific areas of The Triangle where each municipality would like to encourage new investment and/or redevelopment.

ZONING RECOMMENDATIONS

Based on the zoning principles, a schematic zoning map was developed to indicate areas where zoning changes could be most effective. Figure 6.5 shows two different types of zoning districts for consideration. Primary Development Zones are focused around the Shoppers World and Caldor Road area in Framingham, and between Superior Drive and Route 30 in Natick. This second area encompasses two large retail establishments - Home Depot and the Cloverleaf Mall. Review of development proposals will need to consider the traffic impacts of changes in land use and whether traffic improvements, such as the displaced left turn on Speen Street, have been implemented. These two areas hold a great deal of redevelopment potential, could support larger-scale mixed-use development, are well-connected to the transportation system and are further from nearby residential neighborhoods. Alternatively, the Primary Development Zone in Natick could be in the area around Sherwood Plaza

(the area described in the plan as a Transition Zone – see below). Development in this location potentially could have less of an impact on Speen Street traffic, but would place development closer to a single-family residential neighborhood. The Primary Development Zones are intended to be the higher intensity redevelopment districts within The Triangle, similar to what was envisioned through the existing Regional Center Overlay District.

The two additional areas highlighted in Figure 6.5 are Transition Zones. These are areas of The Triangle that also have redevelopment potential, and tend to be single use structures (primarily retail), but abut nearby single-family neighborhoods. The proximity to these neighborhoods necessitates a different approach to the zoning, where transitions in use and development intensity change as you move from the primary travel corridors of Routes 9 and 30 toward the abutting neighborhoods.

Both Primary Development Zones and Transition Zones are intended to be created as new base zoning districts to remove any possibility of future redevelopment utilizing the existing underlying zoning. If these new districts were created as another set of overlays, there is always the possibility that a property owner or developer could utilize the existing base zoning which would yield results counter to the vision for The Triangle. The Consultant Team, in consultation with municipal staff and the Steering Committee, purposefully did not recommend rezoning the entire Golden Triangle at this time. It is important to focus development in specific areas to marry desired land use changes with future transportation changes to ensure proper mitigation of traffic issues is planned and executed alongside new development opportunities. As The Triangle redevelops and transportation improvements occur, both municipalities should monitor progress and make determinations over time with regard to rezoning additional portions of The Triangle. Prior to removing or changing existing base zones and/or overlay districts, both municipalities should check with legal staff with regard to any payments received under the existing overlay districts and how those may be impacted by any proposed zoning changes.

PRIMARY DEVELOPMENT ZONES – ZONING RECOMMENDATIONS

The Primary Development Zones are intended to allow for a higher intensity of development. In order to create incentives for property owners to redevelop in the manner desired by both municipalities, a greater allowance in height and flexibility in uses will be necessary. The following recommendations are offered for the Primary Development Zones in The Triangle.

- Allow up to six stories in height for new development. This density is necessary to incent property owners to do something different with their land. Both municipalities could consider allowing taller buildings by Special Permit, particularly for a larger office project or a project that is considering structured or underground parking as a way to increase allowable development on a given site. If Special Permits are granted for taller buildings, consideration should be given to tying density bonuses back to an increase in public amenities, transportation connectivity and landscaping requirements.
- Encourage parcel consolidation and larger, more coordinated development projects, by setting a higher minimum lot size (than in the existing zoning) in the Primary Development Zone.
- Set both a minimum and maximum front yard setback and vary those requirements by the type of street the parcel fronts on. Primary travel corridors like Route 9 or Route 30 should have a larger front yard setback than secondary travel corridors or interior streets. The larger front yard setback along these two roadways would encourage the creation of a frontage road in the future to help with access and safety. The minimum and maximum front yard setbacks allow for some variability in building placement, but still ensure enough space is provided to allow for proper landscaping, wider sidewalks or a shared-use path for bicycles and pedestrians, pocket parks, and larger pedestrian gathering areas. The new zoning should stipulate the widths of sidewalks and shared use pathways, and the desired square footage for pedestrian gathering spaces and pocket parks.
- Create a building frontage requirement to ensure there is an ample amount of building wall along the frontage of the property. This concept is especially important along secondary streets where

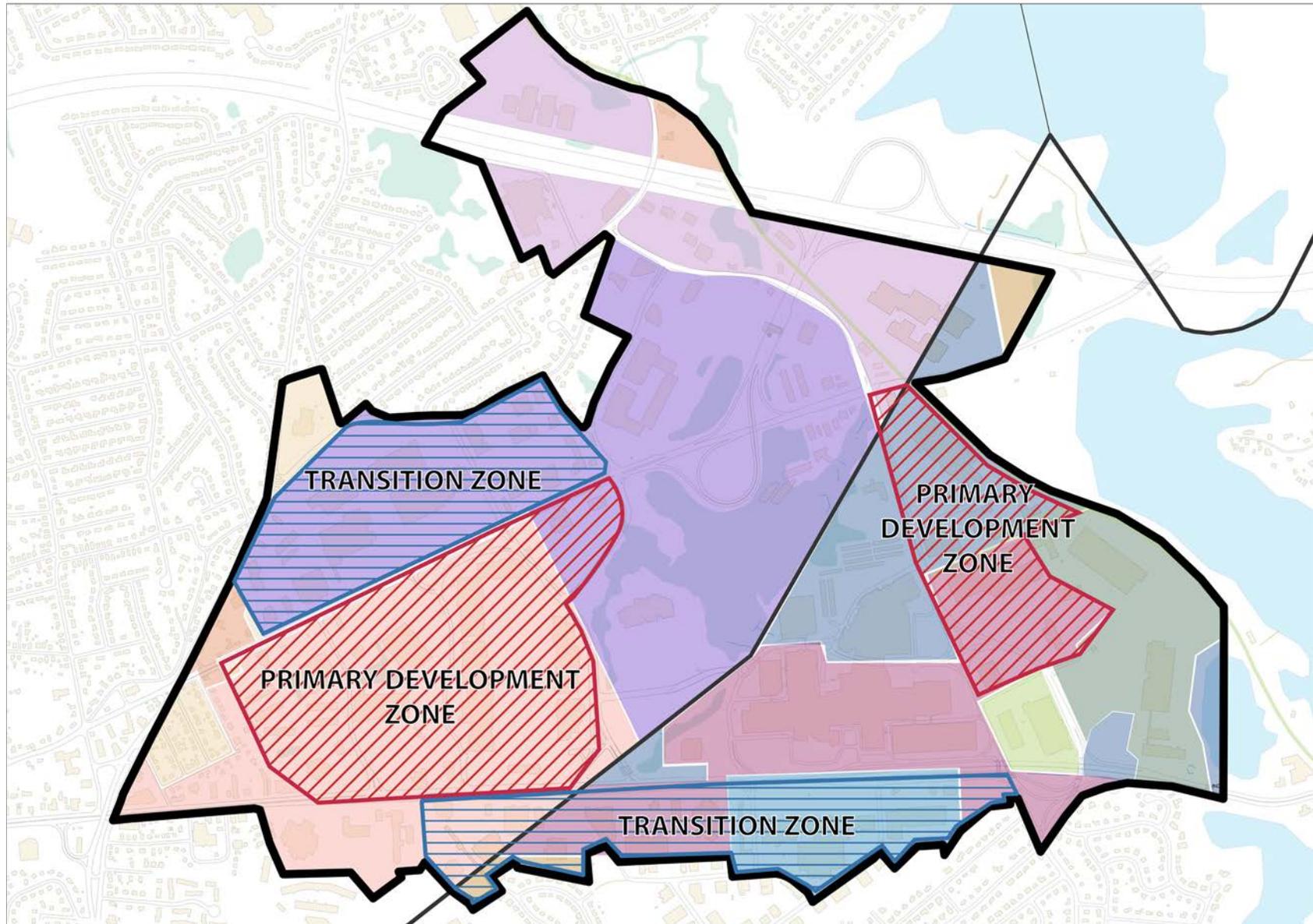


Figure 6. 5: Proposed location of Primary and Transition Zones.

walkability and a visually-appealing street frontage will encourage pedestrian activity. This will help to create a sense of enclosure for pedestrians and create a more interesting street front as people walk along both primary and secondary streets in The Triangle. Varying the facade depths along the face of the building using bump-outs and entryways will help create space for landscaping, public amenities, seating areas, and public gathering spaces.

- Require a high percentage of transparency in ground floor facades along streets to create a more interesting pedestrian environment.
- Step back provisions for upper stories above the second or third floor for buildings that have frontage on secondary streets should be considered on an individual basis, depending on the width of the street and sidewalk. This will help minimize the tunnel effect on streets that are only two lanes wide.
- Create an incentive or density bonus provision to encourage developers to grant easements for the construction of connecting internal streets or to pay into a fund that could be used by the municipalities to build connecting streets.

TRANSITION ZONES – ZONING RECOMMENDATIONS

The Transition Zones are intended to provide for redevelopment opportunities along major transportation corridors while serving as a transition in the intensity of development and types of uses between The Triangle and abutting residential neighborhoods. The Transition Zones should allow for more development intensity than is currently permitted today, but less than the Primary Development Zones. Redevelopment in the Transition Zones may occur in a more organic fashion over a longer period of time, so consistency in dimensional and site planning regulations is important to create a unified look and feel. The following recommendations are offered for the Transition Zones in The Triangle.

- Allow buildings up to three to four stories in height and create a transition provision in the zoning that heights step down within a certain radius of single-family residential neighborhoods. Uses

could also create a transition between commercial properties and nearby residential neighborhoods. For example, town houses could create a buffer area on the backside of commercial properties abutting residential neighborhoods. Taller buildings could be allowed east of Speen Street.

- Set minimum lot sizes in a way that does not discourage individual property owners from investing in or redeveloping their land, but also encourages parcel consolidation where appropriate. One way of accomplishing this would be to provide incentives for owners who consolidate property and meet the design goals and vision for The Triangle. This could come in the form of a density bonus, height increase, increase in sign size, fewer Special Permit requirements, etc. Parcel consolidation can be used to create a more regular parcel geometry that can better accommodate a variety of uses. New development on the larger consolidated development site could include pedestrian, bicycle, and vehicular connecting roads.
- Set both a minimum and maximum front yard setback and vary those requirements by the type of street the parcel fronts on. Primary travel corridors like Route 9 or Route 30 should have a larger front yard setback than secondary travel corridors or interior streets. The minimum and maximum front yard setbacks allow for some variability in building placement, but still ensure enough space is provided to allow for proper landscaping and pedestrian/bike facilities. The larger front yard setback along these two roadways would encourage the creation of a frontage road in the future to help with access and safety. The minimum and maximum front yard setbacks allow for some variability in building placement, but still ensure enough space is provided to allow for proper landscaping, wider sidewalks or a shared-use path for bikes and pedestrians, pocket parks, and larger pedestrian gathering areas. The new zoning should stipulate the widths of sidewalks and shared use pathways, and the desired square footage for pedestrian gathering spaces and pocket parks.
- Set a deeper rear yard setback where commercial properties abut surrounding residential neighborhoods to provide a larger well-landscaped buffer.
- Create a building frontage requirement to ensure there is an ample amount of building wall along the frontage of the property. This concept is especially important along secondary streets where walkability and a visually-appealing street frontage will encourage pedestrian activity, consistent

building wall along both primary and secondary streets. This will help to create a sense of enclosure for pedestrians and create a more interesting street front as people walk along both primary and secondary streets in The Triangle. Varying the façade depths along the face of the building using bump outs and entry ways will help create space for landscaping, public amenities, seating areas, and public gathering spaces.

- Create an incentive or density bonus provision to encourage developers to grant easements for the construction of connecting internal streets or pay into a fund that could be used by the municipalities to build connecting streets.
- Vary the allowable uses in the transition zone to shift the focus more toward neighborhood-scale retail, office, residential, and entertainment/civic uses. These might include small restaurants, neighborhood services, professional offices, art galleries, coffee shops, fitness and wellness, and residential uses such as townhomes, duplexes, and smaller-scale multi-family dwellings.

USES IN THE TRIANGLE

While many uses currently allowed in the base zoning districts for The Triangle remain desirable, there are some additional uses both municipalities should consider allowing in the future. The changing nature of the retail market and opportunities to support residential, mixed-use and cottage industries necessitate a new flexibility with uses that may not have been considered fifty or sixty years ago when development of retail space first started in The Triangle. The following uses should be considered as new zoning is crafted for the area:

EXISTING USES THAT SHOULD REMAIN

- Retail
- Professional or Business Office
- Medical Office
- Hotel/Motel

- Restaurants
- Indoor/Outdoor Amusement
- R&D/Lab Space

FUTURE USES FOR CONSIDERATION

- Specialty Foods
- Art Gallery/Creation Space
- Food Trucks
- Mixed-use
- Multi-Family Residential
- Brewery
- Custom Fabrication/Artisan Industrial
- Co-Work Space

PARKING, LANDSCAPING & PUBLIC AMENITIES

One of the most effective ways to unify a district like The Triangle is through visual cues that transition seamlessly across municipal boundaries. The location of parking, placement of public amenities and a consistent landscaping plan are all site planning elements that can help create a consistent look and feel across parcels.

PARKING RECOMMENDATIONS

Parking recommendations include:

- Unify parking requirements for the new zoning districts. Consider using Natick's parking requirements as a starting point as they are lower than Framingham's.

- Consider parking maximums in The Triangle. Retail and office developers may want to build more parking than is required under zoning. The added parking encourages driving, adds impervious surface area, creates greater stormwater issues and is visually unappealing. Parking maximums will help ensure both municipalities set an appropriate amount of parking, yet provide the flexibility for developers to build less if appropriate.
- Allow shared parking for mixed-use developments. Consider a 10 percent reduction in overall parking for uses that do not have overlapping times of parking demand.
- Regulate the placement of parking to limit it to the rear and sides of buildings.
- Encourage shared access to adjacent parking lots and the closure of curb cuts where possible, particularly along primary travel corridors.
- Establish bike parking standards for residential and mixed-use development, at a minimum.
- Allow for parking reductions if the applicant provides transportation demand management solutions such as car sharing, land banked spaces, joining the MetroWest TMA, subsidizing transit passes, etc.

RECOMMENDATIONS FOR LANDSCAPING & PUBLIC AMENITIES

Recommendations for landscaping and public amenities include:

- Develop a unified set of landscaping requirements that includes the types (e.g., columnar, high canopy), size and caliper of street trees, bushes and other plantings with a preference toward native or hybrid species.
- Develop a unified set of design guidelines and imagery that represent the placement, clustering and types of landscaping that is desired in The Triangle.
- Vary the minimum landscape requirements for the primary development zone and the transition zone. Consider having a higher landscape requirement for the primary development zone and

focus the placement of landscaping along major roadways and in parking areas to soften the hardscape and create a more inviting pedestrian environment. Consider having a lower landscaping requirement in the transition zone, but focus the placement at the front and rear lot lines to buffer the primary roadway and create a visual buffer between rear property lines and abutting residential neighborhoods. It is important to have some consistency in landscaping standards between the Primary and Transition zones, particularly along roadway frontage in order to keep a consistent streetscape look and feel. While the overall density of plantings and the percentage of open space may vary between the primary and transition zones, there should be visual consistency between the two.

- Ensure the front setback in both districts is wide enough to accommodate an ample amount of landscape buffer between the road and the building with room for sidewalks, shared use paths, or a frontage road if desired. Trees and other landscape elements should be pruned and maintained to ensure sight lines and visibility for all roadway users and visibility to ground floor commercial frontage from the roadway.
- Consider varying landscape and public amenity requirements by the size of the development, where larger-scale development provides more and smaller-scale development provides less. At no point should the minimum requirements detract from the overall landscape and public amenity plan for The Triangle. Consistency across parcels is the goal, but standards and amounts can vary based on the size of the development project.
- Consider varying sidewalk/pathway widths and public amenity space (pedestrian gather spaces, plazas, etc.) by the roadway on which the parcel fronts. For example, a wider sidewalk or shared use pathway may be more desirable along Route 9, Route 30 and Speen Street where a sidewalk may be more appropriate along secondary connector streets. It may be more appropriate or desirable to have pedestrian gathering spaces located along secondary streets where traffic is not as heavy and development can be more easily clustered to create enclosed spaces.

SUMMARY RECOMMENDATIONS

- Coordinate on limiting the granting of Variances and Special Permits to ensure that the intent of the Master Plan is not undermined.
- Create and adopt new zoning for Primary Development Zones:
 - Allow up to six stories in height for new development. Consider allowing taller buildings by Special Permit, particularly for a larger office project or a project that is considering structured or underground parking as a way to increase allowable development on a given site. If Special Permits are granted for taller buildings, consideration should be given to tying density bonuses back to an increase in public amenities, transportation connectivity and landscaping requirements.
 - Encourage parcel consolidation and larger, more coordinated development projects, by setting a higher minimum lot size (than in the existing zoning).
 - Set both a minimum and maximum front yard setback and vary those requirements by the type of street the parcel fronts on.
 - Create a building frontage requirement to ensure there is an ample amount of building wall along the frontage of the property.
 - Require a high percentage of transparency in ground floor facades along streets to create a more interesting pedestrian environment.
 - Step back provisions for upper stories above the second or third floor for buildings that have frontage on secondary streets should be considered on an individual basis.
- Create and adopt new zoning for Transition Zones:
 - Allow buildings up to three to four stories in height and create a transition provision in the zoning that heights step down within a certain radius of single-family residential neighborhoods.

- Set minimum lot sizes in a way that does not discourage individual property owners from investing in or redeveloping their land, but also encourages parcel consolidation where appropriate.
- Set both a minimum and maximum front yard setback and vary those requirements by the type of street the parcel fronts on.
- Set a deeper rear yard setback where commercial properties abut surrounding residential neighborhoods to provide a larger well-landscaped buffer.
- Create a building frontage requirement to ensure there is an ample amount of building wall along the frontage of the property.
- Vary the allowable uses in the transition zone to shift the focus more toward neighborhood-scale retail, office, residential, and entertainment/civic uses. These might include small restaurants, neighborhood services, professional offices, art galleries, coffee shops, fitness and wellness, and residential uses such as townhomes, duplexes, and smaller-scale multi-family dwellings.
- Both Primary Development Zones and Transition Zones are intended to be created as new base zoning districts to remove any possibility of future redevelopment utilizing the existing underlying zoning. Prior to removing or changing existing base zones and/or overlay districts, both municipalities should check with legal staff with regard to any payments received under the existing overlay districts and how those may be impacted by any proposed zoning changes.
- Create an incentive or density bonus provision to encourage developers to grant easements for the construction of connecting internal streets or to pay into a fund that could be used by the municipalities to build connecting streets.
- As The Triangle redevelops and transportation improvements occur, both municipalities should monitor progress and make determinations over time with regard to rezoning additional portions of The Triangle.



- Modify allowable uses within Triangle to encourage to support today's residential, mixed-use and cottage industries.
- Adopt parking recommendations:
 - Unify parking requirements for the new zoning districts. Consider using Natick's parking requirements as a starting point as they are lower than Framingham's.
 - Consider parking maximums in The Triangle. Retail and office developers may want to build more parking than is required under zoning.
 - Allow shared parking for mixed-use developments. Consider a 10 percent reduction in overall parking for uses that do not have overlapping times of parking demand.
 - Regulate the placement of parking to limit it to the rear and sides of buildings.
 - Encourage shared access to adjacent parking lots and the closure of curb cuts where possible, particularly along primary travel corridors.
 - Establish bike parking standards for residential and mixed-use development, at a minimum.
 - Allow for parking reductions if the applicant provides transportation demand management solutions such as car sharing, land banked spaces, joining the MetroWest TMA, subsidizing transit passes, etc.
- Adopt recommendations for landscaping and public amenities:
 - Develop a unified set of landscaping requirements that includes the types (e.g., columnar, high canopy), size and caliper of street trees, bushes and other plantings with a preference toward native or hybrid species.
 - Develop a unified set of design guidelines and imagery that represent the placement, clustering and types of landscaping that is desired in The Triangle.

- Vary the minimum landscape requirements for the primary development zone and the transition zone. While the overall density of plantings and the percentage of open space may vary between the primary and transition zones, there should be visual consistency between the two.
- Ensure the front setback in both districts is wide enough to accommodate an ample amount of landscape buffer between the road and the building with room for sidewalks, shared use paths, or a frontage road if desired.
- Consider varying landscape and public amenity requirements by the size of the development, where larger-scale development provides more and smaller-scale development provides less. At no point should the minimum requirements detract from the overall landscape and public amenity plan for The Triangle. Consistency across parcels is the goal, but standards and amounts can vary based on the size of the development project.
- Consider varying sidewalk/pathway widths and public amenity space (pedestrian gather spaces, plazas, etc.) by the roadway the on which the parcel fronts.



08 IMPLEMENTATION

- **DEVELOPMENT VISION AND URBAN DESIGN**
 - **TRANSPORTATION**
 - **UTILITIES**
 - **ZONING**
 - **MUNICIPAL COORDINATION**
-

IMPLEMENTATION

Implementation of this Plan will require a number of actions from both municipalities as well as from the Commonwealth and private property owners, and developers. Implementation actions detailed throughout this report are summarized below.

DEVELOPMENT VISION AND URBAN DESIGN

- Ensure that new development is consistent with and helps to implement the Framework Plan. Development proposals should be required to clearly detail how they accommodate and/or provide new, pedestrian-friendly streets that create new connections through The Triangle with buildings sited to reinforce the street edges.
- Review new development proposals for consistency with this Report, including inclusion of mixed-use, connections, open space, placemaking elements, driveway consolidation, pedestrian and bicycle facilities, zoning and design principles.
- Encourage mixed-use development including retail, office, entertainment and residential uses.
- Work with property owners and developers to facilitate desired development.
- Finalize and adopt the zoning recommendations in Chapter 6.
- Pursue funding for the design and construction of the greenways through the wetlands.
- Design and implement a wayfinding and signage program throughout The Triangle.
- Work with property owners and developers to develop a continuous north-south and east-west greenway system utilizing existing open space (i.e., the central wetlands – Bannister’s Meadows, the Cochituate Rail Trail and Wonderbread Spur, the pathway around the Natick Mall and other identified wetlands) in combination with the patchwork of wooded areas bordering and linking the wetlands, including a wide multi-use path and pedestrian boardwalks through Bannister’s Meadows.
- Consider opening discussions with Eversource regarding building trails under Eversource power lines, both north and south of Route 9.

Implementation of this Plan could take up to 20 or more years, necessitating long-term attention to the framework of Development Vision & Urban Design, Transportation, and Zoning & Regulatory Changes.

Over that long-term, both communities must remain committed to working together, and with property owners, in order to succeed. Community engagement and process, as well as inter-municipal and public-private partnerships will be required for full implementation.

Report illustrations of transportation improvements and potential redevelopment are very conceptual and will require a much more detailed level of design to proceed. These concepts are intended to be a starting point for discussion, but are anticipated to be refined through the design process and in response to opportunities that arise with changing retail and commercial markets.

- Conduct a more detailed study to determine the feasibility of a perimeter pathway around Bannister's Meadows, including the availability of relatively flat land for constructing the path, permitting issues, and future ownership and maintenance responsibility.
- Consider providing an incentive or density bonus zoning provision to encourage developers to build connecting roads, to grant easements for the construction of connecting internal streets, and/or to pay into a fund that could be used by the municipalities to build connecting streets.
- Encourage developers to incorporate the frontage road concept for new development on parcels facing Route 9 and/or Route 30. This involves creating a more pedestrian-friendly environment by siting new commercial buildings further from these busy roads with a separation zone that includes a landscaped setback, a narrow frontage road with on-street parallel parking, and a wide sidewalk with a curbside tree lawn.
- On the south side of Route 9:
 - Work with property owners to study the feasibility of, and implement, segments of a connecting road at the rear of parcels, as well to consolidate driveways.
 - Explore options for defining the legal status of the pedestrian path from Essex Street to Mercer Road with the intention of creating a more definitive connection.
 - Encourage the introduction of a frontage road as properties are redeveloped.
- In the short-term, consider developing a short cycle track on Route 9 that connects via the Natick Mall path on the west side of Speen Street to the Wonderbread Spur and Cochituate Rail Trail on the east and to Ring Road or Shoppers World Drive on the west. In the long-term, as obstacles are removed by future redevelopment the potential redesign of MassPike Exit 13, consider developing a continuous cycle track on both Routes 9 and Route 30.

TRANSPORTATION

- Property owners will need to become major players in transit improvements, including lobbying MassDOT and the MWRTA for improvements, providing employee incentives for commuting by transit and providing on-site transit amenities.
- Work with MassDOT and the legislative delegation to secure funding for the infrastructure that is needed to reach the desired growth. Specifically, MassDOT should be approached regarding:
 - Providing bus pull outs and shelters along Route 9 and Route 30 in order to encourage use of transit. Incorporating the transit accommodations into any infrastructure projects.
 - Providing funding for the proposed commuter route which will provide a first mile/last mile transit connection from the Commuter Rail to the Golden Triangle.
 - Accommodating pedestrians and bicyclists in infrastructure projects.
 - Committing to snow removal to allow for safe passage during all seasons. The municipalities should work with private property owners to ensure that public paths on private property are also cleared.
 - Designing and constructing the displaced left turn concept at the intersection of Route 30 and Speen Street.
 - Interchange improvements required to meet the goals of this study, including providing more direct access to Speen Street in order to reduce traffic at the ramp connection to Route 30 resulting in an intersection at Route 30 that is not grade separated.
- Evaluate transit routes and headways, stop locations and amenities, and pedestrian connections to potential destinations periodically to ensure that transit is a viable alternate mode for employees, residents and visitors to The Triangle.
- Work with MassPort to incorporate additional parking capacity onto the existing Logan Express site.

- Continue to monitor changes in transportation technology to ensure that the transportation system accommodates new technologies and traffic operations in The Triangle remain as efficient as possible.
- The municipalities should include zoning that allows for the mixed-use types of projects that will result in lower exterior trip generation.
- When permitted, projects should be required to include pedestrian, cyclist and transit accommodation as well as provide appropriate connections to adjacent properties, either through constructing those connections as described in detail in Chapter 5, or providing easements and paying into a fund to allow them to be constructed at a later date when adjacent properties are redeveloped.
- Development projects should be required to join the Transportation Management Association (TMA) which joins together employers and then uses that larger employment base to support transit, carpooling and other tools to reduce single occupant vehicular traffic.

UTILITIES

- All redevelopments will need to comply with local and state regulations to ensure that adequate water supply is available and that capacity exists for the resulting wastewater.
- When projects are redeveloped in the area of Route 30 and Speen Street, and in other locations where flooding has been observed, special attention should be given to the stormwater in light of existing flooding occurrences.
- When possible, underground power, cable and telephone should be considered.

ZONING

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- Consider varying sidewalk/pathway widths and public amenity space (pedestrian gather spaces, plazas, etc.) by the roadway on which the parcel fronts.

MUNICIPAL COORDINATION

- To improve cross-municipal coordination between Framingham and Natick, consideration should be given to creating a district-wide entity such as a Business Improvement District (BID) to ensure coordination between municipal staff, governing bodies, property owners, and businesses in The Triangle. The BID would have dedicated staff who could focus on both public and private needs and serve as an intermediary to negotiate and advocate for improvements in The Triangle.
- The two municipalities should consider the idea of establishing a District Improvement Financing (DIF) district as a way to help fund public infrastructure and improvement projects in The Triangle. The DIF district would use incremental property tax gains as an vehicle for funding future infrastructure enhancements. Further study would be needed to determine if a DIF could serve two municipalities together, where the district boundaries would be drawn, how tax revenue and cost share would be determined, and how projects would be selected for DIF funding.
- The two municipalities should continue to inform each other of development proposals, zoning changes, infrastructure improvements, and similar issues. This practice should be codified in any new zoning for The Triangle where the zoning district boundaries span the municipal boundary between Framingham and Natick. This would be similar to how the Regional Center Overlay district works today.



