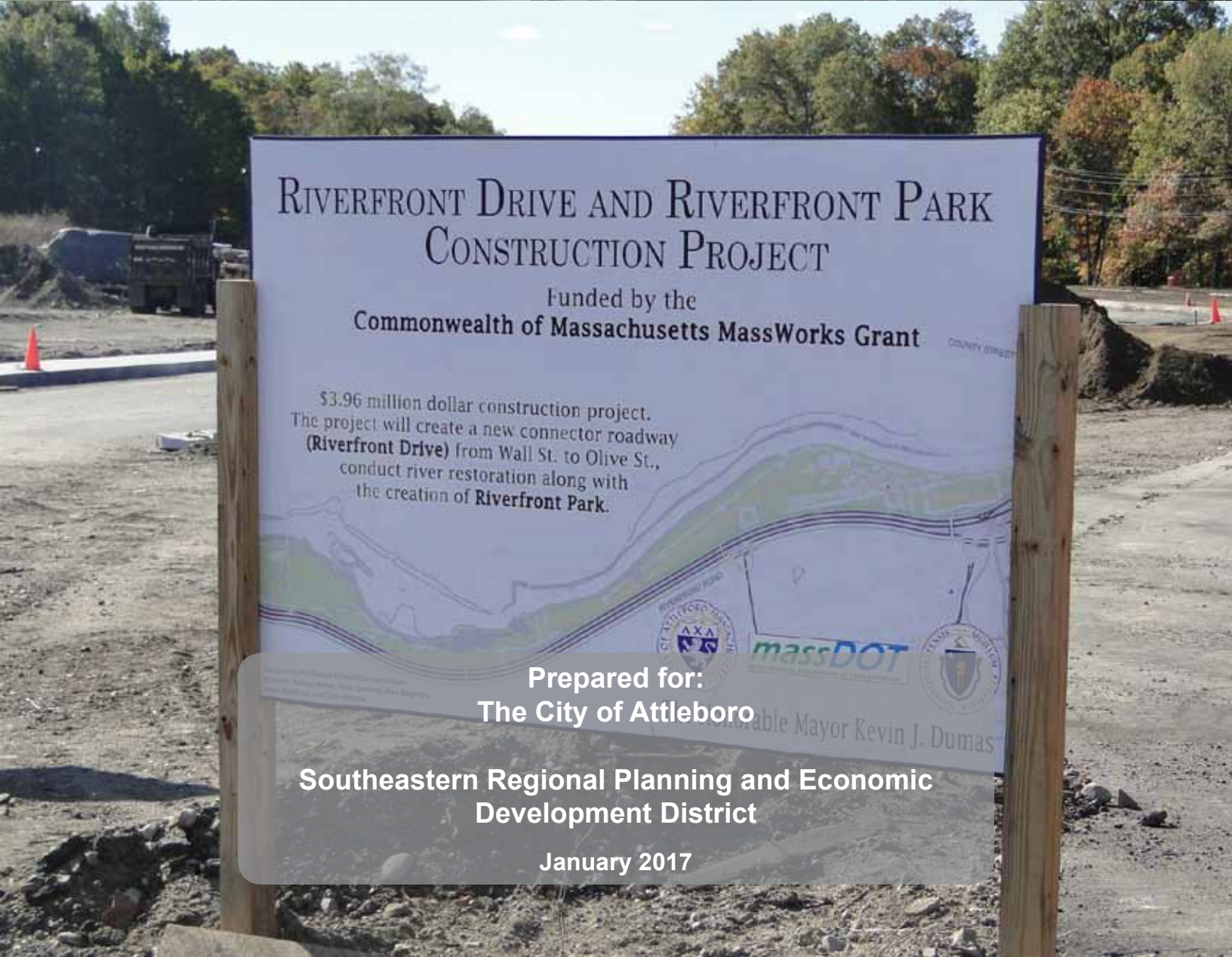




Attleboro Transit Oriented Development

Growth and Development Opportunities for the Attleboro MBTA Station Area

FINAL REPORT



RIVERFRONT DRIVE AND RIVERFRONT PARK CONSTRUCTION PROJECT

Funded by the
Commonwealth of Massachusetts MassWorks Grant

\$3.96 million dollar construction project.
The project will create a new connector roadway
(Riverfront Drive) from Wall St. to Olive St.,
conduct river restoration along with
the creation of Riverfront Park.

Designed by AECOM & Urban Consultants
Illustration: Adam Johnson, Jason Bennett, Alex Bennett,
Alex Bennett and Cole Wilson

Prepared for:
The City of Attleboro

Southeastern Regional Planning and Economic
Development District

January 2017

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Introduction

Trends in housing and commuting have been changing over the past decade from the pursuit of auto-centric suburban homes set in cul-de-sac neighborhoods to denser, urban environments served by transit systems. This shift has made development near transit stations highly attractive to developers and is leading in a resurgence of activities in many downtowns across the Commonwealth. The development trend known as Transit Oriented Development (TOD) creates more compact, mixed used developments that include residential units, small and medium sized office space, small commercial space, and small to medium sized retail, restaurant, and entertainment spaces.

The key element of a TOD is a compact development that is walkable with easy access to the regional transit system. Pedestrian traffic is encouraged, and the infrastructure is designed to accommodate pedestrian travel. Parking most often favors on-street spaces and structured parking located below and behind buildings instead of large surface parking located in front of buildings. Buildings are sited with smaller set-backs from lot lines with the facade on or close to the sidewalk and typically are several stories. TOD does not typically exhibit deep set-backs with sprawling single story structures traditionally found in suburban settings.

The City of Attleboro is poised to benefit from these changing desires to attract new development into downtown surrounding the Massachusetts Bay Transit Authority (MBTA) Commuter Rail Station. This study examines the existing conditions and the growth potential for a TOD in Attleboro.

Study Area

The City of Attleboro, Massachusetts is located approximately thirty miles southwest of Boston, Massachusetts and approximately ten miles north of Providence Rhode Island. The city population according to the 2010 Census was 45,593 (United States Census Bureau, 2010) and home to an employed workforce of 22,711 (Massachusetts Executive Office of Labor and Workforce Development, 2015). The city is located on the I-95 corridor and is home to two stations on the MBTA Providence/Stoughton Line: Attleboro and South Attleboro. This study is focused on the Attleboro MBTA Commuter Rail station located in downtown, at 75 South Main Street. The area of study is bound by the intersections of County Street, South Main Street, North Main Street and Park Street to the north, Olive Street to the south, South Main Street (Route 152) to the east, and County Street (Route 123) to the west. The study area is approximately 64 acres.

The land studied for development potential is bound by Wall Street to the north, Olive Street to the south, the MBTA Providence/Stoughton Commuter Rail line to the east, and the Ten Mile River to the west. Riverfront Drive, a north/south connector between Wall Street and Olive Street divides the site and parallels the Ten Mile River.

Over the past several years, the City of Attleboro and the Attleboro Redevelopment Authority (ARA) have acquired much of the land surrounding the station for the purpose of redevelopment. The land, which has a long history of heavy industrial use, had become polluted and unusable for residential or commercial development. After years of an intense effort involving several state and federal agencies, the environmental contaminants have been remediated and the land is soon to be ready for development.

Complementing the clean-up effort, the City constructed a new road, Riverfront Drive to connect Olive Street to the south to Wall Street at the north. The new road provides improved access to the developable land in the study area, improves access to the Ten Mile River, and is intended to be the catalyst that drives development into the TOD area.

On August 18, 2015, Mayor Kevin J. Dumas officially requested that the Attleboro Municipal Council adopt a new Transit Oriented Development District zoning ordinance. That request was approved on November 3, 2015. Then on June 28, 2016, at the request of the Attleboro Redevelopment Authority and the MBTA, the Attleboro Municipal Council voted to designate approximately 20 acres within the study area as the City's first TOD zoning district; thus paving the way for this new development trend in the City's downtown

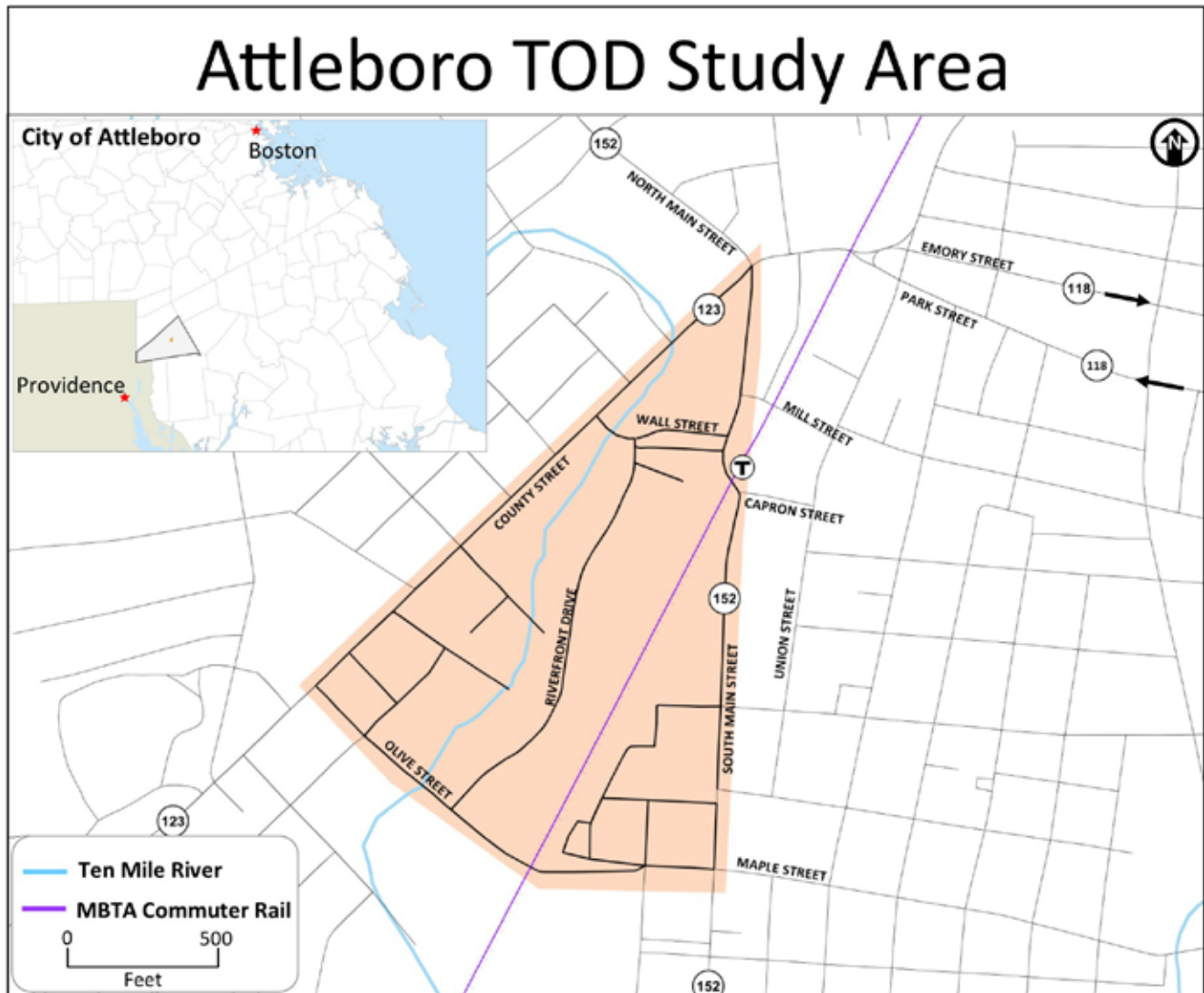


Figure 1: Study Area Map

Existing Infrastructure

The study area included the following roadways:

- County Street (Route 123)
- Park Street (Route 123)
- South Main Street (Route 152)
- Olive Street
- Maple Street
- Wall Street
- Mill Street
- Union Street
- Dunham Street

County Street & Park Street (Route 123)

State Route 123 (known as County Street and Park Street in the study area) is a northeast/southwest roadway that travels through downtown Attleboro. The 42-mile roadway connects State Route 3A in Scituate in the northeast to the Rhode Island state line in the southwest. In the study area, Route 123 is classified as a principal arterial and operates under local jurisdiction. County Street consists of one travel lane in each direction separated by a solid double yellow centerline while the small section of Park Street in the study area consists of one travel lane in each direction with additional turning lanes at the intersection with Route 152. On-street parking is not allowed on County Street but is allowed on both sides of Park Street in the study area. County Street has 4-5 foot sidewalks (generally concrete) on both sides of the road and marked crosswalks at all intersections.

North & South Main Street (Route 152)

North & South Main Streets (Route 152) is a north/south roadway that travels through downtown Attleboro. The 15-mile roadway connects Route 1 in Plainville in the north to the Rhode Island state line in the south. In the study area, Route 152 is classified as an urban minor arterial and operates under local jurisdiction. North & South Main Street consist of one travel lane in each direction separated by a solid double yellow centerline. On-street parking is only allowed on both sides of the road on South Main Street (Route 152) and not allowed on North Main Street (Route 152) in the study area. North & South Main Street has 4-5 foot sidewalks (generally concrete) on both sides of the road and marked crosswalks at all intersections.

Olive Street & Maple Street

Olive Street is an east/west roadway that connects County Street (Route 123) and South Main Street (Route 152). Olive Street becomes Maple Street east of South Main Street (Route 152). Olive Street and Maple Street are classified as urban minor arterials and operate under

local jurisdiction. In the study area, both roadways consist of one travel lane in each direction separated by a solid double yellow centerline and formal on-street parking is not provided. Both streets have 4-5 foot sidewalks (generally concrete) on both sides of the road and marked crosswalks at all intersections.

Wall Street & Riverfront Drive

Wall Street is an east/west roadway that connects County Street (Route 123) and South Main Street (Route 152) and provides access to the Attleboro MBTA Commuter Rail Station. Wall Street is classified as a local roadway and operates under local jurisdiction. It consists of one travel lane in each direction separated by a solid double yellow centerline and parking is prohibited on both sides of the road. Riverfront Drive is a newly constructed north/south roadway that connects Wall Street to Olive Street and provides direct access to the Attleboro MBTA Commuter Rail Station. It is classified as a local roadway and operates under local jurisdiction. It consists of one travel lane in each direction separated by a solid double yellow centerline and on-street parking is not allowed. Both streets have 4-5 foot sidewalks (generally concrete) on both sides of the road and marked crosswalks at all intersections.

Union Street, Mill Street, and Dunham Street

Union Street, Mill Street, and Dunham Street are all part of the local residential street network adjacent to downtown Attleboro. Union Street is a north/south roadway that provides connection from Route 118 in downtown Attleboro to the residential neighborhood to the south. Meanwhile, Mill Street and Dunham Street are east/west roadways that connect the residential neighborhoods in the east to Route 152 and ultimately downtown Attleboro in the west. In the study area, all three roadways are classified as local roadways and operate under local jurisdiction. They all consist of one travel lane in each direction separated by a solid double yellow center line and on-street parking is generally allowed. Both streets have 4-5 foot sidewalks (generally concrete) on both sides of the road and marked crosswalks at all intersections.

Intersections

Signalized Intersections

- County Street (Route 123) & Olive Street
- County Street (Route 123) & Wall Street
- County Street (Route 123) & North/South Main Street (Route 152)/Park Street
- South Main Street (Route 152) & Olive Street

Unsignalized Intersections

- South Main Street (Route 152) & Mill Street
- South Main Street (Route 152) & Wall Street
- Union Street & Mill Street
- Wall Street & Riverfront Drive

County Street (Route 123) & Olive Street



Intersection of County Street and Olive Street

Olive Street intersects County Street (Route 123) from the southeast to form a signalized “T” intersection. The County Street (Route 123) northbound approach consists of one shared through/right turn lane and the County Street (Route 123) southbound approach consists of one shared through/left turn lane. The Olive Street westbound approach consists of one multipurpose travel lane. Sidewalks are present on all approaches and crosswalks are provided on the County Street (Route 123) southbound approach and the Olive Street westbound approach. Traffic control at this location is provided by a semi-actuated traffic signal with an exclusive push button activated pedestrian phase.

County Street (Route 123) & Wall Street



Intersection of County Street and Wall Street

Wall Street intersects County Street (Route 123) from the southeast to form a signalized “T” intersection. The County Street (Route 123) northbound approach consists of one shared through/right turn lane and the County Street (Route 123) southbound approach consists of one shared through/left turn lane. The Wall Street westbound approach consists of one multipurpose travel lane. Sidewalks are present on all approaches and crosswalks are provided on the County Street (Route 123) southbound approach and the Wall Street westbound approach. Traffic control at this location is provided by a fully-actuated traffic signal with an exclusive push button activated pedestrian phase.

County Street (Route 123) & North/South Main Street (Route 152)/Park Street



Intersection of County Street (Route 123) & North/South Main Street (Route 152)/Park Street

County Street (Route 123) intersects North and South Main Streets (Route 152) from the southwest and Park Street intersects from the east to form a four-way signalized intersection. The County Street (Route 123) eastbound and the Park Street westbound approaches consist of a through lane and an exclusive right-turn lane. Left turns are prohibited on these approaches. The North Main Street (Route 152) southbound approach consists of a left-turn lane and a shared through/right-turn lane while the South Main Street (Route 152) northbound approach consists of a shared through/right-turn lane. Left turns are also prohibited on the South Main Street (Route 152) northbound approach. Sidewalks and crosswalks are present on all approaches. Traffic control at this location is provided by a fully-actuated traffic signal with an exclusive push button activated pedestrian phase.

South Main Street (Route 152) & Mill Street

Mill Street intersects South Main Street (Route 152) from the east to form an unsignalized “T” intersection. The Mill Street approach consists of one multipurpose travel lane. The South Main Street (Route 152) northbound approach consists of one shared through/right-turn lane while the southbound approach consists of one shared through/left-turn lane. Sidewalks and crosswalks are present on all approaches. South Main Street (Route 152) operates as the major street and Mill Street operates as the minor street under “STOP” control.



South Main Street (Route 152) & Mill Street

South Main Street (Route 152) & Wall Street

Wall Street intersects South Main Street (Route 152) from the west to form an unsignalized “T” intersection. The Wall Street approach consists of one multipurpose travel lane. The South Main Street (Route 152) northbound approach consists of one shared through/left-turn lane while the southbound approach consists of one shared through/right-turn lane. Sidewalks are present on all approaches and crosswalks are provided on the South Main Street (Route 152) southbound approach and the Wall Street eastbound approach. South Main Street (Route 152) operates as the major street and Wall Street operates as the minor street under “STOP” control.



South Main Street (Route 152) & Wall Street

South Main Street (Route 152) & Olive Street/Maple Street

Olive Street and Maple Street intersect South Main Street (Route 152) from the west and east respectively to form a four-way signalized intersection. All approaches consist of one multipurpose lane. Sidewalks and crosswalks are present on all approaches. Traffic control at this location is provide by a fully-actuated traffic signal with an exclusive push button activated pedestrian phase.



South Main Street (Route 152) & Olive Street/Maple Street

Union Street & Mill Street/Dunham Street



Union Street & Mill Street/Dunham Street

Mill Street intersects Union Street from the west just south of where Dunham Street intersects Union Street from the east forming an offset four-way unsignalized intersection. All approaches to the intersection consist of one multipurpose travel lane. Sidewalks and crosswalks are present on all approaches. Union Street operates as the major street and Mill Street/Dunham Street operate as the minor streets under “STOP” control.

Wall Street & Riverfront Drive



Wall Street & Riverfront Drive

Riverfront Drive intersects Wall Street from the south to form a unsignalized “T” intersection. The Riverfront Drive approach consists of an exclusive left-turn lane and an exclusive right-turn lane. The Wall Street eastbound approach consists of a shared through/right-turn lane while the westbound approach consists of a shared through/left-turn lane. Sidewalks are present on all approaches and a crosswalk is provided on the Riverfront Drive approach. Wall Street operates as the major street and Riverfront Drive operates as the minor street under “STOP” control. Riverfront Drive was not open at the time of the study and is anticipated to open in 2017.

Transit Service

The study area is served by two modes of transit: commuter rail service by the MBTA Providence/Stoughton Line and fixed route bus service by the Greater Attleboro Taunton Regional Transit Authority (GATRA).

Commuter Rail Service



Attleboro MBTA Commuter Rail Station

Attleboro MBTA Station, located at 75 South Main Street, is served by the MBTA Providence/Stoughton Line which provides daily inbound trips to Boston, MA and outbound trips to Providence, RI. Weekday inbound service begins at 5:19 AM and ends at 10:49 PM; outbound service begins at 6:12 AM and ends at 12:50 AM. Saturday inbound service begins at 6:53 AM and ends at 10:18 PM; outbound service begins at 7:31 AM and ends at 11:56 PM. Sunday inbound service begins at 11:38 AM and ends at 10:18 PM; outbound service begins at 11:56 AM and ends at 11:56 PM.

Train departure times vary throughout the service days, but generally a train departs each hour. Weekday service provides more trips than weekend service to accommodate demand for commuter travel to and from Boston.

Bus Service

Bus service in the City of Attleboro is operated by GATRA with service originating at the Attleboro Intermodal Transportation Center (AITC) located adjacent to the Attleboro MBTA Commuter Rail station. The eight routes originate from the AITC operate Monday through Saturday and generally offer hourly service which begins as early as 5:30 AM for Weekdays and 7:45 AM on Saturdays; service concludes at 7:56 PM for Weekdays and 6:41 PM for Saturdays.



GATRA Attleboro Intermodal Transit Center

The routes originating at the AITC are:

- Route 10 - Attleboro/North Attleboro
- Route 11 - South Attleboro Connector
- Route 12 - Attleboro/So. Attleboro/No. Attleboro
- Route 14 - Attleboro/No. Attleboro/Plainville
- Route 15 - Oak Hill
- Route 16 - Attleboro/Seekonk
- Route 18 - Taunton/Norton/Attleboro
- Route 24 - Attleboro/Pawtucket, RI

Route 10 - Attleboro/North Attleborough

The Route 10 serves the City of Attleboro and the Town of North Attleborough with service to Bishop Feehan High School (Attleboro), Triboro Plaza (North Attleborough), North Attleborough Center, and the Emerald Square Mall (North Attleborough). Service on the Route 10 begins at 5:30 AM on Weekdays and 9:30 AM on Saturday; service ends at 6:50 PM on Weekdays and 5:27 PM on Saturdays. The route operates with sixty minute headways.

Route 11 - South Attleboro Connector

The Route 11 does not originate at the AITC, but does connects with Route 10 at the Emerald Square Mall. The Route 11 serves US Route 1 south of the Emerald Square Mall and terminates at the intersection of Broadway and Benefit Street in Pawtucket, RI. Service on the Route 11 begins at 5:40 AM on Weekdays and 9:10 AM on Saturday; service ends at 7:20 PM on Weekdays and 4:52 PM on Saturdays. The route operates with sixty-minute headways.

Route 12 - Attleboro/So. Attleboro/No. Attleborough

The Route 12 originates at the AITC and travels south on MA Route 123 to US Route 1 where it travels north and terminates at the Emerald Square Mall. Service on the Route 12 begins at 6:00 AM on Weekdays and 9:00 AM on Saturdays; service ends at 6:58 PM on Weekdays and 4:58 PM on Saturday. The route operates with sixty-minute headways.

Route 14 - Attleboro/No. Attleborough/Plainville

The Route 14 serves the City of Attleboro, the Town of North Attleborough, and the Town of Plainville with service to the Triboro Plaza, North Attleborough Center, the Plainville Council on Aging, and terminates at Man Mar Drive in Plainville. Service on the Route 14 begins at 5:40 AM on Weekdays and 9:00 AM on Saturdays; service ends at 6:53 PM on Weekdays and 4:48 PM on Saturday. The route operates with sixty minute headways.

Route 15 - Oak Hill

The Route 15 serves the City of Attleboro with service on MA Route 118 to the Oak Hill Community on Oak Hill Avenue. Service on the Route 15 begins at 10:00 AM on Weekdays and 8:35 AM on Saturday; service ends at 5:29 PM on Weekdays and 6:04 PM on Saturday. The route operates varied headways throughout the day, but are generally sixty minutes.

Route 16 - Seekonk/Attleboro

The Route 16 serves the City of Attleboro and the Town of Seekonk via MA Route 152. The route originates at the AITC and terminates at the Central Plaza in Seekonk, just east of the border between Massachusetts and Rhode Island. Service on Route 16 begins service at 5:35 AM on Weekdays and 9:35 AM on Saturdays; service ends at 6:26 PM on Weekdays and 5:26 PM on Saturday. The route operates with sixty minute headways.

Route 18 - Attleboro/Norton/Taunton

The Route 18 provides intercity connection between the AITC and the Bloom Terminal in Taunton via MA Route 123 and MA Route 140. The route serves the City of Attleboro, the Town of Norton, and the City of Taunton with service to Bristol Community College (Attleboro Campus), Norton Town Center, Wheaton College, and downtown Taunton. Service on the Route 18 begins at 5:00 AM on Weekdays and 7:45 AM on Saturday; service ends at 7:56 PM on Weekdays and 6:41 PM on Saturday. Headways vary throughout the day, but are generally sixty minutes.

Route 24 - Attleboro/Pawtucket, RI

The Route 24 serves the City of Attleboro and terminates in the City of Pawtucket, RI at the intersection of Broadway and Benefit Street. The route serves the Attleboro High School and Mayfair Plaza on US Route 1. Service begins at 5:30 AM on Weekdays and ends at 6:53 PM on Weekdays; there is no service on Saturday. The route operates with sixty minute headways.

Existing Traffic Conditions

Traffic Volumes

Traffic volumes for the study area roadways and intersections were collected in May 2016. Peak period turning movement counts were collected on a weekday from 3:00 PM to 6:00 PM at the study area intersections except the intersection of County Street (Route 123) & North/South Main Street (Route 152)/Park Street where counts were conducted in July 2016. Automatic traffic recorder (ATR) counts were conducted for a period of 48 hours in May 2016 on the following roadways shown in Table 1 below.

Based on the ATR and TMC data, the afternoon peak hour of traffic operations for the study area intersections was generally determined to be between 5:00 PM to 6:00 PM.

Table 1: Automatic Traffic Recorder (ATR) Counts Summary

Location	Average Daily Traffic	85th Percentile Speed	Heavy Vehicle Percentage
County St. (123), south of Olive St.	19,072	33 MPH	3.50%
County St. (123), south of Wall St.	15,538	34 MPH	4.10%
County St. (123), south of North/South Main St. (152)	13,858	31 MPH	4.80%
South Main St. (152), south of Olive Street	12,061	28 MPH	2.70%
South Main St. (152), south of Wall St.	8,140	33 MPH	2.60%
South Main St. (152), south of County St. (123)	7,769	27 MPH	7.80%
Union St., north of Mill St.	7,464	27 MPH	4.80%
Olive St., east of County St. (123)	7,112	35 MPH	3.00%
Park St. (118), east of Pleasant St.	5,495	26 MPH	5.40%
Emory St. (118), east of Pleasant St.	5,344	28 MPH	N/A
Mill St., east of South Main St. (152)	3,776	N/A	N/A

**The traffic counters on Mill Street and Emory Street could not accurately compute some statistics due to minor mechanical issues.*

Crash Analysis

The most recent three-year period of crash data (2013 through 2015) was obtained from the Attleboro Police Department and analyzed for the study area intersections. Importantly, there were no recorded fatalities at any of the study area intersections and there were only two incidents that involved a bicyclist or a pedestrian during the three-year period. In addition, all of the study area intersections had crash rates below both the most recent available Statewide and District 5 average crash rates for signalized and unsignalized intersections. Table 2 provides a summary of the crash data for the signalized intersections while Table 3 provides a summary of the crash data for the unsignalized intersections.

Signalized Intersections

The signalized intersection with the highest number of crashes recorded during the three-year period was the County Street (Route 123) & North/South Main Street (Route 152)/ Park Street intersection. There were 17 crashes reported at this intersection during the three-year period for an average of 5.67 crashes per year.

A closer review of the crash data indicates that 35% (6 of 17) of the reported crashes were “angle” type and 82% (14 of 17) resulted in “property damage only”. Approximately 41% (7 of 17) occurred during a weekday afternoon and nearly all of the crashes or 94% (16 of 17) occurred on dry surfaces.



Intersection of County Street (Route 123) & North/South Main (Route 152)/ Park Street

The remainder of the signalized intersections in the study area (County Street (Route 123) & Olive Street, County Street (Route 123) & Wall Street, and South Main Street (Route 152) & Olive Street) all had very similar crash patterns. In summary, all intersections had approximately 7-10 crashes over the three-year period; experienced mostly “angle” or “rear-end” type crashes; demonstrated a high percentage with “property damage only”; and, the majority occurred on dry surfaces.

Unsignalized Intersections

The unsignalized intersection with the highest number of crashes recorded during the three-year period was the Union Street & Mill Street/Dunham Street intersection. There were 4 crashes reported at this intersection during the three-year period for an average of 1.33 crashes per year.

A closer review of the crash data indicates that 50% (2 of 4) of the reported crashes were “angle” type and 50% (2 of 4) resulted in “property damage



Intersection of Union Street and Mill Street/Dunham Street

only". All (4 of 4) occurred during a weekday (50% in the morning and 50% in the afternoon) and a majority of the crashes or 75% (3 of 4) occurred on dry surfaces.

The remainder of the unsignalized intersections in the study area had a negligible number (less than 2) of crashes reported during the three-year period.

Bicycle/Pedestrian Crashes

In the three-year period, there were two crashes that involved a bicyclist or a pedestrian. The first occurred in August of 2013 at the County Street (Route 123) & North/South Main Street (Route 152)/Park Street intersection. A vehicle traveling westbound on Park Street made a right turn and hit a pedestrian in the crosswalk on North Main Street (Route 152). The pedestrian sustained minor injuries and the vehicle operator was issued a citation for failure to yield to a pedestrian in a crosswalk. The second incident occurred in June of 2015 at the County Street (Route 123) & Olive Street intersection. A vehicle traveling eastbound on County Street (Route 123) collided with a bicyclist as it was making a right turn onto Olive Street. The bicyclist hit the passenger side of the vehicle sustaining minor injuries and no citation was issued to the vehicle operator.

Table 2: Signalized Intersections Crash Summary (2013 – 2015)

	County St. (123) & Olive St.	County St. (123) & Wall St.	County St. (123) & N/S Main St. (152)	S. Main St. (152) & Olive St.
Year				
2013	0	1	6	0
2014	3	4	5	6
2015	5	2	6	4
Total	8	7	17	10
Average per year	2.67	2.33	5.67	3.33
Crash Rate	0.42	0.38	0.69	0.43
<i>MassDOT Statewide CR</i>	<i>0.77</i>	<i>0.77</i>	<i>0.77</i>	<i>0.77</i>
<i>MassDOT District 5 CR</i>	<i>0.76</i>	<i>0.76</i>	<i>0.76</i>	<i>0.76</i>
Collision Type				
Angle	3	3	6	5
Head-on	0	0	2	2
Rear-end	4	4	5	2
Sideswipe	0	0	2	0
Single vehicle crash	1	0	2	1
Unknown/Not Reported	0	0	0	0
Total	8	7	17	10
Crash Severity				
Fatal injury	0	0	0	0
Non-fatal injury	3	0	3	2
Property damage only	5	7	14	8
Unknown/Not Reported	0	0	0	0
Total	8	7	17	10
Time of Day				
Weekday Morning	3	3	5	3
Weekday Afternoon	5	1	7	1
Weekend Morning	0	2	3	1
Weekend Afternoon	0	1	2	5
Total	8	7	17	10
Road Surface Condition				
Dry	4	4	16	8
Wet	4	1	0	2
Snow/Ice/Slush	0	2	0	0
Sand, mud, dirt, oil, gravel	0	0	0	0
Unknown/Not Reported	0	0	1	0
Total	8	7	17	10

Table 3: Unsignalized Intersections Crash Summary (2013 – 2015)

Year	S. Main St. (152) & Mill St.	S. Main St. (152) & Wall St.	Union St. & Mill St./Dunham St.	Wall St. & Riverfront Dr.
2013	1	1	2	0
2014	0	0	1	0
2015	0	0	1	0
Total	1	1	4	0
Average per year	0.33	0.33	1.33	0
Crash Rate	0.09	0.07	0.38	0
<i>MassDOT Statewide CR</i>	<i>0.58</i>	<i>0.58</i>	<i>0.58</i>	<i>0.58</i>
<i>MassDOT District 5 CR</i>	<i>0.58</i>	<i>0.58</i>	<i>0.58</i>	<i>0.58</i>
Collision Type				
Angle	1	1	2	0
Head-on	0	0	0	0
Rear-end	0	0	0	0
Sideswipe	0	0	0	0
Single vehicle crash	0	0	2	0
Unknown/Not Reported	0	0	0	0
Total	1	1	4	0
Crash Severity				
Fatal injury	0	0	0	0
Non-fatal injury	0	0	2	0
Property damage only	1	1	2	0
Unknown/Not Reported	0	0	0	0
Total	1	1	4	0
Time of Day				
Weekday Morning	0	0	2	0
Weekday Afternoon	1	1	2	0
Weekend Morning	0	0	0	0
Weekend Afternoon	0	0	0	0
Total	1	1	4	0
Road Surface Condition				
Dry	1	0	3	0
Wet	0	1	1	0
Snow/Ice/Slush	0	0	0	0
Sand, mud, dirt, oil, gravel	0	0	0	0
Unknown/Not Reported	0	0	0	0
Total	1	1	4	0

Bicycle & Pedestrian Facilities

There are few known dedicated bicycle facilities observed in the study area. Bicycle parking in the study area is available in the downtown, at the GATRA Intermodal Center, outside the study area at Recreation Department Building (Pine Street) and at the City Pool (East Street). There are no bike lanes, pavement markings such as sharrows, or signage indicating the presence of bicyclists in the study area.

All study area roadways have 4-5 foot sidewalks (generally concrete) on both sides of the road and marked crosswalks at all intersections. The Downtown Streetscape Improvement Initiative undertaken by the City of Attleboro and GATRA has provided several physical and aesthetic improvements to the downtown including, but not limited to: decorative streetlights, new concrete sidewalks with a wide brick band, new granite curbing, brick-paver crosswalks, intersection bump-outs, signage, trees with tree grates and upward lighting, street furniture such as benches, bicycle racks, and trash receptacles.

Traffic Operations Analysis

Level-of-service analyses (LOS) were completed for the study area intersections to determine the operating conditions during the afternoon peak period. Level-of-service analysis is a general measure that summarizes the overall operation of an intersection or transportation facility based on the analysis techniques published in the Highway Capacity Manual by the Transportation Research Board. It is based upon the operational conditions of a facility including lane use, traffic control, and lane width, and takes into account such factors as operating speeds, traffic interruptions, and freedom to maneuver. Level-of-service represents a range of operating conditions and is summarized with letter grades from “A” to “F”, with “A” being the most desirable and “F” representing the maximum flow rate or the capacity on a facility; the worst possible traffic congestion possible.

Level-of-service is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of each lane or lane group entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. The LOS is only determined for left-turns from the main street and all movements from the minor street.

Table 4: Level-of-Service Criteria Average Delay in Seconds

Table 4 shows the delay criteria for each level-of-service for both signalized and unsignalized intersections.

Table 5 summarizes the levels-of-service for the study area signalized intersections and Table 6 summarizes the levels-of-service for the study area unsignalized intersections during the afternoon peak period. Figure 2 shows the intersection level of service results geographically.

LOS	Signalized	Unsignalized
A	0 to 10	0 to 10
B	>10 to 20	>10 to 15
C	>20 to 35	>15 to 25
D	>35 to 55	>25 to 35
E	>55 to 80	>35 to 50
F	>80	>50

Signalized Intersections

In summary, three of the four study area signalized intersections currently operate with acceptable levels-of-service (LOS D or better). The only intersection that resulted in a failing level-of-service (LOS E or F) during the afternoon peak period was the County Street (Route 123) & North/South Main Street (Route 152)/Park Street intersection. The North & South Main Street (Route 152) approaches resulted in the longest delays, primarily due to the high traffic volumes as well as the shorter green time.

Unsignalized Intersections

All of the study area unsignalized intersections resulted in minor street approaches with levels-of-service D or better. The South Main Street (Route 152) & Wall Street intersection demonstrated the poorest level-of-service (LOS D) during the afternoon peak period.

Table 5: Study Area Signalized Intersections 2016 Afternoon Levels-of-Service (LOS)

Signalized Intersection	LOS
County Street (Route 123) & Olive Street	B
County Street (Route 123) & Wall Street	B
County Street (Route 123) & North/South Main Street (Route 152)/Park Street	F
South Main Street (Route 152) & Olive Street/Maple Street	D

Table 6: Study Area Unsignalized Intersections 2016 Afternoon Levels-of-Service (LOS)

Unsignalized Intersection	LOS
South Main Street (Route 152) & Mill Street	
South Main Street (Route 152), SB Left Turn	A
Mill Street, WB Left Turn	C
Mill Street, WB Right Turn	C
South Main Street (Route 152) & Wall Street	
South Main Street (Route 152), NB Left Turn	A
Wall Street, EB Left Turn	D
Wall Street, EB Right Turn	B
Union Street & Mill Street/Dunham Street	
Union Street, SB Left Turn	A
Union Street, NB Left Turn	A
Mill Street, EB Left Turn	C
Mill Street, EB Right Turn	C
Dunham Street, WB Left Turn	C
Dunham Street, WB Right Turn	C
Wall Street & Riverfront Drive	
Wall Street, WB Left Turn	A
Riverfront Drive, NB Left Turn	B
Riverfront Drive, NB Right Turn	B

Attleboro TOD Existing Traffic Conditions

Afternoon Peak Period Level-of-Service

Level-of-Service (LOS) is a qualitative measure that summarizes the overall operation of an intersection or transportation facility. LOS is summarized with letter grades from "A" (most desirable) to "F" (least desirable).

Intersection Crash Rate

Crash rates are calculations which express "crashes per million entering vehicles" for intersection locations. MassDOT provides the average crash rates for signalized and unsignalized intersections in the Commonwealth and for each District. Statewide Crash Rates: Signalized (0.77), Unsignalized (0.58) - District 5 Crash Rates: Signalized (0.76), Unsignalized (0.58)

This map is for the sole purpose of aiding regional planning decisions and is not warranted for any other use. 07.14.16

0.19 miles

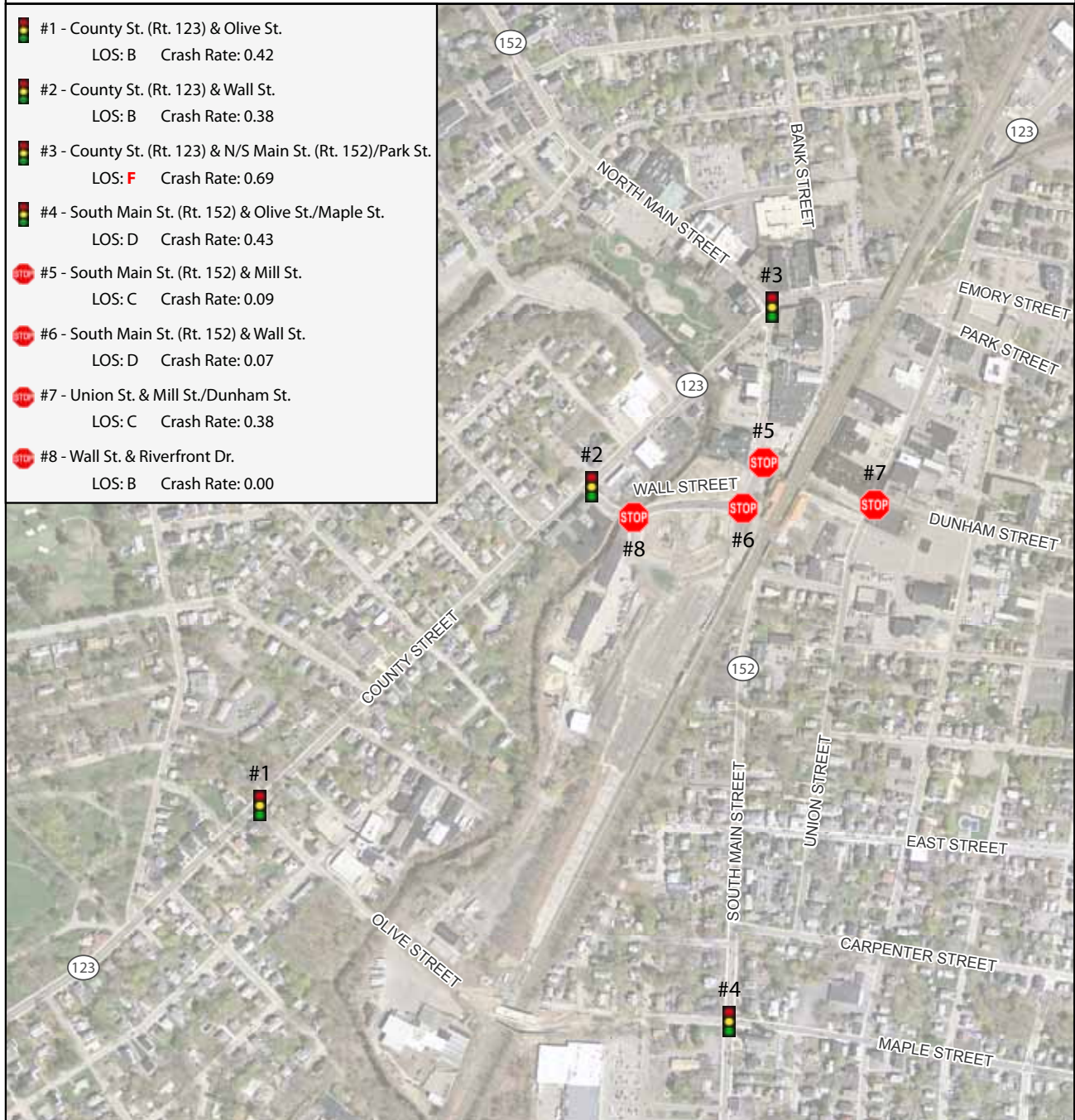


Figure 2: Study Area Existing Traffic Conditions

TOD Build-Out Analysis and Forecast

The City of Attleboro's recent Transit Oriented Development (TOD) ordinance seeks "to create and promote a blend of compact and very highly intensive" mixed-use development around the Downtown Attleboro MBTA Commuter Rail Station (City of Attleboro, 2016). This build-out analysis explores possible scenarios for that future development area directly southwest of the station. In recent years, this 20-acre area has experienced significant public and private sector investments, including the construction of Riverfront Drive and Riverfront Park, a new GATRA bus transfer facility, and an 80-unit mixed-use development on Wall Street known as Renaissance 1.

To promote further "intensive" growth in this district, the new TOD ordinance allows for relatively high building densities, which it expresses as a "floor area ratio" (FAR). FAR is a simple formula that calculates a building's total size (floor area) divided by the total size of its parcel; for example, if a 10,000 s.f. parcel contained a 5,000 s.f. structure, its FAR would be 0.5 (5,000 s.f. floor area ÷ 10,000 s.f. parcel size = 0.5). FAR can also be used as bulk control in zoning bylaws by creating a fixed maximum ratio between a lot's size and its building potential. This is the case in the TOD district, where the maximum FAR is 3, meaning that a 100,000 s.f. parcel of land could support – at most – a 300,000 s.f. building (300,000 s.f. floor area ÷ 100,000 s.f. parcel size = 3). FAR is a very simple and flexible way to think about the building potential of a study area such as the Attleboro TOD district.

This analysis models potential development in three main areas of the TOD district (referred to as Renaissance 1, TOD North, TOD South in Figure 7); it does so: by (1) using possible FARs to translate available land area into built space; by (2) consulting development examples in the area to reference dwelling unit sizes, commercial building programs, and structured parking needs; and (3) by including significant input from Attleboro's Director of Planning and Development to accurately reflect market and permitting conditions in the city. The three main development areas depicted in Figure 1 can also be seen as phases where growth may happen in the near-term (area 1), medium-term (area 2), and long-term (area 3).

Lastly, for each of the three areas, the build-out makes both low-end and high-end estimates to account for possible variation in future demand for TOD development in Attleboro and its surrounding real estate development market. Table 7 presents the following six "Build-out Scenarios" and their various characteristics (Renaissance 1 is included for comparison):

Renaissance 1

Existing project in the TOD area included for reference.

1. Renaissance 2 Low

Low-end estimate of "Near-Term" or Renaissance 2.

2. Renaissance 2 High

High-end estimate of "Near-Term" or Renaissance 2.

3. TOD North Low (includes the building program of Renaissance 2 Low)

Low-end estimate of "Medium-Term." Assumes the current MBTA surface lot and adjacent land along Riverfront Drive can be redeveloped to include substantial structured parking, TOD residential development, and some commercial square

footage.

4. TOD North High (includes the building program of Renaissance 2 High)

High-end estimate of “Medium-Term.” Assumes the current MBTA surface lot and adjacent land along Riverfront Drive can be redeveloped to include substantial structured parking, TOD residential development, and some commercial square footage.

5. Full Build-Out Low (includes the building program of both “Low” Scenarios)

Low-end estimate of “Long-Term.” All sites are in play; highest intensity building within 1/4-mile TOD area; lower densities, no commercial program, and larger unit sizes are found along Olive Street.

6. Full Build-Out High (includes the building program of both “High” Scenarios)

High-end estimate of “Long-Term.” All sites are in play; highest intensity building within 1/4-mile TOD area; lower densities, no commercial program, and larger unit sizes are found along Olive Street.

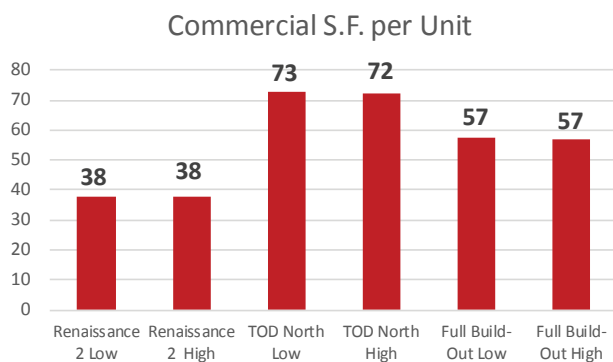


Figure 3: Commercial Square Footage per Unit

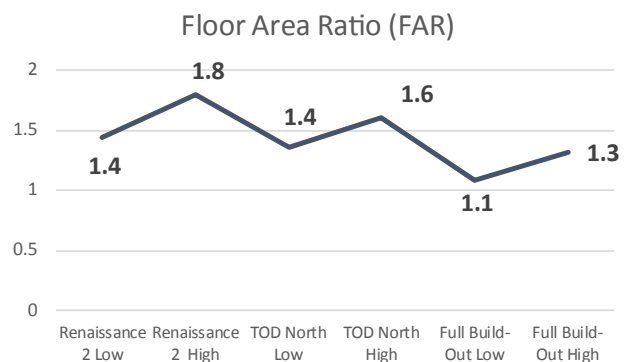


Figure 4: Floor Area Ratio

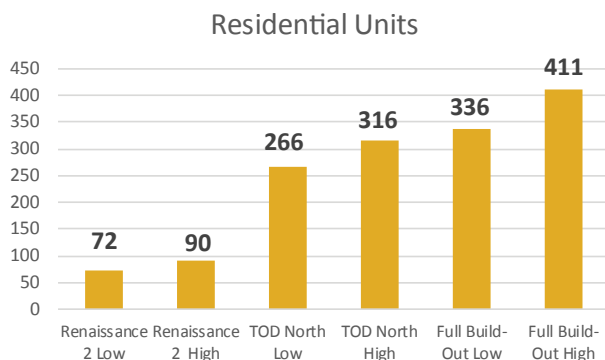


Figure 5: Residential Units

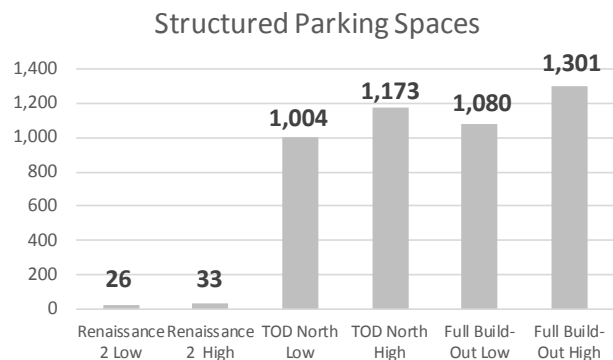


Figure 6: Structured Parking Spaces

The graphs shown above only show the Build-out Scenarios and do not include Renaissance 1.

Table 7: TOD Build-out Scenarios

	Renaissance 1	Renaissance 2 Low	Renaissance 2 High	TOD North Low	TOD North High	Full Build- Out Low	Full Build- Out High
Gross Building-Out (S.F.)	90,000	101,617	127,021	714,963	842,592	862,214	1,047,100
Gross Leasable Area (S.F.)	64,029	91,455	114,319	643,467	758,333	775,992	942,390
Land Area (Acres)	1.3	1.62	1.62	12.05	12.05	18.3	18.3
Floor Area Ratio (FAR)	1.6	1.4	1.8	1.4	1.6	1.1	1.3
Total Residential Units	80	72	90	266	316	336	411
Units per Acre (UPA)	50	45	56	22	26	18	22
Total Structured Parking (S.F.)	12,857	9,146	11,432	351,393	410,721	377,898	455,260
Total Structured Parking Spaces (350 S.F. parking efficiency)	37	26	33	1,004	1,173	1,080	1,301
Total Leasable Commercial Area (S.F.)	6,000	2,744	3,430	19,304	22,750	19,304	23,302
Commercial S.F. per Dwelling Unit	75	38	38	73	72	57	57

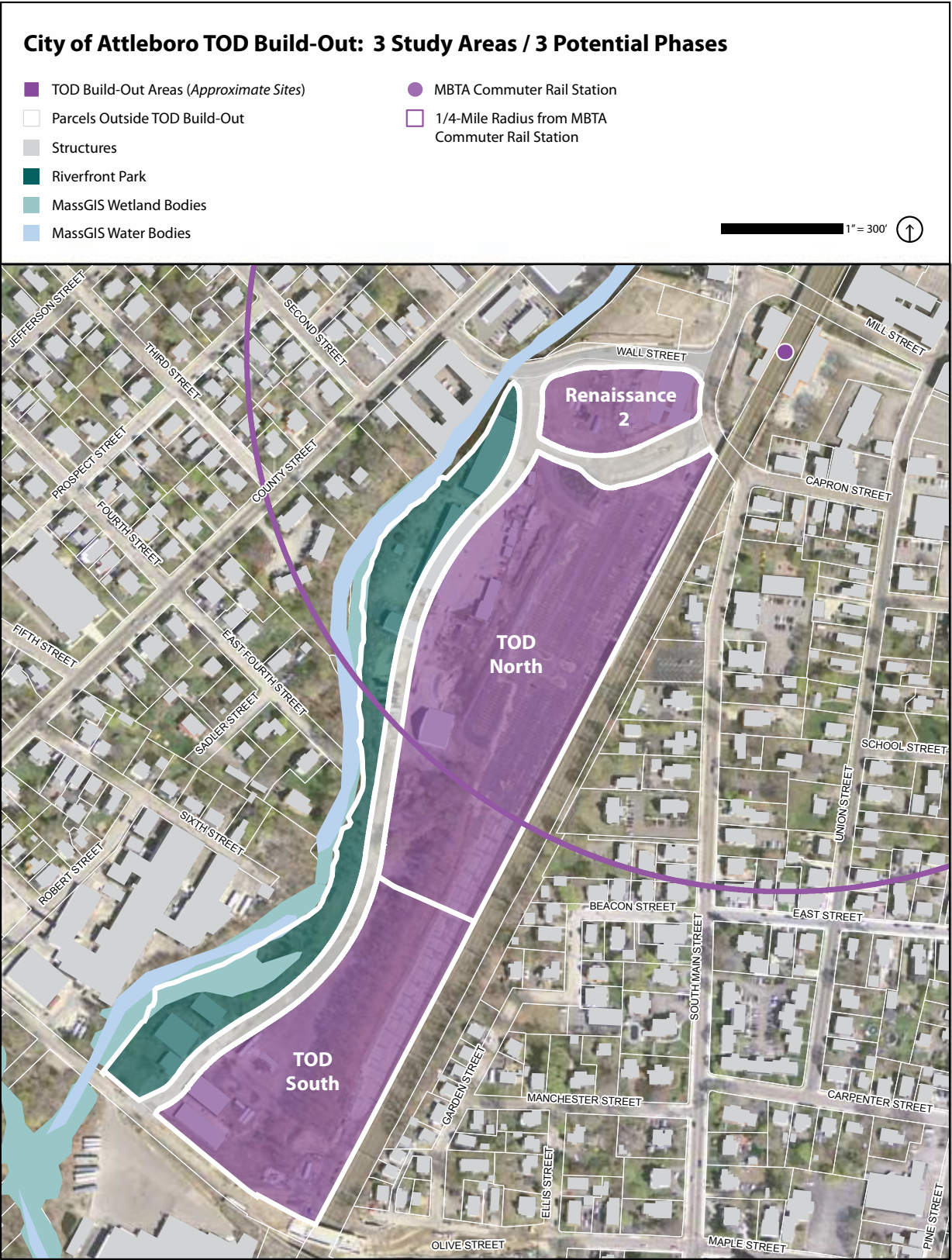


Figure 7: TOD Build Out Scenario Map

Future Traffic Conditions

As the TOD reaches a full build-out, it is expected that traffic volumes will increase on the study area road network. To assist the City of Attleboro in planning for this growth, SRPEDD developed four traffic scenarios for use in the SRPEDD Traffic Simulation Model. The traffic simulation model uses current traffic volumes collected by SRPEDD as part of the traffic counts conducted for this study and incorporates vehicular trips assumed to be generated by the anticipated land uses, and applies an annual growth rate to develop future traffic conditions.

Traffic volumes are developed for the peak hour of congestion which is determined by actual traffic count data indicating the one-hour period during which the road network carries the highest volume of vehicular traffic. The trip estimation has taken considerations for pass by trips and downtown traffic pattern. Table 8 shows details of the trip generation analysis.

The four scenarios developed and modeled are as follows:

Existing Conditions

The existing roadway conditions and traffic volumes as observed by SRPEDD in May 2016.

2016 No-build

The existing roadway conditions and traffic volumes as observed by SRPEDD in May 2016 along with assumed traffic volumes for the Riverfront Drive. The traffic volumes assumed for Riverfront Drive were developed based on existing conditions, however with a greater percentage of southbound trips shifted from County Street between Wall Street and Olive Street, and South Main Street between Wall Street and Olive Street to Riverfront Drive. The trip assumptions were based on survey data collected by SRPEDD from a 2014 Commuter Rail Passenger Study (SRPEDD 2014).

2026 Full-build

Assumes the TOD has achieved a full build-out with the assumptions made in the “Full Build Out Low” scenario presented in the TOD Build-Out Analysis and Forecast. This scenario assumes a 0.6% annual growth rate, based on the SRPEDD Travel Demand Model, for existing traffic conditions and applies trip generation values for assumed land uses based on the Institute of Transportation Engineers Trip Generation Manual (9th Edition) (Institute of Transportation Engineers, 2012).

2046 Full-build

The 2046 Full-build scenario applies a 0.6% annual growth rate to the assumed traffic volumes generated in the 2026 Full-build. This scenario was developed to identify intersections and road segments likely to experience congestion as a result of the build-out of the TOD.

The results of the Future Traffic Conditions analysis is shown in Table 9 for Signalized Intersections and Table 10 for Unsignalized Intersections. Figure 8 displays the results geographically.

Table 8: Trip Generation Estimation for Proposed Attleboro TOD Development Site

Renaissance North			Rate				Trips			
Land Use Type	Size	LU Code	Daily	PM	In	Out	Daily	PM	In	Out
223	80	Mid-rise Apartment	-	FCE	59%	41%	-	31	18	13
880	6,000	Pharmacy/Drugstore without Drive-through	90.06	11	50%	50%	540	66	33	33
920	6,000	Copy, Print and Express Ship Store	-	12.27	43%	57%	-	74	32	42
925	6,000	Drinking place	-	15.49	68%	32%	-	93	63	30
931	6,000	Quality Restaurant	89.95	9.02	62%	38%	540	54	34	21
933	6,000	Fast-food without drive-through window	716	52.4	51%	49%	4,296	314	160	154
936	6,000	Coffee/Donut shop without drive-through window	818.58	36.16	51%	49%	4,911	217	111	106
939	6,000	Bread/Donut shop without drive-through window	-	48.87	52%	48%	-	293	152	141
					55%	45%	Average	143	75	67
							Minimum	54	32	21
							Maximum	314	160	154

Passby rate 85%
Retail Trip Rate 3.75
TOD Resident 0.345

Renaissance North			
	Total	In	Out
Residential	28	15	12
Retail	21	12	10
PM Total	49	27	22

Renaissance South			Rate				Trips			
Land Use Type	Size	LU Code	Daily	PM	In	Out	Daily	PM	In	Out
223	90	Mid-rise Apartment	-	FCE	59%	41%	-	36	21	15
880	3,430	Pharmacy/Drugstore without Drive-through	90.06	11	50%	50%	308.9058	38	19	19
920	3,430	Copy, Print and Express Ship Store	-	12.27	43%	57%	-	42	18	24
925	3,430	Drinking place	-	15.49	68%	32%	-	53	36	17
931	3,430	Quality Restaurant	89.95	9.02	62%	38%	308.5285	31	19	12
933	3,430	Fast-food without drive-through window	716	52.4	51%	49%	2455.88	180	92	88
936	3,430	Coffee/Donut shop without drive-through window	818.58	36.16	51%	49%	4911.48	124	63	61
939	3,430	Bread/Donut shop without drive-through window	-	48.87	52%	48%	-	168	87	80
							Average	84	44	39
							Minimum	31	18	12
							Maximum	180	92	88

Renaissance South			
	Total	In	Out
Residential	31	17	14
Retail	13	7	6
PM Total	44	24	20

MBTA Station South			Rate				Trips			
Land Use Type	Size	LU Code	Daily	PM	In	Out	Daily	PM	In	Out
223	225	Mid-rise Apartment	-	FCE	59%	41%	-	108	64	44
880	19,320	Pharmacy/Drugstore without Drive-through	90.06	11	50%	50%	1739.9592	213	106	106
920	19,320	Copy, Print and Express Ship Store	-	12.27	43%	57%	-	237	102	135
925	19,320	Drinking place	-	15.49	68%	32%	-	299	204	96
931	19,320	Quality Restaurant	89.95	9.02	62%	38%	1737.834	174	108	66
933	19,320	Fast-food without drive-through window	716	52.4	51%	49%	13833.12	1012	516	496
936	19,320	Coffee/Donut shop without drive-through window	818.58	36.16	51%	49%	4911.48	699	356	342
939	19,320	Bread/Donut shop without drive-through window	-	48.87	52%	48%	-	944	491	453
							Average	461	243	217
							Minimum	174	102	66
							Maximum	1012	516	496

MBTA Station South			
	Total	In	Out
Residential	78	43	35
Retail	69	38	31
PM Total	147	81	66

	PM	In	Out
Proposed	239	132	108
Existing	413	68	345
Existing + Proposed	652	200	453

Table 9: Signalized Intersection Future Traffic Conditions

Signalized intersection	Level of Service LOS			
	Existing	2016 No Build	2026 Full Build	2046 Full Build
County Street (Route123) & Olive Street	B	D	F	F
County Street (Route123) & Wall Street	B	B	B	B
County Street (Route123) & North/South Main Street (Route152)/Park Street	F	F	F	F
South Main Street (Route152) & Maple Street	D	F	F	F

Table 10: Unsignalized Intersection Future Traffic Conditions

Unsignalized Intersection	Existing	2016 No Build	2026 Full Build	2046 Full Build
South Main Street (Route 152) & Mill Street				
South Main Street (Route 152), SB Left Turn	A	A	A	A
Mill Street, WB Left Turn	C	C	C	D
Mill Street, WB Right Turn	C	C	C	D
South Main Street (Route 152) & Wall Street				
South Main Street (Route 152), NB Left Turn	A	A	A	A
Wall Street, EB Left Turn	E	E	F	F
Wall Street, EB Right Turn	B	B	B	B
Union Street & Mill Street/Dunham Street				
Union Street, SB Left Turn	A	A	A	A
Union Street, NB Left Turn	A	A	A	A
Mill Street, EB Left Turn	C	C	D	D
Mill Street, EB Right Turn	C	C	C	D
Dunham Street, WB Left Turn	C	C	C	D
Dunham Street, WB Right Turn	C	C	C	D
Wall Street & Riverfront Drive				
Wall Street, WB Left Turn	A	A	A	A
Riverfront Drive, NB Left Turn	B	B	B	B
Riverfront Drive, NB Right Turn	B	B	B	B
Riverfront Drive & Olive Street				
Riverfront Drive SB Left Turn	C	C	C	D
Riverfront Drive SB Right Turn	C	C	C	D
Olive Left Turn	A	A	A	A
Olive Through	A	A	A	A

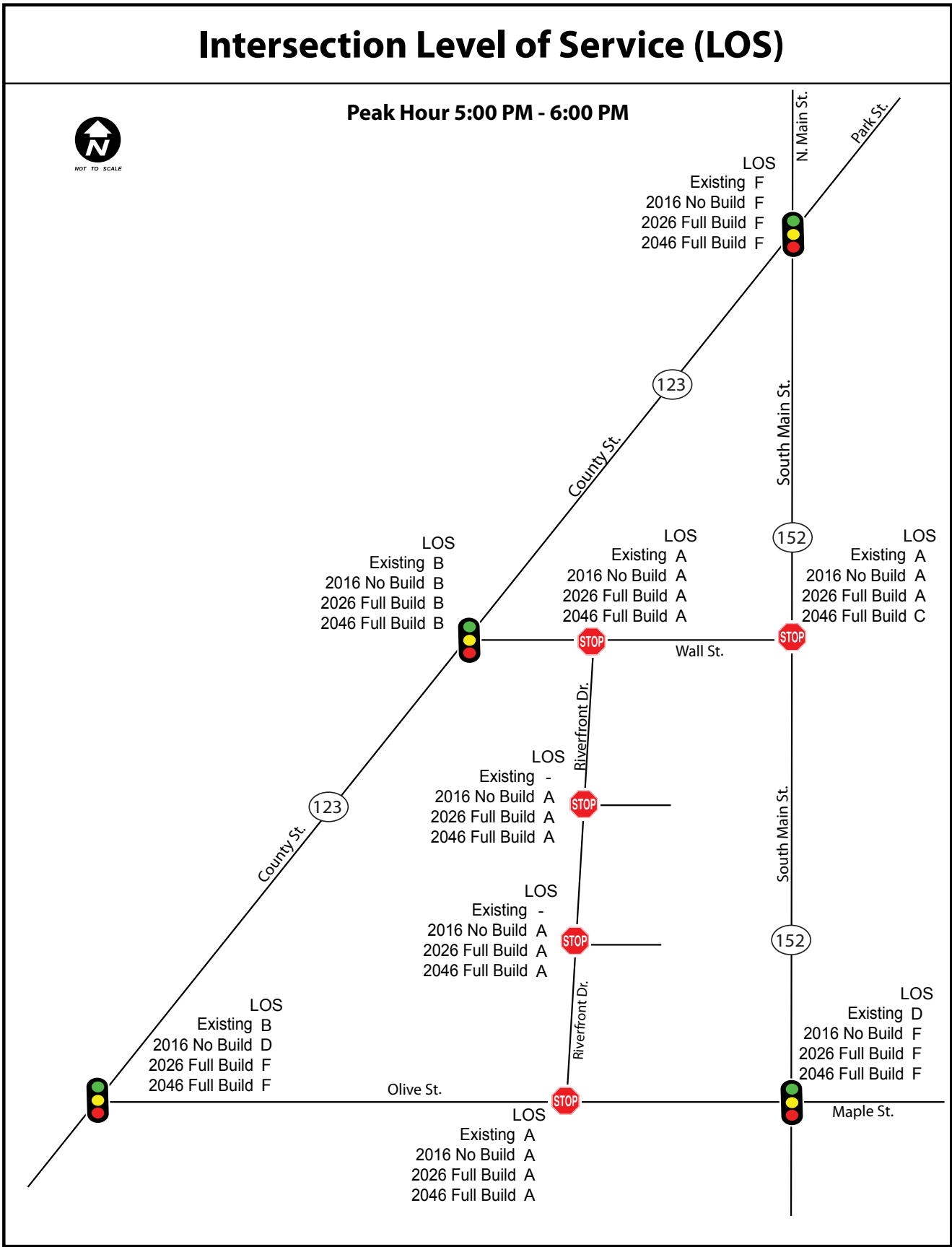


Figure 8: Intersection Level of Service

Conclusion

The Attleboro TOD has the potential to dramatically change downtown Attleboro with the development of new residential units and commercial space. The development will provide pedestrian access to the Attleboro Station on the MBTA Providence/Stoughton line, and further expand housing options for commuters that travel to Boston or Providence. In addition to the MBTA Commuter Rail, GATRA bus service provides access to the surrounding communities, including the Route 1 shopping corridor. It is possible that multiple person households in the TOD could forego owning multiple automobiles without sacrificing mobility. The need for private automobile ownership is further reduced if car sharing and ride sharing services are available to TOD residents.

The recently adopted TOD ordinance is favorable to high density development patterns that are necessary to make a TOD successful. By using a Floor-Area-Ratio approach, the TOD development is likely to occur in a style that mimics existing downtown development. The SRPEDD build-out analysis employed a conservative approach to the development potential, however, market conditions may yield higher density development than assumed in this report.

Traffic congestion is anticipated to increase as a result of the City of Attleboro and the surrounding community's annual growth and also as a result of the expansion of residential and commercial developments in the TOD. As growth occurs, most intersections will likely see increased congestion and delay. The increase in congestion can be mitigated with intersection improvements that allow for turning lanes and coordinated signal systems. The growth in traffic is anticipated to be accelerated by the development of the TOD district.

This report identified the existing conditions of the roadway network, provides an analysis of the potential TOD development, and provides an assumption of future traffic congestion based on the assumption of growth. Actual growth rates for the TOD development and resulting traffic conditions are difficult to predict and are subject to variables too numerous to definitively predict. The assumptions in this report are based on sound land use planning and traffic planning practices and are intended to illustrate the probable growth of the TOD.

Trends in housing and commuting are changing and favor more compact, pedestrian friendly development. The City of Attleboro is well suited to accommodate these changing trends, and the TOD is an excellent opportunity to attract new residents and new businesses to the downtown.

References

1. United States Census Bureau. (2010). *Community Facts for Attleboro city, Massachusetts*. Retrieved October 24, 2016, from factfinder.census.gov
2. Massachusetts Executive Office of Labor and Workforce Development. (2015). *Municipal Employment data for Attleborough*. Retrieved October 24, 2016, from http://lmi2.detma.org/lmi/lmi_town.asp.
3. City of Attleboro, Revised Ordinances of the City of Attleboro, §17–10.16.1, “Transit Oriented Development,” p. 297, April 5, 2016.
4. Southeastern Regional Planning and Economic Development District. (2014). *MBTA Providence/Stoughton Line Attleboro Station Passenger Survey: Survey Date: March 18, 2014*. May, 2014.
5. Institute of Transportation Engineers. (2012). *Trip Generation, 9th Edition*.

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