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Appendices (under separate cover)

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Introduction

The Mashpee Wampanoag tribe is planning to develop a resort casino on a parcel of land in Taunton, a portion of which is located in Phase 2 of the Liberty-Union Industrial Park (LUIP). As shown in **Figure 1**, the site abuts a section of Stevens Street and the state highways Route 24 and Route 140. A CSX rail line and high tension power lines are present on a portion of the site. Access is afforded to the site from O'Connell Way, an industrial park roadway that intersects with Stevens Street just north of its interchange with Route 140.

At full build-out, the casino project will involve a total of 324,000 square feet with 150,000 square feet of gaming space; this includes 3,000 slot machines, 150 multi-game tables, 40 poker tables, and an entertainment lounge. Also included are a 7-10 venue food court and two fine dining restaurants comprising of approx. 60,000 square feet along with 80,000 square feet of back of house support area, 15,000 square feet of event center, and up to a 3,200 space parking structure and additional 2,000 surface spaces. At full build, there will be a total of 900 hotel rooms, plus a 25,000 square foot indoor water park in addition to the casino.

To help the City of Taunton understand the traffic impacts of the proposed project and possible mitigating measures, this preliminary traffic study has been prepared for a core area of intersections and roadways.

In the sections below, this report analyzes existing traffic conditions, establishes a No-Build 2022 condition (should the project not go forward and the LUIP be built out to approved levels of development); it estimates and distributes traffic to roadways generated by the project, analyzes a Build 2022 condition, suggests appropriate traffic mitigation, and documents the resultant operational improvements. The goal of the proponent is to work with the city to deliver a successful project with minimal impacts on local Taunton roads and intersections, while improving operations on Routes 24 and 140.

Existing Conditions

The first step in the existing conditions analysis is determination of a study area. After discussion with the City's transportation consultants, the locations shown in **Figures 2A** and **2B** were selected for analysis. These locations include 14 signalized intersections, 20 non-signalized intersections and 18 roadway/ramp sections, as described below.

Signalized Intersections

The following 14 signalized intersections in the City of Taunton were included in the study area:

- Galleria Mall Drive South/County Street (Route 140);
- Overpass Connector/Route 140 NB Ramps/Stevens Street;
- Route 24 NB Ramps (Exit 12B)/County Street (Route 140);
- Route 24 SB Ramps (Exit 12A)/County Street (Route 140);
- Mozzone Boulevard/County Street (Route 140);
- Erika Drive/County Street (Route 140);
- Hart Street/County Street (Route 140);
- Washington Street/Broadway (Route 138);
- Oak Street/Washington Street (Route 140)/Tremont Street;
- Cohannet Street (Route 140)/Weir Street (Route 138);
- High Street/Winthrop Street (Route 44);
- Main Street (Routes 140 and 44)/Church Green (Route 44)/Summer Street (Route 140);

Figure 1. Site Location

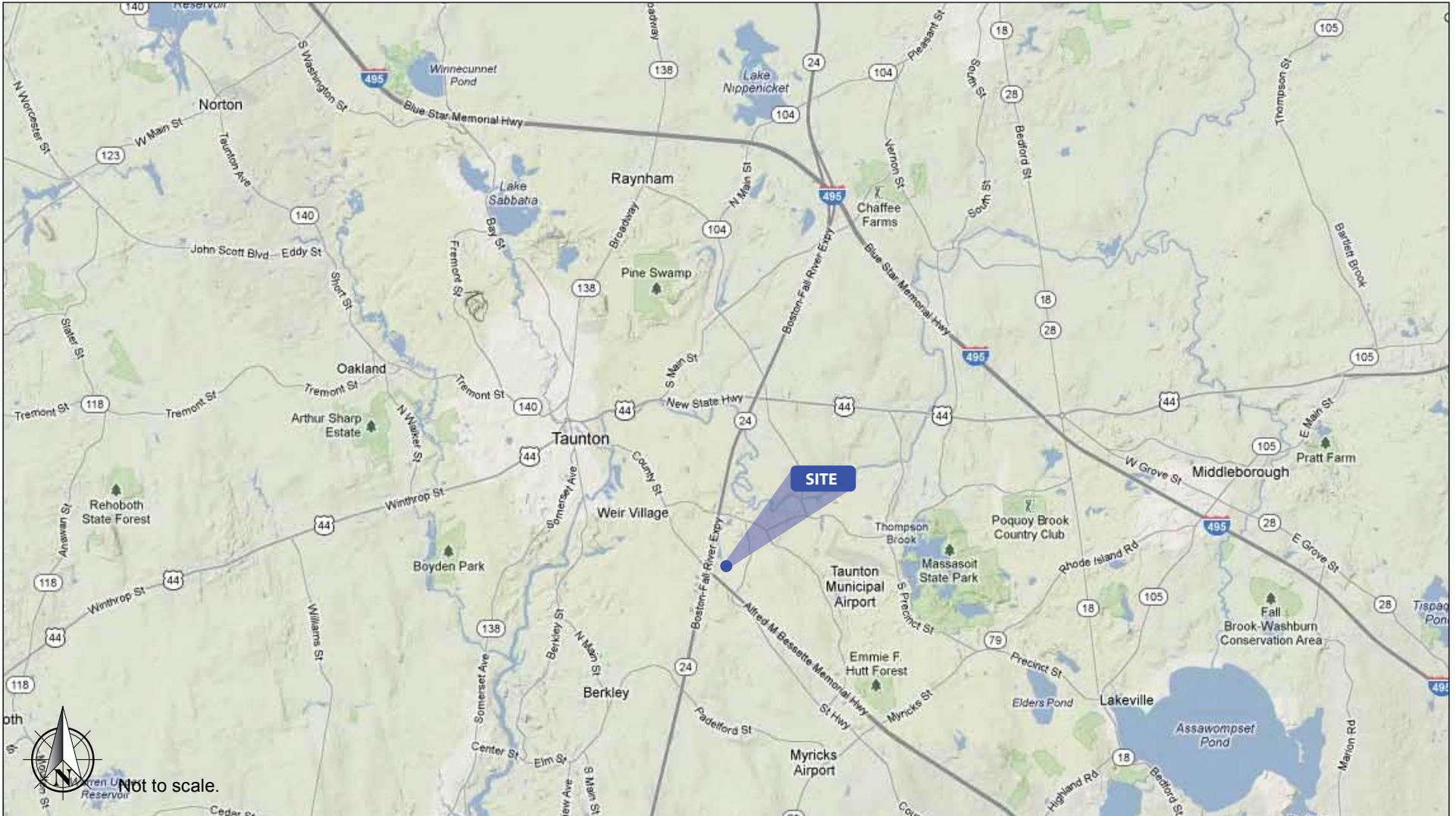


Figure 2A. Study Area Intersections - West

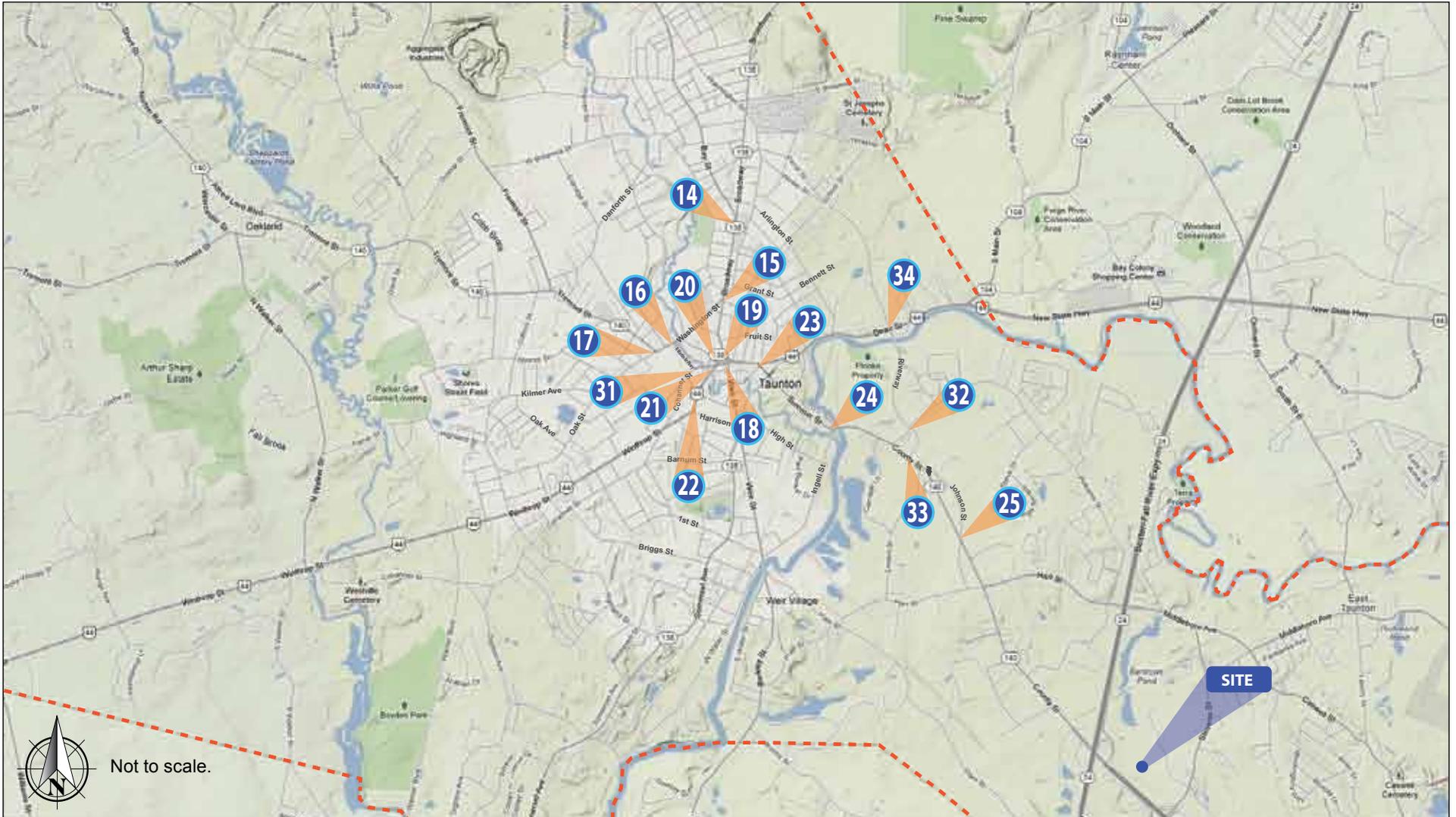
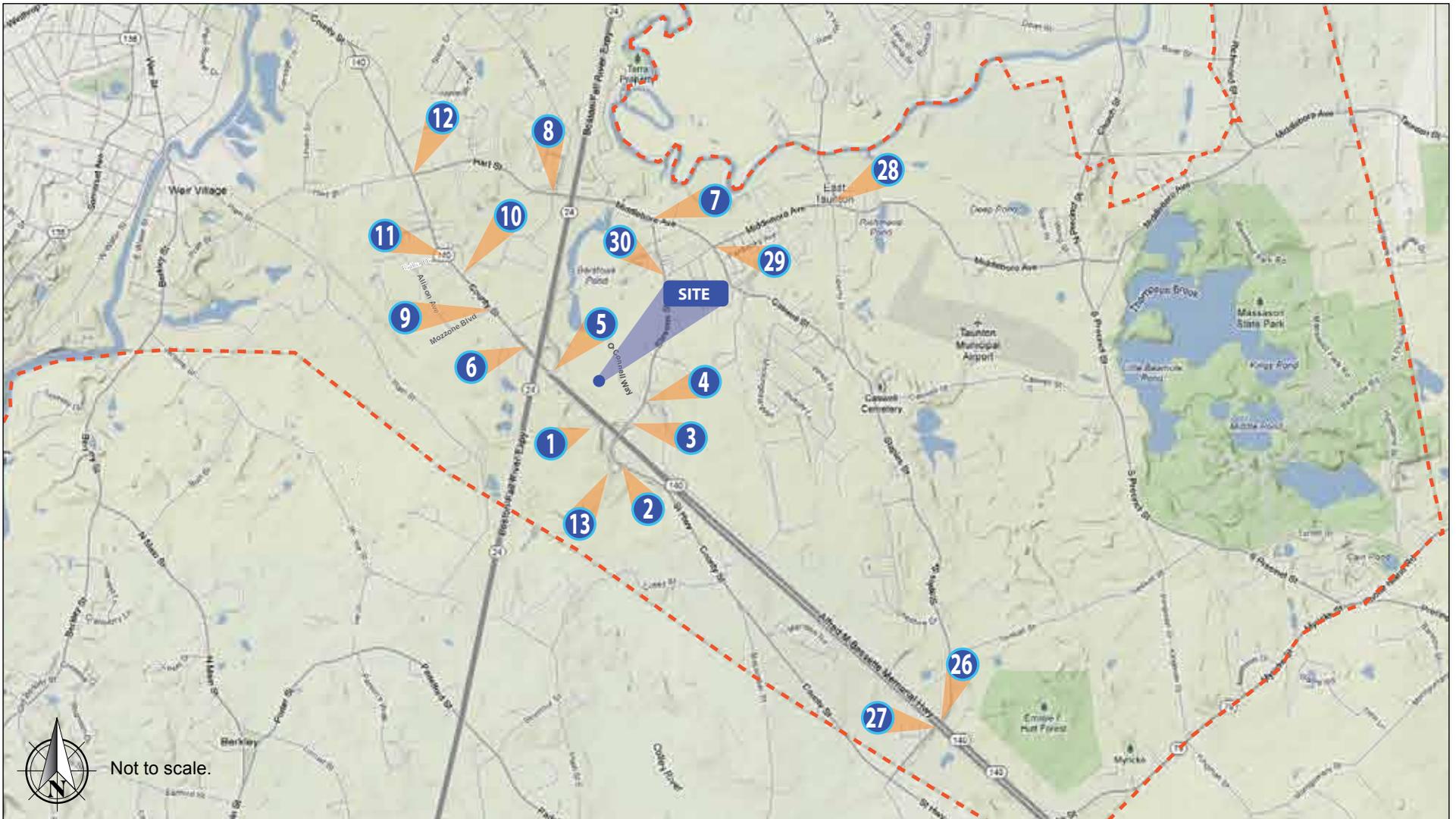


Figure 2B. Study Area Intersections – East



- County Street (Route 140)/Gordon M. Owen Riverway Extension; and,
- Dean Street (Route 44)/Longmeadow Road/Gordon Owen Parkway.

Non-Signalized Intersections

The following 20 non-signalized intersections in the City of Taunton were included in the study area:

- Galleria Mall Driveway North/County Road/Overpass Connector;
- O'Connell Way/Driveway/Stevens Street;
- Middleboro Avenue/Stevens Street;
- Hart Street/Middleboro Avenue/Pool Street/Bristol Plymouth High School Driveway;
- Bristol Plymouth High School Driveway/Hess Gas Station/County Street (Route 140);
- Galleria Mall Driveway South/Galleria Mall Drive;
- Exeter Street/Bay Street/Broadway (Route 138);
- Washington Street (Route 140)/R. Martin Sr. Parkway (Route 140);
- Court Street/Broadway (Route 138)/Weir Street;
- Court Street/Western Green (44/138);
- Cohannet Street (Route 140)/Western Green (44/138);
- Summer Street (Route 140)/County Street (Route 140)/Ingell Street;
- County Street (Route 140)/Johnson Street;
- Myricks Street (Route 79)/Route 140 at Exit 10 NB Ramps;
- Myricks Street (Route 79)/Route 140 at Exit 10 SB Ramps;
- Middleboro Avenue/Old Colony Avenue/Liberty Street;
- Middleboro Avenue/Pinehill Street/Caswell Street;
- Pinehill Street/Stevens Street;
- F. R. Martin Parkway/Cohannet Street; and
- Williams Street/Gordon Owen Parkway.

Route 24 and 140 Interchange Locations

The study area also includes analysis of the Route 24 and Route 140 mainline capacity; 3 merge and 4 diverge locations at the Route 24/Route 140 interchange; 2 merge and 2 diverge locations at the Route 24/Route 140 interchange; and weaving analysis along Route 140.

Site Access

Today, the portion of the site south of the railroad tracks is accessed from Stevens Street via O'Connell Way. The site is indirectly served by Route 24, but is accessed from Exit 12 (Route 140) via Stevens Street, which connects to Route 140 in a second interchange at Exit 11A (Stevens Street). Existing site access is shown in **Figure 3**.

Roadway Conditions

Roadway conditions within the study area are described below.

Route 24 is a four- to six-lane limited access highway running north to south and providing a major link between the greater Boston area and communities to the southeast. It begins at I-95/Route 128 south of Boston and

Figure 3. Existing Site Access



Not to scale.

ends at the Rhode Island state line south of Fall River. North of Route 140 in Taunton, it carried 64,335 vehicles per day in 2009. Serving the site, Route 24 intersects with Route 140 (Interchange 12). Route 24 operates as four lanes (two lanes in each direction) at the Route 140 interchange, but has been widened by MassDOT from the north approximately 2,700 feet in advance of Exit 12 to add to the length of the deceleration lane. The merge lane on Route 24 NB was also lengthened by approximately 2,000 feet north of Route 140.

Route 140 is a 108-mile long state highway that passes through parts of southeastern and central Massachusetts. The highway follows a southeast-northwest trajectory, running from U.S. Route 6 in New Bedford northwest to an intersection with Massachusetts Route 23 in Winchendon, a few miles south of the New Hampshire border. Route 140 operates as a limited access highway south of the site from Route 24 down to its southern terminus at US-6 in New Bedford. North of Route 24, Route 140 carried 22,600 vehicles per average day in 2009; south of Route 24 it carried 37,800 vehicles per day.

Stevens Street intersects with Route 140 south of the site in a partial cloverleaf interchange (Interchange 11), that also serves the Silver City Galleria. To reach the site from Route 24, drivers must exit at Interchange 12 to Route 140 SB and then exit at Exit 11A onto Stevens Street. At O'Connell Way, Stevens Street operates as one through lane in each direction, with an added northbound right turn lane and an exclusive southbound left turn lane to Revolutionary Drive. Beyond Revolutionary Drive, Stevens Street narrows to one lane in each direction with no shoulders, carrying only 2,200 vehicles per day in 2009. Beyond Revolutionary Drive, Stevens Street carried 6,600 vehicles per day in 2009. Counts conducted in March 2012 documented 8,847 vehicles per day on Stevens Street south of O'Connell Way, with an 85th percentile speed of 37 miles per hour. The posted speed limit is 30 miles per hour.

Middleboro Avenue/Hart Street crosses Route 24 via an overpass. While the bridge provides two lanes in each direction, Middleboro Avenue narrows as it abuts the site to one lane in each direction. As it approaches Stevens Street, Middleboro Avenue becomes more residential in nature. Just east of Route 140, Hart Street carried 8,200 vehicles per average day in 2007. East of Stevens Street, Middleboro Avenue carried about 8,600 vehicles on an average day in 2009 and 8,367 vehicles per day in March 2012. West of Stevens Street, Middleboro Avenue carried 11,092 vehicles per day in March 2012.

O'Connell Way west of Stevens Street is a 51-foot wide access road, providing access to the Liberty & Union Industrial Park Phase II. East of Stevens Street, it intersects with Revolutionary Road, which serves an earlier phase of the Industrial Park. This road is designed to handle the large trucks generated by Industrial Park tenants like the Crossroads Commerce Center. O'Connell Way currently ends in a cul-de-sac to the south of the Crossroads Commerce Center, but an access easement continues around the westerly building ending at the CSX right of way. West of Stevens Street, 3,604 vehicles per day were counted on O'Connell Way. The 85th percentile speed was approximately 30 miles per hour.

Galleria Mall Overpass crosses over Route 140 between Stevens Street and County Road providing access to the Silver City Galleria and Route 140 NB on-ramp at Stevens Street. The roadway is approximately 60-foot in width, providing 2 travel lanes in each direction, separated by a 6-foot median with a guiderail. A 5-foot pedestrian sidewalk is provided along the north side of the roadway. West of Stevens Street, 2,700 vehicles per day were counted on the overpass. The 85th percentile speed was approximately 27 miles per hour.

Galleria Mall Drive is one of the main entrances to the Silver City Galleria via County Street and Exit 11B from Route 140 SB. The roadway is approximately 55-foot wide with 2 travel lanes in each direction, separated by a 6-foot median with a guiderail. South of County Street, approximately 7,770 vehicles per day were counted on Galleria Mall Drive. The 85th percentile speed was approximately 23 miles per hour.

Intersection Conditions

Intersection conditions, based on field observations in March 2012, are discussed below:

Signalized Intersections

The operating characteristics of each signalized intersection are described below.

Galleria Mall Drive South/County Street (Route 140) is a signalized intersection with 3 approaches. The Galleria Mall Drive eastbound approach consists of a 12-foot shared left-turn/thru lane and a 12-foot shared through/right-turn lane. A 6-foot raised median with a guard-rail separates the east-west direction of travel on Galleria Mall Drive. The Route 140 Southbound Exit 11B off-ramp is a 20-foot single lane, that provides access to northbound on County Street, and is controlled by a yield sign. The County Street northbound approach consists of a 12-foot shared left-turn/through lane and a 12-foot through lane. Approximately 200-feet south of the County Street northbound approach, the Route 140 Southbound Exit 11 on-ramp consists of a 20-foot single lane and is controlled by a yield sign. The County Street southbound approach consists of a 12-foot shared left-turn/through lane, a 12-foot through lane, and an exclusive 22-foot right-turn slip-lane.

The posted speed limit on County Street is 40 MPH. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are not provided in the area.

Overpass Connector/Route 140 NB Ramps/Stevens Street is a signalized intersection with 4 approaches. The Overpass eastbound approach consists of a 13-foot shared left-turn/through lane, an 11-foot shared through/right-turn lane, and an exclusive 21-foot right-turn only lane. A 6-foot raised median with a guard-rail separates the east-west direction of travel on the Overpass Connector. The Route 140 Northbound Exit Ramp approach consists of a 12-foot left-turn only lane, and an 11-foot through lane. The right turn lane is channelized prior to the stop line. The Stevens Street northbound approach consists of an 11-foot shared left-turn/through lane and a shared 12-foot through/right-turn lane, which operates under Yield control. An 8-foot painted median separates the north-south direction of travel on the northbound approach of Stevens Street. The Stevens Street southbound approach consists of two 12-foot left-turn only lanes and a 12-foot shared through/right-turn lane.

The posted speed limit on Stevens Street is 30 MPH. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are maintained on the north side of the intersection, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

Route 24 NB Ramps (Exit 12B)/County Street (Route 140) is a signalized intersection with 2 approaches. The Route 24 Northbound Exit Ramp westbound approach consists of a 17-foot lane, which directs vehicles northbound on Route 140. The Route 140 northbound approach consists of an 11-foot through lane, a 12-foot through lane, and an exclusive 17-foot right-turn only lane, which operates under Yield control. A 13-foot median with a guide-rail separates the north-south direction of travel on the northbound approach of Route 140. The Route 140 southbound approach consists of an 11-foot left-turn lane and two 12-foot through lanes. A 6-foot median with a guide-rail separates the north-south direction of travel on the southbound approach of Route 140.

The posted speed limit on Route 140 is 40 MPH. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are not provided in the area.

Route 24 SB Ramps (Exit 12)/County Street (Route 140) is a signalized intersection with 3 approaches. The Route 24 Southbound Exit Ramp approach consists of a 19-foot left-turn lane, a 12-foot right-turn lane and 14-foot right-turn lane. The Route 149 northbound approach consists of a 12-foot left-turn lane, an 11-foot through lane and a 14-foot through lane. A 6-foot median with a guard-rail separates the north-south direction of travel on the northbound approach of Route 140. The Route 140 southbound approach consists of a 12-foot through lane and a shared 12-foot through/right-turn lane. The right turn operates under Yield control. A 12-foot median with a guide-rail separates the north-south direction of travel on the southbound approach of Route 140.

The posted speed limit on Route 140 is 40 MPH. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are not provided in the area.

Mozzone Boulevard/County Street (Route 140) is a signalized intersection with 3 approaches. The Mozzone Boulevard approach consists of an 11-foot left-turn lane and an 11-foot right-turn lane. The Route 140 northbound approach consists of a 12-foot shared left-turn/through lane and a 12-foot through lane. The Route 140 southbound approach consists of a 12-foot through lane and a shared 12-foot through/right-turn lane.

The posted speed limit on Route 140 is 40 MPH. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are not provided in the area.

Erika Drive/County Street (Route 140) is a signalized intersection with 4 approaches. The Erika Drive eastbound approach consists of a 12-foot left-turn lane, a shared 12-foot left-turn/through lane, and a 12-foot right-turn lane. The private driveway westbound approach consists of a shared 16-foot left-turn/through/right-turn lane. The Route 140 northbound approach consists of an 11-foot left-turn lane, a 12-foot through lane, and a shared 12-foot through/right-turn lane. The Route 140 southbound approach consists of a shared 12-foot left-turn/through lane, a 12-foot through lane, and a 12-foot right-turn lane.

The posted speed limit on Route 140 is 35 MPH. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are maintained on the north side of the intersection, as are pedestrian signal indications.

Known as “Hart’s Four Corners”, the intersection of **Hart Street/County Street (Route 140)** is a signalized intersection with 4 approaches. The Hart Street eastbound approach consists of a shared 11-foot left-turn/through lane and a 10-foot right-lane. The Hart Street westbound approach consists of a shared 11-foot left-turn/through lane and a 10-foot right-turn lane. The Route 140 northbound approach consists of an 11-foot left-turn lane and a shared 10-foot through/right-turn lane. The Route 140 southbound approach consists of an 11-foot left-turn lane and a shared 11-foot through/right-turn lane.

The posted speed limit on Route 140 is 35 MPH. Parking is prohibited along all approaches of the intersection. A Greater Attleboro Taunton Regional Transit Authority (GATRA) bus stop is located on the near side of the Route 140 southbound approach. Crosswalks and wheelchair ramps are maintained on all legs of the intersection, as are pedestrian signal indications.

Future roadway and traffic control improvements are proposed at this intersection through a Massachusetts Department of Transportation project. The improvements include widening of County Street and new traffic signal operations and equipment. These future improvements will be reflected in the No-Build and Build conditions analyses.

Washington Street/Broadway (Route 138) is a signalized intersection with 4 approaches. The Washington Street eastbound approach consists of a shared 15-foot left-turn/through/right-turn lane. The Washington Street westbound approach consists of a shared 10-foot left-turn/through/right-turn lane. The Broadway northbound approach consists of a shared 15-foot left-turn/through/right-turn lane. The Broadway southbound approach consists of a shared 12-foot left-turn/through lane and a 12-foot right-turn lane.

Signage on all the approaches restricts vehicles from turning right on red. The posted speed limit on Broadway is 20 MPH. Parking is provided on the Broadway northbound approach, with ½-hour parking on the east side of the street and 1-hour parking on the west side. Parking is not provided along the other approaches. Crosswalks and wheelchair ramps are maintained on all legs of the intersection, as are pedestrian signal indications. The pavement and pavement markings are in fair condition, but are inconsistent with allowable turns.

Oak Street/Washington Street (Route 140)/Tremont Street is a signalized intersection with 4 approaches. The Tremont Street eastbound approach consists of a 12-foot left-turn lane and a shared 12-foot left-turn/through/right-turn lane. The Plaza westbound approach consists of a shared 19-foot left-turn/through/right-turn lane. The Oak Street northbound approach consists of a shared 14-foot left-turn/through lane and a shared 12-foot through/right-turn lane. The Washington Street southbound approach consists of a shared 12-foot left-turn/through lane and an 11-foot right-turn lane.

The posted speed limit on Tremont Street is 20 MPH. Parking is prohibited along all approaches of the intersection. A GATRA bus stop is located on the far side of the Washington Street southbound approach. Crosswalks and wheelchair ramps are maintained on all legs of the intersection, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

Cohannet Street (Route 140)/Weir Street (Route 138) is a signalized intersection with 3 approaches. The Cohannet Street eastbound approach consists of a 12-foot left-turn lane, two 12-foot through lanes, and a 14-foot right-turn lane. The Main Street westbound approach consists of an 18-foot right-turn only lane and is not a signalized approach. The Weir Street northbound approach consists of a 10-foot through lane and 10-foot right-turn lane.

Signage on the Cohannet Street and Weir Street approaches restricts vehicles from turning right on red. The posted speed limit on Weir Street is 20 MPH. Parking is provided on the Cohannet eastbound approach, with 2-hour meter parking from 9:00 AM through 5:00 PM on the south side of the street and along both sides of Main Street. Crosswalks and wheelchair ramps are maintained on the eastbound and northbound approaches, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

High Street/Winthrop Street (Route 44) is a signalized intersection with 4 approaches. The High Street eastbound approach consists of a shared 19-foot left-turn/through/right-turn lane. The High Street westbound approach consists of a 10-foot left-turn lane and a shared through lane/right-turn lane. The Winthrop Street northbound approach consists of an 11-foot left-turn lane and a shared 11-foot through/right-turn lane. The Winthrop

southbound approach consists of a shared 11-foot left-turn/through lane and a shared 11-foot through/right-turn lane.

Signage on all the approaches restricts vehicles from turning right on red. Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are maintained in the area, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

Main Street (Routes 140 and 44)/Church Green (Route 44)/Summer Street (Route 140) is a signalized intersection with 3 approaches. The Main Street eastbound approach consists of a 15-foot left-turn lane, a 15-foot through lane, and a 23-foot right-turn lane. The Church Green westbound approach consists of a shared 14-foot through/right-turn lane. The Summer Street northbound approach consists of a shared 15-foot left-turn/through lane and a 15-foot right-turn lane.

The posted speed limit on Main Street is 20 MPH. Parking is provided on the Summer Street eastbound approach, with 2-hour meter parking from 9:00 AM through 5:00 PM on the south side of the street and along both sides of Main Street. Crosswalks and wheelchair ramps are maintained on the westbound and northbound approaches, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

County Street (Route 140)/Gordon M. Owen Riverway Extension is a signalized intersection with 3 approaches. The County Street eastbound approach consists of a shared 12-foot left-turn/through lane. The County Street westbound approach consists of an 11-foot through lane and 10-foot right-turn lane. The Gordon M. Owen Riverway Extension southbound approach consists of a shared 13-foot left-turn/through/right-turn lane.

Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are maintained on the westbound and southbound approach, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

Dean Street (Route 44)/Longmeadow Road/Gordon Owen Parkway is a signalized intersection with 4 approaches. The Dean Street eastbound approach consists of a 10-foot left-turn lane, a 12-foot through lane, and a 15-foot right-turn lane. The Dean Street westbound approach consists of an 11-foot left-turn lane, an 11-foot through lane, and a shared 12-foot through/right-turn lane. The Gordon Owen Parkway northbound approach consists of 12-foot left-turn lane and a shared 12-foot through/right-turn lane. The Longmeadow southbound approach consists of a shared 15-foot left-turn/through/right-turn lane; however, field observations indicate that the approach generally operates with an exclusive left-turn lane and a shared through/right-turn lane.

Parking is prohibited along all approaches of the intersection. Crosswalks and wheelchair ramps are maintained in the area, as are pedestrian signal indications. The pavement and pavement markings are in fair condition.

Non-Signalized Intersections

The operating characteristics of the non-signalized intersections are described below.

Galleria Mall Driveway North/County Road/Overpass Connector is a non-signalized intersection with three approaches. The Galleria Mall Driveway eastbound approach consists of two lanes, an 11-foot through lane

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with no control restrictions and a 12-foot through/left-turn lane, which is stop-controlled. The westbound approach on County Road consists of two lanes, a 12-foot through lane, which is stop-controlled, and a 12-foot channelized right-turn lane onto the Overpass Connector. The southbound approach from the Overpass Connector consists of a 13-foot left-turn lane and a 13-foot channelized right-turn lane. This approach is separated from northbound traffic by a 5-foot median.

Crosswalks are provided between the parking lots at the Galleria Mall and an overflow parking lot northeast of the intersection. A 6.5-foot crosswalk crosses the eastbound approach between the parking lot and the sidewalk along the west side of the Overpass Connector, and a 4-foot crosswalk crosses the southbound approach to the overflow lot. Wheelchair ramps are not provided at any of the crosswalks.

O'Connell Way/Revolutionary Drive/Stevens Street is a non-signalized intersection with four approaches. The O'Connell Way eastbound approach consists of a single 26-foot lane. The westbound approach consists of two lanes, a 13-foot through/right-turn lane and a 10-foot left-turn lane. The westbound approach is separated from oncoming traffic by a landscaped median. The Stevens Street northbound approach consists of a 12-foot shared left-turn/through lane and a 12-foot right-turn lane. The Stevens Street southbound approach consists of an 11-foot left-turn lane and a 12-foot through lane. There is also a 3-foot shoulder on the southbound approach.

A 6-foot sidewalk is provided on the east side of Stevens Street. There is an 8.5-foot crosswalk across the industrial driveway.

Middleboro Avenue/Stevens Street is a non-signalized intersection with three approaches. The Middleboro Avenue eastbound approach has a single 13-foot lane. The westbound approach has a single 15-foot lane. The Stevens Street northbound approach consists of a single 11-foot lane. Middleboro Avenue is free-flowing, while Stevens Street is stop-controlled.

There is a 5-foot sidewalk along the north side of Middleboro Street, and an 8-foot sidewalk along the west side of Stevens Street at the intersection.

Hart Street/Middleboro Avenue/Poole Street/Bristol Plymouth High School Driveway is a non-signalized intersection with four approaches. The Hart Street eastbound approach consists of a single 18-foot travel lane. The Middleboro Avenue westbound approach consists of a single 14-foot lane. The northbound approach at the Bristol Plymouth High School Driveway has a single 13-foot lane. The Poole Street southbound approach consists of a single 13-foot lane. The northbound and southbound approaches are offset from one another by approximately 80 feet. Hart Street and Middleboro Avenue are free-flowing, while Poole Street and Bristol HS are stop-controlled.

5-foot sidewalks are provided on both Hart Street approaches before the intersection with Bristol Plymouth High School Driveway. No crosswalks or pedestrian ramps are provided.

Route 140 at the CSX rail grade crossing is an ungated rail crossing with advance crossbuck markings and flashing overhead warning lights. This is just west of Route 24; at this location Route 140 is one lane in each direction.

Bristol Plymouth High School Driveway/Hess Gas Station/County Street (Route 140) is a non-signalized intersection with four approaches. The eastbound approach at Hess gas station is 37.5 feet wide. The Bristol Plymouth High School Driveway southbound approach consists of two 12-foot lanes: a left-turn lane and a right-turn lane. The County Street northbound approach consists of two 12-foot travel lanes and a 3-foot shoulder. Left turns into Hess are prohibited in the northbound direction. The County Street southbound approach has two 12-foot lanes with a 6-foot shoulder. The County Street northbound and southbound travel lanes are separated by a painted median that is 7 feet wide at the intersection.

Sidewalks are provided on the north side of County Street, measuring 6-feet wide. New pedestrian ramps with tactile warning strips are provided, but there is no crosswalk across the Bristol Plymouth High School Driveway.

Galleria Mall Driveway South/Galleria Mall Drive is a non-signalized intersection with three approaches. The Galleria Mall Driveway South westbound approach consists of a 13.5-foot channelized right-turn lane and a 13-foot left-turn lane, both of which are stop-controlled. The Galleria Mall Drive northbound approach consists of a 13-foot channelized right-turn lane and a 14-foot through lane, which is stop-controlled. The southbound approach on Galleria Mall drive consists of a 10-foot left turn lane and a 12-foot through lane.

No sidewalks are provided at this intersection.

Exeter Street/Bay Street/Broadway (Route 138) is a non-signalized intersection with four approaches. The Exeter Street eastbound approach has a single 13-foot lane. The Broadway northbound approach consists of an 18-foot lane with a 2-foot shoulder. The Broadway southbound approach has a single 20-foot travel lane. The Bay Street southeast-bound approach has a single 16-foot lane. Broadway is free-flowing, while the Exeter Street and Bay Street approaches are stop-controlled.

Asphalt sidewalks are provided along all approaches at this intersection. On each side of Exeter Street, there are 5-foot sidewalks. On Broadway, there are 8-foot sidewalks on each side. On Bay Street, there is a 4-foot sidewalk along the west side of the roadway.

Washington Street (Route 140)/F. R. Martin Sr. Parkway (Route 140) is a non-signalized intersection with four approaches. The Washington Street eastbound approach consists of a 12-foot through lane and a 13-foot right-turn lane, which has a storage length of 150 feet. The Washington Street westbound approach has a single 17-foot lane. The F. R. Martin Sr. Parkway northbound approach consists of a 10-foot left-turn lane and a 12-foot right-turn lane with a storage length of 200 feet. The southbound driveway approach has a single 12-foot lane. Washington Street is free-flowing, while F. R. Martin Parkway is stop-controlled.

A 5.5-foot sidewalk is provided on both sides of Washington Street and both sides of F. R. Martin Sr. Parkway. Crosswalks are provided on the eastern and western sides of the intersection.

Court Street/Broadway (Route 138)/Weir Street is a non-signalized intersection with two approaches. The Broadway northbound approach consists of a 31-foot channelized left-turn lane and a 14-foot through lane. The Broadway southbound approach has a single 13-foot channelized right-turn lane. 8-foot on-street parking lanes are provided on both sides of Broadway and Weir Street as well as on the north side of Court Street.

Sidewalks are provided along Broadway and are typically 8 to 9 feet wide. Crosswalks are provided across all sides of the intersection.

Court Street/Western Green (Route 44/Route 138) is a non-signalized intersection with three approaches. The Post Office Square eastbound approach has a single 10-foot travel lane. The Court Street westbound approach consists of three lanes: a 13-foot left-turn lane, a 13-foot shared left-turn/through lane, and a 20-foot channelized right-turn lane. A bus stop is located on the north side of Court Street to the east of the intersection. The Court Street southbound approach has a single 11-foot lane. 8-foot on-street parking lanes are provided on the west side of Court Street to the north of the intersection and on both sides of Post Office Square. The Court Street westbound approach is free-flowing, while the southbound and eastbound approaches are stop-controlled.

Sidewalks are provided along all approaches to the intersection and all are at least 9 feet wide. Crosswalks are provided across the north, south, and west sides of the intersection and are 9 feet wide.

Cohannet Street (Route 140)/Western Green (44/138) is a non-signalized intersection with three approaches. The eastbound approach on Cohannet Street is a single 24-foot travel lane adjacent to a 10-foot parking lane and bus stop. The northbound approach on Winthrop Street approaches the intersection at a 45-degree angle with Cohannet Street with a single 11-foot travel lane adjacent to a 7.5-foot parking lane. The southbound approach on Western Green consists of a 14-foot left-turn lane, a 12-foot left turn lane, and a 12-foot through/right lane. Cohannet Street and Winthrop Street are stop-controlled, while Western Green is free-flowing.

Sidewalks are provided along all approaches and are typically 9 to 14 feet wide. Crosswalks are provided across all approaches and are typically 9-foot wide.

Summer Street (Route 140)/County Street (Route 140)/Ingell Street is a non-signalized intersection with three approaches. The Summer Street eastbound approach consists of a 13-foot through lane and a 12-foot channelized right-turn lane. The County Street westbound approach has a single 19-foot travel lane. The Ingell Street northbound approach consists of a 12-foot travel lane, which widens to a 17-foot left-turn lane and a 16-foot channelized right-turn lane. Summer Street and County Street are free-flowing, while Ingell Street is stop-controlled.

Sidewalks are provided along all approaches and are typically 4 to 5 feet wide. A 12-foot crosswalk is provided across Ingell Street.

County Street (Route 140)/Johnson Street is a non-signalized intersection with four approaches. The County Street eastbound approach has a single 12.5-foot travel lane with a 4-foot shoulder. The County Street westbound approach has a 13-foot travel lane with a 3-foot shoulder. The Johnson Street northbound approach is unmarked and approximately 11 feet wide. The Johnson Street southbound approach has a single 10-foot travel lane. The entrance to the Trucci's parking lot is approximately 60 feet away from the intersection, adjacent to the westbound approach on County Street. County Street is free-flowing, while Johnson Street is stop-controlled.

Sidewalks are provided on both sides of County Street, on the west side of Johnson Street to the south of the intersection, and on both sides of Johnson Street to the north of the intersection. Sidewalks are typically 4 to 5 feet wide. Crosswalks are not provided at this location.

Myricks Street (Route 79)/Route 140 at Exit 10 NB Ramps is a non-signalized intersection with three approaches. The Myricks Street eastbound approach consists of a 15-foot shared left-turn/through lane. The Myricks Street westbound approach has a 15-foot shared through/right-turn lane. The southbound approach on the Route 140 ramp consists of a 21-foot channelized left-turn lane and a 19-foot channelized right-turn lane. Myricks Street is free-flowing, while the ramp is stop-controlled.

Sidewalks and crosswalks are not provided at this intersection.

Myricks Street (Route 79)/Route 140 at Exit 10 SB Ramps is a non-signalized intersection with three approaches. The Myricks Street eastbound approach consists of a 15-foot shared through/right-turn lane. The Myricks Street westbound approach has a 20-foot shared left-turn/through lane. The southbound approach on the Route 140 ramp consists of a 20-foot channelized left-turn lane and a 20-foot channelized right-turn lane. Myricks Street is free-flowing, while the ramp is stop-controlled.

No sidewalks or crosswalks are provided at this intersection.

Middleboro Avenue/Old Colony Avenue/Liberty Street is a non-signalized intersection with four approaches. The eastbound approach on Middleboro Avenue is a single 14-foot travel lane. The westbound approach on Middleboro Avenue is a 16-foot travel lane. The northbound approach on Liberty Street is a single 20-foot travel lane. The southbound approach on Old Colony Avenue is a single 16-foot travel lane. Liberty Street is offset from Old Colony Avenue by about 40 feet. Liberty Street and Old Colony Avenue operate under Stop control; Middleboro Avenue is free flow.

Sidewalks are provided on the south side of Middleboro Avenue and on both sides of Liberty Street, and are typically 5 to 7 feet wide. Crosswalks are provided across Liberty Street and Old Colony Avenue, with a crosswalk across Middleboro Avenue between the other two crosswalks. Pedestrian ramps are either not provided or are in poor condition.

Middleboro Avenue/Pinehill Street/Caswell Street is a non-signalized intersection with four approaches. The Pinehill Street eastbound approach has a single 14-foot lane. The Middleboro Avenue westbound approach has a single 14-foot travel lane. The Caswell Street northbound approach consists of a single 10-foot travel lane. The Middleboro Avenue southbound approach has a single 13-foot travel lane. The northbound, southbound, and eastbound approaches are stop-controlled, while the westbound approach is free-flowing.

Sidewalks are provided along the north side of Middleboro Street, the south/west side of Pinehill Street, and both sides of Caswell Street. The sidewalks are typically 4 to 7 feet wide. Crosswalks are provided across all approaches of the intersection and are typically 7 to 9 feet wide. Pedestrian ramps are either not provided or are in poor condition.

Pinehill Street/Stevens Street is a non-signalized intersection with three approaches. The Pinehill Street westbound approach has a single 11-foot travel lane. The Stevens Street northbound approach consists of a single 12-foot travel lane. The Stevens Street southbound approach consists of a single 11-foot travel lane.

Sidewalks are provided along the east side of Stevens Street and on each side of Pinehill Street. Sidewalks are typically 5 to 6 feet wide. A 7-foot crosswalk is provided across Pinehill Street.

F. R. Martin Parkway/Cohannet Street is a non-signalized intersection with three approaches. The Cohannet Street eastbound approach has a single 16-foot approach. The Cohannet Street westbound approach has a single 12-foot travel lane. The F. R. Martin Parkway southbound approach has a single 17-foot lane. 8-foot on-street parking lanes are provided on both sides of Cohannet Street. Cohannet Street is free-flowing, while F. R. Martin Parkway is stop-controlled.

Sidewalks with a typical width of 5 to 6 feet are provided along all approaches. There is a crosswalk provided across F. R. Martin Parkway. Pedestrian ramps are in fair to poor condition.

Williams Street/Gordon Owen Parkway is a flashing signal-controlled intersection with four approaches. The Gordon Owen Parkway eastbound approach has a single 21-foot travel lane. The Gordon M. Owen Riverway Extension westbound approach has a single 13-foot travel lane. The eastbound and westbound approaches are controlled by a flashing yellow indication. The Williams Street northbound approach has a single 11-foot travel lane. The Williams Street southbound approach has a single 12-foot travel lane. The northbound and southbound approaches on Williams Street are controlled by a flashing red indication at the intersection.

Sidewalks are provided on the west side Williams Street to the south of the intersection, the north side of Riverway Extension to the east of the intersection, and on both sides of Gordon Owen Parkway and Williams Street to the north of the intersection. The sidewalks are typically 4 to 7 feet wide. Eight foot wide crosswalks are provided on the north and west sides of the intersection.

Interchange Conditions

Route 24/Route 140 Interchange is a five-ramp partial cloverleaf configuration. In the vicinity of the interchange Route 24 northbound and southbound consists of two travel lanes in each direction and is grade separated, passing above Route 140. Motorists traveling along Route 24 northbound can access Route 140 southbound at Exit 12A, while access to Route 140 northbound is provided at Exit 12B. Along Route 24 southbound, motorists can access Route 140 northbound and southbound at Exit 12; at this location a third travel lane along Route 24 southbound is provided, approximately 2,700 feet in length, serving as a deceleration lane. Route 24 NB also has an extended acceleration lane. In the vicinity of the interchange, Route 140 generally consists of two travel lanes in each direction. From Route 140, motorists traveling in either the northbound or southbound direction can access Route 24 northbound at Exit 12A and Route 24 southbound at Exit 12B; both ramp locations are controlled by a traffic signal at Route 140.

Route 140/Stevens Street Interchange is a partial cloverleaf. In the vicinity of the interchange, Route 140 consists of two travel lanes in each direction. Along Route 140 northbound, motorists can access Stevens Street at Exit 11. Along Route 140 southbound, motorist can access County Street at Exit 11B and Stevens Street, via the Stevens Street Connector, at Exit 11A. In the vicinity of the interchange, Stevens Street generally consists of two travel lanes in each direction and passes above Route 140.

Data Collection Program

To establish existing conditions, traffic volume counts began in March and continued through May, 2012 as shown below. Count data are included in **Appendix A**.

- Automatic Traffic Recorder (ATR) counts were conducted over a 72-hour period on Thursday, Friday and Saturday March 15, 16 and 17 to establish weekday, Friday and Saturday daily and hourly volumes at intersections. From the ATR counts it was established that the weekday AM peak hour occurs from 7:15 to 8:15 AM, the weekday PM peak hour occurs from 4:30 to 5:30 PM and the Saturday peak hour occurs from 11:45 to 12:45 PM.
- Manual intersection Turning Movement Counts (TMC) were conducted on March 15 -17, March 23-24 and April 14-15 at 33 intersections within the city of Taunton. These locations had been established in cooperation with the City's peer review consultant. Counts were conducted during the weekday peak periods of 7:00 to 9:00 AM and 4:00 to 6:00 PM and the Saturday midday peak period from 11:00 AM to 2:00 PM.
- Automatic Traffic Recorder Counts were conducted on May 3, 4, 5 and 6 at 18 locations at the Route 24/140 interchange and Route 140/Stevens Street interchange, again established in cooperation with the City's peer review consultant.

Roadway Volumes

Table 1 summarizes average daily traffic volumes at the local Taunton roadway locations counted.

Table 1. Average Daily Traffic Summary

	ADT	%T	AM Peak (7:15 -8:15 AM)	PM Peak (4:30 -5:30 P.M.)	Saturday Peak (11:45 -12:45 P.M.)	85th Percentile Speed (mph)
O'Connell Way west of Stevens Street						
Eastbound	1,803	7.7%	60	133	105	31
Westbound	1,801	7.7%	147	126	55	32
TOTAL	3,604	7.7%	207	259	160	31
Stevens Street south of O'Connell Way						
Northbound	4,589	9.5%	421	365	272	38
Southbound	4,258	5.9%	207	500	266	36
TOTAL	8,847	7.8%	628	865	538	37
Middleboro Street east of Stevens Street						
Eastbound	4,111	3.6%	319	353	356	38
Westbound	4,256	3.4%	408	388	271	38
TOTAL	8,367	3.5%	727	741	627	38
Middleboro Street west of Stevens Street						
Eastbound	5,371	3.2%	429	462	427	40
Westbound	5,721	2.0%	481	554	376	38
TOTAL	11,092	2.6%	910	1,016	803	39

Figures 4 and 5 illustrate Friday daily and hourly traffic volumes on the local roads and Routes 24/140 highways, respectively.

Figure 4. Friday Traffic Variations: Local Roads

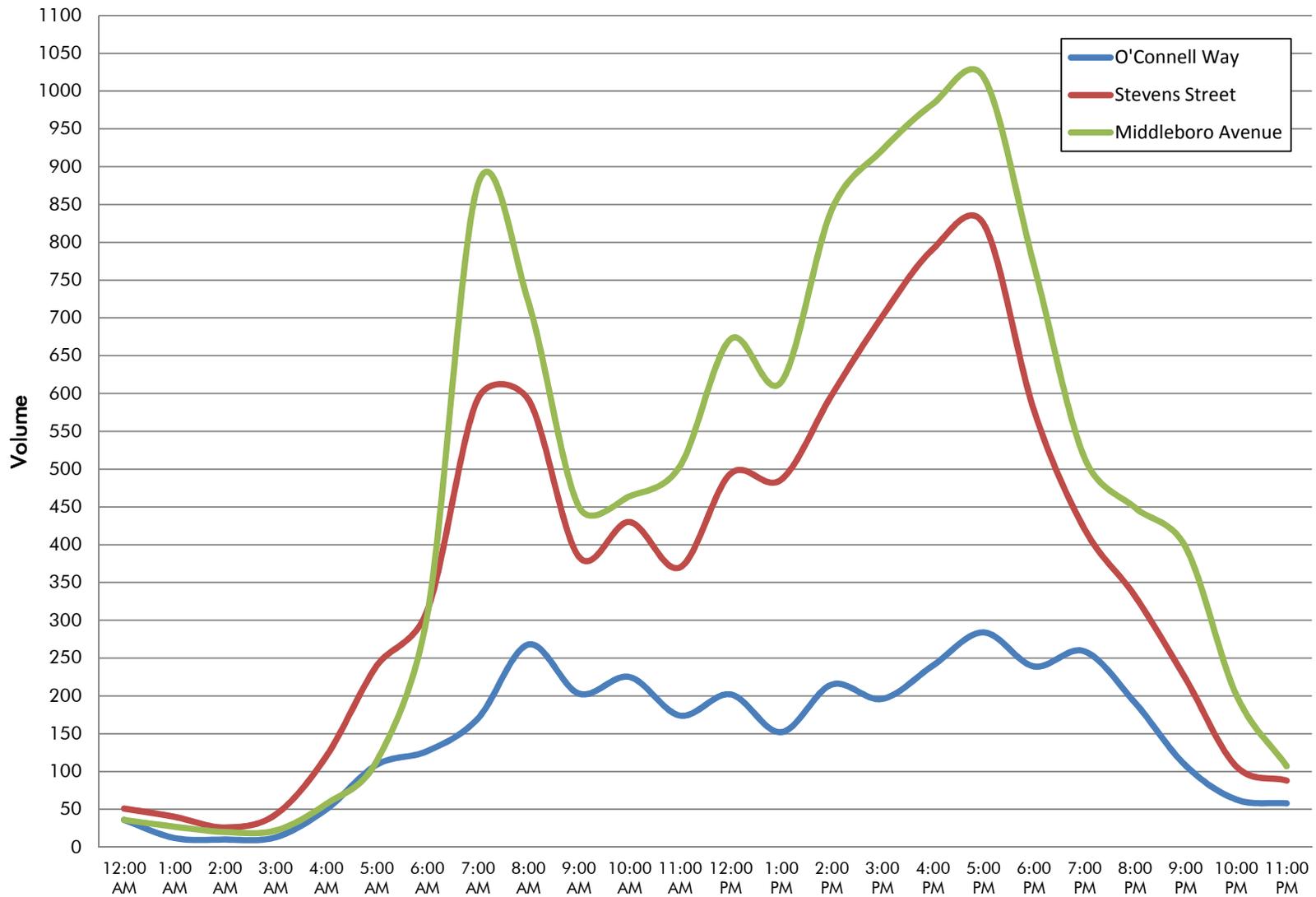


Figure 5. Friday Traffic Variations: Regional Roads

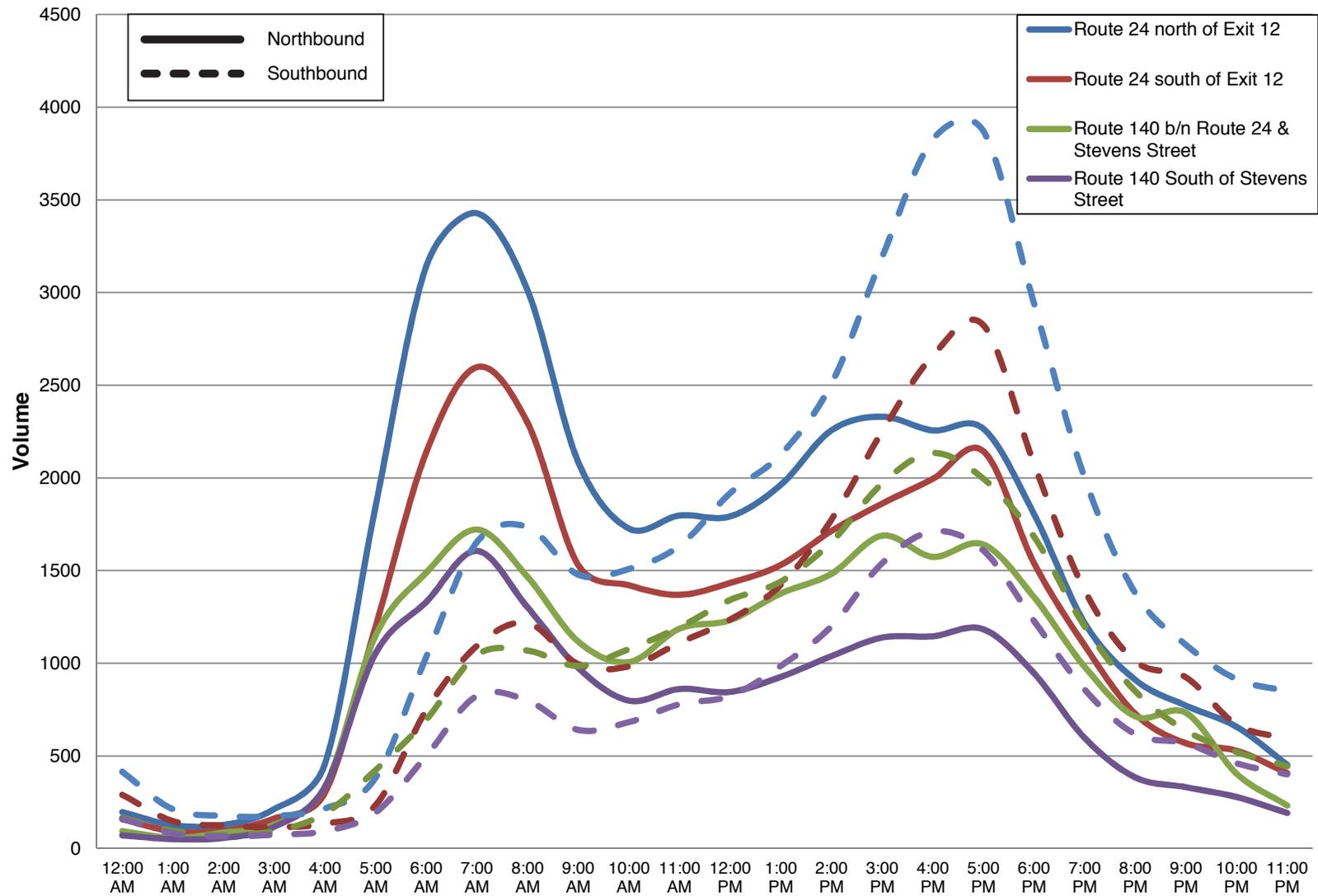


Figure 6. Saturday Traffic Variations: Local Roads

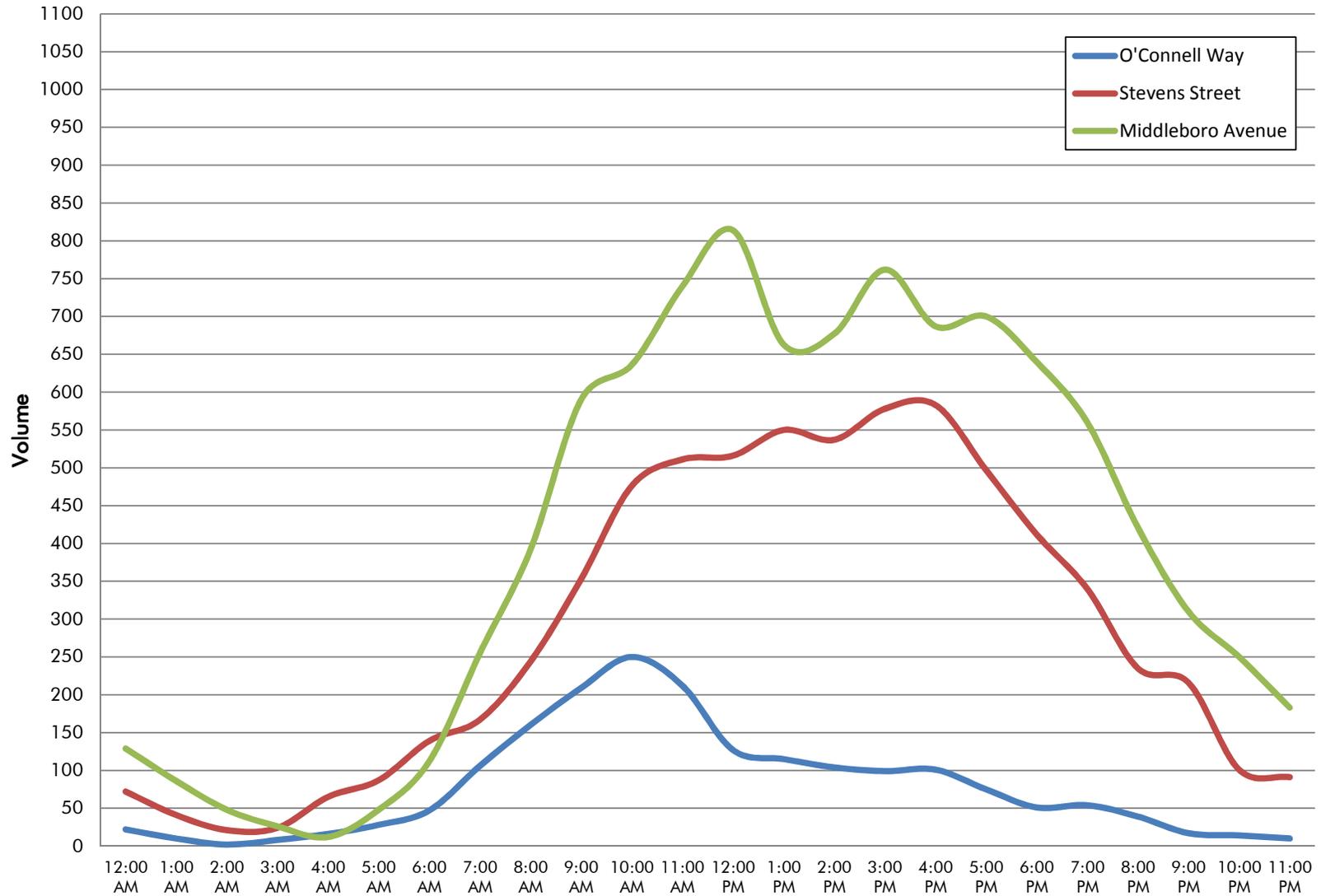


Figure 7. Saturday Traffic Variations: Regional Roads

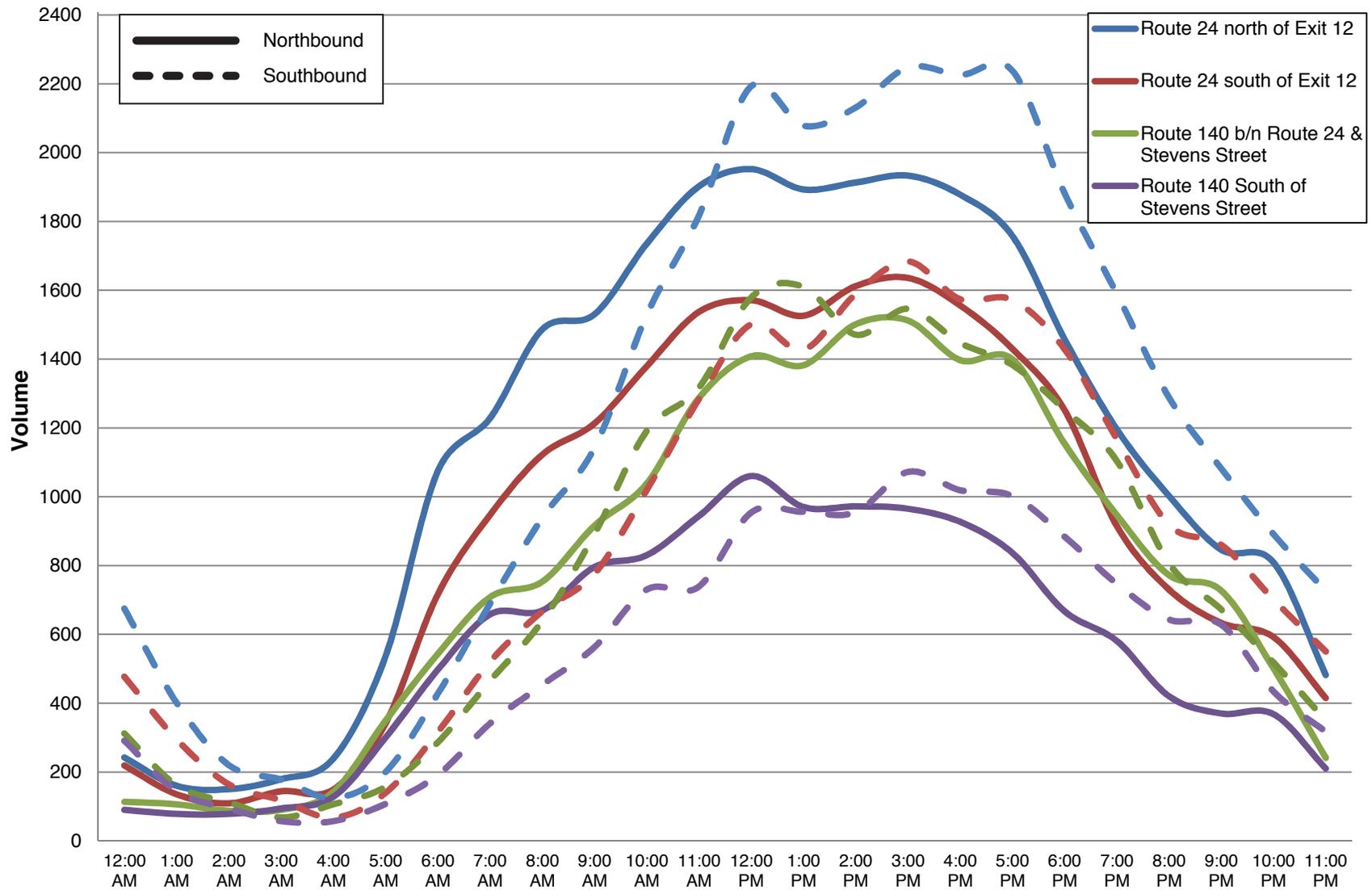


Figure 8B. Existing Conditions (2012) AM Peak Hour Volumes, (7:15-8:15 AM) – East

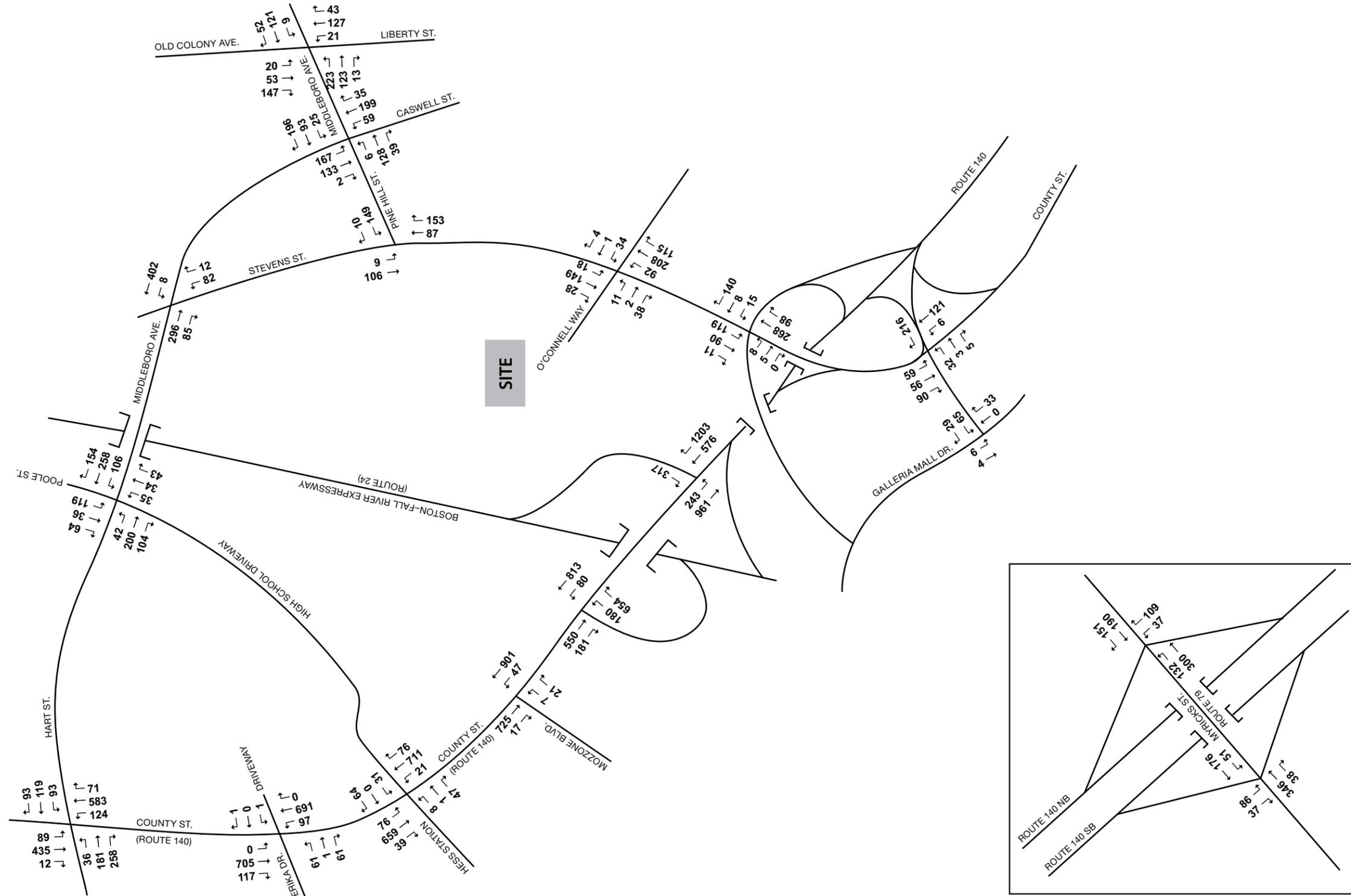


Figure 9B. Existing Conditions (2012) Friday PM Peak Hour Volumes, (4:30-5:30 PM) – East

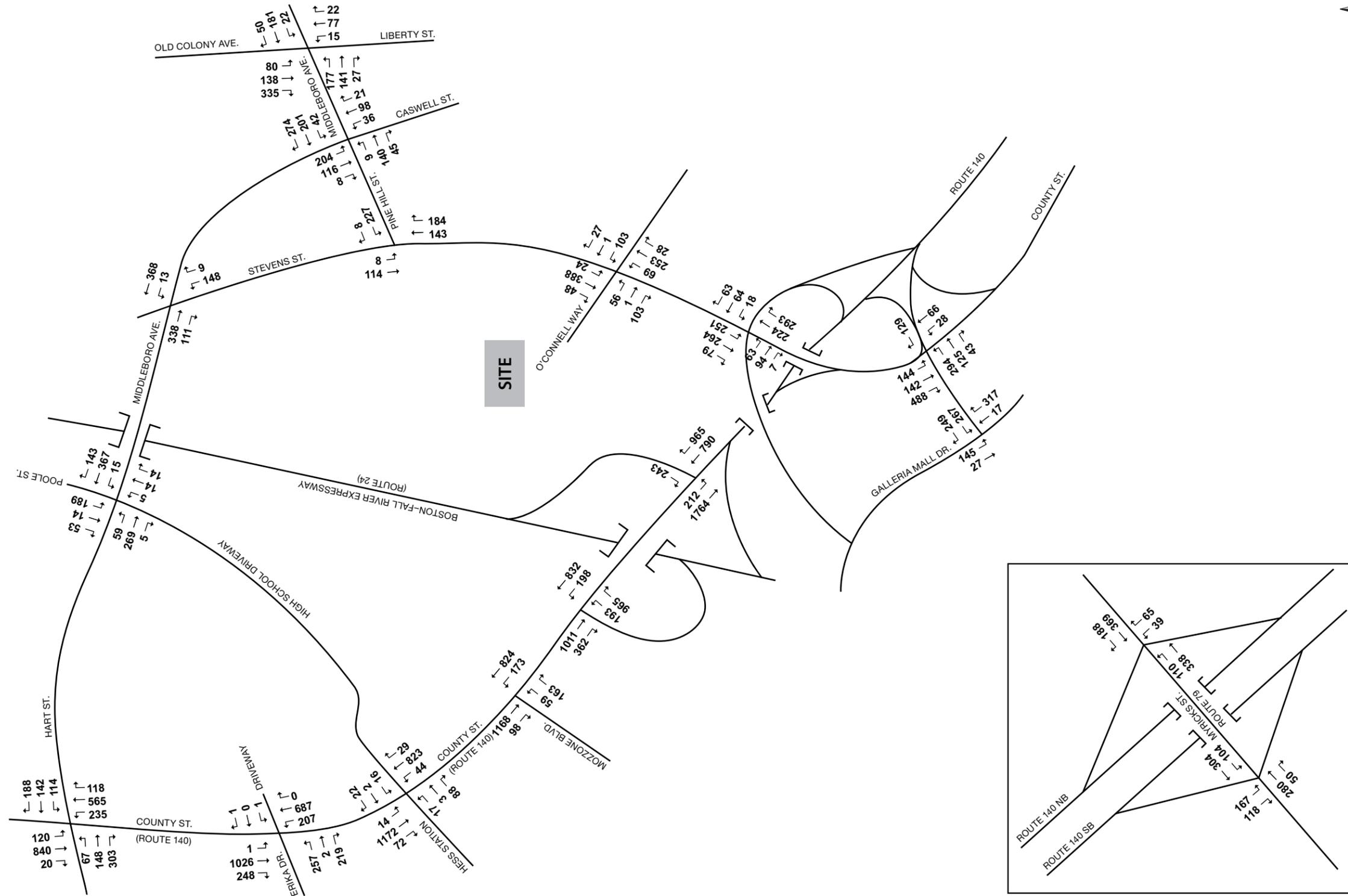
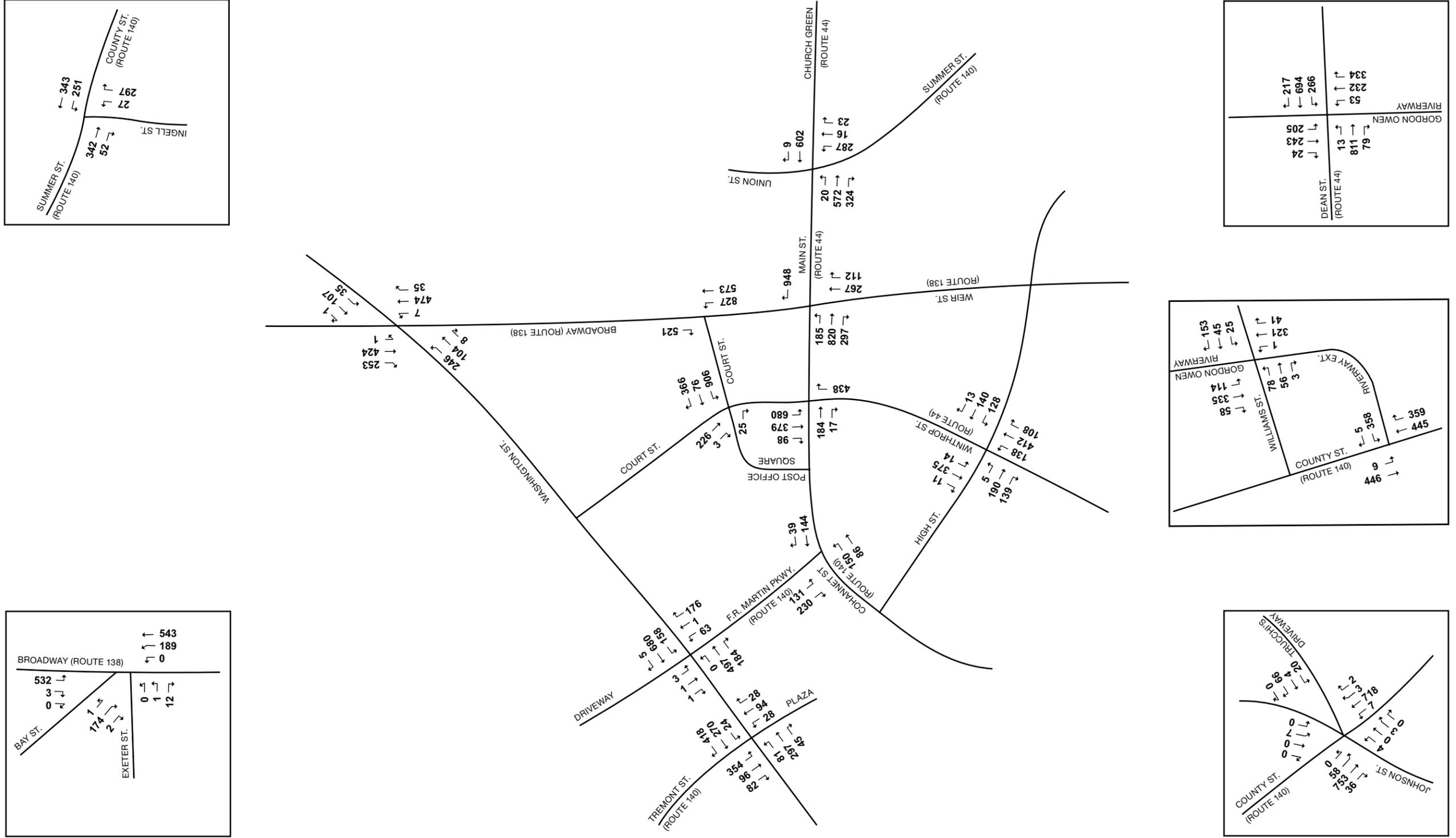


Figure 10A. Existing Conditions (2012) Saturday Midday Peak Hour Volumes, (11:45-12:45 PM) – West



Interchange Volumes

Existing interchange volumes for the AM, Friday PM and Saturday peak hours are shown in **Figure 11**.

Seasonal Adjustment Factors

According to Massachusetts Department of Transportation (MassDOT) procedures, the intersection traffic volumes collected in March and interchange traffic volumes collected in May were adjusted upward by 2.7% to reflect annual average conditions. Because April volumes are above the annual average, the volumes collected in April were not adjusted. MassDOT no longer publishes seasonal factors, but instead recommends use of monthly ADTs from a nearby permanent count station to determine the seasonal variations. The most relevant count location for this study was at Count Station 6072, Route 24 in Taunton north of Route 140; thus this location was used as the basis for the adjustment.

Safety Analysis

Intersection Analysis

The study team performed a safety analysis at the study area intersections to identify and evaluate possible safety issues that exist. Crash data for these locations were obtained from MassDOT for the most recent 3-year period available (2007–09). During that period, 483 vehicular accidents were reported at the study area intersections. Within the 483 reported collisions, 7 crashes involved a pedestrian, and 2 collisions involved a cyclist. **Table 2** summarizes the crashes at the study area intersections. Detailed crash data is included in **Appendix B**.

Table 2. Study Area Crash Rate Summary

Intersection	Number of Crashes				Crash Rate	
	2007	2008	2009	TOTAL	Intersection Average	District 5 Average
Signalized						
Galleria Mall Drive South/County Street	2	3	1	6	0.40	0.77
Overpass Connector/Route 140 NB Ramps/Stevens Street	1	0	9	10	0.69	
Route 24 NB Ramps/County Street	6	7	7	20	0.41	
Route 24 SB Ramps/County Street	8	1	4	13	0.30	
Mozzone Boulevard/County Street	5	7	7	19	0.63	
Erika Drive/County Street	4	5	1	10	0.31	
Hart Street/County Street	14	16	14	44	1.26	
Washington Street/Broadway	1	2	14	17	0.56	
Oak Street/Washington Street/Tremont Street	11	7	8	26	0.82	
Cohannet Street/Weir Street	6	16	6	28	0.80	
High Street/Winthrop Street	3	11	5	19	0.75	
Main Street/Church Green/Summer Street	4	2	3	9	0.40	
County Street/Riverway Extension	0	3	8	11	0.49	
Dean Street/Longmeadow Road/Gordon Owen Parkway	6	19	16	41	0.96	
Non-Signalized						
Galleria Mall Driveway North/County Road/Overpass Connector	0	1	0	1	-	0.60
O'Connell Way/Driveway/Stevens Street	0	0	0	0	0.00	

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Middleboro Avenue/Stevens Street	1	2	3	6	0.51
Hart Street/Middleboro Avenue/Pool Street/Bristol Plymouth HS Driveway	6	7	4	17	1.25
Bristol Plymouth HS Driveway/Hess Gas Station/County Street	0	1	3	4	0.14
Galleria Mall Drive South/Galleria Mall Drive	0	0	0	0	0.00
Exeter Street/Bay Street/Broadway	9	7	6	22	0.85
Washington Street/F. R. Martin Parkway	3	3	6	12	0.35
Court Street/Broadway/Weir Street	5	9	5	19	0.74
Court Street/Western Green	4	5	6	15	0.66
Cohannet Street/Western Green	6	7	8	21	0.92
Summer Street/County Street/Ingell Street	11	8	3	22	1.18
County Street/Johnson Street	1	0	4	5	0.23
Myricks Street/Route 140 NB Ramps	0	0	0	0	0.00
Myricks Street/Route 140 SB Ramps	0	0	0	0	0.00
Middleboro Avenue/Old Colony Avenue/Liberty Street	3	4	3	10	0.66
Middleboro Avenue/Pinehill Street/Caswell Street	6	2	3	11	0.77
Pinehill Street/Stevens Street	1	1	0	2	0.25
F. R. Martin Parkway/Cohannet Street	1	1	3	5	0.34
Williams Street/Gordon Owen Parkway	7	15	16	38	2.12

As shown above, four signalized intersections exceeded the MassDOT District 5 average rate of 0.77 crashes per million entering vehicles, and eight exceeded the average rate of 0.60 crashes per million entering vehicles for non-signalized intersections.

Interchange Analysis

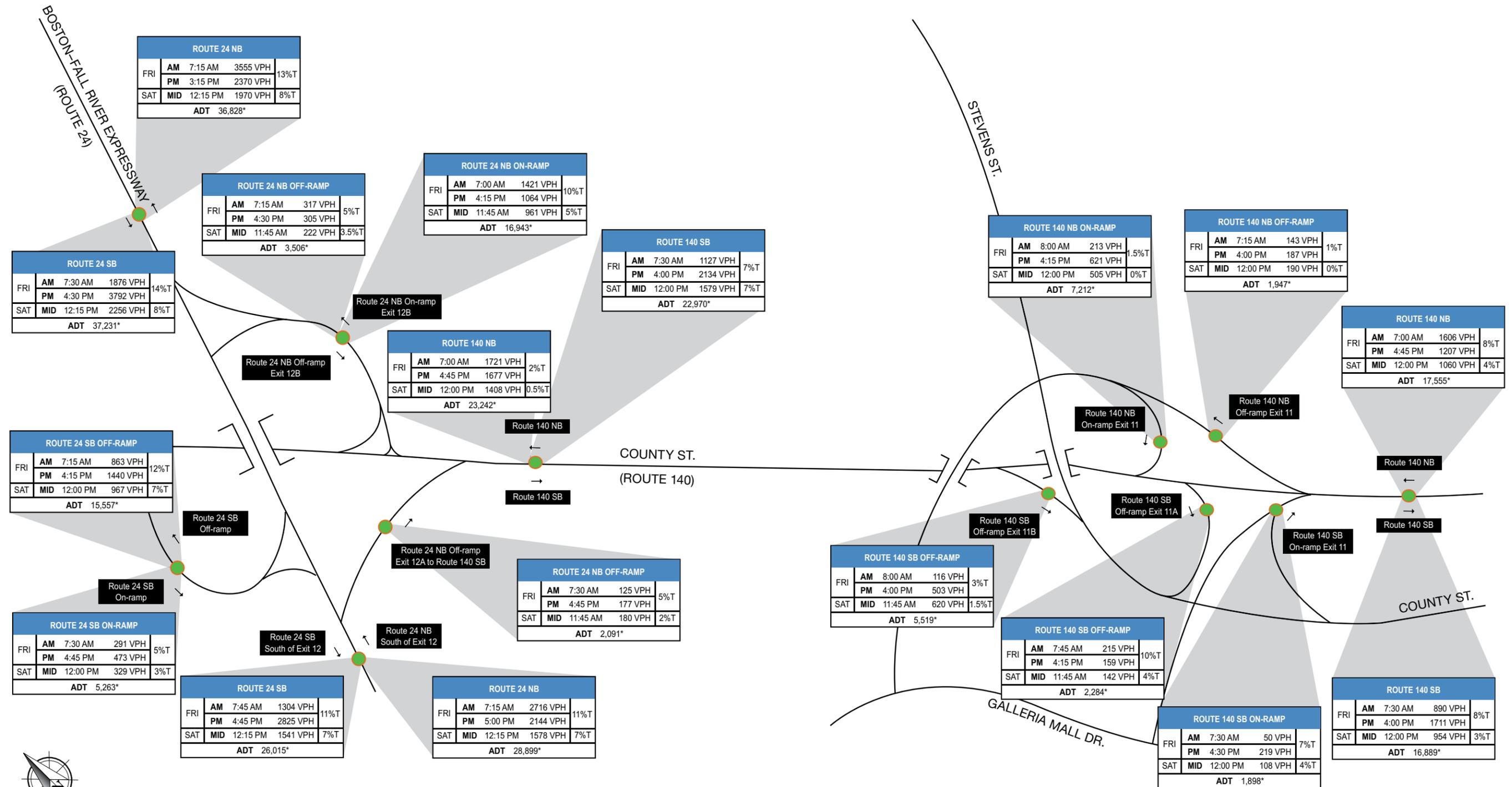
Crash data for the Route 24 and Route 140 highway segments were obtained from MassDOT for the most recent 3-year period available (2008–2010) to identify and evaluate possible safety issues that exist. A detailed crash analysis has not been completed for this report. However, we have identified the trends noticed as part of our initial review. A more comprehensive analysis will take place for all highway segments as part of future coordination with MassDOT on mitigation development and design. Our initial findings indicate that during the above-mentioned period, the majority of crashes, particularly on the mainline of Route 24, are rear-end crashes. A significant majority occur in the southbound direction on the approach to the off-ramp. There were not as many other trends noticeable as part of this initial review. Crash rate worksheets are found in **Appendix B**.

Operations Analysis

Intersection Operations

The criterion for evaluating intersection traffic operations is level of service (LOS), which is determined by assessing average delay incurred by vehicles at intersections and along intersection approaches. The study team calculated average delay and associated LOS at study area intersections using Trafficware's Synchro 7 software, which also evaluates the impact on traffic operations from closely spaced intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM).

Figure 11. Existing Conditions (2012) Interchange Volume Data



Not to scale.

Level of service and delay (in seconds) are based on intersection geometry and available traffic data for each intersection. Both the City of Taunton and Massachusetts Department of Transportation provided the intersection signal timing and phasing used in this analysis.

Table 3 summarizes the delay and LOS thresholds for signalized and non-signalized intersections, as defined in the HCM. LOS A defines the most favorable condition, with minimum traffic delay. LOS F represents the worst condition (unacceptable), with significant traffic delay. The threshold at LOS E/LOS F indicates that the intersection, or intersection approach, is theoretically at capacity. LOS D is generally considered acceptable in an urban environment, such as the Taunton study area, and below theoretical operating capacity.

Table 3. Level of Service Criteria (HCM Excerpt)

Level of Service	Average Stopped Delay (sec./veh.)	
	Signalized Intersection	Non-Signalized Intersection
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Interchange Operations

Traffic operations at and between the Route 24/Route 140 and Route 140/Stevens Street interchanges were analyzed using Highway Capacity Software (HCS2010), which is based on methodology prescribed in the 2010 HCM for uninterrupted flow. Similar to the intersection operations analysis detailed above, the criterion for evaluating traffic operations is level of service (LOS), but is determined based on capacity rather than delay. LOS for freeways is defined on the basis of density measured in passenger cars per lane per hour (pc/ln/h).

Lengths of freeways are comprised of several continuously connected segments that can be analyzed individually to determine LOS and capacity. The three types of segments include basic, merge or diverge, and weaving segments.

Merge and Diverge Segments

Merge and Diverge segments are those in which two or more traffic streams combine (or merge) to form a single traffic stream (i.e., on-ramp) or a single traffic stream that divides (or diverges) to form two or more traffic streams (i.e., off-ramp). The LOS criteria for merge and diverge segments are detailed in **Table 4**.

Table 4. LOS Criteria for Merge and Diverge Segments (HCM Excerpt)

LOS	Density (pc/h/ln)	Comments
A	≤10	Unrestricted Operations
B	>10 – 20	Merging and diverging maneuvers noticeable to drivers
C	>20 – 28	Influence area speeds begin to decline
D	>28 – 35	Influence area turbulence becomes intrusive
E	>35	Turbulence felt by virtually all drivers
F	Demand Exceeds Capacity	Ramp and freeway queues up

Source: *Highway Capacity Manual 2010*, Volume 2: Uninterrupted Flow, Exhibit 13-2.

Weaving Segments

Weaving segments are those in which two or more traffic streams traveling in the same direction cross paths without the aid of traffic control devices; for example, an on-ramp followed by an off-ramp along the same direction of a freeway. The LOS criteria for weaving segments are detailed in **Table 5**.

Table 5. LOS Criteria for Weaving Segments (HCM Excerpt)

LOS	Density (pc/h/ln)	
	Freeway Weaving Segments	Waving Segments on Multilane Highway or C-D Roadways*
A	0 – 10	0 – 12
B	>10 – 20	>12 – 24
C	>20 – 28	>24 – 32
D	>28 – 35	>32 – 36
E	>35	>36
F	Demand Exceeds Capacity	

Source: *Highway Capacity Manual 2010*, Volume 2: Uninterrupted Flow, Exhibit 12-10.

*Collector-distributor (C-D) roadways

Basic Freeway Segments

Basic Freeway segments are section of freeway that are not interrupted by merges, diverges, or weaving. The LOS criteria for weaving segments are detailed in **Table 6**.

Table 6. LOS Criteria for Basic Freeway Segments (HCM Excerpt)

LOS	Density (pc/h/ln)
A	≤ 11
B	>11 – 18
C	>18 – 26
D	>26 – 35
E	>35 – 45
F	> 45 or any component v/c (flow rate to capacity ratio) > 1.00

Source: *Highway Capacity Manual 2010*, Volume 2:
Uninterrupted Flow, Exhibit 10-7.

*Collector-distributor (C-D) roadways

LOS A defines the most favorable condition, with minimum traffic delay. LOS F represents the worst condition (unacceptable) with significant traffic delay. The threshold of LOS E/LOS F indicates that the segment is theoretically at capacity. LOS D is generally considered acceptable in a dense environment such as the Taunton study area, and below theoretical operating capacity.

AM Peak Hour Intersection Operations

Table 7 shows the Existing Conditions level of service summary for study area intersections during the weekday AM peak hour. Detailed Synchro analysis for all conditions is presented in Appendix C.

Table 7. Existing Conditions (2012) Level of Service Summary, Friday AM Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street	A	1.9		
Galleria EB left/thru thru/right	A	2.8	0.04	2
Route 140 WB right	A	0.2	0.15	0
County NB left/thru thru	A	3.0	0.07	14
County SB left/thru thru	A	3.1	0.11	13
County SB right	A	1.7	0.13	7
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	8.6		
Overpass EB left/thru thru/right	B	14.5	0.03	4
Route 140 WB left	B	15.3	0.07	13
Route 140 WB thru	B	14.6	0.02	9

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Route 140 WB right	A	5.2	0.27	33
Stevens NB left/thru thru/right	B	12.2	0.39	63
Stevens SB left left	A	4.4	0.13	12
Stevens SB thru/right	A	4.6	0.17	20
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	6.8		
Route 24 WB right	A	0.3	0.22	0
Route 140 NB thru thru	A	9.1	0.40	95
Route 140 NB right	B	11.1	0.90	#85
Route 140 SB left	B	15.2	0.51	105
Route 140 SB thru thru	A	0.2	0.31	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	B	16.9		
Route 24 EB left	C	29.8	0.47	155
Route 24 EB right right	B	16.8	0.57	198
Route 140 NB left	D	35.4	0.38	86
Route 140 NB thru thru	A	8.4	0.41	184
Route 140 SB thru thru/right	C	20.8	0.60	263
9. Mozzone Boulevard/County Street (Route 140)	A	4.0		
Mozzone EB left	B	14.9	0.02	8
Mozzone EB right	A	7.6	0.06	8
Route 140 NB left/thru thru	A	4.4	0.45	130
Route 140 SB thru thru/right	A	3.3	0.30	81
11. Erika Drive/County Street (Route 140)	B	13.9		
Erika EB left	D	37.6	0.24	62
Erika EB left/thru	D	37.4	0.23	20
Erika EB right	A	7.8	0.16	24
Driveway WB left/thru/right	C	33.0	0.05	21
Route 140 NB left	A	10.0	0.29	75
Route 140 NB thru thru/right	A	8.9	0.34	252
Route 140 SB left/thru thru	B	18.3	0.53	343
Route 1490 SB right	B	10.5	0.19	80
12. Hart Street/County Street (Route 140)	D	52.1		
Hart EB left/thru	E	56.6	0.85	#295
Hart EB right	C	23.8	0.65	186
Hart WB left/thru	F	>80.0	>1.00	#413
Hart WB right	A	8.0	0.27	28
Route 140 NB left	B	19.5	0.46	108
Route 140 NB thru/right	D	43.7	0.94	#824
Route 140 SB left	D	45.7	0.68	80
Route 140 SB thru/right	C	25.9	0.65	#500
15. Washington Street/Broadway (Route 138)	C	29.3		
Washington EB left/thru/right	C	31.3	0.71	279
Washington WB left/thru/right	B	19.9	0.25	123
Broadway NB left/thru/right	C	33.6	0.79	#544

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Broadway SB left/thru	C	28.2	0.65	293
Broadway SB right	C	22.7	0.40	184
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	29.9		
Tremont EB left	D	35.7	0.69	357
Tremont EB left/thru/right	D	35.0	0.67	329
Plaza WB left/thru/right	D	53.6	0.77	#321
Oak NB left/thru thru/right	C	29.0	0.64	240
Washington SB left/thru	C	32.8	0.59	249
Washington SB right	A	7.6	0.45	127
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	11.7		
Cohannet EB left	A	2.2	0.12	m42
Cohannet EB thru thru	B	19.0	0.59	262
Cohannet EB right	A	2.4	0.15	35
Main WB right	A	1.4	0.56	0
Weir NB thru	C	26.8	0.62	#269
Weir NB right	C	20.0	0.19	62
22. High Street/Winthrop Street (Route 140)	C	24.4		
High EB left/thru/right	C	31.9	0.64	240
High WB left	D	53.5	0.69	#105
High WB thru/right	C	33.1	0.64	169
Winthrop NB left	B	12.9	0.28	124
Winthrop NB thru/tight	B	14.7	0.53	419
Winthrop SB left/thru thru/right	C	25.9	0.30	111
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	B	19.8		
Main EB left	B	15.7	0.04	5
Main EB thru	C	23.7	0.69	#405
Main EB right	A	5.2	0.41	74
Church WB thru/right	C	23.5	0.67	#398
Summer NB left/thru	C	22.8	0.65	#320
Summer NB right	B	10.9	0.05	16
33. County Street (Route 140)/Riverway Ext.	E	57.7		
County EB left/thru	E	61.5	>1.0	#564
County WB thru	B	12.5	0.62	335
County WB right	A	2.1	0.35	38
Riverway SB left/right	F	>80.0	>1.0	#564
34. Dean Street/Longmeadow Road/Gordon Owen Parkway	E	57.6		
Dean EB left	D	50.0	0.17	16
Dean EB thru thru/right	E	60.2	>1.0	#581
Dean WB left	E	56.1	0.73	197
Dean WB thru thru/right	B	15.0	0.37	250
Gordon NB left	F	>80.0	>1.0	#299
Gordon NB thru	D	39.8	0.70	#419

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Gordon NB right	C	21.6	0.55	236
Longmeadow SB left*	F	>80.0	>1.0	#205
Longmeadow SB thru/right	D	50.1	0.85	#410
Non-Signalized Intersections				
1. Galleria Mall Driveway North/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	C	19.1	0.09	7
O'Connell EB right	A	10.0	0.07	6
Driveway WB left/thru	C	24.1	0.19	14
Driveway WB right	A	10.0	0.01	1
Stevens NB left/thru	A	3.1	0.09	7
Stevens NB right	A	0.0	0.08	0
Stevens SB left	A	8.1	0.02	2
Stevens SB thru/right	A	0.0	0.14	0
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.29	0
Middleboro WB left/thru	A	0.4	0.02	1
Stevens NB left/right	D	32.2	0.54	74
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	1.7	0.06	5
Middleboro WB left/thru/right	A	4.2	0.18	17
Bristol NB left/thru/right	F	-	>1.00	-
Poole SB left/thru/right	F	-	>1.00	-
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	F	>50.0	0.81	121
Bristol WB left/thru	F	>50.0	>1.00	193
Bristol WB right	C	16.1	0.31	33
Route 140 NB left/thru thru/right	A	0.4	0.36	2
Route 140 SB left/thru thru/right	A	3.4	0.23	22
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	A	7.7	0.10	-
Drive South WB right	A	6.3	0.04	-
Mall Drive NB thru	A	0.0	0.0	-
Mall Drive NB right	A	6.3	0.04	-
Mall Drive SB left	A	7.1	0.01	-
Mall Drive SB right	A	6.5	0.01	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)				
Driveway EB left/thru/right	F	>50.0	0.27	22
Pkwy WB left/thru	F	>50.0	>1.00	800
Pkwy WB right	F	>50.0	>1.00	800
Washington NB left/thru	A	0.0	0.0	0
Washington NB right	A	0.0	0.13	0
Washington SB left/thru/right	A	6.0	0.24	24
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	A	9.1	0.45	59
Weir NB thru	A	0.0	0.42	0
Broadway SB right	A	0.0	0.29	0
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.5	0.02	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	B	14.6	0.52	-
21. Cohannet Street (Route 140)/Western Green (44/138)				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.23	0
Summer WB left/thru	A	6.2	0.30	32
Ingell NB left/right	F	>50.0	>1.00	501
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.0	0.00	0
County WB left/thru/right	A	0.1	0.00	0
Johnson NB left/thru/right	F	>50.0	0.34	32
Johnson SB left/thru/right	F	>50.0	0.38	33
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	1.3	0.13	11
Myricks WB thru/right	A	3.6	0.29	0
Ramps NB left/thru	C	17.7	0.29	30
Ramps NB right	C	17.7	0.29	30

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.26	0
Myricks WB left/thru	A	2.7	0.07	6
Ramps SB left/thru	C	19.9	0.34	38
Ramps SB right	C	19.9	0.34	38
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.9	0.21	20
Middleboro WB left/thru/right	A	0.06	0.01	1
Liberty NB left/thru/right	F	>50.0	>1.0	351
Old Colony SB left/thru/right	F	>50.0	>1.0	369
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	C	22.4	0.56	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	E	38.8	0.81	-
Pinehill left/thru/right	F	>50.0	>1.00	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	B	13.9	0.33	36
Stevens NB left/thru/right	A	0.0	0.20	0
Stevens SB left/thru/right	A	1.2	0.02	1
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.7	0.15	13
Cohannet WB thru/right	A	0.0	0.08	0
Pkwy SB left/right	C	20.0	0.58	92
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	8.0	0.36	42
Gordon WB left/thru/right	A	0.1	0.00	0
Williams NB left/thru/right	F	-	-	-
Williams SB left/thru/right	F	-	-	-

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

Under morning peak hour conditions, all of the study area intersections operate at an acceptable overall LOS D or better, with the exception of Oak Street/Washington Street/Tremont Street, Dean Street/Longmeadow Road/Gordon Owen Parkway, and County Street/Gordon M. Owen Riverway Extension.

Dean Street/Longmeadow Road/Gordon Owen Parkway

The intersection of Dean Street/Longmeadow Road/Gordon Owen Parkway operates at an overall LOS E during the morning peak hour. The northbound and southbound left-turning movements operate at LOS F due to the heavy volumes for this permitted only movement. The eastbound shared through/right-turn and westbound left turns operate at LOS E due to the heavy volumes during the peak hour traveling toward the schools that are located off of Gordon Owen Parkway.

County Street/Gordon M. Owen Riverway Extension

Like Dean Street/Longmeadow Road/Gordon Owen Parkway, County Street/Riverway Extension provides a major access to the Taunton High School and one of the middle schools. This location operates at LOS E during the morning peak hour. This is due to the heavy volumes traveling into and out of the Gordon M. Owen Riverway Extension.

Although the other intersections operate at an acceptable overall LOS, various approaches at the following locations operate at LOS F:

Hart's Four Corners

The Hart Street EB and WB shared left-turn/through lanes operate at LOS E and F, respectively. This is mainly due to the left-turning movements in both directions not being able to receive acceptable gaps in the through traffic on Hart Street.

There are also several minor street approaches at the non-signalized intersections that operate at LOS F due to insufficient gaps in the main street traffic. These locations include:

- Bristol HS Driveway NB and Poole Street SB at Hart Street/Middleboro Avenue/Poole Street/Bristol Plymouth HS Driveway;
- Hess Station EB and Bristol HS Driveway EB at Bristol Plymouth HS Driveway/County Street;
- Driveway EB and F.R. Martin Parkway WB at Washington Street/F.R. Martin Parkway;
- Ingell Street NB at Summer Street/County Street/Ingell Street;
- Johnson Street NB and SB at County Street/Johnson Street;
- Liberty Street NB and Old Colony Avenue SB at Middleboro Avenue/Liberty Street/Old Colony Avenue; and
- Williams Street NB and SB at Gordon Owen Parkway/Williams Street/Riverway Extension.

Friday PM Peak Hour Intersection Operations

Table 8 shows the Existing Conditions level of service summary for study area intersections during the Friday PM peak hour.

Table 8. Existing Conditions (2012) Level of Service Summary, Friday PM Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	7.1		
Galleria EB left/thru thru/right	B	10.5	0.52	53
Route 140 WB right	A	0.1	0.08	0
County NB left/thru thru	A	7.4	0.13	16
County SB left/thru thru	A	8.8	0.36	39
County SB right	A	4.4	0.62	33
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	9.2		
Overpass EB left/thru thru/right	B	16.7	0.33	47
Route 140 WB left	B	16.2	0.10	17
Route 140 WB thru	B	16.7	0.21	41
Route 140 WB right	A	6.2	0.20	17
Stevens SB left left	A	5.4	0.28	27
Stevens SB thru/right	A	6.3	0.37	87
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	4.2		
Route 24 WB right	A	0.2	0.16	0
Route 140 NB thru thru	B	11.6	0.50	181
Route 140 NB right	A	2.0	0.63	0
Route 140 SB left	B	18.7	0.47	138
Route 140 SB thru thru	A	0.6	0.52	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	D	47.9		
Route 24 EB left	C	28.8	0.38	162
Route 24 EB right right	B	19.3	0.70	307
Route 140 NB left	D	48.6	0.69	226
Route 140 NB thru thru	B	10.9	0.40	236
Route 140 SB thru thru/right	F	>80.0	>1.0	#821
9. Mozzone Boulevard/County Street (Route 140)	B	18.6		
Mozzone EB left	C	21.2	0.29	39
Mozzone EB right	B	19.1	0.53	82
Route 140 NB left (de facto)	F	>80.0	>1.0	#134
Route 140 NB thru	B	15.2	0.78	#493
Route 140 SB thru thru/right	A	8.3	0.61	213
Erika EB left	E	55.9	0.64	223
Erika EB left/thru	E	55.5	0.63	122
Erika EB right	A	4.6	0.08	56
Driveway WB left/thru/right	D	46.0	0.08	23
Route 140 NB left	C	20.1	0.63	199

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Route 140 NB thru thru/right	A	9.7	0.31	296
Route 140 SB left/thru thru	C	24.6	0.65	#765
Route 140 SB right	B	16.3	0.37	223
12. Hart Street/County Street (Route 140)	F	>80.0		
Hart EB left/thru	F	>80.0	>1.00	#334
Hart EB right	C	24.8	0.68	#261
Hart WB left/thru	F	>80.0	>1.00	#432
Hart WB right	A	8.8	0.41	70
Route 140 NB left	E	56.5	0.92	#308
Route 140 NB thru/right	D	35.1	0.88	#839
Route 140 SB left	D	36.0	0.55	#118
Route 140 SB thru/right	F	>80.0	>1.00	#1123
15. Washington Street/Broadway (Route 138)	D	48.6		
Washington EB left/thru/right	F	>80.0	>1.00	#590
Washington WB left/thru/right	C	25.7	0.46	191
Broadway NB left/thru/right	C	22.6	0.66	#460
Broadway SB left/thru	C	23.0	0.66	#458
Broadway SB right	C	21.1	0.56	305
17. Oak Street /Washington Street/Tremont Street (Route 140)	D	52.6		
Tremont EB left	D	46.7	0.78	#602
Tremont EB left/thru/right	D	46.3	0.77	#568
Plaza WB left/thru/right	F	>80.0	>1.0	#479
Oak NB left/thru thru/right	C	32.4	0.68	218
Washington SB left/thru	C	34.6	0.68	406
Washington SB right	A	7.0	0.52	186
18. Cohannet Street (Route 140) / Weir Street (Route 138)	A	9.8		
Cohannet EB left	A	2.3	0.15	43
Cohannet EB thru thru	C	21.0	0.56	253
Cohannet EB right	A	3.5	0.36	143
Main WB right	A	2.2	0.68	0
Weir NB thru	C	21.5	0.45	206
Weir NB right	B	18.7	0.20	81
22. High Street/Winthrop Street (Route 140)	E	76.1		
High EB left/thru/right	E	61.8	0.98	#652
High WB left	F	>80.0	>1.00	#298
High WB thru/right	C	27.4	0.41	201
Winthrop NB left	C	26.6	0.39	111
Winthrop NB thru/tight	C	20.3	0.54	302
Winthrop SB left/thru thru/right	F	>80.0	>1.00	#365
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	24.3		
Main EB left	C	20.8	0.14	16
Main EB thru	C	23.4	0.64	370
Main EB right	A	5.9	0.42	87

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Church WB thru/right	D	38.7	0.89	#631
Summer NB left/thru	C	20.3	0.50	189
Summer NB right	B	11.3	0.04	19
33. County Street (Route 140)/Riverway Ext.	B	18.2		
County EB left/thru	B	14.5	0.66	341
County WB thru	B	14.1	0.64	308
County WB right	A	2.6	0.41	40
Riverway SB left/right	D	40.6	0.85	#564
34. Dean Street/Longmeadow Road/Gordon Owen	D	42.8		
Dean EB left	D	51.3	0.18	22
Dean EB thru thru/right	D	40.3	0.87	#591
Dean WB left	F	>80.0	>1.0	#577
Dean WB thru thru/right	B	19.8	0.62	517
Gordon NB left	E	75.5	0.74	#116
Gordon NB thru	D	37.7	0.59	303
Gordon NB right	B	19.8	0.54	200
Longmeadow SB left	F	>80.0	0.95	#259
Longmeadow SB thru/right*	D	40.5	0.69	#415
Non-Signalized Intersections				
1. Galleria Mall Driveway North/County Road/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	E	42.3	0.42	47
O'Connell EB right	B	12.7	0.21	19
Driveway WB left/thru	F	>50.0	>1.00	244
Driveway WB right	B	10.1	0.05	4
Stevens NB left/thru	A	2.8	0.09	7
Stevens NB right	A	0.0	0.02	0
Stevens SB left	A	8.2	0.04	3
Stevens SB thru/right	A	0.0	0.30	0
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.30	0
Middleboro WB left/thru	A	0.5	0.02	1
Stevens NB left/right	D	29.7	0.57	84
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	2.3	0.07	6
Middleboro WB left/thru/right	A	0.5	0.02	1
Bristol NB left/thru/right	C	22.1	0.23	22
Poole SB left/thru/right	F	>50.0	>1.00	497

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	E	41.1	0.59	83
Bristol WB left/thru	F	>50.0	0.45	47
Bristol WB right	B	11.1	0.09	7
Route 140 NB left/thru thru/right	A	2.1	0.29	6
Route 140 SB left/thru thru/right	A	1.0	0.40	3
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	B	14.0	-	-
Drive South WB right	A	7.3	-	-
Mall Drive NB thru	A	8.7	-	-
Mall Drive NB right	A	7.8	-	-
Mall Drive SB left	B	10.5	-	-
Mall Drive SB right	A	8.1	-	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)/				
Driveway EB left/thru/right	F	>50.0	>1.00	81
Pkwy WB left/thru	F	-	-	-
Pkwy WB right	F	-	-	-
Washington NB left/thru	A	0.3	0.01	1
Washington NB right	A	0.0	0.20	0
Washington SB left/thru/right	C	15.1	0.50	70
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	B	10.9	0.63	119
Weir NB thru	B	10.9	0.63	119
Broadway SB right	A	0.0	0.33	0
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.9	0.07	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	C	15.7	0.55	-
21. Cohannet Street (Route 140)/Western Green (44/138)				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.30	0
Summer WB left/thru	A	7.3	0.35	40
Ingell NB left/right	F	>50.0	>1.00	510
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.2	0.01	0
County WB left/thru/right	A	0.6	0.02	2
Johnson NB left/thru/right	F	>50.0	0.32	27
Johnson SB left/thru/right	F	>50.0	0.13	10
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	3.4	0.13	11
Myricks WB thru/right	A	0.0	0.40	0
Ramps NB left/thru	C	24.4	0.38	44
Ramps NB right	C	24.4	0.38	44
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.21	0
Myricks WB left/thru	A	2.6	0.09	8
Ramps SB left/thru	F	>50.0	>1.0	344
Ramps SB right	F	>50.0	>1.0	344
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.0	0.17	15
Middleboro WB left/thru/right	A	0.9	0.02	2
Liberty NB left/thru/right	F	>50.0	>1.0	355
Old Colony SB left/thru/right	F	>50.0	>1.0	1195
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	C	19.1	0.53	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	C	17.3	0.44	-
Pinehill left/thru/right	E	45.6	0.89	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	C	16.5	0.45	59
Stevens NB left/thru/right	A	0.0	0.21	0
Stevens SB left/thru/right	A	0.8	0.01	1
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.3	0.16	14
Cohannet WB thru/right	A	0.0	0.22	0
Pkwy SB left/right	F	>50.0	>1.0	447
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	4.0	0.18	16

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	-	-	-
Williams SB left/thru/right	F	-	-	-

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process

Under existing evening conditions, all of the study area intersections operate at an overall LOS D or better, with the exception of Hart Street/County Street, Oak Street/Washington Street/Tremont Street, and High Street/Winthrop Street.

Hart’s Four Corners (Hart Street/County Street)

The intersection of Hart Street/County Street operates at an overall LOS F during the evening peak hour. The Hart Street eastbound and westbound shared left-turn/through lanes operate at LOS F. This is mainly due to the left-turning movements in both directions not being able to find acceptable gaps in the through traffic on Hart Street. The County Street northbound left-turn and southbound through/right-turn movement also operate at LOS E and F, respectively. This is due to the heavy volumes for these movements.

MassDOT has approved 25% plans to improve this location in their project #605679. These plans propose to widen County Street, adding an additional through lane to both the northbound and southbound approaches at the intersection. The Existing Conditions analysis does not reflect these improvements.

High Street/Winthrop Street

The intersection of High Street/Winthrop Street operates at an overall LOS E during the evening peak hour. The High Street eastbound approach operates at LOS E, while the westbound left-turns operate at LOS F. This is likely due to insufficient green time for the heavy left-turn movement. Likewise, the Winthrop Street southbound approach operates at LOS F.

Although other intersections operate at an acceptable overall LOS, various approaches operate at LOS F; specifically:

At **Route 24 SB Ramp/County Street**, the County Street southbound approach operates at LOS F due to the high traffic volumes.

At **Mozzone Boulevard/County Street**, the northbound County Street de-facto left-turn lane operates at LOS F. This delay is due to the lack of gaps in the southbound traffic to allow northbound vehicles to make the left-turn.

The Erika Drive eastbound left-turning movements, at **Erika Drive/County Street**, operate at LOS E. This is due to insufficient green time for this approach.

At **Washington Street/Broadway**, the Washington Street eastbound approach operates at LOS F due the heavy left-turn volume.

At **Oak Street/Washington Street/Tremont Street**, the Plaza westbound approach operates at LOS F.

At **Dean Street/Longmeadow Road/Gordon Owen Parkway**, the northbound and southbound left turns operate at LOS E and F, respectively. This is due to the heavy permitted left-turning volumes. The Dean Street westbound left turn also operates at LOS F due to heavy volumes.

There are also several minor street approaches at the non-signalized intersections that operate at LOS E or F due to insufficient gaps in the main street traffic. These locations include:

- O'Connell Way EB left-through and Driveway WB left/through at O'Connell Way/Stevens Street;
- Poole Street SB at Hart Street/Middleboro Avenue/Poole Street/Bristol Plymouth HS Driveway;
- Hess Station EB and Bristol HS Driveway EB at Bristol Plymouth HS Driveway/County Street;
- Driveway EB and F.R. Martin Parkway WB at Washington Street/F.R. Martin Parkway;
- Ingell Street NB at Summer Street/County Street/Ingell Street;
- Johnson Street NB and SB at County Street/Johnson Street; and,
- Route 140 SB Ramp left/through at Myricks Street/Route 140 SB Ramp.
- Liberty Street NB and Old Colony Avenue SB at Middleboro Avenue/Liberty Street/Old Colony Avenue;
- F.R. Martin Parkway SB at F.R. Martin Parkway/Cohannet Street; and,
- Williams Street NB and SB at Gordon Owen Parkway/Williams Street/Riverway Extension.

Saturday Midday Peak Hour Intersection Operations

Table 9 shows the Existing Conditions level of service summary for study area intersections during the Saturday midday peak hour.

Table 8. Existing Conditions (2012) Level of Service Summary, Saturday Midday Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	6.9		
Galleria EB left/thru thru/right	B	10.4	0.49	62
Route 140 WB right	A	0.1	0.07	0
County NB left/thru thru	A	7.3	0.16	21
County SB left/thru thru	A	7.3	0.16	19
County SB right	A	5.4	0.71	40
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	9.1		
Overpass EB left/thru thru/right	B	15.3	0.33	43
Route 140 WB left	B	15.6	0.17	14
Route 140 WB thru	B	15.9	0.27	56

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Route 140 WB right	A	6.3	0.09	14
Stevens NB left/thru thru/right	A	7.2	0.52	54
Stevens SB left left	A	5.1	0.12	15
Stevens SB thru/right	A	4.2	0.21	36
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	4.4		
Route 24 WB right	A	0.2	0.14	0
Route 140 NB thru thru	B	11.4	0.51	164
Route 140 NB right	A	1.1	0.48	0
Route 140 SB left	B	17.8	0.52	150
Route 140 SB thru thru	A	0.4	0.42	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	C	23.0		
Route 24 EB left	C	29.1	0.42	179
Route 24 EB right right	B	19.0	0.66	227
Route 140 NB left	D	39.6	0.47	114
Route 140 NB thru thru	A	9.7	0.42	202
Route 140 SB thru thru/right	C	32.9	0.87	#557
9. Mozzone Boulevard/County Street (Route 140)	B	11.4		
Mozzone EB left	C	21.1	0.25	58
Mozzone EB right	B	14.1	0.45	56
Route 140 NB left/thru thru	B	15.6	0.81	#328
Route 140 SB thru thru/right	A	5.9	0.47	151
Erika EB left	D	52.2	0.66	#385
Erika EB left/thru	D	52.3	0.66	#436
Erika EB right	A	3.7	0.35	61
Driveway WB left/thru/right	E	63.0	0.04	19
Route 140 NB left	C	27.7	0.72	284
Route 140 NB thru thru/right	B	11.6	0.31	261
Route 140 SB left/thru thru	C	34.9	0.68	#522
Route 140 SB right	C	21.2	0.62	373
12. Hart Street/County Street (Route 140)	F	>80.0		
Hart EB left/thru	E	77.4	0.93	#352
Hart EB right	C	20.6	0.65	#214
Hart WB left/thru	F	>80.0	>1.00	#455
Hart WB right	A	8.3	0.36	52
Route 140 NB left	D	42.3	0.82	#278
Route 140 NB thru/right	E	69.6	>1.00	#1011
Route 140 SB left	D	50.8	0.69	#158
Route 140 SB thru/right	F	>80.0	>1.00	#1147
15. Washington Street/Broadway (Route 138)	C	25.1		
Washington EB left/thru/right	D	40.4	0.81	#402
Washington WB left/thru/right	C	23.5	0.34	139
Broadway NB left/thru/right	C	22.5	0.66	#449
Broadway SB left/thru	C	20.2	0.55	340

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Broadway SB right	B	17.9	0.40	201
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	29.8		
Tremont EB left	D	39.7	0.69	364
Tremont EB left/thru/right	D	39.3	0.68	327
Plaza WB left/thru/right	D	50.7	0.67	#281
Oak NB left/thru thru/right	C	29.5	0.67	253
Washington SB left/thru	C	29.7	0.59	325
Washington SB right	A	6.5	0.41	123
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	10.9		
Cohannet EB left	A	2.2	0.13	48
Cohannet EB thru thru	C	21.8	0.60	282
Cohannet EB right	A	2.8	0.26	82
Main WB right	A	1.5	0.59	0
Weir NB thru	C	21.6	0.46	199
Weir NB right	B	19.0	0.23	89
22. High Street/Winthrop Street (Route 140)	C	33.4		
High EB left/thru/right	C	30.9	0.59	295
High WB left	E	59.0	0.78	#193
High WB thru/right	C	26.3	0.33	141
Winthrop NB left	C	21.5	0.32	99
Winthrop NB thru/tight	C	23.0	0.65	457
Winthrop SB left/thru thru/right	D	48.2	0.82	#256
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	21.4		
Main EB left	C	21.4	0.19	28
Main EB thru	C	25.1	0.69	#486
Main EB right	A	6.8	0.39	106
Church WB thru/right	C	27.9	0.76	#543
Summer NB left/thru	B	19.0	0.43	163
Summer NB right	B	10.7	0.04	18
33. County Street (Route 140)/Riverway Ext.	C	34.5		
County EB left/thru	B	13.7	0.62	258
County WB thru	B	13.8	0.61	251
County WB right	A	2.9	0.47	27
Riverway SB left/right	F	>80.0	>1.0	#420
34. Dean Street/Longmeadow Road/Gordon Owen	D	36.3		
Dean EB left	D	51.7	0.22	27
Dean EB thru thru/right	D	37.5	0.82	#530
Dean WB left	E	64.8	0.86	#408
Dean WB thru thru/right	B	17.8	0.51	397
Gordon NB left	D	37.9	0.34	82
Gordon NB thru	D	35.3	0.50	259
Gordon NB right	B	17.4	0.58	207

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Longmeadow SB left	F	>80.0	>1.0	#367
Longmeadow SB thru/right*	D	35.6	0.54	291
Non-Signalized Intersections				
1. Galleria Mall Driveway North/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	C	17.3	0.18	16
O'Connell EB right	B	10.1	0.12	10
Driveway WB left/thru	C	18.2	0.10	8
Driveway WB right	A	9.6	0.02	2
Stevens NB left/thru	A	2.1	0.05	4
Stevens NB right	A	0.0	0.02	0
Stevens SB left	A	7.8	0.01	1
Stevens SB thru/right	A	0.0	0.15	0
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.28	0
Middleboro WB left/thru	A	0.4	0.01	1
Stevens NB left/right	C	21.6	0.42	51
8. Hart Street/Middleboro Avenue/Pooler Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	2.0	0.07	5
Middleboro WB left/thru/right	A	0.1	0.00	0
Bristol NB left/thru/right	B	12.3	0.07	6
Pooler SB left/thru/right	F	>50.0	0.93	207
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	C	17.5	0.27	27
Bristol WB left/thru	E	47.8	0.09	7
Bristol WB right	B	11.3	0.04	3
Route 140 NB left/thru thru/right	A	0.9	0.30	5
Route 140 SB left/thru thru/right	A	0.2	0.36	1
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	B	12.8	0.51	-
Drive South WB right	A	8.1	0.38	-
Mall Drive NB thru	A	8.7	0.05	-
Mall Drive NB right	A	7.4	0.28	-
Mall Drive SB left	B	10.9	0.34	-
Mall Drive SB right	A	7.8	0.07	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)				
Driveway EB left/thru/right	F	>50.0	0.42	36
Pkwy WB left/thru	F	>50.0	>1.00	571
Pkwy WB right	F	>50.0	>1.00	571
Washington NB left/thru	A	0.0	0.0	0
Washington NB right	A	0.0	0.13	0
Washington SB left/thru/right	A	6.0	0.24	24
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	A	9.6	0.52	80
Weir NB thru	A	0.0	0.41	0
Broadway SB right	A	0.0	0.33	0
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.4	0.05	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	B	13.1	0.43	-
21. Cohannet Street (Route 140)/Western Green (44/138)				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.25	0
Summer WB left/thru	A	5.4	0.24	23
Ingell NB left/right	E	46.7	0.87	226
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.0	0.00	0
County WB left/thru/right	A	0.6	0.02	2
Johnson NB left/thru/right	F	>50.0	0.25	22
Johnson SB left/thru/right	F	>50.0	0.23	20
26. Myricks Street (Route 79)/Route140 NB Rsmpts				
Myricks EB left/thru	A	2.6	0.08	7
Myricks WB thru/right	A	0.0	0.27	0
Ramps NB left/thru	C	15.3	0.16	14
Ramps NB right	C	15.3	0.16	14

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.20	0
Myricks WB left/thru	A	1.8	0.04	3
Ramps SB left/thru	C	17.2	0.46	60
Ramps SB right	C	17.2	0.46	60
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	4.9	0.17	15
Middleboro WB left/thru/right	A	0.9	0.02	1
Liberty NB left/thru/right	F	>50.0	>1.0	377
Old Colony SB left/thru/right	F	>50.0	>1.0	682
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	B	14.1	0.39	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	B	13.9	0.36	-
Pinehill left/thru/right	C	23.8	0.70	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	B	12.7	0.30	31
Stevens NB left/thru/right	A	0.0	0.18	0
Stevens SB left/thru/right	A	0.6	0.01	0
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.2	0.12	11
Cohannet WB thru/right	A	0.0	0.13	0
Pkwy SB left/right	C	22.3	0.66	123
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	3.5	0.14	12
Gordon WB left/thru/right	A	0.1	0.00	0
Williams NB left/thru/right	F	>50.0	>1.0	373
Williams SB left/thru/right	F	>50.0	>1.0	253

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process

Under Saturday midday conditions, all of the study area intersections operate at an overall LOS D or better, with the exception of Hart Street/County Street.

Hart's Four Corners (Hart Street/County Street)

The intersection of Hart Street/County Street operates at an overall LOS F during the Saturday midday peak hour. The Hart Street eastbound and westbound shared left-turn/through lanes operate at LOS E and F, respectively. This is mainly due to the left-turning movements in both directions not being able to find acceptable gaps in the through traffic on Hart Street. The County Street northbound and southbound through/right-turn lanes operate at LOS E and F, respectively. This is due to the heavy volumes on County Street. As previously stated, plans to improve this location are currently at the 25% design level.

Although other intersections operate at an acceptable overall LOS, various approaches operate at LOS F; specifically:

The westbound driveway approach, at **Erika Drive/County Street**, operates at LOS E. This is due to the long cycle length at this location.

The High Street westbound left-turn, at **High Street/Winthrop Street**, operates at an overall LOS E during the evening peak hour. This is due to the heavy left-turn volume and insufficient gaps in through traffic.

At **County Street/Gordon M. Owen Riverway Extension**, the southbound Riverway Extension approach operates at LOS F due to the heavy left-turning volume.

At **Dean Street/Longmeadow Road/Gordon Owen Parkway**, the Longmeadow Road southbound left turn and Dean Street westbound left turn operate at LOS F and E, respectively. This is due to the heavy left-turning volumes for these approaches.

There are also several minor street approaches at the non-signalized intersections that operate at LOS E or F due to insufficient gaps in the main street traffic. These locations include:

- Poole Street SB at Hart Street/Middleboro Avenue/Poole Street/Bristol Plymouth HS Driveway;
- Bristol HS Driveway EB at Bristol Plymouth HS Driveway/County Street;
- Driveway EB and F.R. Martin Parkway WB at Washington Street/F.R. Martin Parkway;
- Ingell Street NB at Summer Street/County Street/Ingell Street;
- Johnson Street NB and SB at County Street/Johnson Street;
- Liberty Street NB and Old Colony Avenue SB at Middleboro Avenue/Liberty Street/Old Colony Avenue; and,
- Williams Street NB and SB at Gordon Owen Parkway/Williams Street/Riverway Extension.

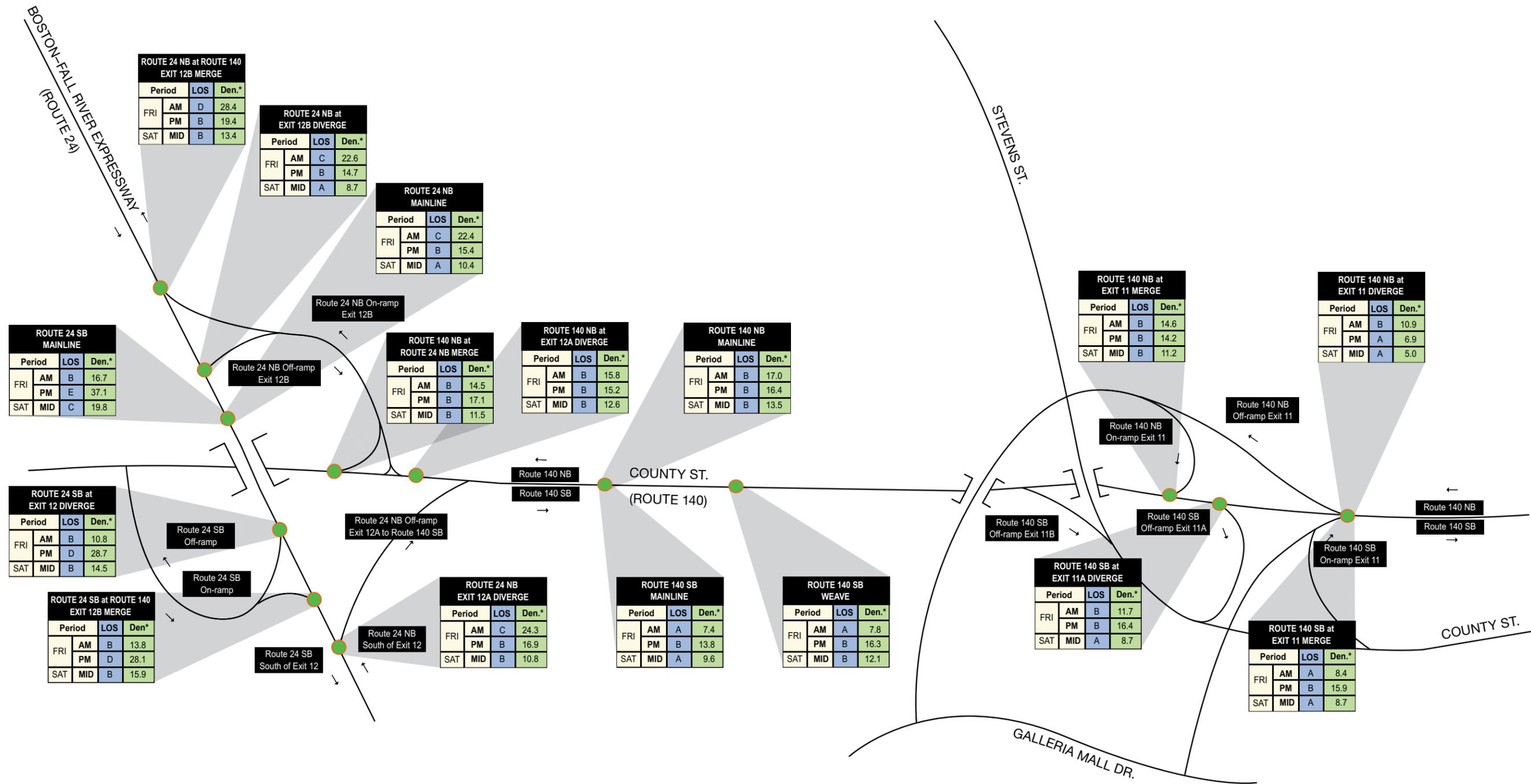
Interchange Operations

Figure 12 illustrates existing levels of service at the Route 24/140 and Route 140/Stevens Street interchanges for the Friday AM, Friday PM, and Saturday midday peak hours. Highway Capacity Manual analysis for all conditions is presented in **Appendix D**.

As shown all basic, merge, diverge, and weaving segments operate at an acceptable LOS D or better during all time periods with the exception one location during one time period:

Route 24 Southbound Mainline – during the Friday PM peak hour the Route 24 Southbound basic segment (or mainline), just upstream Exit 12, currently operates at LOS E with a density of 37.1 passenger

Figure 12. Existing Conditions (2012) Interchange Operations



Not to scale.

Den.* = Density (pc/mi/ln)

cars/hour/lane – considered to be operating at capacity. Route 24 southbound, which consists of two travel lanes, currently carries approximately 3,800 vehicles per hour during the Friday PM peak hour. The Route 24 southbound basic roadway segment operates at LOS B during the Friday AM peak hour and LOS C during the Saturday Midday peak hour.

Existing Transit Service

Existing transit service past the site is provided by the Greater Attleboro-Taunton Regional Transit Authority (GATRA). GATRA provides fixed-route bus services in the cities of Attleboro and Taunton, and the towns of Duxbury, Franklin, Kingston, Mansfield, Marshfield, Middleborough, North Attleboro, Norton, Plainville, Plymouth, Raynham, Seekonk, and Wareham. All 26 member communities have demand response (Dial-A-Ride) services for people with disabilities and seniors. In addition, GATRA provides shuttle services to MBTA stations in the towns of Bellingham, Franklin, Norton, Mansfield, Medway, Middleborough, and Pembroke.

Although no buses travel directly on Stevens Street, the site is convenient to two GATRA bus routes, .

- **Route 3** connects the Silver City Galleria with the Myles Standish Industrial Park. It travels near to the site on Route 140 (County Street). Route 3 provides hourly service during the weekday AM and PM peak periods only. No weekend or evening service is provided.
- **Route 8** travels between the Bloom Bus Terminal in East Taunton, the Silver City Galleria and the Raynham Walmart, again travelling near the site on Route 140 (County Street). Route 8 provides service on approximately an hourly basis between 5:45 AM and 8:00 PM weekdays and between 10:00 AM and 7:00 PM on Saturdays. No Sunday service is provided.

These routes are shown in **Figure 13**.

Existing Pedestrian and Bicycle Conditions

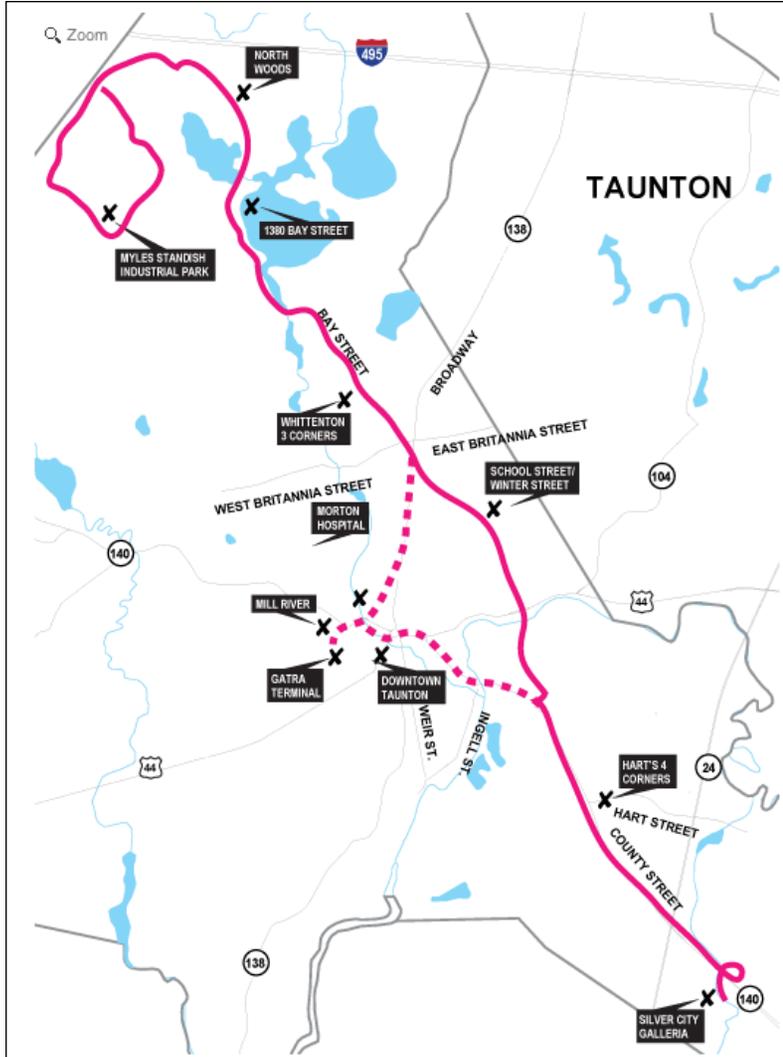
Pedestrian conditions in the study area are variable. Sidewalks are provided along some stretches of road, but they are discontinuous. Crosswalks, pedestrian signals and HP ramps are similarly inconsistent at study area intersections. No bicycle accommodations were observed either on the LUIP site or on study area roadways. Directly adjacent to the site, a sidewalk is provided along the east side of Stevens Street for most of its length. This provides pedestrian access to the East Taunton Elementary School.

Aviation

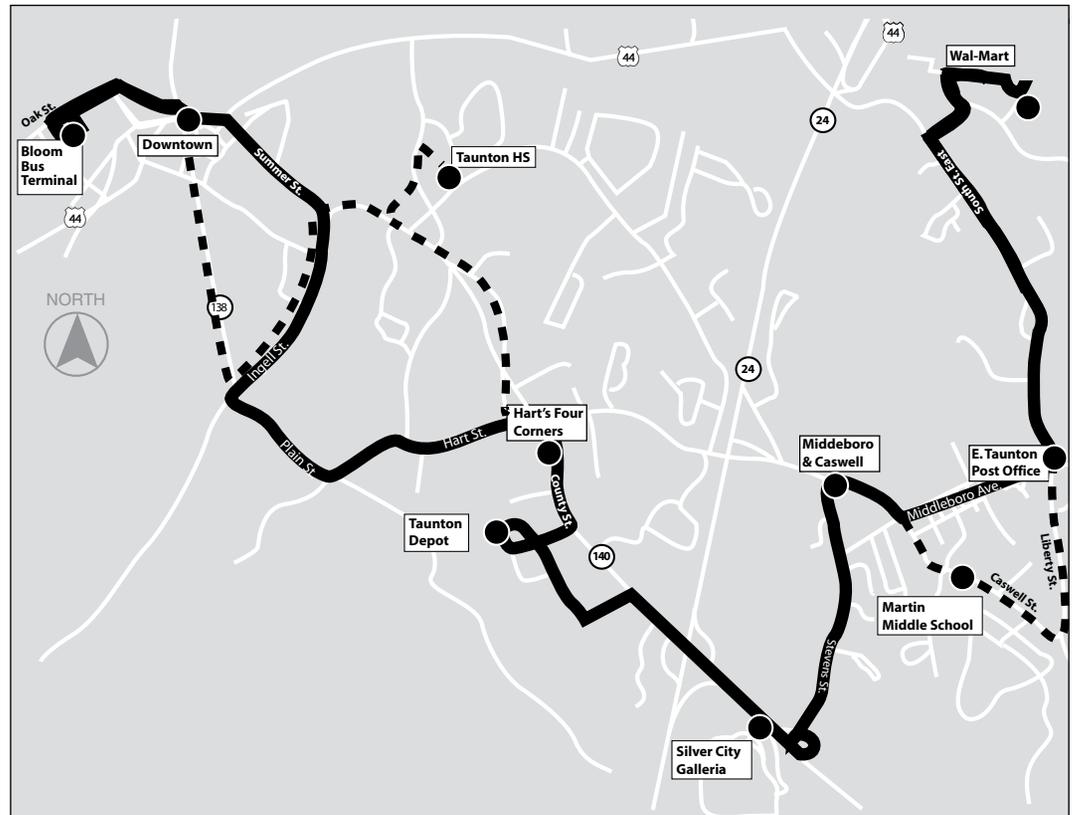
Less than three miles from the site (by land) is the Taunton Municipal Airport at King Field, a public use airport serving the aviation needs of southeastern Massachusetts. The Taunton Airport Commission has completed several improvement projects in recent years including the construction of several new private hangars. Based on information presented on its website, the airport is one of the fastest growing in Massachusetts, with a significant increase in the number of based aircraft. There are 19 FAA-registered aircraft based at the airport. Ground access to the site from the airport is afforded by Middleboro Avenue, Pine Hill Street and Stevens Street.

There are two heliports in Taunton, one of which serves the Morton Hospital. The second, the Princess House Heliport, is privately owned. Located about 8 miles from the site (by land), the heliport provides ground access to the casino site via Routes 138 and 140.

Figure 13. Existing GATRA Bus Service in the Study Area



GATRA Bus Route 3



No-Build 2022 Conditions

2022 Background Traffic

The next step in estimation of traffic impacts of the proposed project is to assemble a study area traffic network that reflects traffic volumes that would be present if the project were not built. After consultation with the City's consultants, this No-Build traffic network was determined based on a 0.75% per year growth rate for the first five years and a 0.5% growth rate for the second five years – a 0.6% per year growth rate overall. This rate was applied in order to convert the existing, adjusted traffic volumes into 2022 No-Build volumes.

LUIP Buildout Traffic

The second step in determining No-Build traffic was to estimate the traffic that would be generated by the approved full buildout of the Liberty & Union Industrial Park, both Phase 1 south of Stevens Street and Phase 2 on the site itself, less the trips generated by uses already on the site today, which are reflected in the existing traffic counts. Phase I of the LUIP was approved by the Executive Office of Environmental Affairs Massachusetts Environmental Policy Act (MEPA) office for 1,783,360 square feet of warehouse/distribution facilities, including about 183,440 square feet of office space. In 2012, 773,060 square feet of warehouse space remains to be built on the Phase 1 site. Phase II was approved for 663,400 square feet of warehouse/distribution space and 69,900 square feet of office space¹. Vehicle trips that would be generated by the potential full development at LUIP Phase 2 if a casino were not built on the site are summarized in **Table 10**. Vehicle trips that would be added to existing volumes for Phase 1 are summarized in **Table 11**.

1. Source, Certificate of the Secretary of Environmental Affairs on the Notice of Project Change, East Taunton Industrial Park, EOEA Number 12631, January 6, 2006.

Table 9. Liberty & Union Industrial Park: Phase 2 Estimated Trip Generation at Approved Full Buildout

Component	Size	Category	Trip Rates (Trips/ksf or unit)	Unadjusted Vehicle Trips
Daily Trip Generation				
Warehouse¹	663.40 ksf	Total	3.56	2,362
		In	1.78	1,181
		Out	1.78	1,181
Office²	69.90 ksf	Total	14.49	1013
		In	7.24	506
		Out	7.24	506
Total		Total		3,374
		In		1,687
		Out		1,687
AM Peak Hour Trip Generation				
Warehouse¹	663.40 ksf	Total	0.30	199
		In	0.24	157
		Out	0.06	42
Office²	69.90 ksf	Total	2.02	141
		In	1.78	124
		Out	0.24	17
Total		Total		340
		In		281
		Out		59
Friday PM Peak Hour Trip Generation				
Warehouse¹	663.40 ksf	Total	0.32	212
		In	0.08	53
		Out	0.24	159
Office²	69.90 ksf	Total	2.25	157
		In	0.38	27
		Out	1.87	130
Total		Total		369
		In		80
		Out		290
Saturday Peak Hour Trip Generation				
Warehouse¹	663.40 ksf	Total	0.13	86
		In	0.07	43
		Out	0.07	43
Office²	69.90 ksf	Total	2.40	168
		In	1.20	84
		Out	1.20	84
Total		Total		254
		In		127
		Out		127

Notes:

1. ITE Trip Generation Rate, 8th Edition, LUC 160 (Warehousing), Rate

Table 10. Liberty & Union Industrial Park: Phase 1 Estimated Additional Trip Generation at Approved Full Build-out

Component	Size	Category	Trip Rates (Trips/ksf or unit)	Unadjusted Vehicle Trips
Daily Trip Generation				
Warehouse ¹	773.06 ksf	Total	3.56	2,752
		In	1.78	1,376
		Out	1.78	1,376
AM Peak Hour Trip Generation				
Warehouse ¹	773.06 ksf	Total	0.30	232
		In	0.24	183
		Out	0.06	49
Friday PM Peak Hour Trip Generation				
Warehouse ¹	773.06 ksf	Total	0.32	247
		In	0.08	62
		Out	0.24	186
Saturday Midday Peak Hour Trip Generation				
Warehouse ¹	773.06 ksf	Total	0.13	100
		In	0.07	50
		Out	0.07	50

Notes:

1. ITE Trip Generation Rate, 8th Edition, LUC 160 (Warehousing), Rate
2. ITE Trip Generation Rate, 8th Edition, LUC 492 (Health Club), Rate
3. ITE Trip Generation Rate, 8th Edition, LUC 710 (General Office Building), fitted curve equation

The buildout analysis for the LUIP Phase 2 site was based on LUC 150 – Warehousing and LUC 710 – General Office. The warehousing code covers buildings primarily devoted to the storage of materials, but can also include office and maintenance areas. General office is defined as an office building containing multiple tenants. An office building typically contains a mixture of professional services. Calculations of the number of vehicle trips use ITE’s average rate per 1,000 square feet.

The trip generation from the full buildout of Phases I and II of the industrial park will be used to represent site traffic in the No-Build traffic networks.

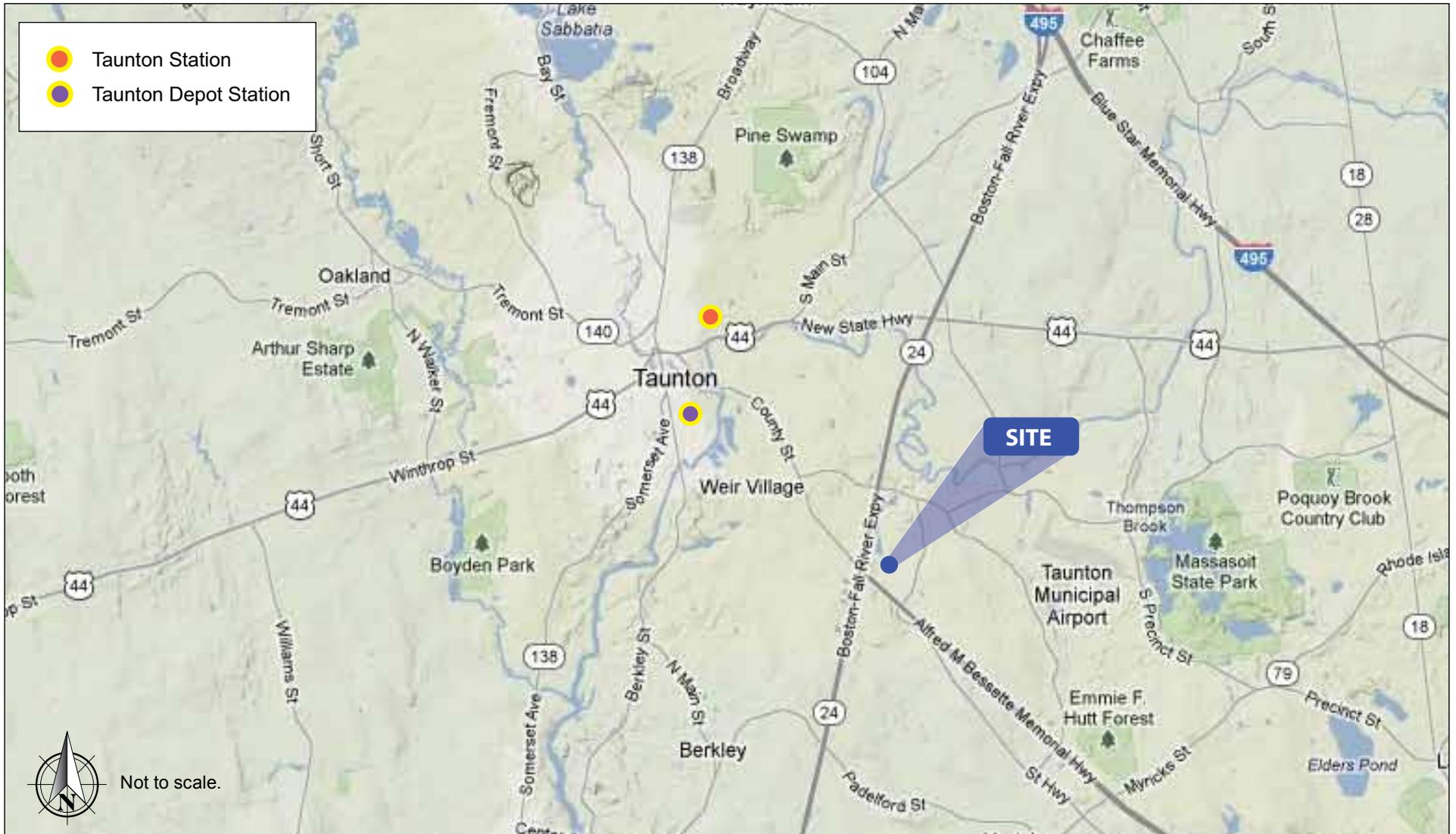
Proposed Roadway and Transit Improvements

South Coast Rail Project

The MBTA’s South Coast Rail project is intended to restore passenger rail service from South Station in Boston to Fall River and New Bedford in southeastern Massachusetts. The three proposed rail alternatives via Attleboro, Stoughton or Whittenton include stops in Taunton at Taunton Depot, Taunton (Dean Street) and Downtown Taunton, as shown in **Figure 14** and described below:

- The Taunton Depot Station would be located off Route 140 at the rear of a shopping plaza that includes Target, Home Depot and other stores. It would provide 456 total parking spaces and a “kiss and ride” area in a paved lot and accommodations for two bus bays. Access to the parking area and bus bays would be afforded from a driveway that would go through the existing Target plaza. The station would provide one center platform with a pedestrian bridge over the tracks.

Figure 14. Proposed Taunton Station Locations: South Coast Rail, Stoughton Alternative



- This location would be the closest to the proposed casino site. Shuttle service could connect the casino with the station.
- The Taunton Station (Dean Street) is located along Arlington Street near Dean Street (Route 44) near an historic train station. It would provide 209 parking spaces and a “kiss and ride” area in a paved lot and accommodations for two bus bays. GATRA Route 7 would be rerouted to serve the station. Platforms would be provided on one side of a single track.
- Downtown Taunton Depot would be located on Oak Street next to the GATRA/Former Oak Street Mall site. A portion of the site accommodates an existing GATRA maintenance facility. This site could accommodate 726 total parking spaces in a paved lot; buses would be accommodated at the existing GATRA depot, with improved pedestrian connections to the station.

An Environmental Impact Statement for the project was filed by the U.S. Army Corps of Engineers in February 2011 and accepted by MassDOT as the relevant state document as well. In this document, the group of alternatives going through Stoughton was adopted by MassDOT as the preferred corridor for the service. The Stoughton alternative would accommodate the Taunton Depot and Taunton (Dean Street) options, but not the Downtown Taunton option.

Since the filing of the EIS/EIR, Massachusetts Department of Transportation (MassDOT) has been proceeding with some of the elements of the project that would need to be in place before the rail project can proceed, including the successfully completed replacement of three structurally deficient rail bridges, purchase from CSX of 30 miles of track between Taunton, Fall River and New Bedford, and the conceptual design and environmental review for the ultimate expansion of South Station to accommodate the new service and improve existing MBTA and AMTRAK service. Funding has also been allocated in the MassDOT capital plan released late in 2011 to fund continued planning and design for the rail service. No additional funds were allocated in a one year transportation bond bill filed in March 2012, although that does not preclude additional funding at a later date. With this said, it is likely that implementation of the South Coast Rail project is not anticipated for many years.

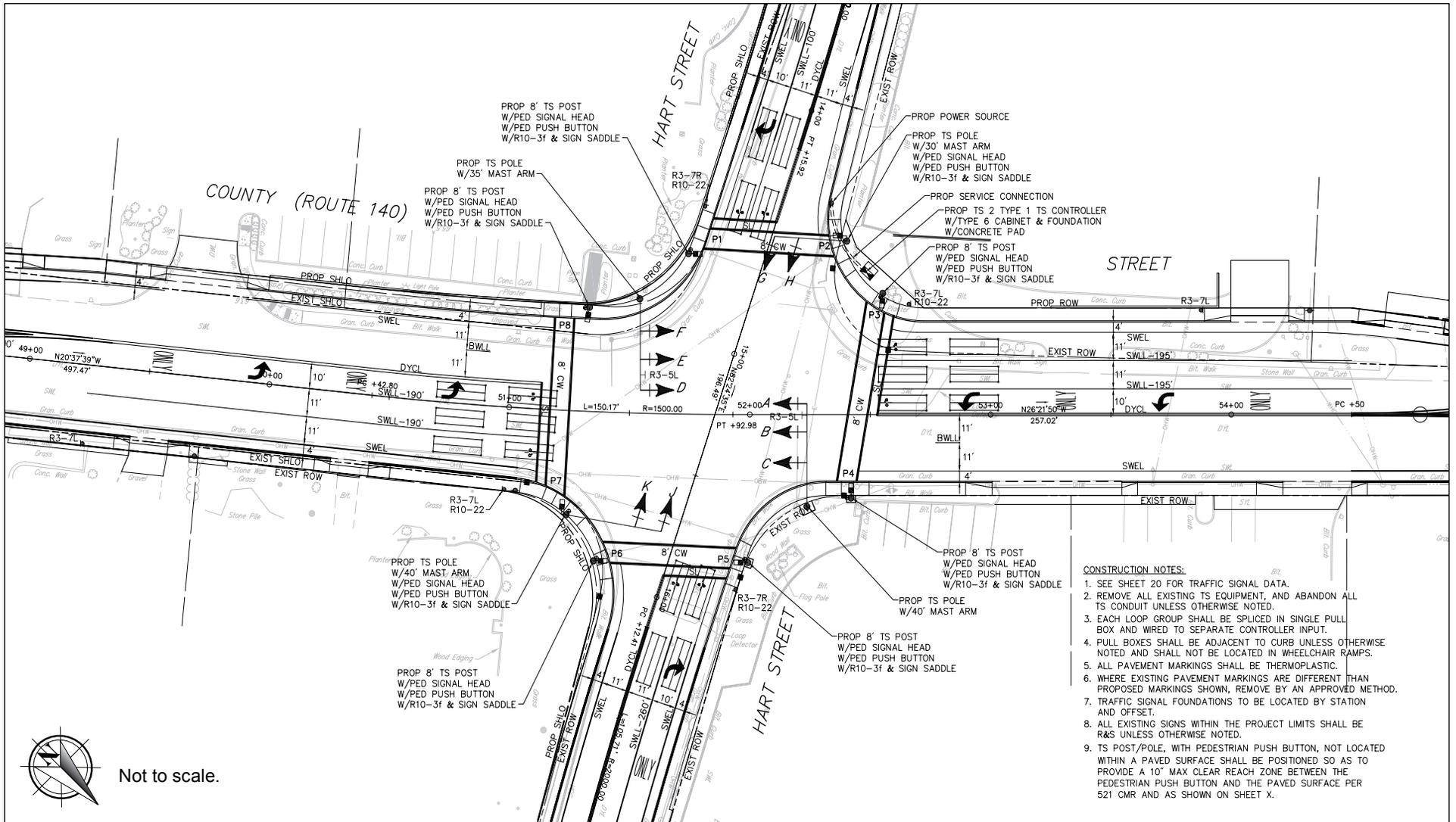
Hart’s Four Corners Intersection Improvements

As stated above, future roadway and traffic control improvements are proposed at this intersection through Massachusetts Department of Transportation Project #605679. The improvements, with a MassDOT cost estimate of \$1,680,000, are forecast to begin construction in Winter 2016/2017. The plan includes widening of County Street and new traffic signal operations and equipment. These future improvements, as shown in **Figure 15**, are reflected in the No-Build and Build conditions analyses. The 25% plans were approved in September 2011, and design is now progressing. The City of Taunton is responsible for the right-of-way acquisition necessary to implement the project.

Proposed MassDOT Improvements at Route 24/Route 140 Interchange

In conjunction with replacing the structurally deficient Route 24 bridge over Route 140, the Massachusetts Department of Transportation has investigated a number of conceptual alternatives for relieving traffic congestion, accommodating a potential future widening of Route 24 and improving pedestrian and bicycle accommodations at the interchange of Route 24 with Route 140 in Taunton. MassDOT Project #605888 has been under consideration since the mid-1990’s by the Southeast Regional Planning and Economic Development District (SERPEDD). In 2003, improvements were studied in relationship to LUIP development; in 2008

Figure 15. MassDOT Approved 25% Design: Harts Four Corners Improvements



acceleration and deceleration lanes were added to Route 24 to accommodate periodic queues generated by the interchange.

MassDOT's preferred alternative, 1D, is shown in **Figure 16** below. The Route 24 southbound off-ramp is proposed to split from the mainline in two lanes, one to a new ramp to Route 140 northbound and the other to Route 140 southbound. The ramp to Route 140 southbound would enter Route 140 in its own lane, outside of a signal as currently exists today. Route 140 under Route 24 would be widened to 7 lanes (4 lanes today) to accommodate a northbound double left to Route 24 southbound and a double through on Route 140 northbound. Route 140 southbound would have a divided single off-ramp lane from Route 24 southbound divided with a median barrier from two through lanes to Route 140 southbound and a transition to a double left turn to the Route 24 northbound ramp. Route 140 northbound between interchange 11 (Stevens Street) and Route 24 would be widened to the north to provide 3 lanes (currently 2 lanes with an auxiliary lane transition from the Stevens Road on-ramp). Exit 11A to Stevens Street at the Galleria Mall Drive would become signalized.

As of Spring, 2012, this improvement has not been programmed by the State. The preliminary cost estimate for this alternative is \$28,750,000. Future work would involve seeking additional public input, finalizing the alternatives, initiating environmental studies and preliminary design and finalizing the feasibility study for the interchange improvements. Because a specific has not yet been defined, its implementation has not been incorporated into the 2022 traffic networks.

Reconstruction of Route 140 from Route 24 to Taunton Depot Drive

MassDOT Project #605191 involves roadway reconstruction, median installation and sidewalk reconstruction on Route 140 in the City of Taunton, with an estimated construction cost in 2009 of \$2,121,800. Also included are traffic signal upgrades and drainage improvements. The 25% plans for this project were approved by MassDOT in August, 2009. Construction was projected to begin in Spring, 2016. Three study area intersections with Route 140 are included in this project area: Route 140 at Mozzone Boulevard, Hess Gas Station/Bristol-Plymouth High School and Erika Drive. Because plans for specific improvements at these locations were not available, implementation of this project was not factored into the 2022 traffic networks.

Operations Analysis

2022 No-Build AM Peak Hour Intersection Operations

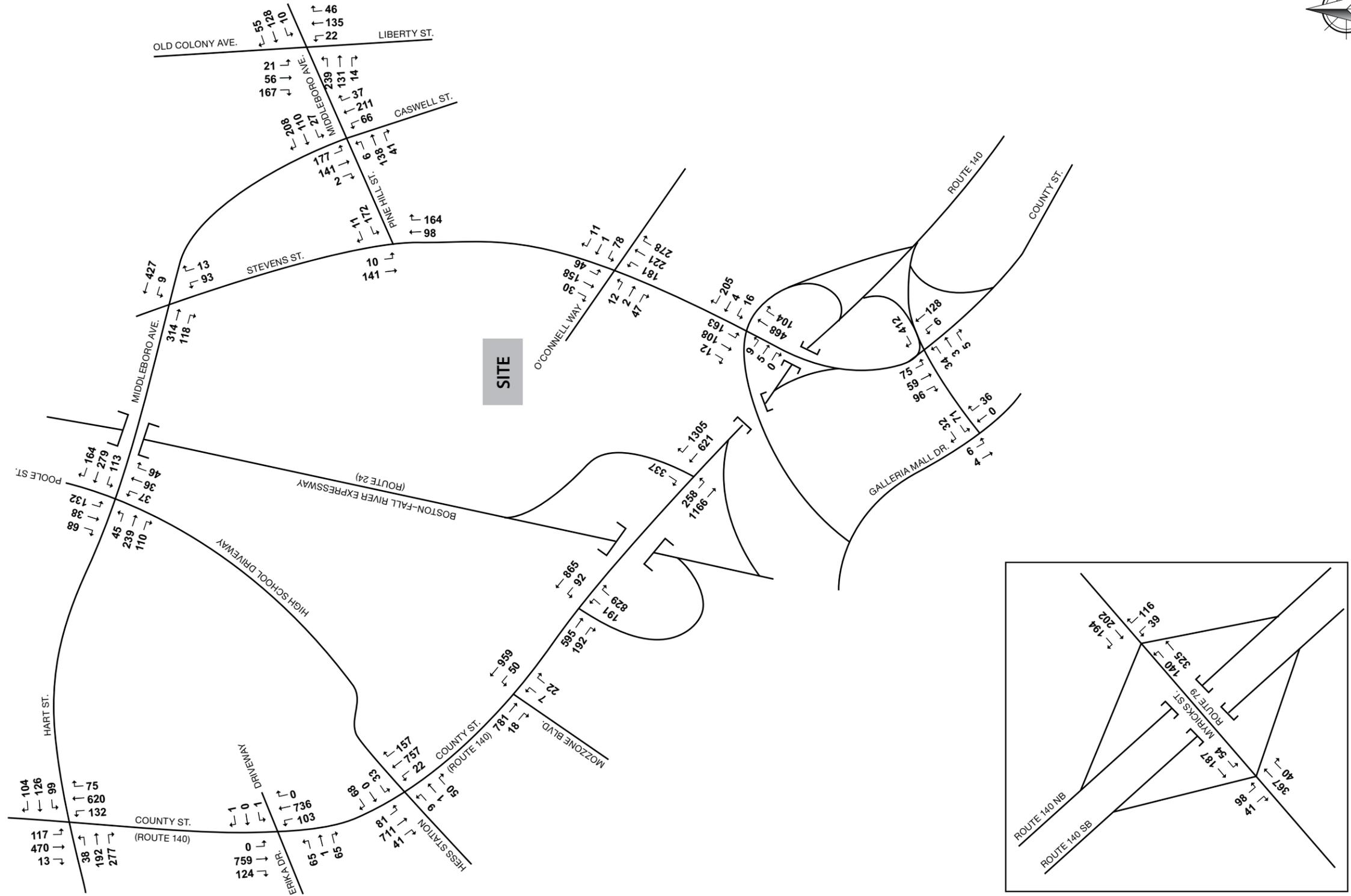
No-Build (2022) traffic volumes at study area intersections for the AM, PM and Saturday peak hours are shown in **Figures 17A-B, 18A-B, and 19A-B.**

Table 11 shows the No-Build Conditions level of service summary for study area intersections during the morning peak hour.

Figure 16. MassDOT Preliminary Alternative: Route 24/140 Interchange Improvements



Figure 17B. No-Build Conditions (2022) AM Peak Hour Volumes – East



Not to scale.

Figure 19A. No-Build Conditions (2022) Saturday Midday Peak Hour Volumes – West



Not to scale.

Table 11: No-Build Conditions (2022) Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	1.5		
Galleria EB left/thru thru/right	A	2.9	0.03	5
Route 140 WB right	A	0.3	0.25	0
County NB left/thru thru	A	2.8	0.06	14
County SB left/thru thru	A	2.9	0.08	14
County SB right	A	1.7	0.10	12
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	B	11.0		
Overpass EB left/thru thru/right	B	17.3	0.04	7
Route 140 WB left	B	18.1	0.07	18
Route 140 WB thru	B	17.3	0.03	13
Route 140 WB right	A	6.7	0.45	44
Stevens NB left/thru thru/right	B	15.3	0.61	113
Stevens SB left left	A	4.5	0.21	18
Stevens SB thru/right	A	4.1	0.13	29
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	7.6		
Route 24 WB right	A	0.3	0.21	0
Route 140 NB thru thru	B	10.1	0.43	116
Route 140 NB right	B	13.3	0.92	#132
Route 140 SB left	B	15.6	0.51	123
Route 140 SB thru thru	A	0.3	0.37	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	B	19.9		
Route 24 EB left	C	25.9	0.35	161
Route 24 EB right right	B	18.2	0.67	271
Route 140 NB left	D	40.8	0.40	110
Route 140 NB thru thru	B	12.3	0.48	245
Route 140 SB thru thru/right	C	26.3	0.67	320
9. Mozzone Boulevard/County Street (Route 140)	A	4.0		
Mozzone EB left	B	16.1	0.02	8
Mozzone EB right	A	8.0	0.07	8
Route 140 NB left/thru thru	A	4.4	0.48	144
Route 140 SB thru thru/right	A	3.2	0.32	88

Project First Light Transportation Study

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
11. Erika Drive/County Street (Route 140)	B	14.2		
Erika EB left	D	38.8	0.25	64
Erika EB left/thru	D	38.8	0.25	62
Erika EB right	A	7.6	0.17	24
Driveway WB left/thru/right	C	33.5	0.05	3
Route 140 NB left	A	10.0	0.29	82
Route 140 NB thru thru/right	A	8.9	0.35	275
Route 140 SB left/thru thru	B	18.6	0.55	382
Route 140 SB right	B	11.0	0.20	91
12. Hart Street/County Street (Route 140)	C	32.1		
Hart EB left/thru	C	32.5	0.48	303
Hart EB right	A	2.1	0.31	28
Hart WB left/thru	D	38.9	0.63	#383
Hart WB right	A	4.0	0.14	37
Route 140 NB left	D	40.3	0.46	185
Route 140 NB thru/right	D	37.0	0.79	391
Route 140 SB left	D	50.3	0.58	173
Route 140 SB thru/right	D	38.1	0.70	275
15. Washington Street/Broadway (Route 138)	C	28.4		
Washington EB left/thru/right	C	31.2	0.71	#425
Washington WB left/thru/right	B	19.7	0.23	121
Broadway NB left/thru/right	C	32.7	0.78	#578
Broadway SB left/thru	C	25.5	0.56	324
Broadway SB right	C	22.8	0.40	197
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	30.0		
Tremont EB left	D	36.0	0.70	369
Tremont EB left/thru/right	C	34.7	0.67	361
Plaza WB left/thru/right	E	56.6	0.80	#332
Oak NB left/thru thru/right	C	29.6	0.64	245
Washington SB left/thru	C	30.0	0.50	234
Washington SB right	A	7.8	0.47	138
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	12.3		
Cohannet EB left	A	2.3	0.13	m44
Cohannet EB thru thru	B	19.8	0.63	285
Cohannet EB right	A	2.3	0.13	m39
Main WB right	A	1.6	0.59	0
Weir NB thru	C	28.2	0.66	#313
Weir NB right	B	19.8	0.17	67

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
22. High Street/Winthrop Street (Route 140)	C	24.5		
High EB left/thru/right	C	31.8	0.64	249
High WB left	E	58.9	0.74	#127
High WB thru/right	C	29.6	0.54	189
Winthrop NB left	B	13.0	0.26	128
Winthrop NB thru/right	B	15.5	0.56	444
Winthrop SB left/thru thru/right	C	26.3	0.31	114
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	20.5		
Main EB left	B	15.7	0.01	7
Main EB thru	C	24.9	0.72	#443
Main EB right	A	5.7	0.44	86
Church WB thru/right	C	24.3	0.70	#419
Summer NB left/thru	C	23.5	0.67	#372
Summer NB right	B	11.5	0.04	21
33. County Street (Route 140)/Riverway Ext.	C	32.7		
County EB left/thru	B	15.9	0.68	338
County WB thru	B	14.0	0.66	384
County WB right	A	2.3	0.40	37
Riverway SB left/right	F	>80.0	>1.0	#614
34. Dean Street/Longmeadow Road/Gordon Owen	D	42.1		
Dean EB left	D	49.7	0.08	22
Dean EB thru thru/right	D	41.9	0.92	#657
Dean WB left	E	55.8	0.72	221
Dean WB thru thru/right	B	14.5	0.37	258
Gordon NB left	F	>80.0	>1.0	#295
Gordon NB thru	D	39.3	0.68	#445
Gordon NB right	C	22.2	0.58	251
Longmeadow SB left	F	>80.0	0.91	#229
Longmeadow SB thru/right*	D	43.9	0.77	#484
Non-Signalized Intersections				
1. Galleria Mall Driveway North/County Road/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	D	27.3	0.09	7
O'Connell EB right	A	9.8	0.07	5
Driveway WB left/thru	F	>50.0	0.60	79
Driveway WB right	A	9.7	0.02	1
Stevens NB left/thru	A	4.5	0.15	13
Stevens NB right	A	0.0	0.19	0
Stevens SB left	A	8.8	0.05	4
Stevens SB thru/right	A	0.0	0.13	0

Project First Light Transportation Study

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.29	0
Middleboro WB left/thru	A	0.3	0.01	1
Stevens NB left/right	C	24.1	0.39	45
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	1.3	0.05	4
Middleboro WB left/thru/right	A	4.9	0.22	20
Bristol NB left/thru/right	F	-	-	-
Poole SB left/thru/right	F	-	-	-
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	C	23.1	0.31	32
Bristol WB left/thru	F	>50.0	0.83	105
Bristol WB right	C	15.2	0.28	28
Route 140 NB left/thru thru/right	A	0.4	0.36	2
Route 140 SB left/thru thru/right	A	1.9	0.24	12
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	A	7.8	0.11	-
Drive South WB right	A	6.3	0.04	-
Mall Drive NB thru	A	0.0	0.00	-
Mall Drive NB right	A	6.3	0.04	-
Mall Drive SB left	A	7.1	0.01	-
Mall Drive SB right	A	6.6	0.01	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)/				
Driveway EB left/thru/right	F	>50.0	0.16	13
Pkwy WB left/thru	F	>50.0	>1.0	754
Pkwy WB right	F	>50.0	>1.0	754
Washington NB left/thru	A	0.0	0.00	0
Washington NB right	A	0.0	0.14	0
Washington SB left/thru/right	A	5.1	0.20	18
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	A	9.1	0.44	58
Weir NB thru	A	0.0	0.45	0
Broadway SB right	A	0.0	0.23	0

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
20. Court Street/Western Green (44/138)				
Post EB right	A	8.5	0.03	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	B	14.6	0.52	-
21. Cohannet Street (Route 140)/Western Green (44/138)				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.23	0
Summer WB left/thru	A	5.9	0.28	29
Ingell NB left/right	F	>50.0	>1.0	391
25. County Street (Route 140)/Johnson Street/Trucci's Driveway				
County EB left/thru/right	A	0.0	0.00	0
County WB left/thru/right	A	0.1	0.00	0
Johnson NB left/thru/right	F	>50.0	0.36	32
Johnson SB left/thru/right	F	>50.0	0.49	42
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	3.3	0.12	10
Myricks WB thru/right	A	0.0	0.26	0
Ramps NB left/thru	C	16.5	0.24	24
Ramps NB right	C	16.5	0.24	24
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.27	0
Myricks WB left/thru	A	2.3	0.06	4
Ramps SB left/thru	C	20.1	0.37	42
Ramps SB right	C	20.1	0.37	42
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.9	0.20	19
Middleboro WB left/thru/right	A	0.5	0.01	1
Liberty NB left/thru/right	F	>50.0	>1.0	252
Old Colony SB left/thru/right	F	>50.0	0.86	192

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	C	17.3	0.46	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	D	27.4	0.73	-
Pinehill left/thru/right	D	30.1	0.76	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	B	13.8	0.34	37
Stevens NB left/thru/right	A	0.0	0.18	0
Stevens SB left/thru/right	A	0.6	0.01	1
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.7	0.14	12
Cohannet WB thru/right	A	0.0	0.08	0
Pkwy SB left/right	C	20.2	0.60	99
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	4.9	0.20	18
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	-	-	-
Williams SB left/thru/right	F	-	-	-

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
 m = 95th percentile queue is metered by upstream traffic signal.
 * = 25' left-turn pocket added during calibration process.

Under No-Build Conditions, operations generally remain the same as existing conditions during the morning peak hour. At **High Street/Winthrop Street**, the High Street westbound left-turn worsens from LOS D to LOS E.

At Oak Street/Washington Street/Tremont Street, the Plaza westbound approach worsens from LOS D to LOS E.

2022 No-Build Friday PM Peak Hour Intersection Operations

Table 12 shows the No-Build Conditions level of service summary for study area intersections during the Friday evening peak hour.

Table 12. No-Build Conditions (2022) Level of Service Summary, Friday PM Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	7.1		
Galleria EB left/thru thru/right	B	11.2	0.52	88
Route 140 WB right	A	1.1	0.11	0
County NB left/thru thru	A	7.1	0.11	16
County SB left/thru thru	A	9.0	0.41	51
County SB right	A	4.2	0.62	38
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	9.5		
Overpass EB left/thru thru/right	B	18.0	0.33	51
Route 140 WB left	B	17.5	0.09	20
Route 140 WB thru	B	17.9	0.20	48
Route 140 WB right	A	6.6	0.21	27
Stevens NB left/thru thru/right	B	10.4	0.62	80
Stevens SB left left	A	6.3	0.46	45
Stevens SB thru/right	A	6.6	0.42	105
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	4.5		
Route 24 WB right	A	0.2	0.16	0
Route 140 NB thru thru	B	11.7	0.52	196
Route 140 NB right	A	3.4	0.75	0
Route 140 SB left	B	19.3	0.42	147
Route 140 SB thru thru	A	0.7	0.56	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	E	68.4		
Route 24 EB left	C	27.8	0.35	165
Route 24 EB right right	B	19.7	0.73	349
Route 140 NB left	E	55.4	0.77	#295
Route 140 NB thru thru	B	12.7	0.45	257
Route 140 SB thru thru/right	F	>80.0	>1.00	#891
9. Mozzone Boulevard/County Street (Route 140)	C	26.0		
Mozzone EB left	B	19.7	0.20	46
Mozzone EB right	C	21.1	0.56	92
Route 140 NB left (de facto)	F	>80.0	>1.00	#163
Route 140 NB thru	B	17.2	0.81	#525
Route 140 SB thru thru/right	A	9.1	0.65	234

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
11. Erika Drive/County Street (Route 140)	C	22.0		
Erika EB left	E	55.1	0.62	229
Erika EB left/thru	E	55.6	0.63	232
Erika EB right	A	4.6	0.35	58
Driveway WB left/thru/right	D	46.0	0.08	24
Route 140 NB left	C	23.4	0.65	237
Route 140 NB thru thru/right	B	10.0	0.34	323
Route 140 SB left/thru thru	C	26.8	0.68	#825
Route 140 SB right	D	16.3	0.33	240
12. Hart Street/County Street (Route 140)	D	38.2		
Hart EB left/thru	D	50.4	0.75	#391
Hart EB right	A	2.5	0.37	36
Hart WB left/thru	E	75.9	0.93	#479
Hart WB right	A	3.6	0.28	50
Route 140 NB left	E	61.8	0.82	#432
Route 140 NB thru thru/right	C	28.6	0.59	387
Route 140 SB left	E	59.2	0.64	177
Route 140 SB thru thru/right	D	43.7	0.87	#527
15. Washington Street/Broadway (Route 138)	D	42.4		
Washington EB left/thru/right	F	>80.0	>1.00	#593
Washington WB left/thru/right	C	25.3	0.44	189
Broadway NB left/thru/right	C	23.5	0.69	#529
Broadway SB left/thru	C	24.0	0.70	#503
Broadway SB right	C	22.0	0.60	331
17. Oak Street /Washington Street/Tremont Street (Route 140)	D	41.0		
Tremont EB left	D	44.6	0.77	#608
Tremont EB left/thru/right	D	44.1	0.75	#587
Plaza WB left/thru/right	F	>80.0	>1.0	#506
Oak NB left/thru thru/right	C	30.5	0.61	244
Washington SB left/thru	D	35.2	0.68	430
Washington SB right	A	7.7	0.56	208
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	10.3		
Cohannet EB left	A	2.2	0.14	m50
Cohannet EB thru thru	C	21.5	0.59	271
Cohannet EB right	A	3.5	0.37	157
Main WB right	A	2.8	0.72	0
Weir NB thru	C	21.9	0.47	221
Weir NB right	B	18.8	0.21	86

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
22. High Street/Winthrop Street (Route 140)	E	77.1		
High EB left/thru/right	E	67.8	1.00	#703
High WB left	F	>80.0	>1.0	#324
High WB thru/right	C	27.5	0.42	204
Winthrop NB left	C	26.8	0.39	118
Winthrop NB thru/right	C	20.3	0.54	323
Winthrop SB left/thru thru/right	D	53.5	0.90	#334
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	26.3		
Main EB left	B	19.7	0.11	18
Main EB thru	C	24.2	0.67	#433
Main EB right	A	6.4	0.43	103
Church WB thru/right	D	43.6	0.93	#666
Summer NB left/thru	C	20.8	0.53	294
Summer NB right	B	11.6	0.04	23
33. County Street (Route 140)/Riverway Ext.	C	20.9		
County EB left/thru	B	14.7	0.68	369
County WB thru	B	14.8	0.68	352
County WB right	A	2.6	0.44	40
Riverway SB left/right	D	52.2	0.93	#600
34. Dean Street/Longmeadow Road/Gordon Owen	D	49.2		
Dean EB left	D	50.8	0.12	29
Dean EB thru thru/right	D	46.2	0.93	#657
Dean WB left	F	>80.0	>1.0	#643
Dean WB thru thru/right	B	18.5	0.63	564
Gordon NB left	D	52.7	0.44	#70
Gordon NB thru	D	38.7	0.62	341
Gordon NB right	C	21.9	0.60	229
Longmeadow SB left	F	>80.0	>1.0	#301
Longmeadow SB thru/right*	D	42.5	0.74	#484
Non-Signalized Intersections				
1. Galleria Mall Driveway North/County Road/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	E	41.0	0.41	46
O'Connell EB right	B	14.2	0.32	35
Driveway WB left/thru	F	>50.0	>1.0	721
Driveway WB right	B	10.5	0.09	7
Stevens NB left/thru	A	2.2	0.07	5
Stevens NB right	A	0.0	0.05	0
Stevens SB left	A	8.4	0.03	3
Stevens SB thru/right	A	0.0	0.31	0

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.30	0
Middleboro WB left/thru	A	0.5	0.02	1
Stevens NB left/right	E	40.3	0.71	125
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	2.3	0.08	6
Middleboro WB left/thru/right	A	0.4	0.01	1
Bristol NB left/thru/right	C	22.9	0.23	22
Poole SB left/thru/right	F	>50.0	>1.0	516
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	F	>50.0	0.77	150
Bristol WB left/thru	F	>50.0	0.88	96
Bristol WB right	B	12.8	0.09	8
Route 140 NB left/thru thru/right	A	1.3	0.31	7
Route 140 SB left/thru thru/right	A	0.4	0.42	2
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	B	11.5	0.44	-
Drive South WB right	A	7.4	0.27	-
Mall Drive NB thru	A	8.4	0.03	-
Mall Drive NB right	A	7.9	0.35	-
Mall Drive SB left	B	10.1	0.30	-
Mall Drive SB right	A	7.8	0.05	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)				
Driveway EB left/thru/right	F	>50.0	>1.0	53
Pkwy WB left/thru	F	-	-	-
Pkwy WB right	F	-	-	-
Washington NB left/thru	A	0.3	0.1	1
Washington NB right	A	0.0	0.22	0
Washington SB left/thru/right	C	16.4	0.53	79
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	B	11.1	0.64	125
Weir NB thru	A	0.0	0.38	0
Broadway SB right	A	0.0	0.35	0

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.9	0.06	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	C	15.7	0.55	-
21. Cohannet Street (Route 140)/Western Green (44/138)-				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.32	0
Summer WB left/thru	A	7.6	0.37	43
Ingell NB left/right	F	>50.0	>1.0	579
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.1	0.00	0
County WB left/thru/right	A	0.9	0.03	2
Johnson NB left/thru/right	F	>50.0	0.54	36
Johnson SB left/thru/right	F	>50.0	0.27	18
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	2.9	0.11	10
Myricks WB thru/right	A	0.0	0.43	0
Ramps NB left/thru	D	26.7	0.38	43
Ramps NB right	D	26.7	0.38	43
27. Myricks Street (Route 79)/Route 140 SB RAMps				
Myricks EB thru/right	A	0.0	0.21	0
Myricks WB left/thru	A	2.9	0.10	8
Ramps SB left/thru	F	>50.0	>1.0	525
Ramps SB right	F	>50.0	>1.0	525
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.2	0.17	16
Middleboro WB left/thru/right	A	0.8	0.02	1
Liberty NB left/thru/right	F	>50.0	>1.0	257
Old Colony SB left/thru/right	F	>50.0	>1.0	1166
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	C	17.9	0.51	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	C	16.1	0.41	-

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Pinehill left/thru/right	D	31.4	0.78	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	C	17.2	0.48	65
Stevens NB left/thru/right	A	0.0	0.24	0
Stevens SB left/thru/right	A	0.6	0.01	1
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.7	0.17	15
Cohannet WB thru/right	A	0.0	0.24	0
Pkwy SB left/right	F	>50.0	>1.0	539
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	4.3	0.19	18
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	-	-	-
Williams SB left/thru/right	F	-	-	-

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
 m = 95th percentile queue is metered by upstream traffic signal.
 * = 25' left-turn pocket added during calibration process.

Under No-Build Conditions, operations generally remain the same as existing conditions during the evening peak hour. However, there are a few locations where certain approaches worsen to below LOS D.

At *Route 24 SB Ramp/County Street*, the overall LOS worsens from LOS D to LOS E. The northbound left-turn at this location worsens from LOS D to LOS E.

At *Middleboro Avenue/Stevens Street*, the Stevens Street northbound approach worsens from LOS D to LOS E.

The Hess Station approach at *Bristol Plymouth HS Driveway/County Street* worsens from LOS E to LOS F.

With the proposed improvements at *Hart Street County Street*, the overall LOS improves from LOS F to LOS D during the evening peak hour. However, the Hart Street westbound left-turn/through movement operates at LOS E. The County Street northbound and southbound left-turns also operate at LOS E.

2022 No-Build Saturday Intersection Operations

No-Build operations at intersections are shown in **Table 13**.

Table 13: No-Build Conditions (2022) Level of Service Summary, Saturday Midday Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	6.9		
Galleria EB left/thru thru/right	B	10.9	0.50	86
Route 140 WB right	A	0.1	0.09	0
County NB left/thru thru	A	7.1	0.14	20
County SB left/thru thru	A	7.2	0.16	22
County SB right	A	5.6	0.73	40
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	9.4		
Overpass EB left/thru thru/right	B	16.4	0.35	50
Route 140 WB left	B	15.4	0.10	20
Route 140 WB thru	B	17.0	0.30	62
Route 140 WB right	A	6.2	0.13	20
Stevens NB left/thru thru/right	A	8.3	0.59	64
Stevens SB left left	A	5.2	0.17	20
Stevens SB thru/right	A	4.5	0.20	42
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	4.5		
Route 24 WB right	A	0.2	0.14	0
Route 140 NB thru thru	B	11.5	0.52	185
Route 140 NB right	A	1.1	0.50	0
Route 140 SB left	B	18.9	0.51	167
Route 140 SB thru thru	A	0.4	0.45	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	C	23.3		
Route 24 EB left	C	30.2	0.46	190
Route 24 EB right right	B	18.8	0.64	243
Route 140 NB left	D	38.6	0.46	128
Route 140 NB thru thru	A	9.6	0.44	219
Route 140 SB thru thru/right	C	34.1	0.89	#586
9. Mozzone Boulevard/County Street (Route 140)	B	14.0		
Mozzone EB left	C	21.5	0.27	62
Mozzone EB right	B	14.4	0.42	65
Route 140 NB left (de facto)	D	54.6	0.90	#133
Route 140 NB thru	B	13.4	0.75	#521
Route 140 SB thru thru/right	A	6.1	0.49	160
11. Erika Drive/County Street (Route 140)	C	25.4		
Erika EB left	D	52.6	0.66	#418
Erika EB left/thru	D	52.7	0.67	#421
Erika EB right	A	3.8	0.38	62
Driveway WB left/thru/right	E	64.0	0.02	12

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Route 140 NB left	C	25.6	0.70	309
Route 140 NB thru thru/right	B	11.5	0.33	278
Route 140 SB left/thru thru	C	33.1	0.67	#591
Route 140 SB right	C	21.9	0.66	440
12. Hart Street/County Street (Route 140)	D	36.0		
Hart EB left/thru	D	39.8	0.59	#325
Hart EB right	A	2.4	0.37	37
Hart WB left/thru	E	59.1	0.85	#459
Hart WB right	A	3.8	0.22	46
Route 140 NB left	E	55.9	0.77	#413
Route 140 NB thru/right	C	31.7	0.73	#470
Route 140 SB left	E	56.3	0.59	159
Route 140 SB thru/right	D	44.2	0.87	447
15. Washington Street/Broadway (Route 138)	C	26.3		
Washington EB left/thru/right	D	44.8	0.86	#454
Washington WB left/thru/right	C	23.4	0.34	142
Broadway NB left/thru/right	C	22.8	0.67	#473
Broadway SB left/thru	C	20.8	0.58	364
Broadway SB right	B	18.0	0.41	210
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	28.4		
Tremont EB left	D	37.2	0.68	364
Tremont EB left/thru/right	D	36.9	0.67	353
Plaza WB left/thru/right	D	46.4	0.61	#293
Oak NB left/thru thru/right	C	29.0	0.63	234
Washington SB left/thru	C	30.9	0.61	326
Washington SB right	A	7.3	0.46	141
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	11.3		
Cohannet EB left	A	2.2	0.13	48
Cohannet EB thru thru	C	22.5	0.64	304
Cohannet EB right	A	2.7	0.24	85
Main WB right	A	1.8	0.63	0
Weir NB thru	C	21.8	0.46	215
Weir NB right	B	19.0	0.23	95
22. High Street/Winthrop Street (Route 140)	D	35.9		
High EB left/thru/right	C	29.9	0.56	317
High WB left	D	54.6	0.76	#209
High WB thru/right	C	25.8	0.31	151
Winthrop NB left	C	21.7	0.31	108
Winthrop NB thru/tight	C	25.6	0.71	#513
Winthrop SB left/thru thru/right	E	57.3	0.90	#268
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	23.0		
Main EB left	C	22.5	0.19	31
Main EB thru	C	27.3	0.75	#548

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Main EB right	A	7.6	0.41	122
Church WB thru/right	C	29.8	0.80	#583
Summer NB left/thru	B	19.3	0.45	249
Summer NB right	B	11.0	0.04	22
33. County Street (Route 140)/Riverway Ext.	B	15.5		
County EB left/thru	B	13.7	0.62	281
County WB thru	B	13.9	0.63	278
County WB right	A	2.8	0.46	38
Riverway SB left/right	C	32.1	0.75	#514
34. Dean Street/Longmeadow Road/Gordon Owen	D	37.9		
Dean EB left	D	51.1	0.15	35
Dean EB thru thru/right	D	39.5	0.85	#569
Dean WB left	E	64.5	0.86	#427
Dean WB thru thru/right	B	18.0	0.54	424
Gordon NB left	D	37.4	0.33	85
Gordon NB thru	D	35.2	0.49	274
Gordon NB right	B	17.9	0.62	225
Longmeadow SB left	F	>80.0	>1.0	#401
Longmeadow SB thru/right*	D	35.2	0.53	314
Non-Signalized Intersections				
1. Galleria Mall Driveway North/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	C	17.1	0.14	12
O'Connell EB right	B	10.1	0.12	10
Driveway WB left/thru	C	21.9	0.26	25
Driveway WB right	A	9.6	0.02	2
Stevens NB left/thru	A	1.9	0.05	4
Stevens NB right	A	0.0	0.04	0
Stevens SB left	A	7.9	0.02	1
Stevens SB thru/right	A	0.0	0.15	0
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.28	0
Middleboro WB left/thru	A	0.2	0.01	1
Stevens NB left/right	C	21.8	0.44	54
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	2.0	0.07	5
Middleboro WB left/thru/right	A	0.0	0.00	0
Bristol NB left/thru/right	B	11.7	0.05	4
Poole SB left/thru/right	F	>50.0	0.97	228

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	C	23.1	0.31	33
Bristol WB left/thru	F	>50.0	0.07	5
Bristol WB right	B	12.6	0.04	3
Route 140 NB left/thru thru/right	A	0.7	0.32	4
Route 140 SB left/thru thru/right	A	0.3	0.39	1
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	B	13.6	0.54	-
Drive South WB right	A	8.3	0.39	-
Mall Drive NB thru	A	8.8	0.05	-
Mall Drive NB right	A	7.5	0.29	-
Mall Drive SB left	B	11.3	0.36	-
Mall Drive SB right	A	7.8	0.07	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)/				
Driveway EB left/thru/right	F	>50.0	0.29	23
Pkwy WB left/thru	F	>50.0	>1.0	498
Pkwy WB right	F	>50.0	>1.0	498
Washington NB left/thru	A	0.0	0.00	0
Washington NB right	A	0.0	0.13	0
Washington SB left/thru/right	A	5.6	0.22	21
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	A	9.9	0.56	91
Weir NB thru	A	0.0	0.37	0
Broadway SB right	A	0.0	0.35	0
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.5	0.04	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	B	13.3	0.44	-
21. Cohannet Street (Route 140)/Western Green (44/138)-				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.26	0
Summer WB left/thru	A	5.6	0.25	25
Ingell NB left/right	E	45.7	0.86	222
25. County Street (Route 140)/Johnson Street/Trucci's Driveway				
County EB left/thru/right	A	0.0	0.00	0
County WB left/thru/right	A	0.5	0.02	1
Johnson NB left/thru/right	F	>50.0	0.31	27
Johnson SB left/thru/right	F	>50.0	0.44	34
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	2.7	0.09	8
Myricks WB thru/right	A	0.0	0.28	0
Ramps NB left/thru	C	15.8	0.15	13
Ramps NB right	C	15.8	0.15	13
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.20	0
Myricks WB left/thru	A	1.5	0.03	2
Ramps SB left/thru	C	18.5	0.51	72
Ramps SB right	C	18.5	0.51	72
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	4.9	0.15	14
Middleboro WB left/thru/right	A	0.7	0.01	1
Liberty NB left/thru/right	F	>50.0	>1.0	275
Old Colony SB left/thru/right	F	>50.0	>1.0	569
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	B	12.8	0.32	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	B	13.0	0.33	-
Pinehill left/thru/right	C	21.6	0.67	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	B	13.0	0.31	33
Stevens NB left/thru/right	A	0.0	0.18	0
Stevens SB left/thru/right	A	0.6	0.01	0
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.5	0.13	11
Cohannet WB thru/right	A	0.0	0.13	1
Pkwy SB left/right	D	25.2	0.72	148
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Gordon EB left/thru/right	A	3.0	0.12	10
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	>50.0	>1.0	333
Williams SB left/thru/right	F	>50.0	0.85	190

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

Under No-Build Conditions, operations generally remain the same as existing conditions during the Saturday midday peak hour. However, there are a few locations where certain approaches worsen to below LOS D.

At **High Street/Winthrop Street**, the Winthrop Street southbound approach worsens from LOS D to LOS E.

The Bristol HS Driveway left-turn/through movement at **Bristol Plymouth HS Driveway/County Street** worsens from LOS E to LOS F.

While the **Hart's Four Corners (Hart Street/County Street)** intersection improves from LOS F to LOS D, the Hart Street westbound left-turn/through movement operates at LOS E. The County Street northbound and southbound left-turns also operate at LOS E.

2022 No-Build Interchange Operations

No-Build (2022) traffic volumes at the interchange are shown in **Figure 20**. **Figure 21** shows the No-Build Conditions level of service summary for the interchanges during the Friday AM, Friday PM, and Saturday midday peak hours. Under No Build Conditions, none of the basic, merge, diverge, or weaving segments will worsen to below LOS D; however, many of the locations will experience reductions in LOS.

During the Friday PM peak hour, the Route 24 southbound mainline will continue to operate at LOS E (at capacity) and will experience an increase in density from 37.1 to 41.0 passenger cars/lane/hour as a result of background growth – just 4 passenger cars/lane/hour below the threshold for LOS F (over capacity).

2022 Build Conditions

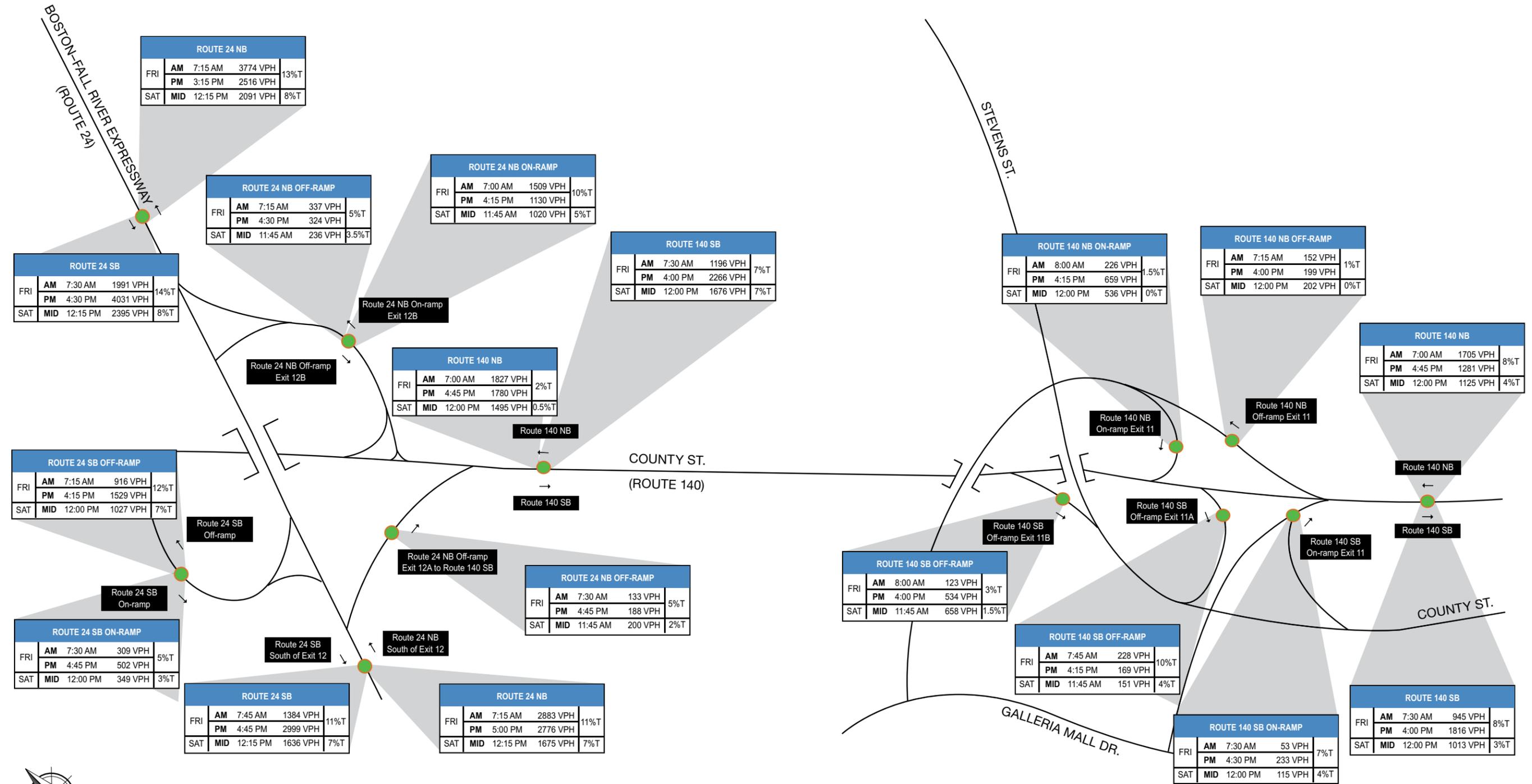
This section documents the methodology adopted for estimating vehicle trip generation and trip distribution for the casino/hotel project proposed on the site of the Liberty & Union Industrial Park (LUIP) in Taunton. The proposed full-build project includes:

- 324,000 square foot (sf) destination resort casino complex, including the gaming floor, restaurants, some retail and back of house space, and a 15,000 sf performance venue;
- 900 hotel rooms in three facilities; and
- 25,000 sf indoor water park.

The proposed site plan is shown in **Figure 22**.

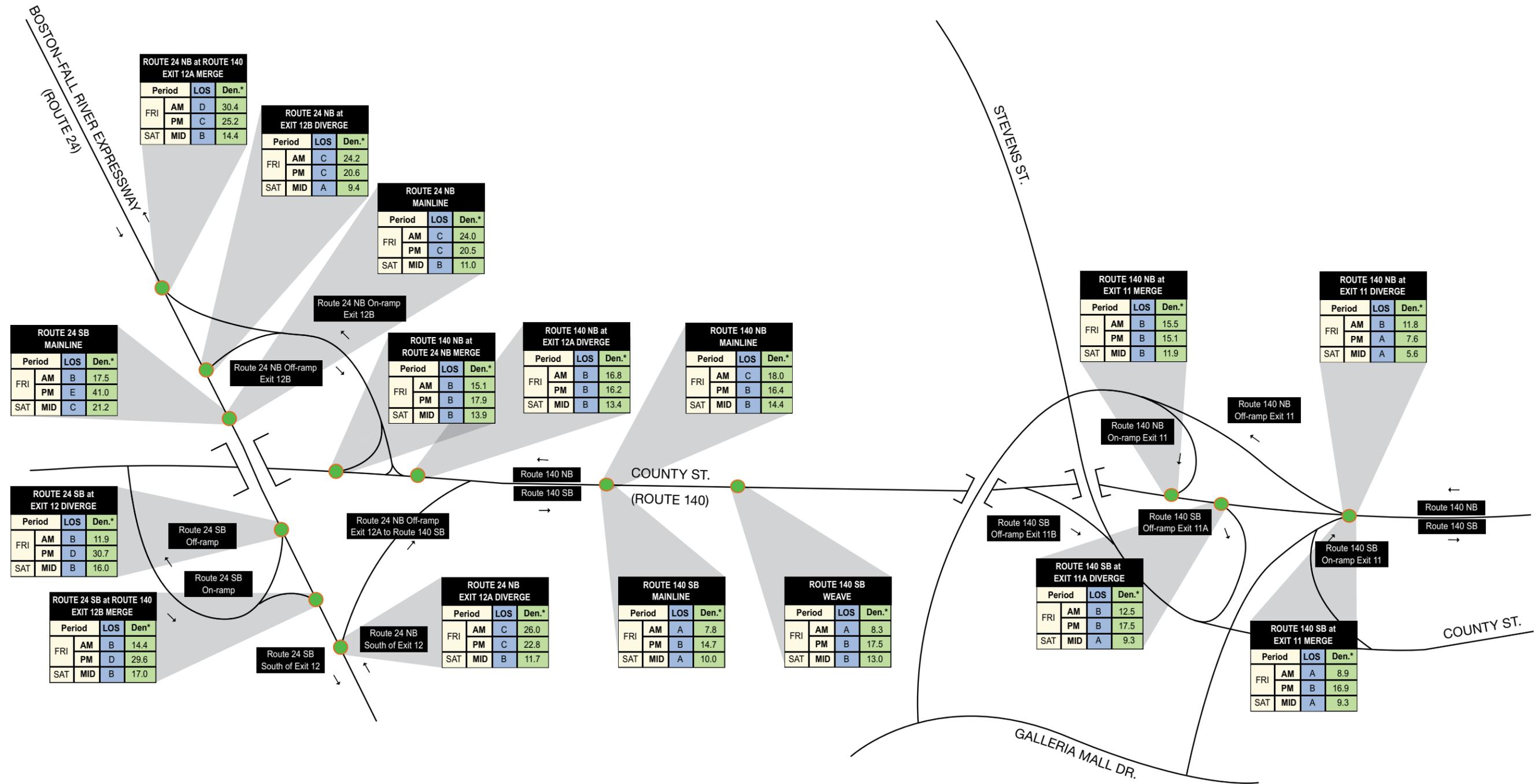
Vehicle Trip Generation

Figure 20. No-Build Conditions (2022) Interchange Volume Data



Not to scale.

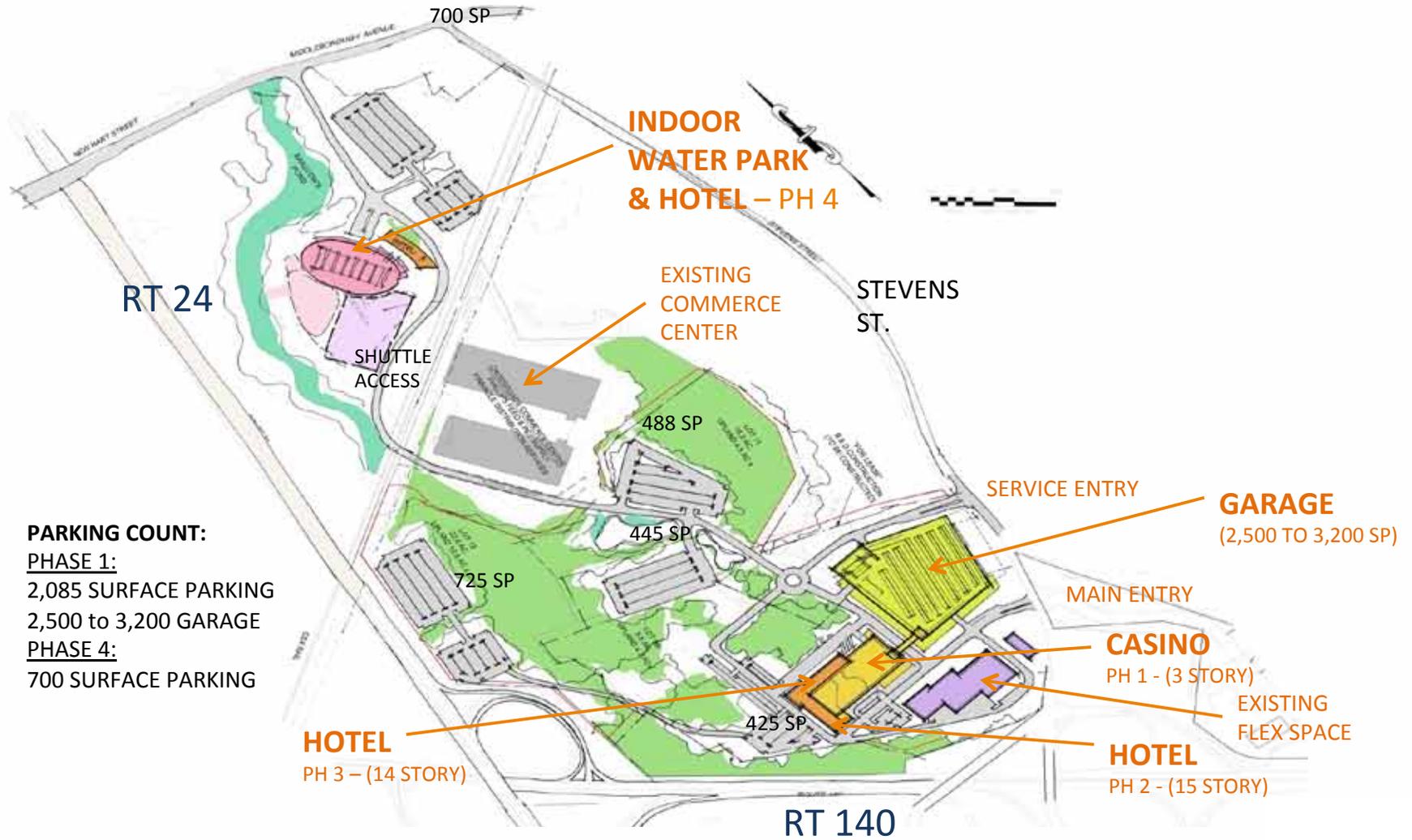
Figure 21. No-Build Conditions (2022) Interchange Operations



Den.* = Density (pc/mi/ln)



Figure 22. Proposed Site Plan



Casino

For the casino, separate trip rates were determined for patrons and employees. The patron and visitor trip rates were based on actual daily and hourly traffic counts collected over multiple days at the Phase 1 Mohegan Sun casino in Uncasville, Connecticut, as reported in the *Draft Environmental Impact Statement, Proposed Mashpee Wampanoag Initial Reservation and Destination Resort Casino*, October 17, 2008, pages 7-69 to 7-72.

These counts were conducted on days when performances were held in the on-site performance venue. After a review of Institute of Transportation Engineers (ITE) trip rates and published literature on other casino projects, it was concluded that the Mohegan Sun data represented the situation closest to the proposed facility in terms of both geographic location and size. In addition, only these data were differentiated for employee and patron trips as well as peak hour trips. The count data revealed the following peak hours:

- Monday through Thursday morning peak hour is 8:00 to 9:00 AM
- Friday afternoon peak hour is 4:00 to 5:00 PM
- Saturday evening peak hour is 8:00 to 9:00 PM and
- Sunday afternoon peak hour is 4:00 to 5:00 PM

As noted in the October 2008 EIS, total trip rates were first established from the Mohegan Sun count data, after which data related to the numbers and work-hours for employees were developed. Then, the employee trip rates were subtracted from the total trip rates to yield patron trip rates. Sundays were not selected for analysis as the peak trip rates on Sundays combined with Sunday afternoon background traffic are lower than the Friday or Saturday PM peak hour counts. And, although Saturday peak period of trip generation for the casino is from 8:00 to 9:00 P.M., the peak casino volumes were instead superimposed on Saturday midday peak volumes (which are higher as background traffic) as a worst case estimate. Trip rates used in the analysis are presented in **Table 14**.

Table 14. Class III Casino Trip Generation Rates (based on Mohegan Sun Counts)

Day of Week	Trip Generation Rates			
		Morning Peak Hour (8-9 AM)		
<i>Monday through Thursday</i>	Daily	In	Out	Total
Casino patrons	49.30	0.86	0.53	1.39
Casino employees	3.76	0.14	0.05	0.19
Total	53.06	1.00	0.58	1.58
		Afternoon Peak Hr. (4-5 P.M.)		
<i>Friday</i>	Daily	In	Out	Total
Casino patrons	54.89	2.00	1.64	3.64
Casino employees	4.30	0.08	0.21	0.29
Total	59.19	2.08	1.85	3.93
		Evening Peak Hour (8 - 9 P.M.)		
<i>Saturday</i>	Daily	In	Out	Total
Casino patrons	60.86	2.20	1.64	3.84
Casino employees	4.90	0.02	0.13	0.15
Total	65.76	2.22	1.77	3.99
		Afternoon Peak Hr. (4-5 P.M.)		
<i>Sunday</i>	Daily	In	Out	Total
Casino patrons	57.74	1.77	2.06	3.83
Casino employees	4.52	0.05	0.14	0.19
Total	62.26	1.82	2.20	4.02

Source: *Draft Environmental Impact Statement: Proposed Mashpee Wampanoag Initial Reservation and Resort Casino* October 17 2008 P. 7-70

Bus trips – roughly 50 entering and 50 exiting per day – were included in the overall patron trip generation numbers. Per the *Environmental Impact Statement* cited above, “during the week, the bulk of the buses will enter the site during the morning hours. Bus trips will be more evenly spread out on weekends. It is estimated that buses could generate between 20 and 30 trips during the weekend peak hours.” (P. 7-72).

Hotel

Hotel trip rates were based on ITE’s Trip Generation manual, 8th edition (2008), Land Use Code 310. As stated in the *Environmental Impact Statement* referenced above, “it is likely that most, if not all the traffic generated by the hotel will be shared trips with the casino. However, to present a conservative analysis, twenty percent of the total trips generated by the ... hotel are assumed to be ‘new’ trips.” (p. 7-71) Thus, 20% of the hotel trips were assumed to be new trips independent of casino trips.

Indoor Water Park

Because indoor water parks are a relatively new concept there is little data available upon which to base estimates of daily or peak hour trips. The study team found daily and peak hour traffic volume data that was recorded on the site of an existing 55,000 sf “Coco Keys” indoor water park in Mount Laurel, New Jersey. A trip rate for the proposed 25,000 sf facility was developed based on the rates for the larger Mount Laurel water park.

The resulting total, casino patron, and casino employee vehicle trips generated by the casino, the hotels, and the water park by land use and time period are presented in **Table 15**. A detailed trip generation spreadsheet is provided in **Appendix E**.

Table 15. Summary of Vehicle Trips by Land Use

Time of Day/Land Use	Square Feet	Direction	Trip Rate (Trips/ksf or unit)	Unadjusted Vehicle Trips	"New" (Unshared) Trips	Adjusted Vehicle Trips
Daily (Friday)						
Casino/Restaurants	324.00 KSF	Total	59.19	19,178	100%	19,178
		In	29.60	9,589	100%	9,589
		Out	29.60	9,589	100%	9,589
Hotel	900 rooms	Total	8.92	8,028	20%	1,606
		In	4.46	4,014	20%	803
		Out	4.46	4,014	20%	803
Water Park	25.00 KSF			N/A		N/A
TOTAL		Total		27,206		20,784
		In		13,603		10,392
		Out		13,603		10,392

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AM Peak Hour						
Casino/Restaurants	324.00 KSF	Total	1.58	512	100%	512
		In	1.00	324	100%	324
		Out	0.58	188	100%	188
Hotel	900 rooms	Total	0.67	603	20%	121
		In	0.39	350	20%	70
		Out	0.28	253	20%	51
Water Park			N/A			N/A
Total		Total		1,115		633
		In		674		394
		Out		441		239
Friday PM Peak Hour						
Casino/Restaurants	324.00 KSF	Total	3.93	1,273	100%	1,273
		In	2.08	674	100%	674
		Out	1.85	599	100%	599
Hotel	900 rooms	Total	0.70	630	20%	126
		In	0.34	306	20%	61
		Out	0.36	324	20%	65
Water Park	25.00 KSF	Total	1.22	31		
		In	0.64	16		16
		Out	0.58	15		15
Total		Total		1,934		1,415
		In		996		751
		Out		938		679
Saturday Peak Hour						
Casino/Restaurants	324.00 KSF	Total	3.99	1,293	100%	1,293
		In	2.22	719	100%	719
		Out	1.77	573	100%	573
Hotel	900 rooms	Total	0.70	630	20%	126
		In	0.34	309	20%	62
		Out	0.36	321	20%	64
Water Park	25.00 KSF	Total	0.95	24		24
		In	0.60	15		15
		Out	0.35	9		9
Total		Total		1,947		1,443
		In		1,043		796
		Out		904		647

The breakdown of casino patron and employee trips is provided in **Table 16**.

Land Uses	Table 16. Patron and Employee Vehicle Trips by Time Period							
	Daily		AM Peak Hour		Friday PM Peak Hr.		Sat. Midday Peak Hr.	
	In	Out	In	Out	In	Out	In	Out
Casino Patron Vehicle Trips	8,892	8,892	279	172	648	531	713	531
Casino Employee Vehicle Trips	697	697	45	16	26	68	6	42
Total Casino Vehicle Trips	9,589	9,589	324	188	674	599	719	573

Project Site

The current, occupied land uses on the Project site include a 22,840 sf fitness center (Workout World) and 44,100 sf of office space at 50 O'Connell Way, along with two 175,200 sf warehouse buildings at the Crossroads Commerce Center in the Liberty Union Industrial Park Phase 2. These uses are slated to remain on the site after the casino and hotels are built. Only a vacant 137,000 sf industrial/office building is expected to be replaced by the casino project. For this reason, all of the trips generated by existing land uses, as reflected in the existing traffic counts, were retained in the traffic network for Build conditions.

Trip Distribution

In the 2008 *Environmental Impact Statement* for the proposed casino at Middleborough, trip distribution patterns were developed independently for patron trips and employee trips. The methodology incorporated population data from the Year 2000 U.S. Census. The same methodology, as described below, was adopted for this Project, although population estimates have been updated to the Year 2010 Census. Detailed trip distribution worksheets are found in **Appendix E**.

Patron Trips

For patron trips, market studies have shown that two hours is the maximum time that patrons will spend driving to a resort casino. Therefore, population data were gathered for communities within a two-hour drive of the proposed site. The population figures were modified by distance factors based on market studies, as follows:

- Those within a 30-minute drive would make 3.2 more visits to the resort than patrons located within a 1-2 hour drive.
- Those within a 30 to 60 minute drive would make 1.6 times as many visits to the resort than patrons located within a 1-2 hour drive.

Thus, population of communities within 30 minutes was multiplied by 3.2 and population of communities within 30-60 minutes was multiplied by 1.6.

A second factor, called a "competition factor", was developed to represent the proximity of the communities to competing casinos – i.e., Mohegan Sun, Foxwoods, Twin Rivers and several facilities in Maine. . (A high

factor represents little competition and a low factor reflects higher competition.) These factors ranged from 0.2 used for communities in Connecticut and Rhode Island close to competing casinos up to 0.9 applied to Taunton and abutting communities. Regional competition factors were assigned to reduce trips from communities to the north and west that would generally fall within the market area for potential casinos for the western and north districts. No specific casino locations in the north or west districts were assumed in the trip distribution.

As with the distance factor, community populations were multiplied by the specific competition factor to yield an estimate of the potential market population for the casino.

Employee Trips

Unlike patrons, who will travel up to two hours to visit the casino, most employees will travel 45 minutes or less. The associated trip distribution methodology for employees is similar to that of patrons, but incorporates only communities within a 45 minute commuting distance of the site. Distance factors were also applied to assign a higher proportion of trips to those communities closer to the Taunton site. As a separate trip rate was not established for hotel and water park employees, the overall patron trip distribution was used for all hotel and water park trips.

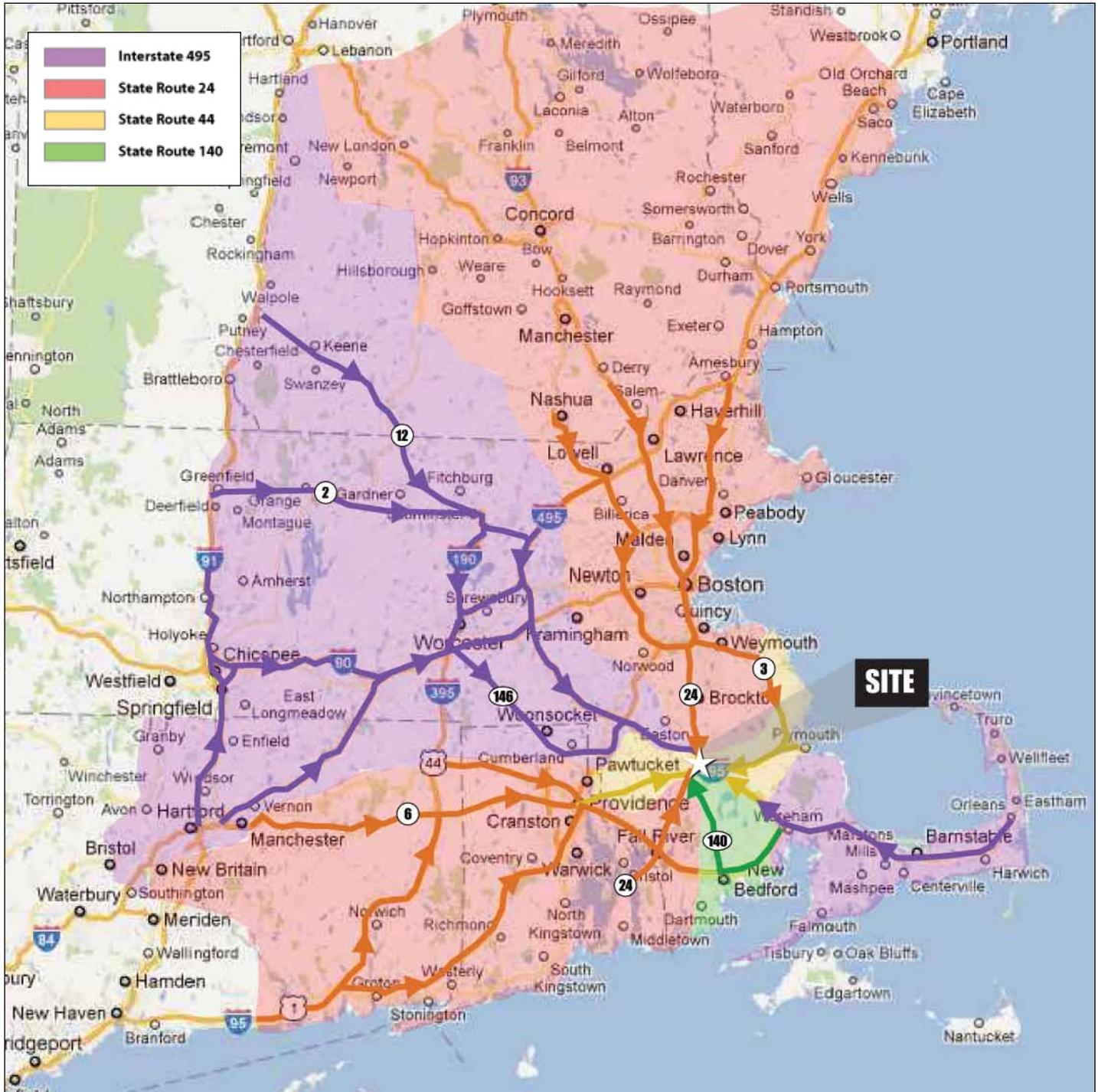
Resulting Trip Distribution

The above calculations yielded the first cut distribution of trips on a regional basis, as shown in **Figure 23** for all trips, **Figure 24** for casino and hotel patrons and **Figure 25** for casino employees. Once the trips from each of the regional highway approaches were calculated, they were distributed to local roadways and streets within the City of Taunton based on their relative convenience to the site, as shown in **Figure 26**.

Figures 27A-B show the percentage distribution on local streets and intersections for patrons; **Figures 28A-B** show the percentage distribution on local streets and intersections for employees. **Figures 29A-B, 30A-B, and 31A-B** show peak hour project generated trips on local streets and intersections. **Figure 32** shows peak hour project generated trips at the interchange.

Figures 33A-B show Build volumes in the AM peak hour at study area intersections; **Figures 34A-B** show PM peak hour Build volumes and **Figures 35A-B** show Saturday midday peak hour Build volumes. **Figure 36** shows Build volumes at the interchange.

Figure 23. Overall Regional Trip Distribution



Not to scale.

Figure 24. Regional Trip Distribution: Patrons

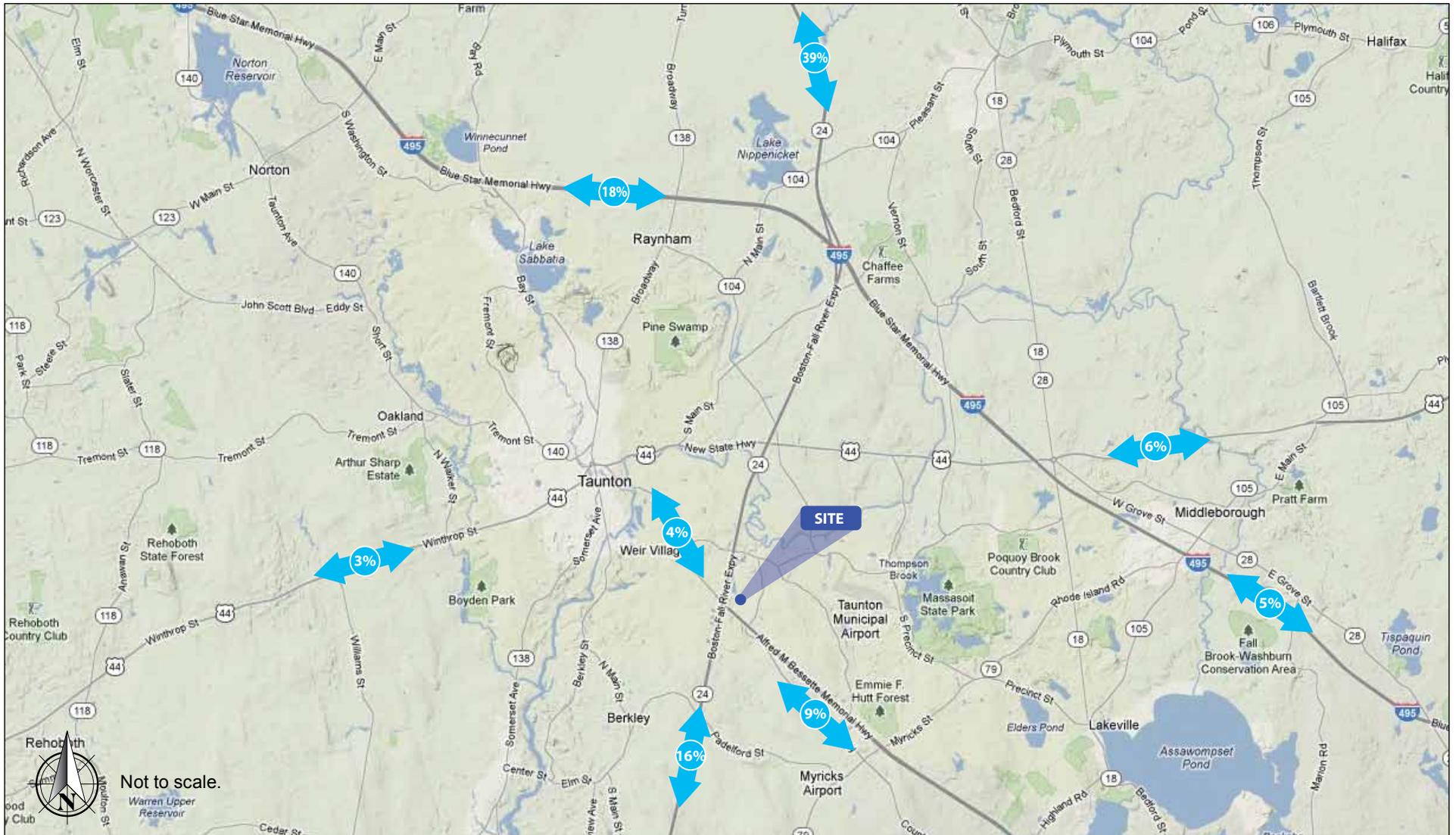


Figure 25. Regional Trip Distribution: Employees

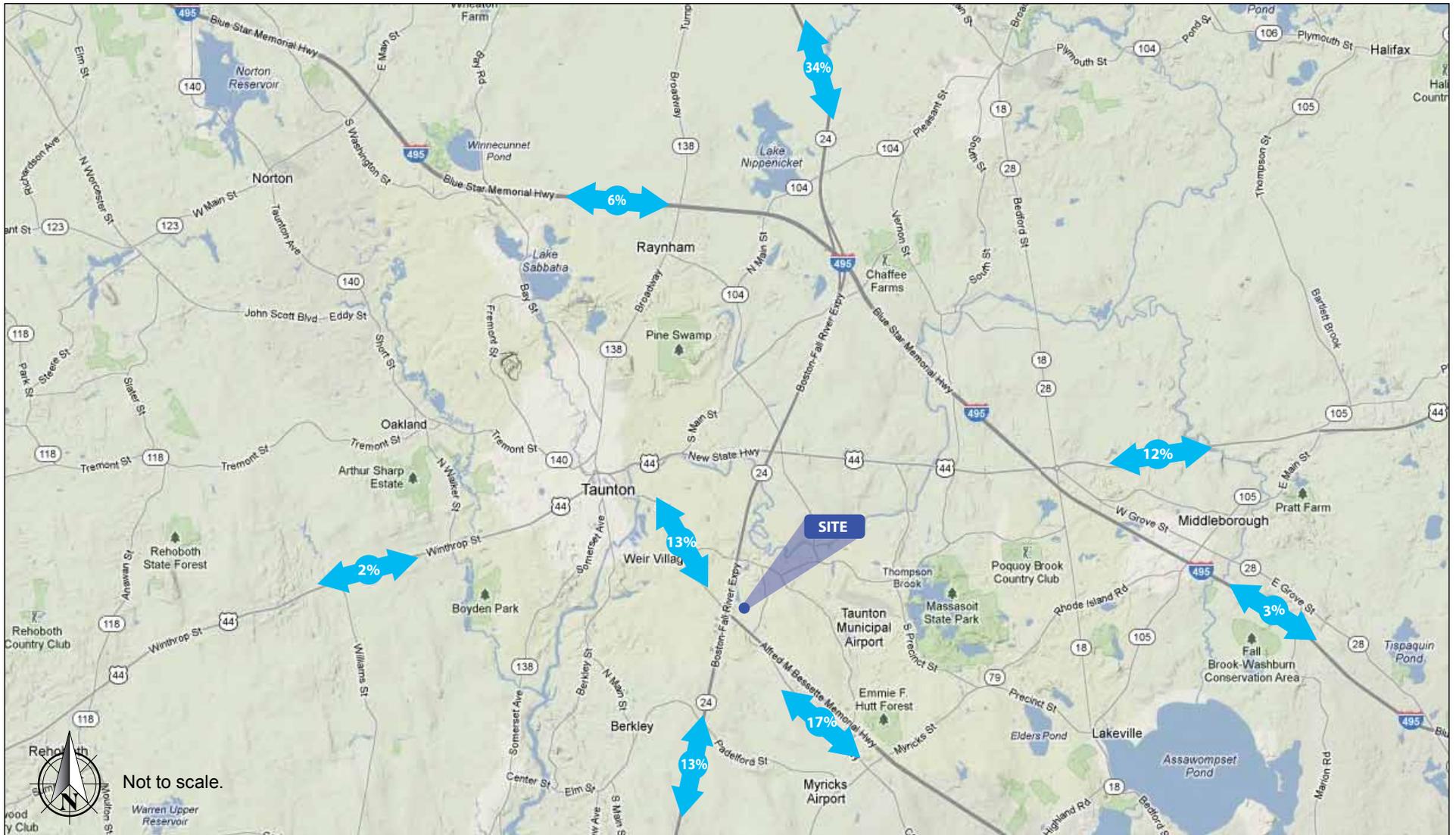
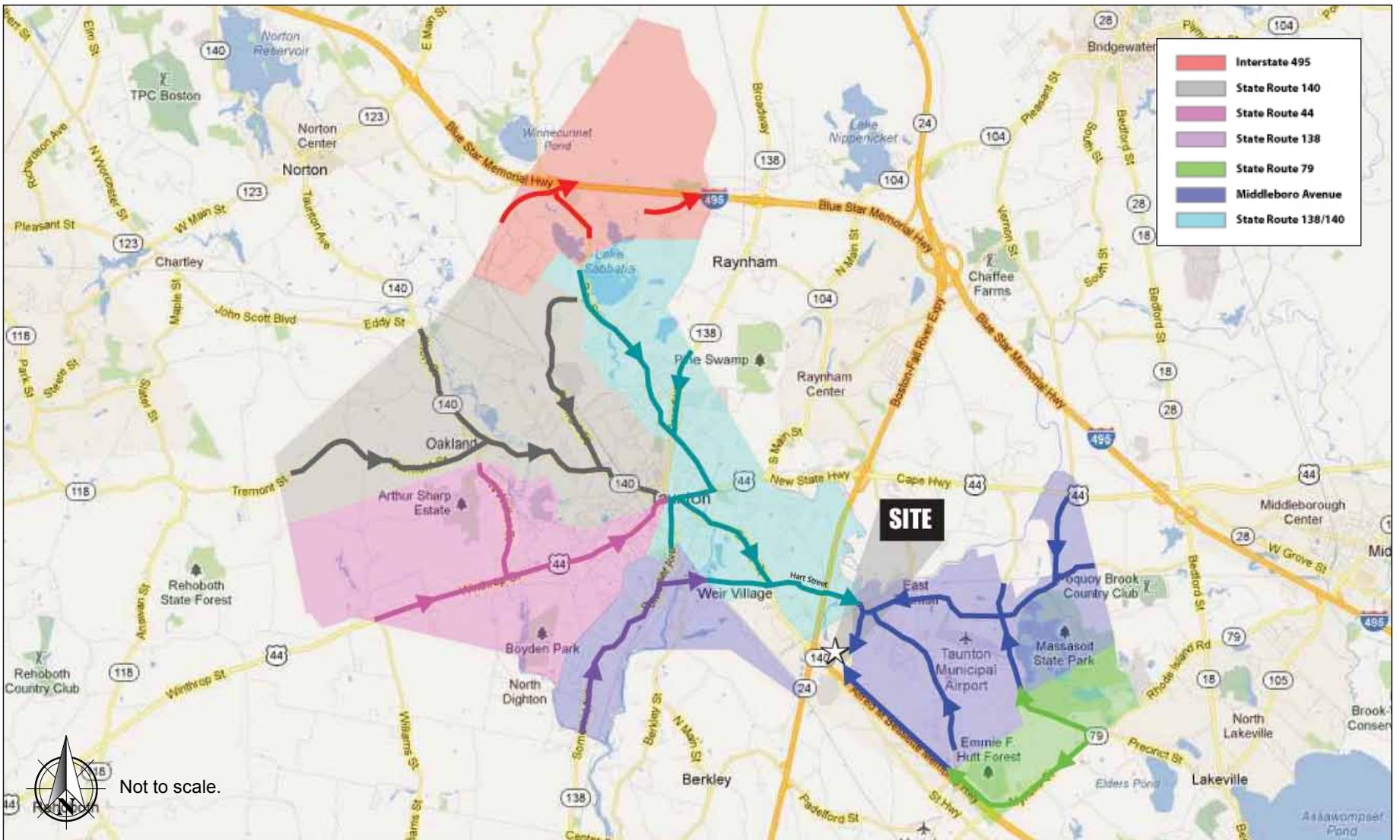
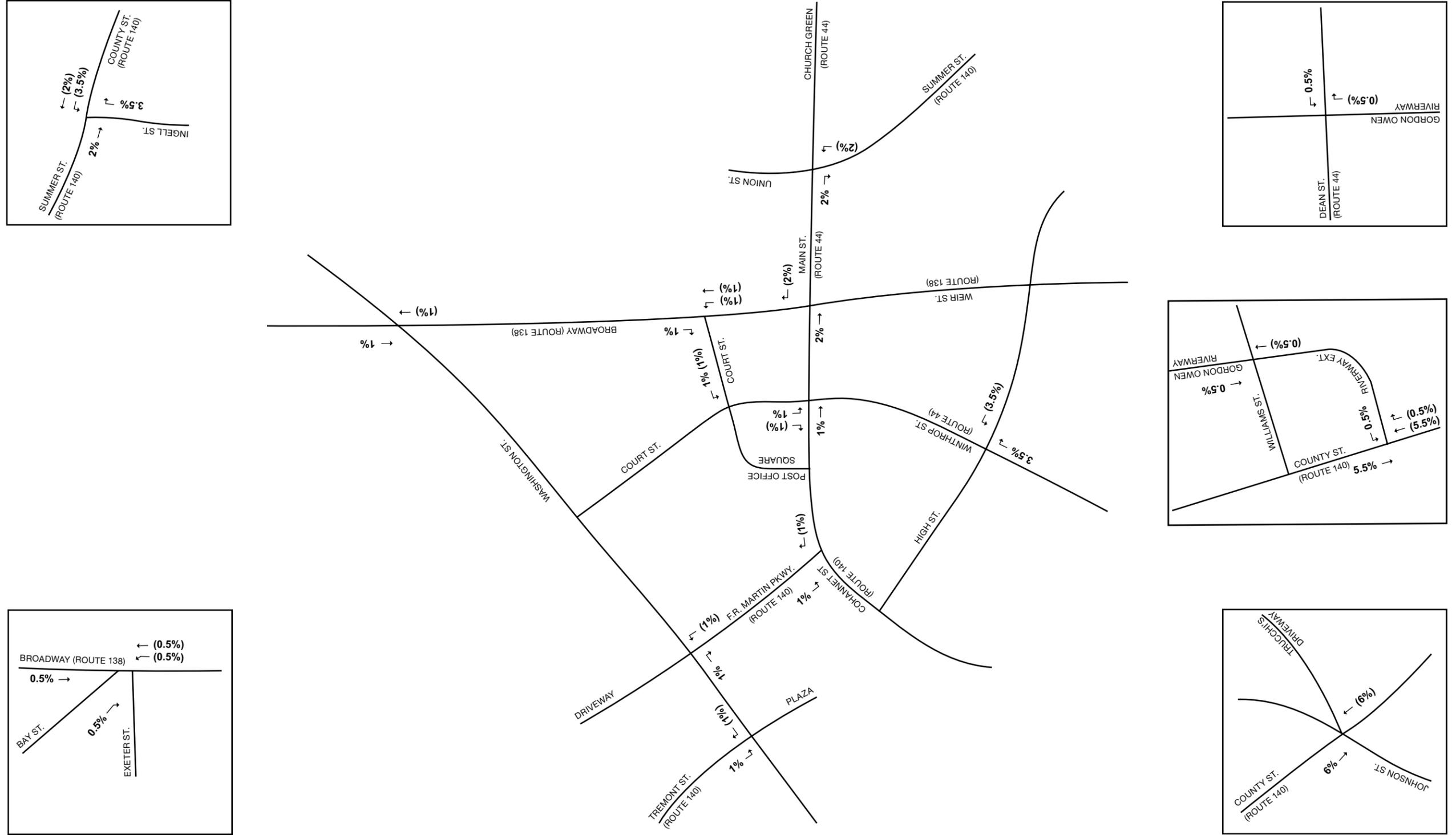


Figure 26. Taunton Roadway Trip Distribution



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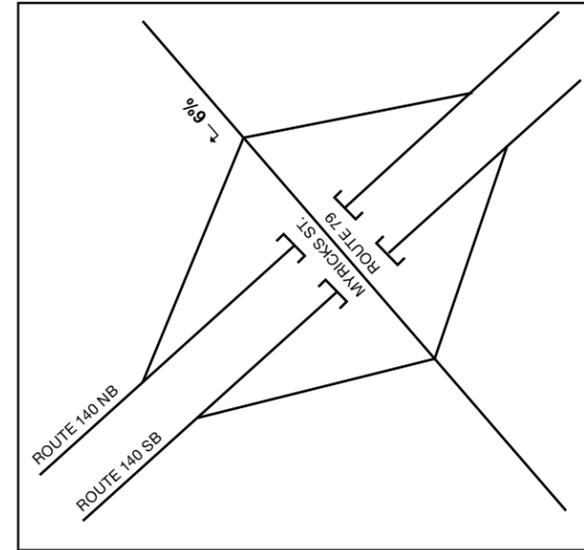
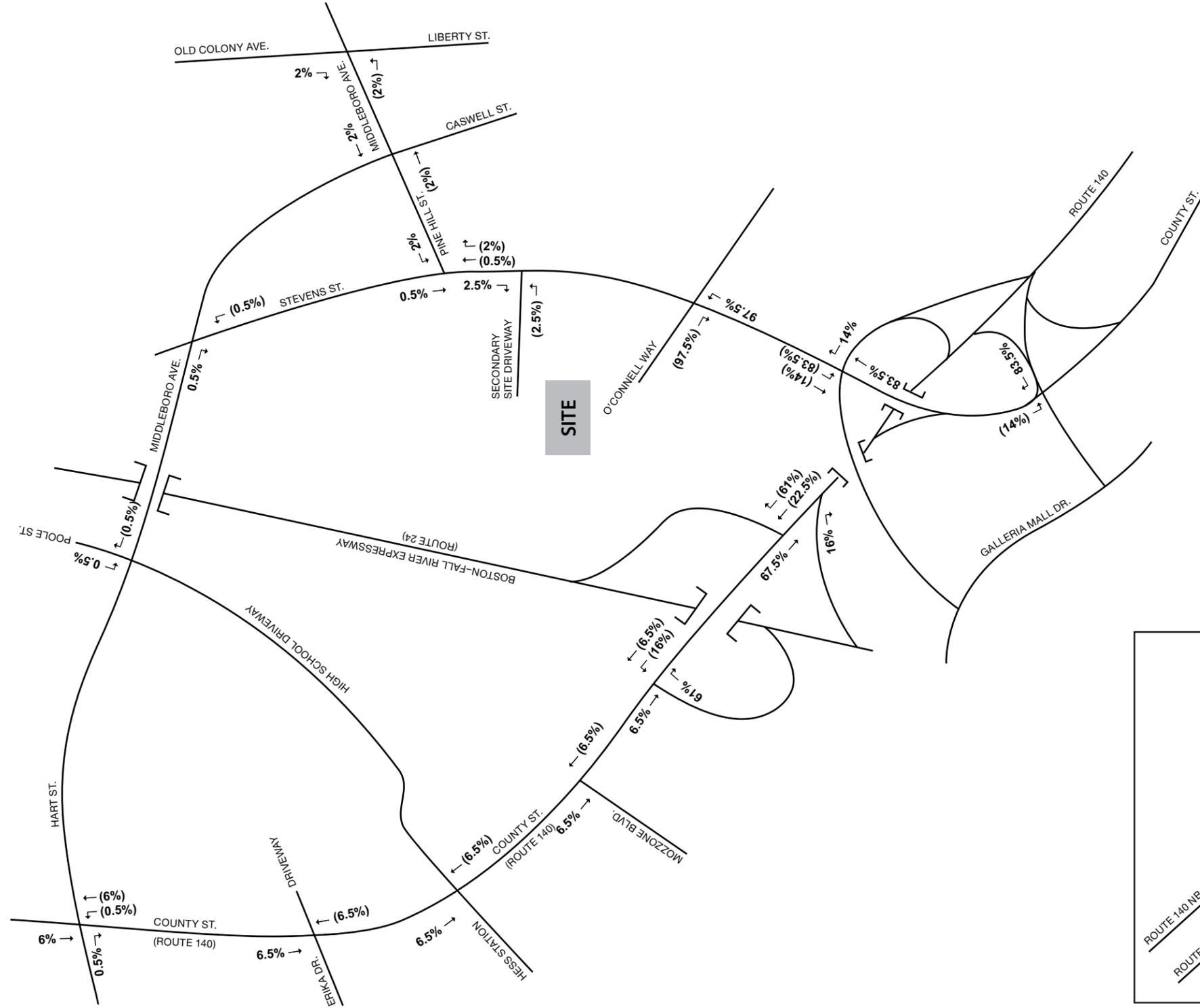
Figure 27A. Local Trip Distribution (In Percentages), Patron - West



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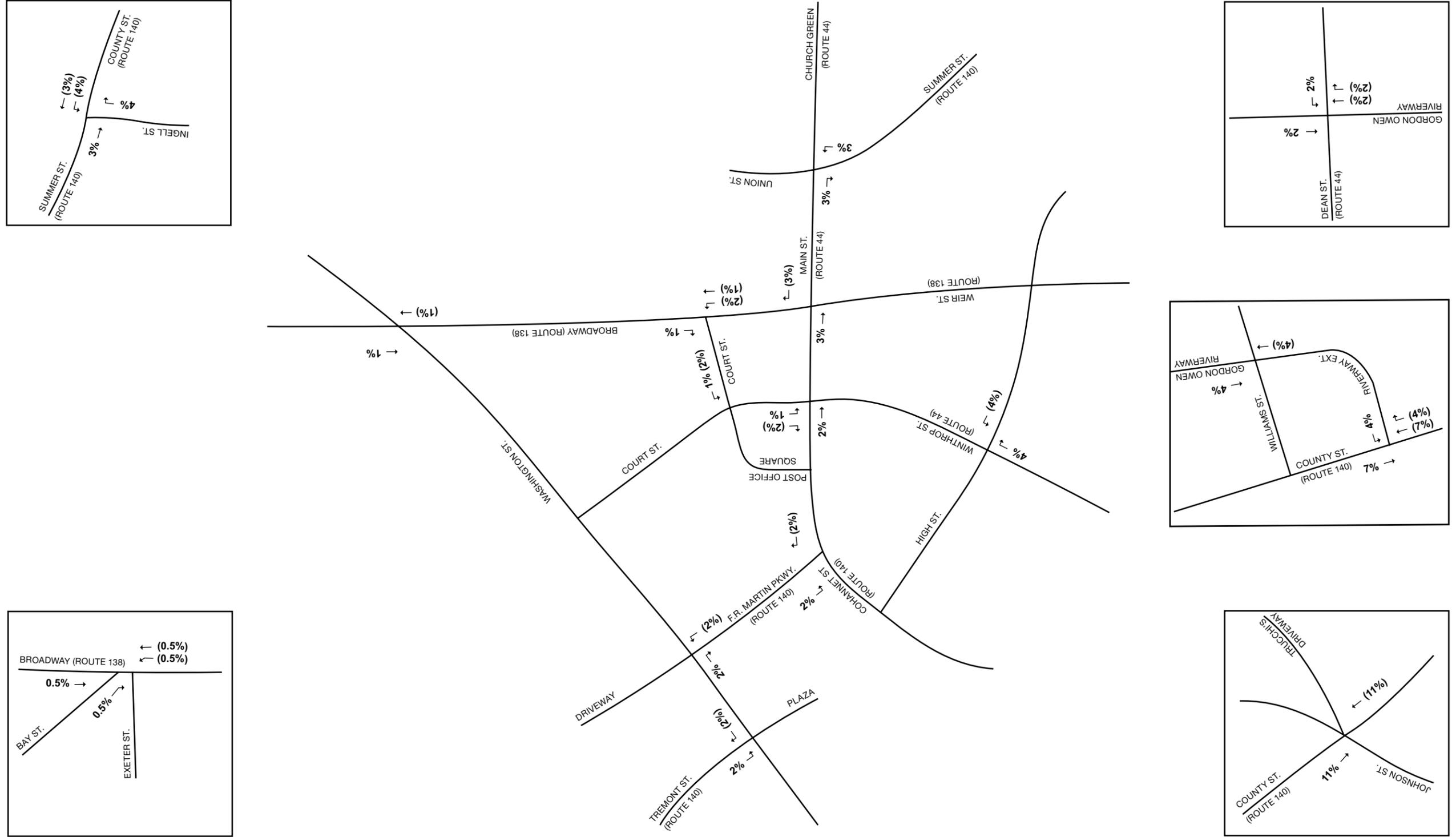
Figure 27B. Local Trip Distribution (In Percentages), Patron – East



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Figure 28A. Local Trip Distribution (In Percentages), Employee - West



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Figure 28B. Trip Distribution (In Percentages), Employee - East

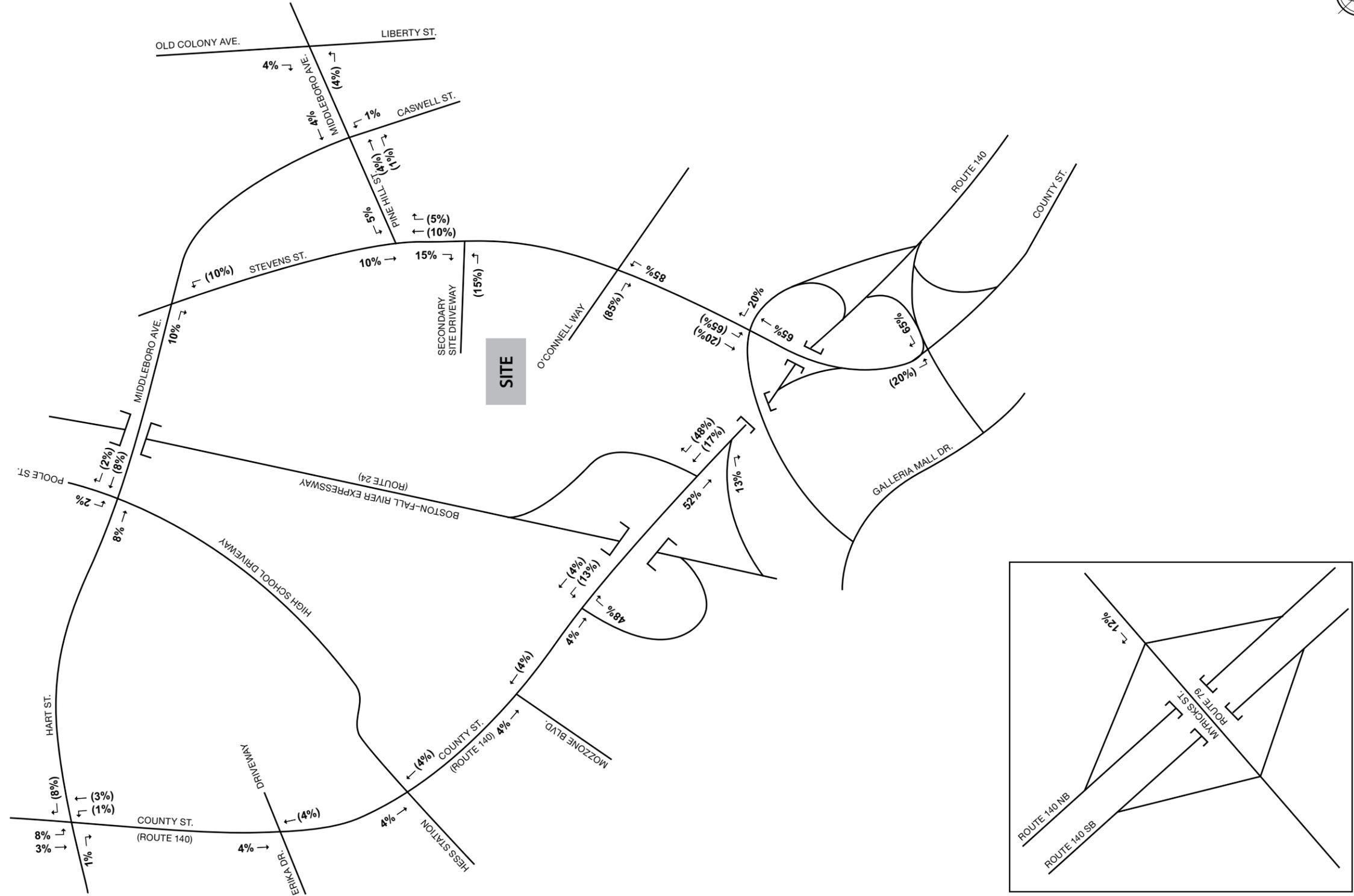
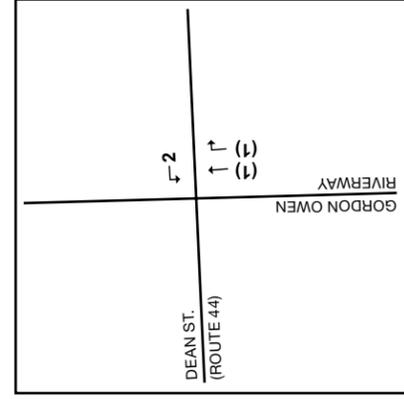
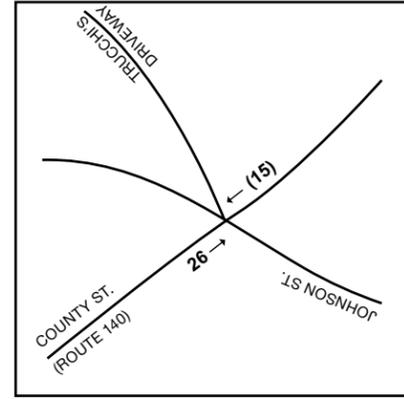
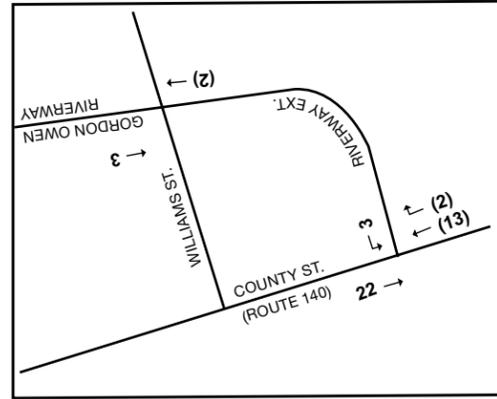
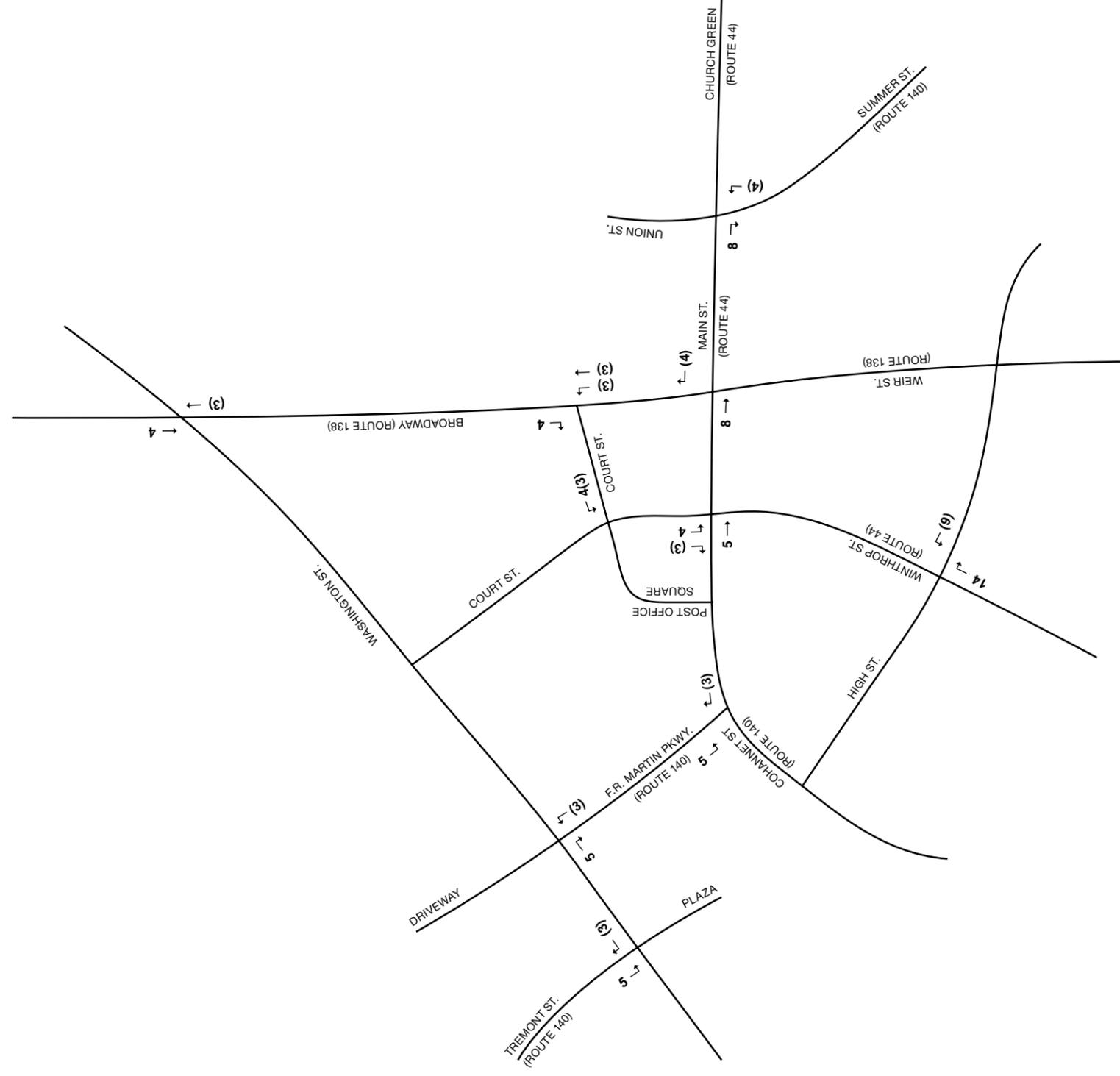
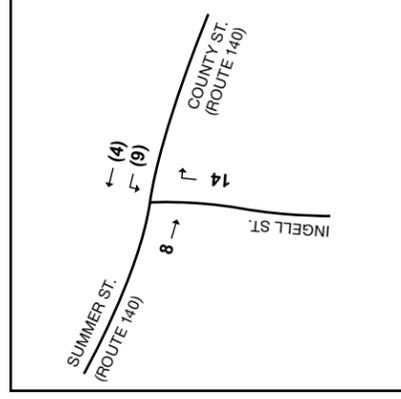
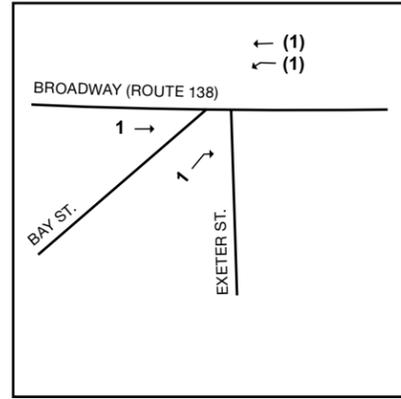


Figure 29A. Project Generated Trips, A.M. Peak Hour Volumes – West

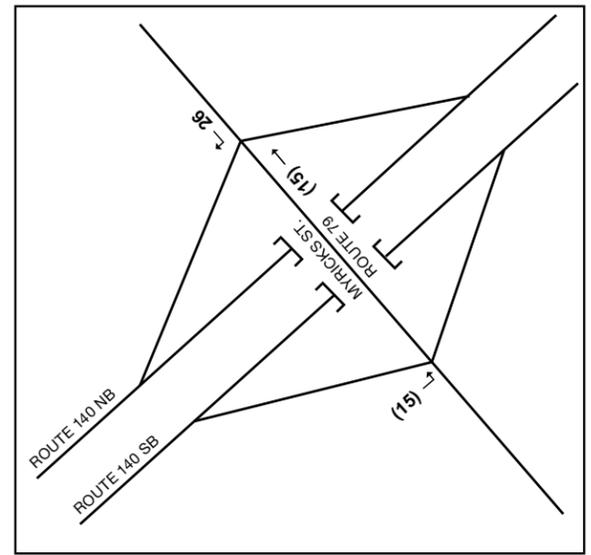
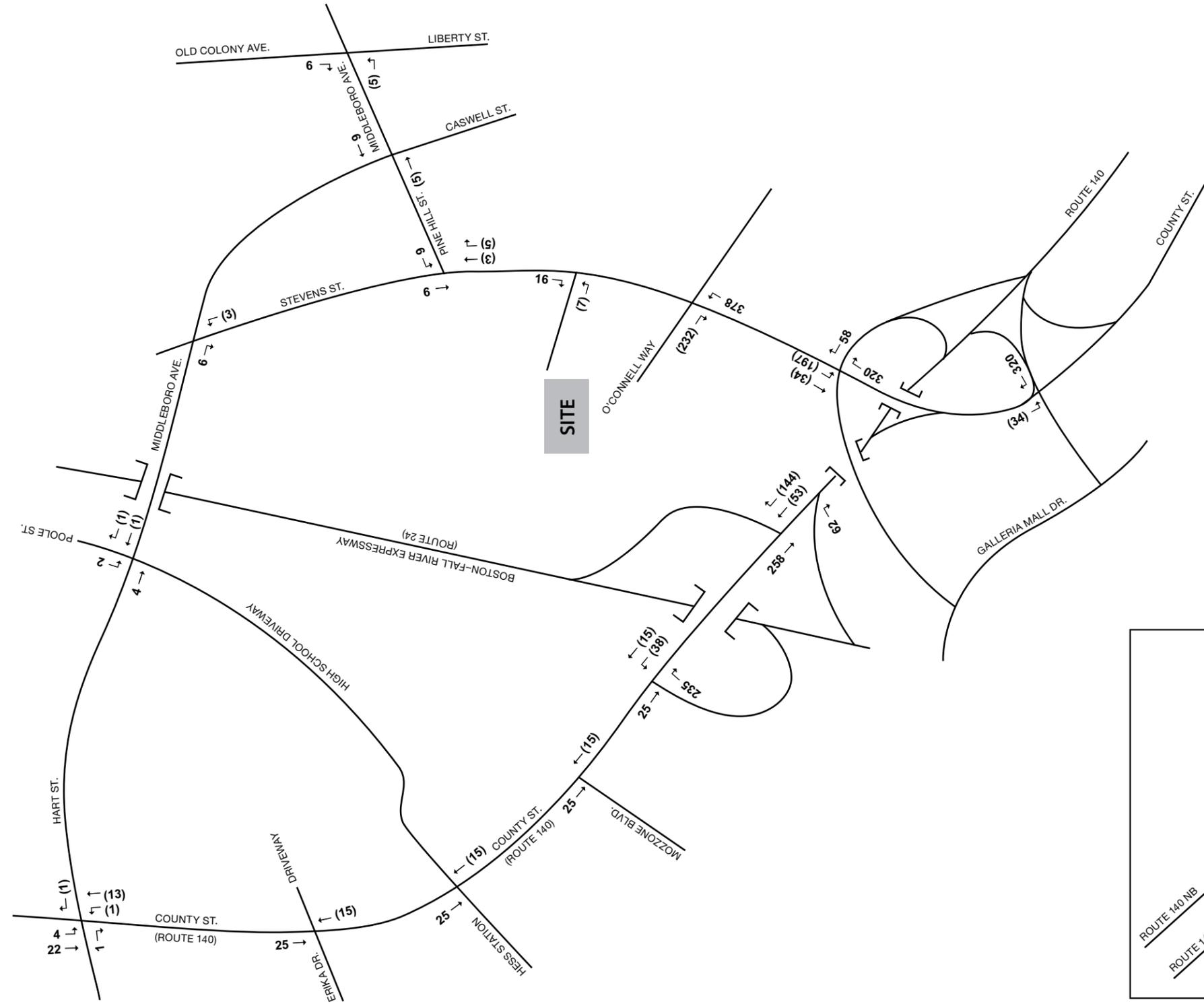
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Figure 29B. Project Generated Trips, A.M. Peak Hour Volumes – East

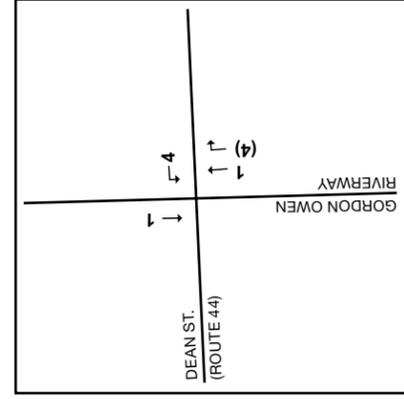
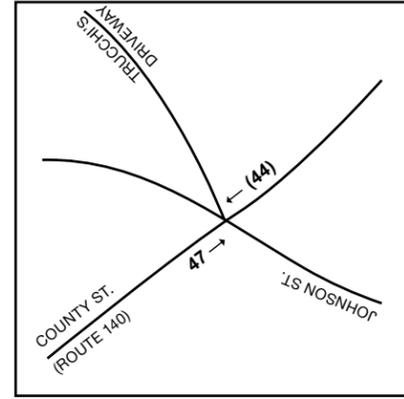
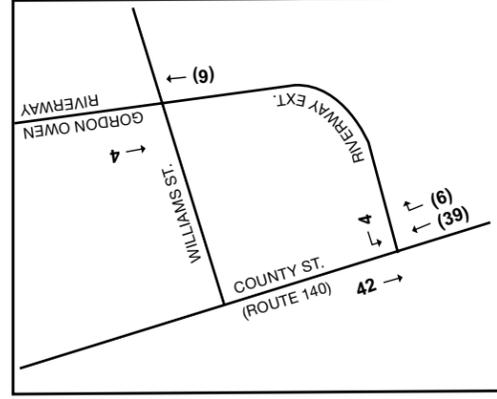
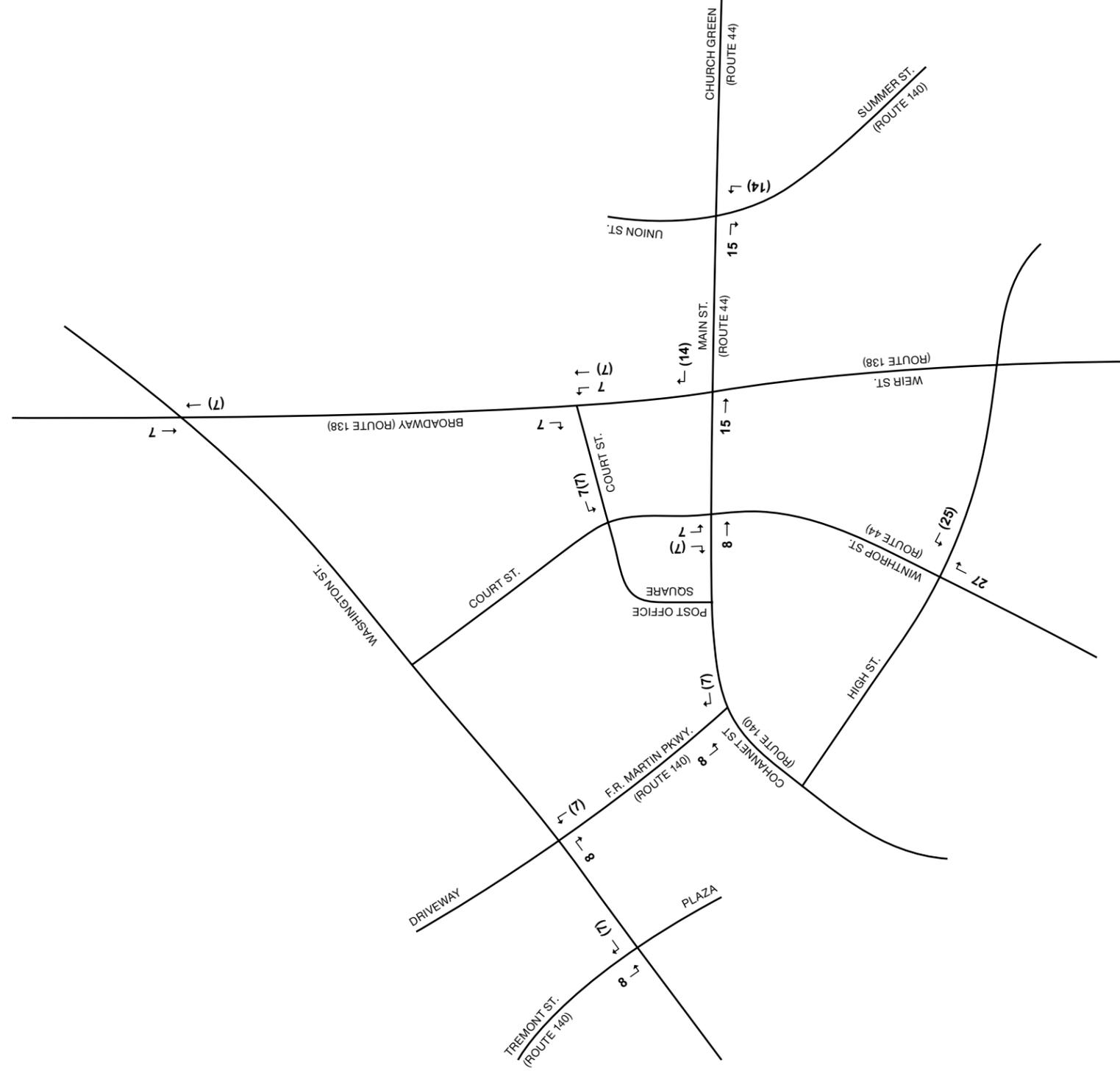
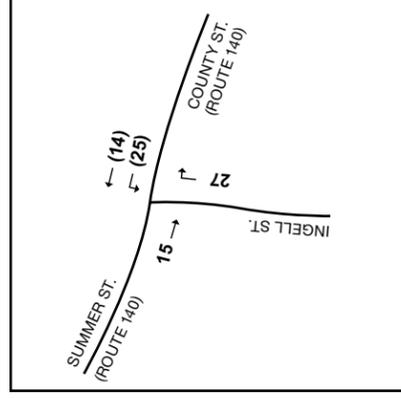
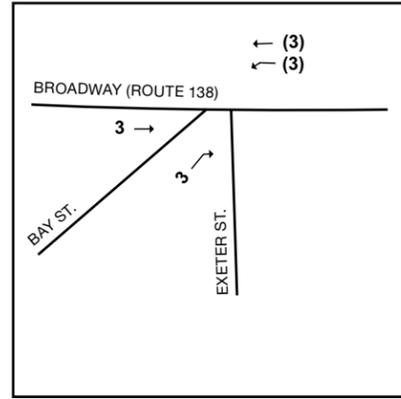
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Figure 30A. Project Generated Trips, Friday P.M. Peak Hour Volumes – West

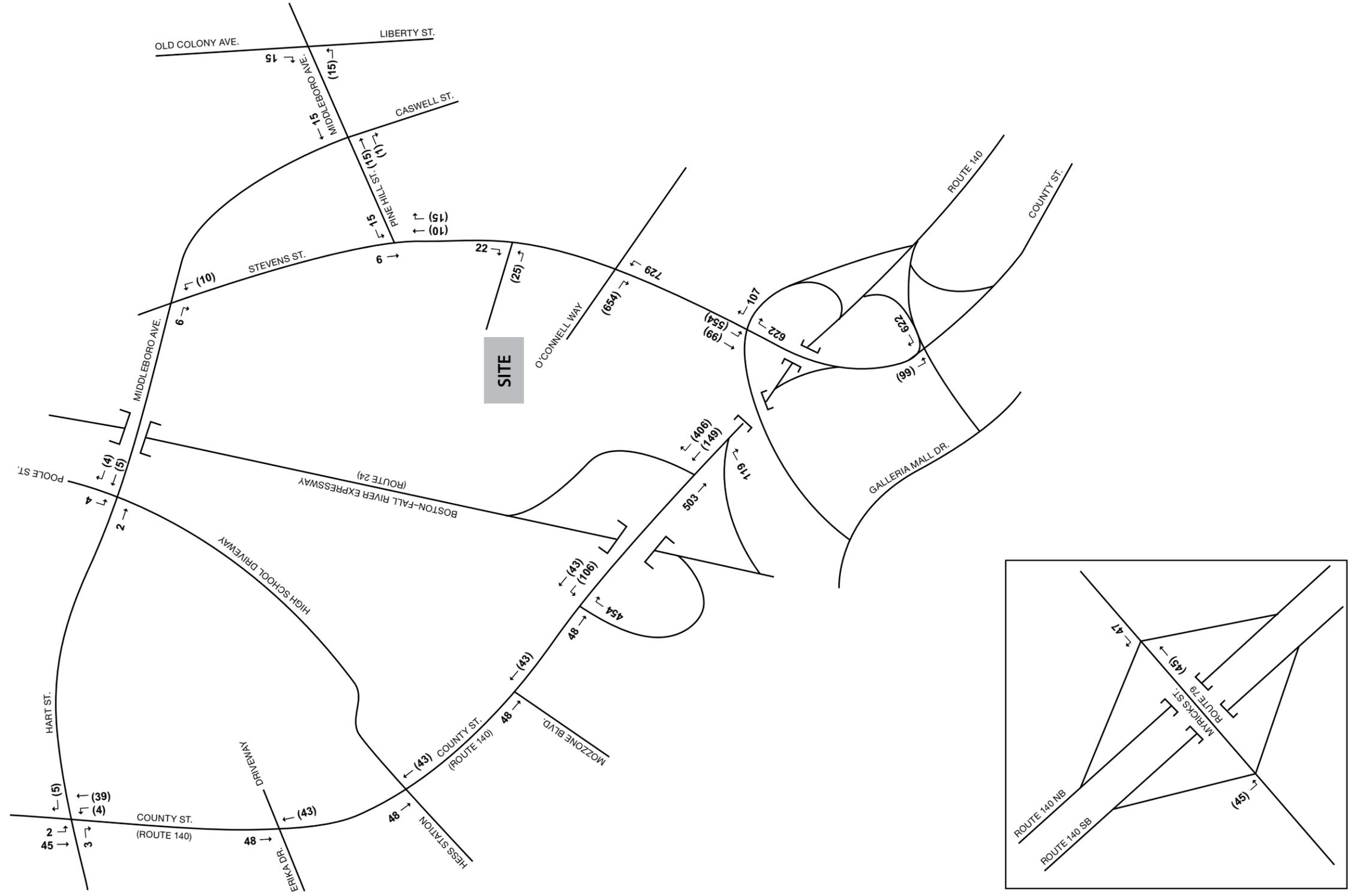
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Figure 30B. Project Generated Trips, Friday P.M. Peak Hour Volumes – East

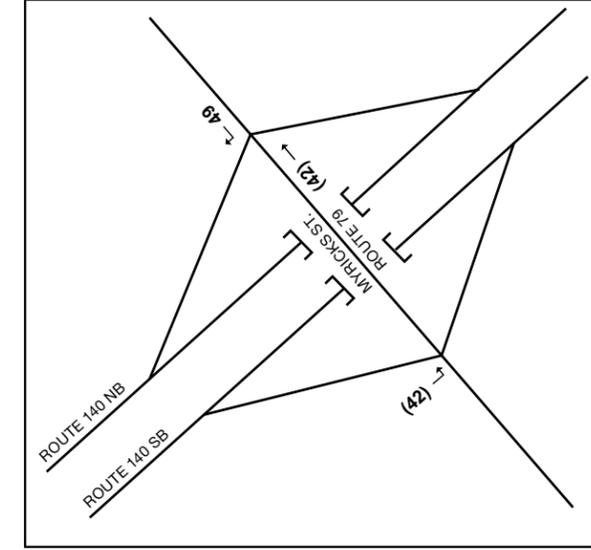
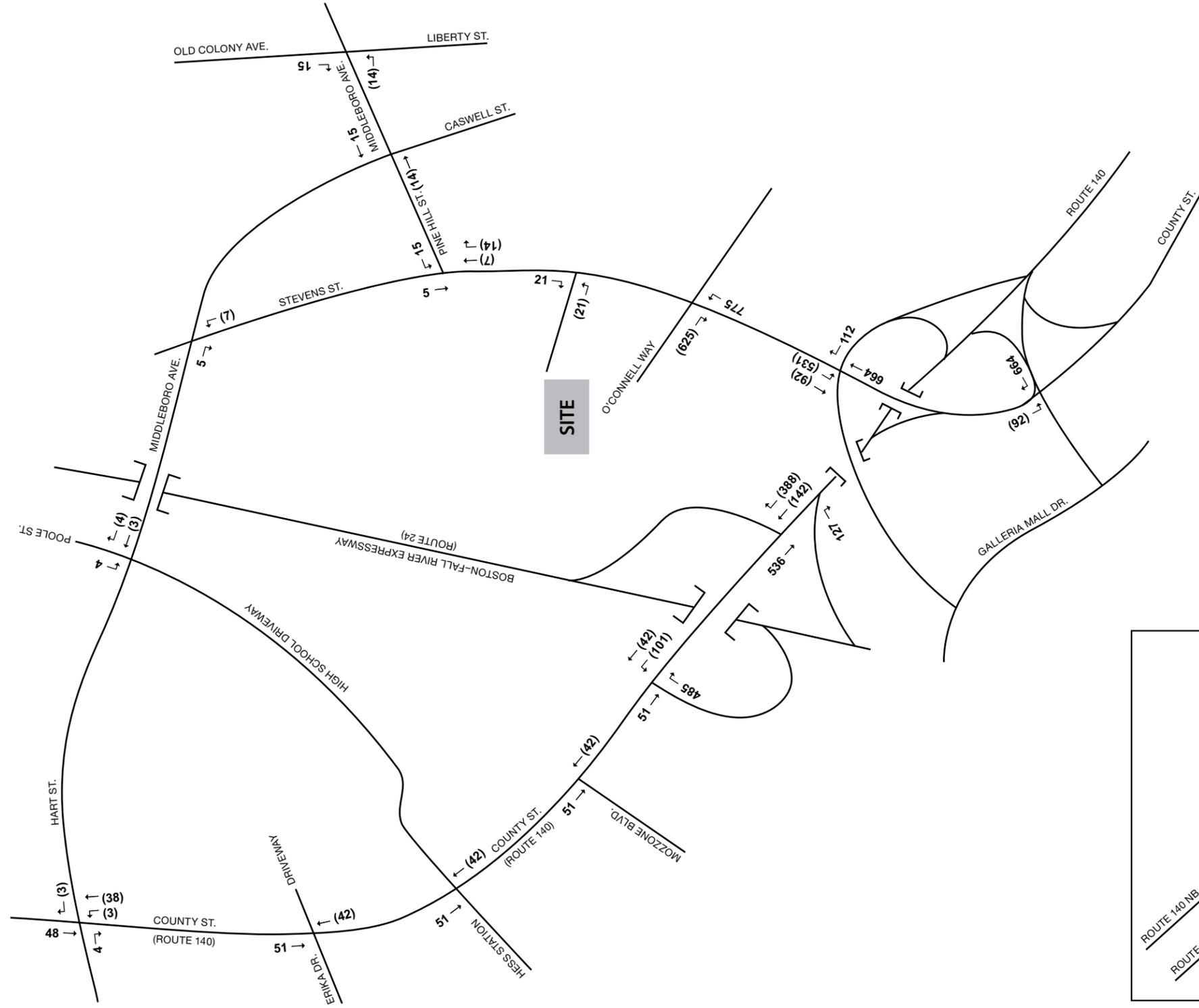
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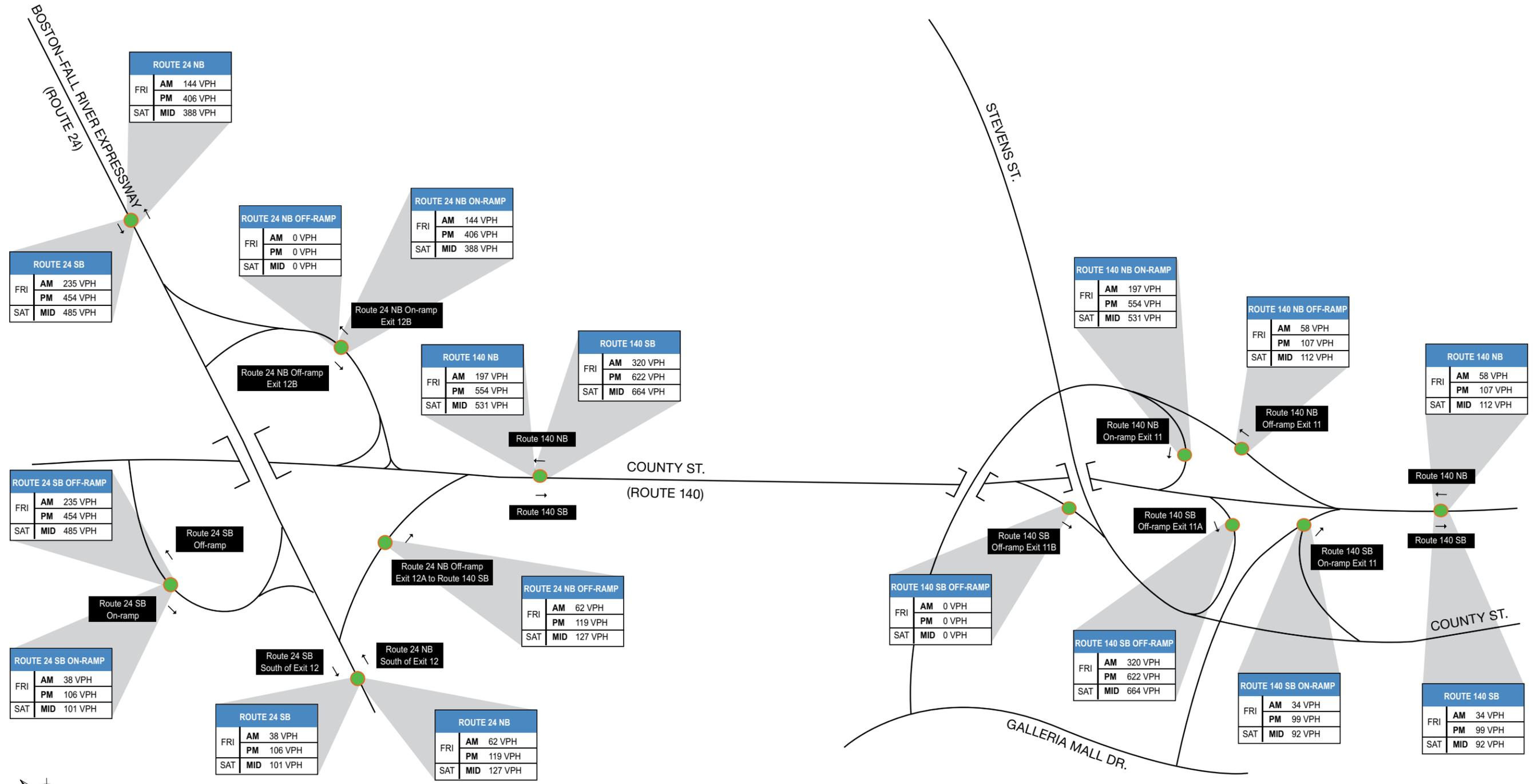
Figure 31B. Project Generated Trips, Saturday Midday Peak Hour Volumes – East

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Figure 32. Project-generated (2022) Interchange Volume Data



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Figure 33A. Build Conditions (2022) AM Peak Hour Volumes – West

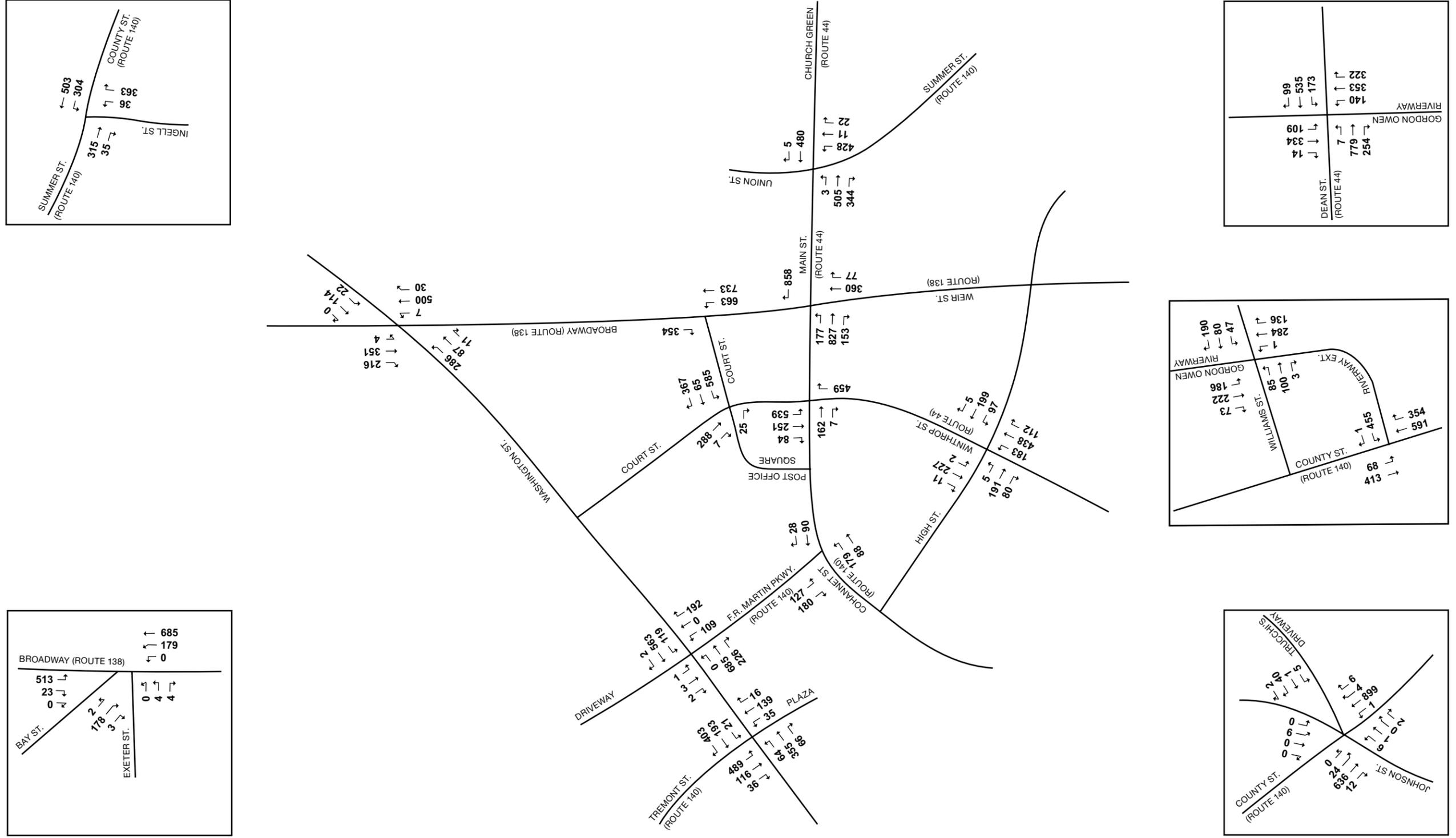
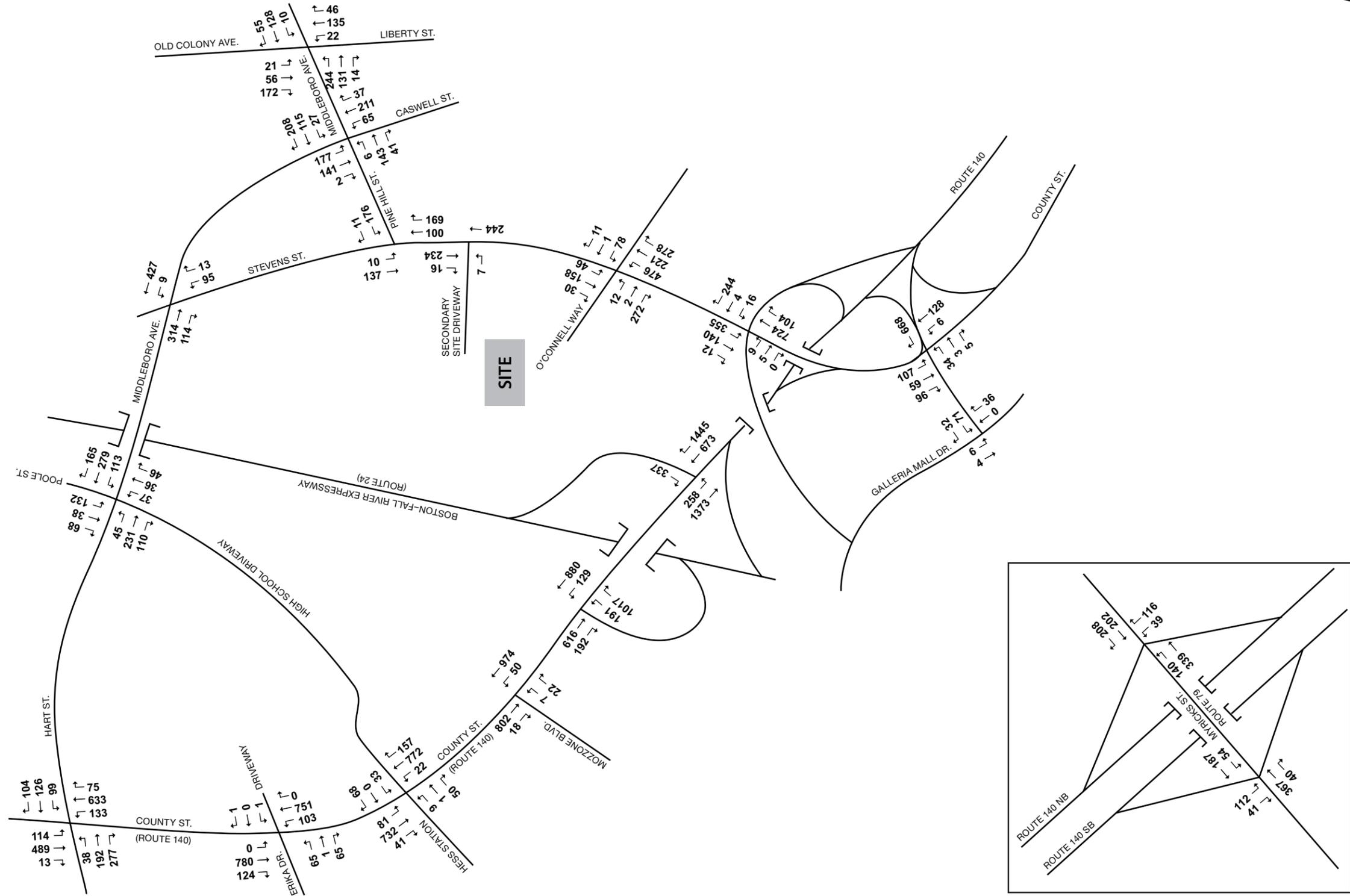
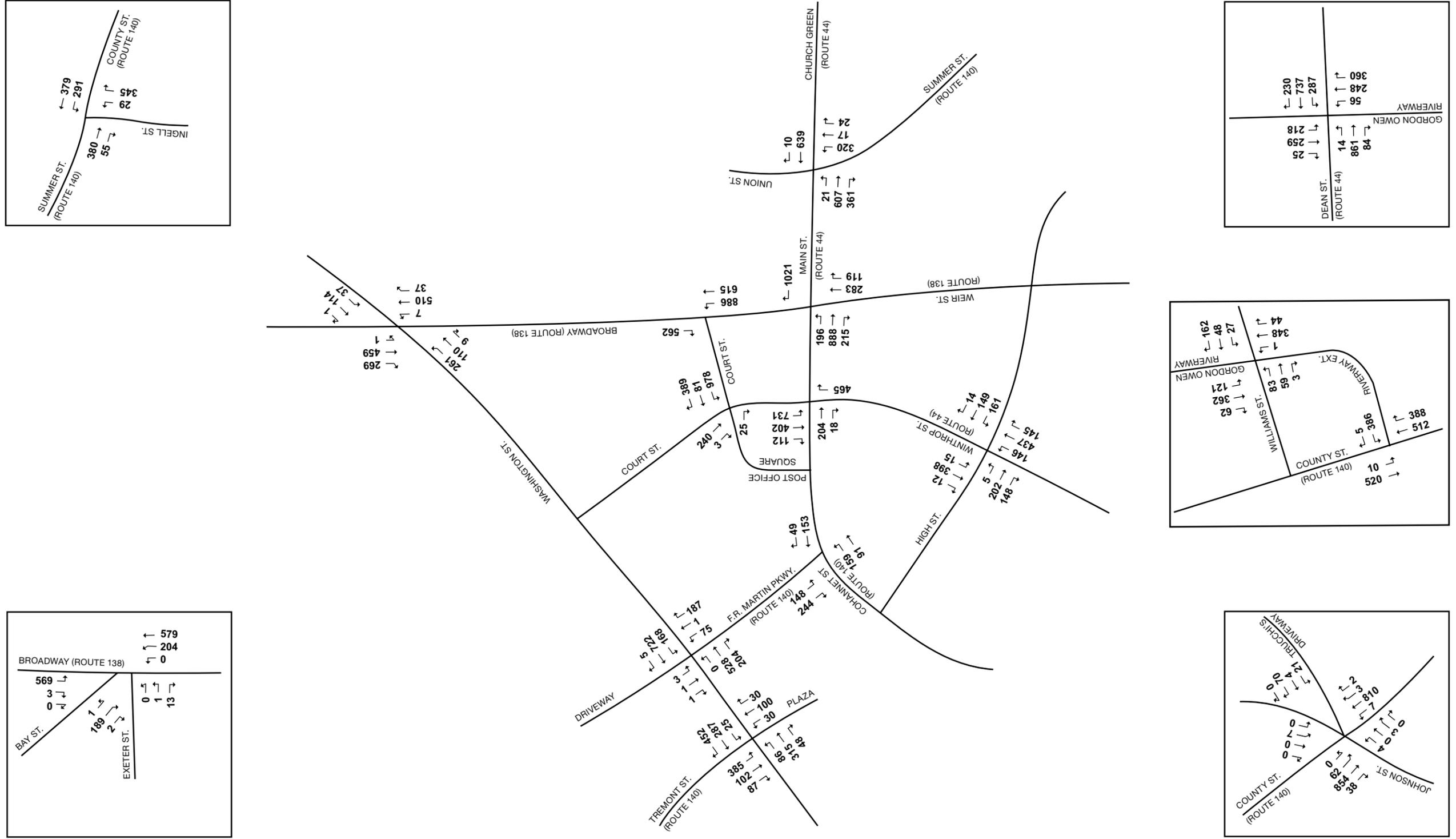


Figure 33B. Build Conditions (2022) AM Peak Hour Volumes – East



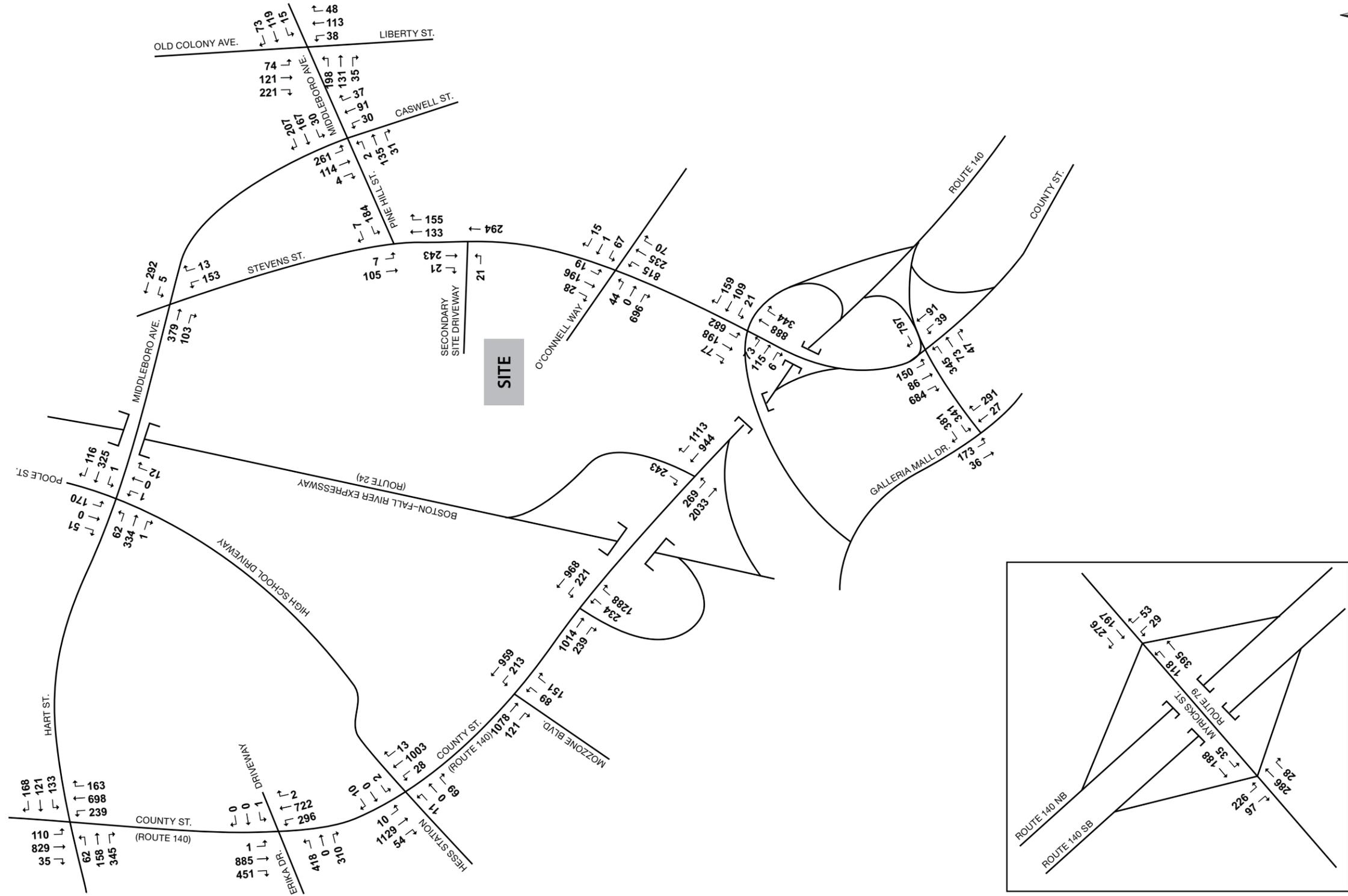
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Figure 35A. Build Conditions (2022) Saturday Midday Peak Hour Volumes – West



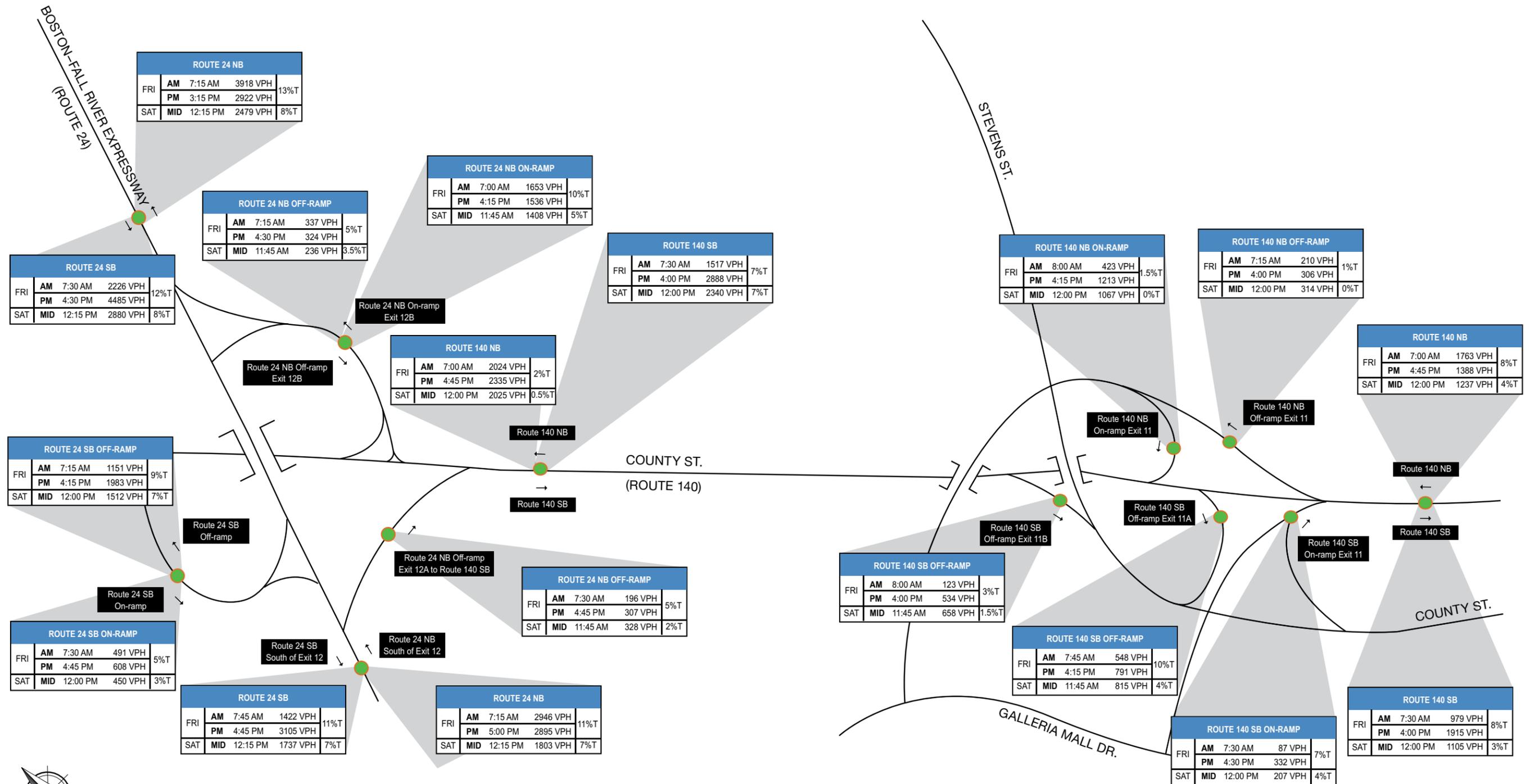
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Figure 35B. Build Conditions (2022) Saturday Midday Peak Hour Volumes – East



Not to scale.

Figure 36. Build Conditions (2022) Interchange Volume Data



Not to scale.

Operations Analysis

2022 Build AM Peak Hour Intersection Operations

Table 17 shows the Build Conditions intersection level of service summary for study area intersections during the morning peak hour.

Table 17: Build Conditions (2022) Intersection Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	1.5		
Galleria EB left/thru thru/right	A	2.9	0.03	5
Route 140 WB right	A	0.7	0.41	0
County NB left/thru thru	A	2.8	0.06	14
County SB left/thru thru	A	2.8	0.09	17
County SB right	A	1.8	0.10	12
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	B	12.4		
Overpass EB left/thru thru/right	C	22.2	0.04	9
Route 140 WB left	C	23.3	0.09	22
Route 140 WB thru	C	22.4	0.03	15
Route 140 WB right	A	8.1	0.54	54
Stevens NB left/thru thru/right	B	17.0	0.70	193
Stevens SB left left	A	7.0	0.52	46
Stevens SB thru/right	A	3.8	0.15	37
5. Route 24 NB Ramp (Exit 12B/County Street (Route 140))	B	14.6		
Route 24 WB right	A	0.3	0.21	0
Route 140 NB thru thru	B	10.6	0.46	134
Route 140 NB right	C	33.1	>1.0	#261
Route 140 SB left	B	16.3	0.50	135
Route 140 SB thru thru	A	0.4	0.44	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	C	23.8		
Route 24 EB left	C	25.1	0.30	162
Route 24 EB right right	B	19.8	0.75	372
Route 140 NB left	D	47.0	0.53	153
Route 140 NB thru thru	B	15.8	0.52	274
Route 140 SB thru thru/right	C	34.0	0.75	353
9. Mozzone Boulevard/County Street (Route 140)	A	4.1		
Mozzone EB left	B	16.3	0.03	8
Mozzone EB right	A	8.2	0.08	8
Route 140 NB left/thru thru	A	4.5	0.48	148
Route 140 SB thru thru/right	A	3.2	0.33	91

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
11. Erika Drive/County Street (Route 140)	B	14.9		
Erika EB left	D	39.8	0.27	64
Erika EB left/thru	D	39.6	0.26	62
Erika EB right	A	7.5	0.15	24
Driveway WB left/thru/right	C	34.0	0.05	3
Route 140 NB left	B	10.4	0.32	82
Route 140 NB thru thru/right	A	9.4	0.39	282
Route 140 SB left/thru thru	B	19.5	0.59	396
Route 140 SB right	B	11.0	0.20	92
12. Hart Street/County Street (Route 140)	C	32.2		
Hart EB left/thru	C	32.8	0.49	303
Hart EB right	A	2.1	0.32	28
Hart WB left/thru	D	39.5	0.64	#385
Hart WB right	A	4.1	0.14	37
Route 140 NB left	D	41.4	0.48	189
Route 140 NB thru thru/right	D	37.0	0.80	400
Route 140 SB left	D	50.4	0.57	170
Route 140 SB thru thru/right	D	37.9	0.71	284
15. Washington Street/Broadway (Route 138)	C	28.5		
Washington EB left/thru/right	C	31.2	0.71	#425
Washington WB left/thru/right	B	19.7	0.23	121
Broadway NB left/thru/right	C	32.9	0.78	#582
Broadway SB left/thru	C	25.7	0.57	328
Broadway SB right	C	22.8	0.40	197
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	30.0		
Tremont EB left	D	35.7	0.69	366
Tremont EB left/thru/right	D	35.2	0.68	369
Plaza WB left/thru/right	E	56.6	0.80	#332
Oak NB left/thru thru/right	C	29.7	0.64	245
Washington SB left/thru	C	30.0	0.50	234
Washington SB right	A	7.9	0.48	140
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	12.4		
Cohannet EB left	A	2.3	0.13	m44
Cohannet EB thru thru	B	19.9	0.64	287
Cohannet EB right	A	2.3	0.13	m39
Main WB right	A	1.6	0.59	0
Weir NB thru	C	28.2	0.66	#313
Weir NB right	B	19.8	0.17	67

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
22. High Street/Winthrop Street (Route 140)	C	29.2		
High EB left/thru/right	C	34.6	0.65	249
High WB left	F	>80.0	0.86	#149
High WB thru/right	C	32.2	0.55	189
Winthrop NB left	B	16.0	0.28	128
Winthrop NB thru/right	B	19.4	0.60	458
Winthrop SB left/thru thru/right	C	29.5	0.33	114
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	20.5		
Main EB left	B	15.7	0.01	7
Main EB thru	C	24.9	0.72	#443
Main EB right	A	5.7	0.44	87
Church WB thru/right	C	24.3	0.70	#419
Summer NB left/thru	C	23.7	0.67	#376
Summer NB right	B	11.5	0.04	21
33. County Street (Route 140)/Riverway Ext.	D	38.1		
County EB left/thru	B	15.2	0.67	352
County WB thru	B	13.5	0.65	398
County WB right	A	2.3	0.39	38
Riverway SB left/right	F	>80.0	>1.0	#613
34. Dean Street/Longmeadow Road/Gordon Owen	D	41.9		
Dean EB left	D	49.7	0.08	22
Dean EB thru thru/right	D	41.9	0.92	#657
Dean WB left	E	55.8	0.72	221
Dean WB thru thru/right	B	14.5	0.37	258
Gordon NB left	F	>80.0	>1.0	#294
Gordon NB thru	D	39.3	0.68	#445
Gordon NB right	C	22.2	0.58	252
Longmeadow SB left	F	>80.0	0.91	#229
Longmeadow SB thru/right*	D	43.8	0.77	#481
Non-Signalized Intersections				
1. Galleria Mall Driveway North/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	F	>50.0	0.52	42
O'Connell EB right	B	12.3	0.38	46
Driveway WB left/thru	F	>50.0	>1.0	-
Driveway WB right	B	10.0	0.02	1
Stevens NB left/thru	A	8.0	0.40	49
Stevens NB right	A	0.0	0.19	0
Stevens SB left	A	8.8	0.05	4
Stevens SB thru/right	A	0.0	0.13	0

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.29	0
Middleboro WB left/thru	A	0.3	0.01	1
Stevens NB left/right	C	24.3	0.40	46
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	1.3	0.05	4
Middleboro WB left/thru/right	A	4.9	0.22	20
Bristol NB left/thru/right	F	-	>1.0	-
Poole SB left/thru/right	F	-	>1.0	-
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	C	22.3	0.30	31
Bristol WB left/thru	F	>50.0	0.79	100
Bristol WB right	B	15.0	0.27	28
Route 140 NB left/thru thru/right	A	0.7	0.36	2
Route 140 SB left/thru thru/right	A	3.8	0.25	12
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	A	7.8	0.11	-
Drive South WB right	A	6.3	0.04	-
Mall Drive NB thru	A	7.2	0.00	-
Mall Drive NB right	A	6.3	0.04	-
Mall Drive SB left	A	7.1	0.01	-
Mall Drive SB right	A	6.6	0.01	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)				
Driveway EB left/thru/right	F	>50.0	0.16	13
Pkwy WB left/thru	F	>50.0	>1.0	770
Pkwy WB right	F	>50.0	>1.0	770
Washington NB left/thru	A	0.0	0.00	0
Washington NB right	A	0.0	0.14	0
Washington SB left/thru/right	A	5.1	0.20	18
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	A	9.1	0.44	58
Weir NB thru	A	9.1	0.44	58
Broadway SB right	A	0.0	0.24	0
20. Court Street/Western Green (44/138)/Post Office Square				

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Post EB right	A	8.5	0.03	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	B	14.6	0.52	-
21. Cohannet Street (Route 140)/Western Green (44/138)-				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.23	0
Summer WB left/thru	A	6.1	0.29	31
Ingell NB left/right	F	>50.0	>1.0	433
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.0	0.00	0
County WB left/thru/right	A	0.1	0.00	0
Johnson NB left/thru/right	F	>50.0	0.60	57
Johnson SB left/thru/right	F	>50.0	0.65	52
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	3.2	0.12	10
Myricks WB thru/right	A	0.0	0.27	0
Ramps NB left/thru	A	0.0	0.00	-
Ramps NB right	C	17.0	0.25	25
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.00	0
Myricks WB left/thru	A	2.3	0.06	4
Ramps SB left/thru	A	0.0	0.00	0
Ramps SB right	C	21.8	0.42	52
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.9	0.20	1
Middleboro WB left/thru/right	A	0.5	0.01	1
Liberty NB left/thru/right	F	>50.0	>1.0	262
Old Colony SB left/thru/right	F	>50.0	0.89	207
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	C	17.9	0.48	-
Middleboro WB left/thru/right	A	28.5	0.74	-
Caswell NB left/thru/right	D	-	-	-
Pinehill left/thru/right	D	31.2	0.77	-
30. Stevens Street/Pinehill Street				

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Pinehill WB left/thru/right	B	13.9	0.34	38
Stevens NB left/thru/right	A	0.0	0.18	0
Stevens SB left/thru/right	A	0.6	0.01	1
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.7	0.14	12
Cohannet WB thru/right	A	0.0	0.08	0
Pkwy SB left/right	C	20.6	0.61	102
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	4.9	0.20	18
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	>50.0	>1.0	-
Williams SB left/thru/right	F	>50.0	>1.0	909
35. Stevens Street/Secondary Site Driveway				
Driveway EB left/right	B	12.4	0.02	1
Stevens NB left/thru	A	0.0	0.00	0
Stevens SB thru/right	A	0.0	0.17	0

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

Under Build Conditions, there are only a few locations where LOS worsens from No-Build Conditions in the AM peak hour.

At *High Street/Winthrop Street*, the High Street westbound left-turn worsens from LOS E to LOS F.

At *O'Connell Way/Stevens Street*, the O'Connell Way eastbound left-turn/through movement worsens from LOS D to LOS F.

2022 Build Friday PM Peak Hour Intersection Operations

Table 18 shows the Build Conditions level of service summary for study area intersections during the Friday evening peak hour.

**Table 18: Build Conditions (2022) Intersection Level of Service Summary, Friday PM
Peak Hour**

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	6.0		
Galleria EB left/thru thru/right	B	12.1	0.53	88
Route 140 WB right	A	1.1	0.51	0
County NB left/thru thru	A	6.9	0.11	17
County SB left/thru thru	A	9.7	0.49	67
County SB right	A	3.9	0.60	37
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	F	>80.0		
Overpass EB left/thru thru/right	C	34.3	0.49	75
Route 140 WB left	C	30.7	0.13	29
Route 140 WB thru	C	32.6	0.30	69
Route 140 WB right	A	9.4	0.51	52
Stevens NB left/thru thru/right	/B	17.4	0.77	342
Stevens SB left left	F	>80.0	>1.0	#445
Stevens SB thru/right	A	5.0	0.40	138
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	B	11.3		
Route 24 WB right	A	0.2	0.16	0
Route 140 NB thru thru	B	14.3	0.58	240
Route 140 NB right	C	26.2	1.00	#248
Route 140 SB left	C	21.0	0.39	147
Route 140 SB thru thru	A	1.3	0.72	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	F	>80.0		
Route 24 EB left	C	25.8	0.29	165
Route 24 EB right right	D	35.3	0.96	#770
Route 140 NB left	F	>80.0	>1.0	#466
Route 140 NB thru thru	B	17.0	0.51	273
Route 140 SB thru thru/right	F	>80.0	>1.0	#932
9. Mozzone Boulevard/County Street (Route 140)	C	30.2		
Mozzone EB left	B	19.7	0.20	46
Mozzone EB right	C	21.9	0.56	94
Route 140 NB left (de facto)	F	>80.0	>1.0	#173
Route 140 NB thru	B	19.6	0.85	#563
Route 140 SB thru thru/right	A	9.5	0.67	248

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
11. Erika Drive/County Street (Route 140)	C	22.5		
Erika EB left	E	55.1	0.62	229
Erika EB left/thru	E	55.6	0.63	232
Erika EB right	A	4.6	0.35	58
Driveway WB left/thru/right	D	46.0	0.08	24
Route 140 NB left	C	27.3	0.68	249
Route 140 NB thru thru/right	B	10.2	0.36	345
Route 140 SB left/thru thru	C	27.4	0.72	#881
Route 140 SB right	D	16.6	0.33	244
12. Hart Street/County Street (Route 140)	D	39.9		
Hart EB left/thru	E	56.0	0.79	#398
Hart EB right	A	2.6	0.38	37
Hart WB left/thru	F	>80.0	0.98	#483
Hart WB right	A	3.7	0.28	50
Route 140 NB left	E	67.2	0.85	#437
Route 140 NB thru thru/right	C	28.7	0.60	413
Route 140 SB left	E	61.7	0.67	182
Route 140 SB thru thru/right	D	42.6	0.86	#572
15. Washington Street/Broadway (Route 138)	D	42.4		
Washington EB left/thru/right	F	>80.0	>1.0	#593
Washington WB left/thru/right	C	25.3	0.44	189
Broadway NB left/thru/right	C	23.7	0.69	#529
Broadway SB left/thru	C	24.3	0.70	#503
Broadway SB right	C	22.0	0.60	331
17. Oak Street /Washington Street/Tremont Street (Route 140)	D	41.2		
Tremont EB left	D	44.3	0.76	#608
Tremont EB left/thru/right	D	44.6	0.76	#605
Plaza WB left/thru/right	F	>80.0	>1.0	#506
Oak NB left/thru thru/right	C	30.6	0.61	244
Washington SB left/thru	D	35.3	0.68	430
Washington SB right	A	7.8	0.56	212
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	10.4		
Cohannet EB left	A	2.2	0.14	m50
Cohannet EB thru thru	C	21.7	0.60	278
Cohannet EB right	A	3.5	0.37	156
Main WB right	A	2.9	0.73	0
Weir NB thru	C	21.9	0.47	221
Weir NB right	B	18.8	0.21	86

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
22. High Street/Winthrop Street (Route 140)	F	>80.0		
High EB left/thru/right	E	67.8	1.00	#703
High WB left	F	>80.0	>1.0	#316
High WB thru/right	C	27.5	0.42	204
Winthrop NB left	C	26.8	0.39	118
Winthrop NB thru/right	C	21.2	0.58	353
Winthrop SB left/thru thru/right	E	59.5	0.94	#343
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	26.2		
Main EB left	B	19.7	0.11	18
Main EB thru	C	24.2	0.67	#433
Main EB right	A	6.4	0.45	107
Church WB thru/right	D	43.6	0.93	#666
Summer NB left/thru	C	21.2	0.55	306
Summer NB right	B	12.0	0.04	23
33. County Street (Route 140)/Riverway Ext.	C	23.3		
County EB left/thru	B	15.1	0.70	409
County WB thru	B	15.1	0.69	386
County WB right	A	2.5	0.43	40
Riverway SB left/right	E	63.4	0.98	#607
34. Dean Street/Longmeadow Road/Gordon Owen	D	49.7		
Dean EB left	D	50.8	0.12	29
Dean EB thru thru/right	D	46.2	0.93	#657
Dean WB left	F	>80.0	>1.0	#649
Dean WB thru thru/right	B	18.5	0.63	564
Gordon NB left	D	53.4	0.44	#71
Gordon NB thru	D	38.7	0.62	341
Gordon NB right	C	22.0	0.60	233
Longmeadow SB left	F	>80.0	>1.0	#301
Longmeadow SB thru/right*	D	42.5	0.74	#486
Non-Signalized Intersections				
1. Galleria Mall Driveway North/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	F	-	-	-
O'Connell EB right	F	>50.0	>1.0	1087
Driveway WB left/thru	F	>50.0	>1.0	-
Driveway WB right	B	12.6	0.12	10
Stevens NB left/thru	D	31.7	0.91	339
Stevens NB right	A	0.0	0.05	0
Stevens SB left	A	9.8	0.05	4
Stevens SB thru/right	A	0.0	0.31	0

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.31	0
Middleboro WB left/thru	A	0.5	0.02	1
Stevens NB left/right	E	42.3	0.72	132
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	2.3	0.08	6
Middleboro WB left/thru/right	A	0.4	0.01	1
Bristol NB left/thru/right	C	23.1	0.23	22
Poole SB left/thru/right	F	>50.0	>1.0	535
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	F	>50.0	0.89	150
Bristol WB left/thru	F	>50.0	>1.0	96
Bristol WB right	B	13.2	0.09	8
Route 140 NB left/thru thru/right	A	1.4	0.32	7
Route 140 SB left/thru thru/right	A	0.4	0.43	2
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	B	11.5	0.44	-
Drive South WB right	A	7.4	0.27	-
Mall Drive NB thru	A	8.4	0.03	-
Mall Drive NB right	A	7.9	0.35	-
Mall Drive SB left	B	10.1	0.30	-
Mall Drive SB right	A	7.8	0.05	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)				
Driveway EB left/thru/right	F	>50.0	>1.0	53
Pkwy WB left/thru	F	-	-	-
Pkwy WB right	F	-	-	-
Washington NB left/thru	A	0.3	0.1	1
Washington NB right	A	0.0	0.22	0
Washington SB left/thru/right	C	16.5	0.54	80
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	B	11.2	0.65	127
Weir NB thru	A	0.0	0.38	0
Broadway SB right	A	0.0	0.36	0

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.9	0.06	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	C	15.6	0.55	-
21. Cohannet Street (Route 140)/Western Green (44/138)-				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.33	0
Summer WB left/thru	A	8.1	0.40	48
Ingell NB left/right	F	>50.0	>1.0	711
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.1	0.00	0
County WB left/thru/right	A	0.9	0.03	2
Johnson NB left/thru/right	F	>50.0	0.54	36
Johnson SB left/thru/right	F	>50.0	0.27	18
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	2.9	0.11	10
Myricks WB thru/right	A	0.0	0.43	0
Ramps NB left/thru	D	26.7	0.38	43
Ramps NB right	D	26.7	0.38	43
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.21	0
Myricks WB left/thru	A	2.9	0.10	8
Ramps SB left/thru	F	>50.0	>1.0	525
Ramps SB right	F	>50.0	>1.0	525
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.2	0.18	16
Middleboro WB left/thru/right	A	0.9	0.02	1
Liberty NB left/thru/right	F	>50.0	>1.0	267
Old Colony SB left/thru/right	F	>50.0	>1.0	1203
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	C	18.9	0.54	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	C	16.4	0.41	-

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Pinehill left/thru/right	D	32.3	0.78	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	C	18.6	0.52	76
Stevens NB left/thru/right	A	0.0	0.25	0
Stevens SB left/thru/right	A	0.5	0.01	1
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.7	0.17	15
Cohannet WB thru/right	A	0.0	0.24	0
Pkwy SB left/right	F	>50.0	>1.0	579
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	4.3	0.19	18
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	-	-	-
Williams SB left/thru/right	F	-	-	-
35. Stevens Street/Secondary Site Driveway				
Driveway EB left/right	C	20.3	0.11	9
Stevens NB left/thru	A	0.0	0.00	0
Stevens SB thru/right	A	0.0	0.35	0

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

During the evening peak hour, the overall LOS at **Overpass Connector/Route 140 NB Ramps/Stevens Street** worsens from LOS A under No-Build Conditions to LOS F under Build Conditions. The Stevens Street southbound left-turn movement worsens from LOS A to LOS F. This is due to the heavy volume being added to this movement under Build Conditions.

At **Route 24 NB Ramp/County Street**, the overall LOS worsens from LOS E to LOS F. The Route 140 northbound left-turns worsen from LOS E to LOS F.

At **Hart Street/County Street**, the Hart Street eastbound left-turn/through movement worsens from LOS D to LOS E. The westbound left-turn/through movement worsens from LOS E to LOS F.

At **High Street/Winthrop Street**, the overall LOS worsens from LOS E to LOS F. The Winthrop Street southbound approach worsens from LOS D to LOS E.

At **County Street/Gordon M. Owen Riverway Extension**, the Riverway southbound approach worsens from LOS D to LOS E.

At **O'Connell Way/Stevens Street**, the O'Connell Way eastbound left-turn/through movement worsens from LOS E to LOS F. The right-turn movement worsens from LOS B to LOS F.

2022 Build Saturday Midday Peak Hour Intersection Operations

Table 19 shows the Build Conditions level of service summary for study area intersections during the Saturday midday peak hour.

Table 19: Build Conditions (2022) Intersection Level of Service Summary: Saturday Midday Peak Hour

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
<i>Signalized Intersections</i>				
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	5.4		
Galleria EB left/thru thru/right	B	10.9	0.50	86
Route 140 WB right	A	1.0	0.50	0
County NB left/thru thru	A	7.1	0.14	21
County SB left/thru thru	A	8.0	0.29	34
County SB right	A	5.6	0.73	40
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	D	36.1		
Overpass EB left/thru thru/right	C	34.5	0.52	83
Route 140 WB left	C	30.3	0.14	31
Route 140 WB thru	D	35.2	0.44	102
Route 140 WB right	A	8.3	0.43	48
Stevens NB left/thru thru/right	B	16.9	0.74	349
Stevens SB left left	F	>80.0	>1.0	#285
Stevens SB thru/right	A	4.0	0.23	70
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	5.2		
Route 24 WB right	A	0.2	0.14	0
Route 140 NB thru thru	B	13.2	0.57	235
Route 140 NB right	A	3.6	0.76	0
Route 140 SB left	C	22.1	0.50	179
Route 140 SB thru thru	A	0.8	0.61	0
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	D	51.5		
Route 24 EB left	C	26.3	0.33	187
Route 24 EB right right	C	23.5	0.83	507
Route 140 NB left	E	59.0	0.76	#264
Route 140 NB thru thru	B	16.8	0.53	290
Route 140 SB thru thru/right	F	>80.0	>1.0	#713
9. Mozzone Boulevard/County Street (Route 140)	B	16.3		
Mozzone EB left	C	21.3	0.27	61
Mozzone EB right	B	15.6	0.43	69
Route 140 NB left (de facto)	E	74.6	0.97	#148
Route 140 NB thru	B	15.1	0.78	#564
Route 140 SB thru thru/right	A	6.4	0.51	174

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
11. Erika Drive/County Street (Route 140)	C	25.8		
Erika EB left	E	55.4	0.69	#418
Erika EB left/thru	E	55.6	0.70	#421
Erika EB right	A	3.8	0.39	62
Driveway WB left/thru/right	E	64.0	0.02	12
Route 140 NB left	C	27.5	0.72	316
Route 140 NB thru thru/right	B	11.4	0.34	298
Route 140 SB left/thru thru	C	32.6	0.67	#652
Route 140 SB right	C	21.9	0.63	#464
12. Hart Street/County Street (Route 140)	D	37.0		
Hart EB left/thru	D	42.1	0.62	#331
Hart EB right	A	2.5	0.37	37
Hart WB left/thru	E	65.5	0.88	#462
Hart WB right	A	3.8	0.23	46
Route 140 NB left	E	59.7	0.80	#420
Route 140 NB thru thru/right	C	31.6	0.74	#525
Route 140 SB left	E	57.7	0.60	158
Route 140 SB thru thru/right	D	43.7	0.87	#504
15. Washington Street/Broadway (Route 138)	C	26.4		
Washington EB left/thru/right	D	44.8	0.86	#454
Washington WB left/thru/right	C	23.4	0.34	142
Broadway NB left/thru/right	C	23.1	0.67	#502
Broadway SB left/thru	C	21.1	0.59	372
Broadway SB right	B	18.0	0.41	210
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	28.5		
Tremont EB left	D	37.0	0.68	365
Tremont EB left/thru/right	D	37.2	0.68	363
Plaza WB left/thru/right	D	46.8	0.61	#293
Oak NB left/thru thru/right	C	29.2	0.64	234
Washington SB left/thru	C	31.1	0.61	326
Washington SB right	A	7.4	0.46	144
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	11.4		
Cohannet EB left	A	2.2	0.13	48
Cohannet EB thru thru	C	22.7	0.66	310
Cohannet EB right	A	2.7	0.24	85
Main WB right	A	1.9	0.63	0
Weir NB thru	C	21.8	0.46	215
Weir NB right	B	19.0	0.23	95

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
22. High Street/Winthrop Street (Route 140)	D	38.1		
High EB left/thru/right	C	29.9	0.56	317
High WB left	E	71.7	0.88	#252
High WB thru/right	C	25.8	0.31	151
Winthrop NB left	C	21.7	0.31	108
Winthrop NB thru/right	C	27.3	0.75	#579
Winthrop SB left/thru thru/right	E	57.3	0.90	#238
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	22.9		
Main EB left	C	22.5	0.19	31
Main EB thru	C	27.3	0.75	#548
Main EB right	A	7.7	0.43	127
Church WB thru/right	C	29.8	0.80	#583
Summer NB left/thru	B	19.6	0.47	259
Summer NB right	B	11.3	0.04	23
33. County Street (Route 140)/Riverway Ext.	B	16.3		
County EB left/thru	B	14.0	0.64	314
County WB thru	B	14.2	0.64	307
County WB right	A	2.7	0.46	38
Riverway SB left/right	D	35.5	0.79	#519
34. Dean Street/Longmeadow Road/Gordon Owen	D	38.0		
Dean EB left	D	51.1	0.15	35
Dean EB thru thru/right	D	39.5	0.85	#569
Dean WB left	E	65.9	0.87	#433
Dean WB thru thru/right	B	18.0	0.54	424
Gordon NB left	D	37.2	0.33	85
Gordon NB thru	D	35.2	0.49	274
Gordon NB right	B	18.0	0.62	226
Longmeadow SB left	F	>80.0	>1.0	#401
Longmeadow SB thru/right*	D	35.2	0.53	313
Non-Signalized Intersections				
1. Galleria Mall Driveway North/Overpass Connector				
County EB left/thru	-	-	-	-
County WB thru/right	-	-	-	-
Overpass SB left/right	-	-	-	-
4. O'Connell Way/Stevens Street				
O'Connell EB left/thru	F	>50.0	>1.00	-
O'Connell EB right	F	>50.0	0.98	409
Driveway WB left/thru	F	>50.0	>1.00	-
Driveway WB right	B	11.1	0.03	2
Stevens NB left/thru	B	12.3	0.66	134
Stevens NB right	A	0.0	0.04	0
Stevens SB left	A	9.0	0.02	2
Stevens SB thru/right	A	0.0	0.15	0

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
7. Middleboro Avenue/Stevens Street				
Middleboro EB thru/right	A	0.0	0.28	0
Middleboro WB left/thru	A	0.2	0.01	1
Stevens NB left/right	C	22.4	0.46	58
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway				
Hart EB left/thru/right	A	2.0	0.07	5
Middleboro WB left/thru/right	A	0.0	0.00	0
Bristol NB left/thru/right	B	11.7	0.05	4
Poole SB left/thru/right	F	>50.0	0.99	237
10. Bristol Plymouth HS Driveway/County Street (Route 140)				
Hess EB left/thru/right	D	26.4	0.35	38
Bristol WB left/thru	F	>50.0	0.08	6
Bristol WB right	B	12.9	0.04	3
Route 140 NB left/thru thru/right	A	0.8	0.33	4
Route 140 SB left/thru thru/right	A	0.3	0.40	1
13. Galleria Mall Drive South/Galleria Mall Drive				
Drive South WB left	B	13.6	0.54	-
Drive South WB right	A	8.3	0.39	-
Mall Drive NB thru	A	8.8	0.05	-
Mall Drive NB right	A	7.5	0.29	-
Mall Drive SB left	B	11.3	0.36	-
Mall Drive SB right	A	7.8	0.07	-
14. Exeter Street/Bay Street/Broadway (Route 138)				
Exeter EB hard-left/left/right	-	-	-	-
Broadway NB left/bear-left/thru	-	-	-	-
Broadway SB thru/right/hard-right	-	-	-	-
Bay SEB hard-left/bear-right/right	-	-	-	-
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)				
Driveway EB left/thru/right	F	>50.0	0.29	23
Pkwy WB left/thru	F	>50.0	>1.0	551
Pkwy WB right	F	>50.0	>1.0	551
Washington NB left/thru	A	0.0	0.00	0
Washington NB right	A	0.0	0.14	0
Washington SB left/thru/right	A	5.7	0.23	22
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)				
Weir NB left left	A	10.0	0.56	92
Weir NB thru	A	0.0	0.37	0
Broadway SB right	A	0.0	0.35	0

Intersection	LOS	Delay	V/C Ratio	95% Queue Length
20. Court Street/Western Green (44/138)/Post Office Square				
Post EB right	A	8.5	0.04	-
Court WB left	A	-	-	-
Court WB left/thru	A	-	-	-
Court WB right	A	-	-	-
Court SB thru/right	B	13.3	0.44	-
21. Cohannet Street (Route 140)/Western Green (44/138)-				
Cohannet thru/right	-	-	-	-
Winthrop NB right	-	-	-	-
Western SB left left	-	-	-	-
Western SB thru/right	-	-	-	-
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street				
Summer EB thru/right	A	0.0	0.27	0
Summer WB left/thru	A	6.0	0.28	28
Ingell NB left/right	F	>50.0	0.97	297
25. County Street (Route 140)/Johnson Street				
County EB left/thru/right	A	0.0	0.00	0
County WB left/thru/right	A	0.5	0.02	1
Johnson NB left/thru/right	F	>50.0	0.64	46
Johnson SB left/thru/right	F	>50.0	0.44	34
26. Myricks Street (Route 79)/Route 140 NB Ramps				
Myricks EB left/thru	A	2.6	0.09	8
Myricks WB thru/right	A	0.0	0.32	0
Ramps NB left/thru	C	17.0	0.17	15
Ramps NB right	C	17.0	0.17	15
27. Myricks Street (Route 79)/Route 140 SB Ramps				
Myricks EB thru/right	A	0.0	0.20	0
Myricks WB left/thru	A	1.5	0.03	2
Ramps SB left/thru	C	22.3	0.62	106
Ramps SB right	C	22.3	0.62	106
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street				
Middleboro EB left/thru/right	A	5.1	0.17	15
Middleboro WB left/thru/right	A	0.7	0.01	1
Liberty NB left/thru/right	F	>50.0	>1.0	312
Old Colony SB left/thru/right	F	>50.0	>1.0	643
29. Middleboro Avenue/Pinehill Street/Caswell Street				
Middleboro EB left/thru/right	B	13.5	0.36	-
Middleboro WB left/thru/right	A	-	-	-
Caswell NB left/thru/right	B	13.4	0.34	-

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Intersection	LOS	Delay	V/C Ratio	95% Queue Length
Pinehill left/thru/right	C	22.9	0.69	-
30. Stevens Street/Pinehill Street				
Pinehill WB left/thru/right	B	13.7	0.34	38
Stevens NB left/thru/right	A	0.0	0.19	0
Stevens SB left/thru/right	A	0.5	0.01	0
31. F.R. Martin Pkwy/Cohannet Street				
Cohannet EB left/thru	A	5.6	0.13	11
Cohannet WB thru/right	A	0.0	0.13	0
Pkwy SB left/right	D	27.0	0.74	159
32. Gordon Owen Pkwy/Riverway Ext./Williams Street				
Gordon EB left/thru/right	A	3.0	0.12	10
Gordon WB left/thru/right	A	0.0	0.00	0
Williams NB left/thru/right	F	>50.0	>1.0	337
Williams SB left/thru/right	F	>50.0	0.87	194
35. Stevens Street/Secondary Site Driveway				
Driveway EB left/right	B	13.4	0.05	4
Stevens NB left/thru	A	0.0	0.00	0
Stevens SB thru/right	A	0.0	0.18	0

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

During the midday Saturday peak hour, no overall LOS was reduced to unacceptable conditions, but some locations had approaches that worsened below LOS D from No-Build Conditions to the Build Conditions.

At **Overpass Connector/Route 140 NB Ramp/Stevens Street**, the Stevens Street southbound left-turns worsen from LOS A to LOS F. This worsens the overall LOS from LOS A to LOS D.

The Route 140 northbound left-turn at **Route 24 SB Ramp/County Street** worsens from LOS D to LOS E. The Route 140 southbound approach worsens from LOS C to LOS F.

At **Mozzone Boulevard/County Street**, the Route 140 northbound de facto left-turn lane worsens from LOS D to LOS E.

At **Erika Drive/County Street**, the eastbound left-turn and through movements worsen from LOS D to LOS E.

The High Street westbound left-turn at **High Street/Winthrop Street** worsens from LOS D to LOS E.

At **O'Connell Way/Stevens Street**, the eastbound left-turn/through movement worsens from LOS C to LOS F. The eastbound right-turn worsens from LOS B to LOS F. The driveway westbound left-turn worsens from LOS C to LOS F.

At **Summer Street/County Street/Ingell Street**, the Ingell Street northbound approach worsens from LOS E to LOS F.

2022 Build Interchange Operations

Figure 37 summarizes Build 2022 interchange operations during the Friday AM, Friday PM, and Saturday midday peak hours. Under No Build Conditions, only one location during one time period will worsen to below LOS D:

Route 24 Southbound at Exit 12 Diverge – If left unmitigated, the Route 24 at Exit 12 Diverge will decrease from LOS D to LOS F during the Friday PM peak hour as a result of an increase of approximately 450 vehicles per hour using the off-ramp. This location will continue to operate at LOS B during the Friday AM peak hour and will worsen from LOS B to LOS C during the Saturday midday peak hour. The Route 24 southbound mainline will continue to operate at LOS E (at capacity).

Proposed Mitigating Measures

Proposed geometric and traffic signal improvements measures to mitigate identified traffic impacts are discussed in this section. Any measures affecting state-controlled highways or signals will be coordinated with and approved by MassDOT.

Route 24/Route 140 and Route 140/Stevens Street Interchanges

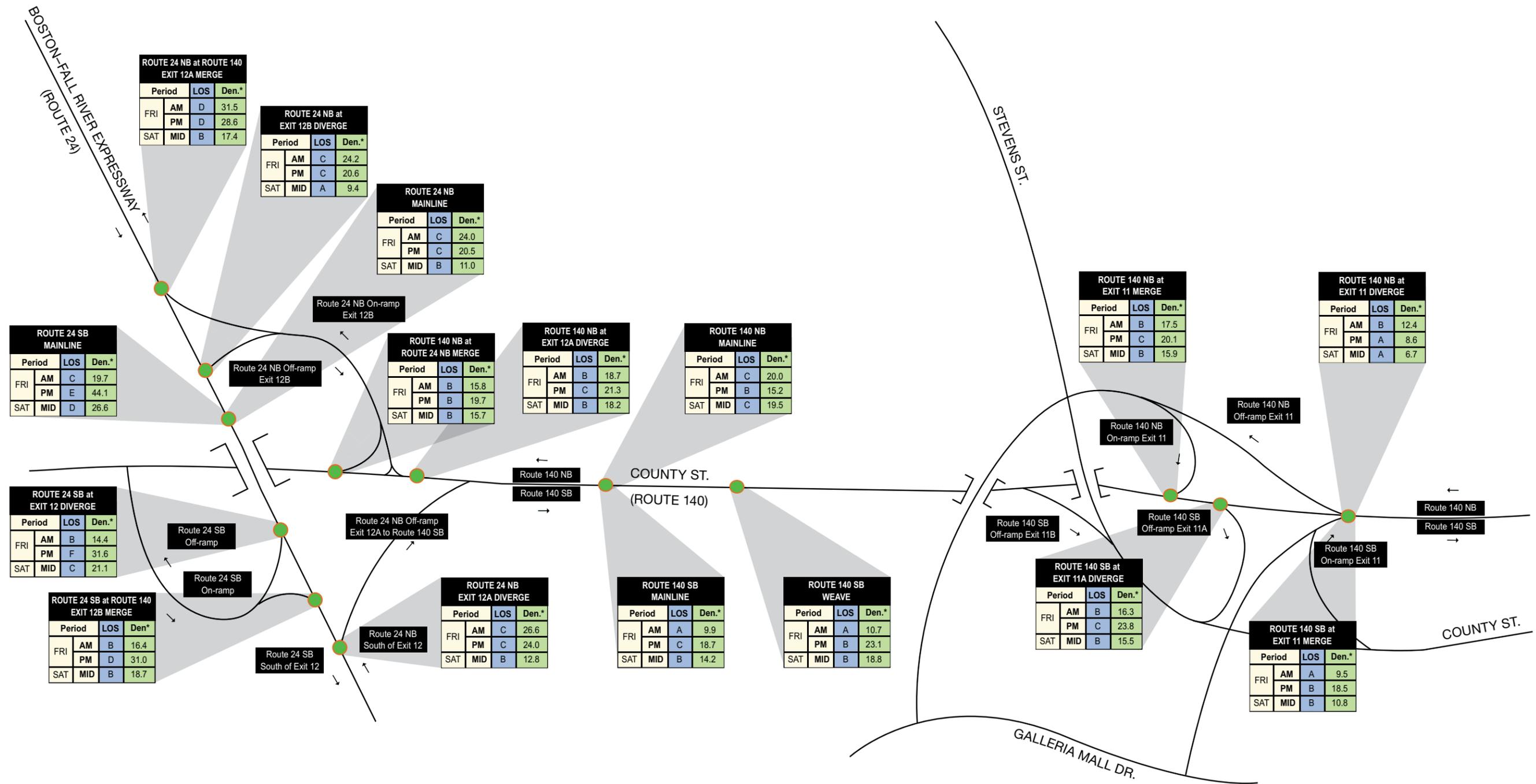
As stated above, the Massachusetts Department of Transportation, in conjunction with replacing the structurally deficient Route 24 bridge over Route 140 and addressing regional traffic concerns has investigated a number of conceptual alternatives for relieving traffic congestion, accommodating a potential future widening of Route 24 and improving pedestrian and bicycle accommodations at the interchange of Route 24 with Route 140 in Taunton (MassDOT Project #605888). Improvements at this location have been under consideration since the mid-1990's by the Southeast Regional Planning and Economic Development District (SERPEDD). In 2003, improvements were studied in relationship to proposed LUIP development; in 2008 acceleration and deceleration lanes were added to Route 24 to accommodate periodic queues generated by the interchange. At the present time, alternatives for improvements have been identified but the project has not reached the feasibility study stage.

Given the long-term time frame necessary for planning, permitting, design and construction, it is not realistic to expect that these improvements will be available in time for the opening of the proposed casino. For this reason, interim improvements are proposed to improve the existing operation of the interchange and accommodate casino traffic, as follows. The proponent and City will continue to work with MassDOT to develop a long-term interchange alternative which when realized will accommodate all projected traffic volumes including the potential revitalization of the Silver City Galleria Mall.

Route 24 SB Ramp (Exit 12B)/County Street (Route 140) Interchange

At the Route 24 SB Ramp, the Route 140 NB approach will be widened to accommodate 2 left-turn lanes and 2 through lanes just beyond the Route 24 overpass, as shown in **Figure 38**. The widening required will not affect the Route 24 bridge abutments. The proposed cross-section under the bridge is provided in **Figure 39**. The Route 24 SB off-ramp approach which we realigned and widened to have double left-turn lanes and a single channelized right-turn lane, which will enter into its own lane allowing a free, uninterrupted movement. Widening of the ramp is required to open up the single lane ramp to 2 lanes prior to approaching Route 140.

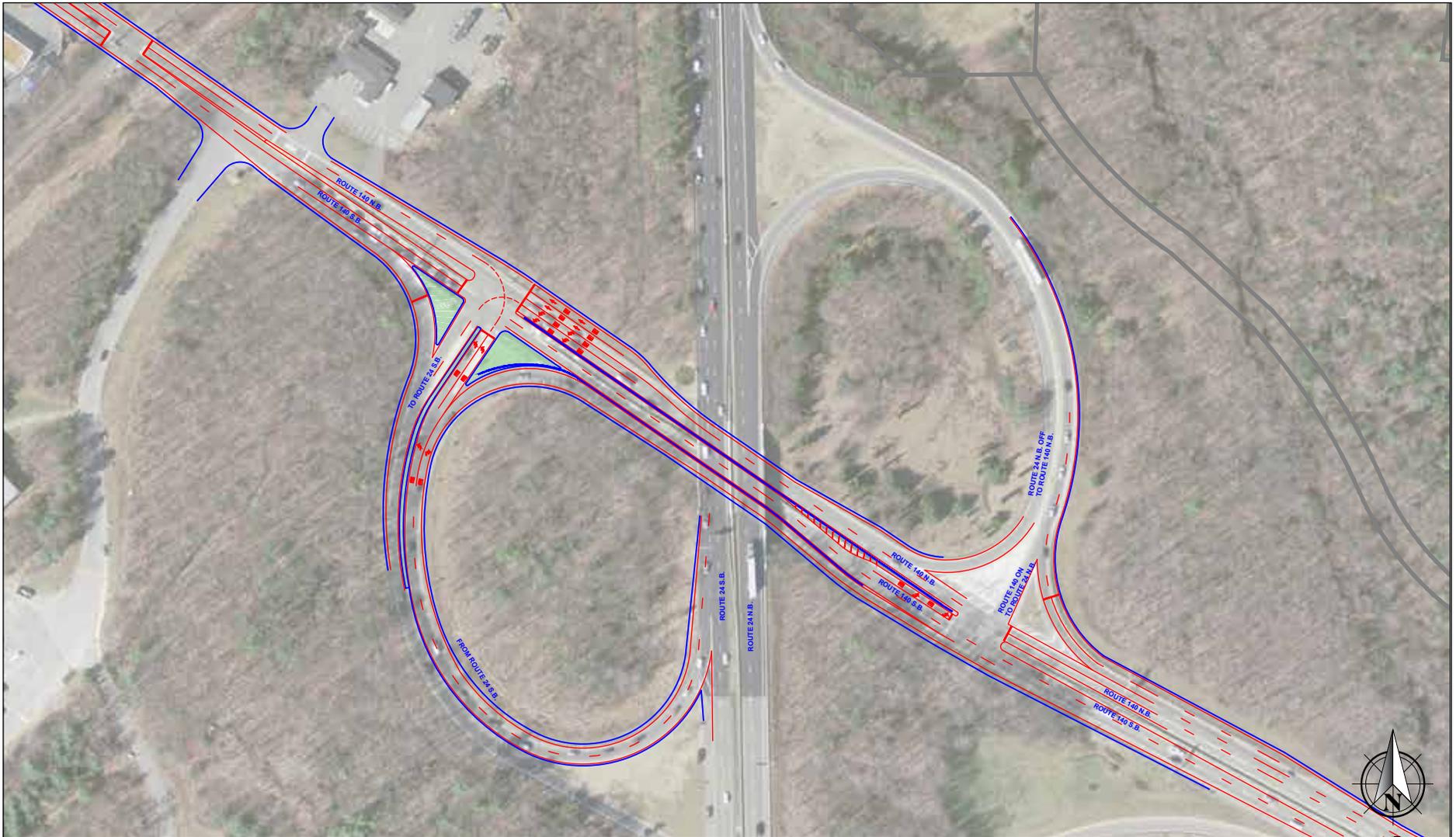
Figure 37. Build Conditions (2022) Interchange Operations



Den.* = Density (pc/mi/ln)

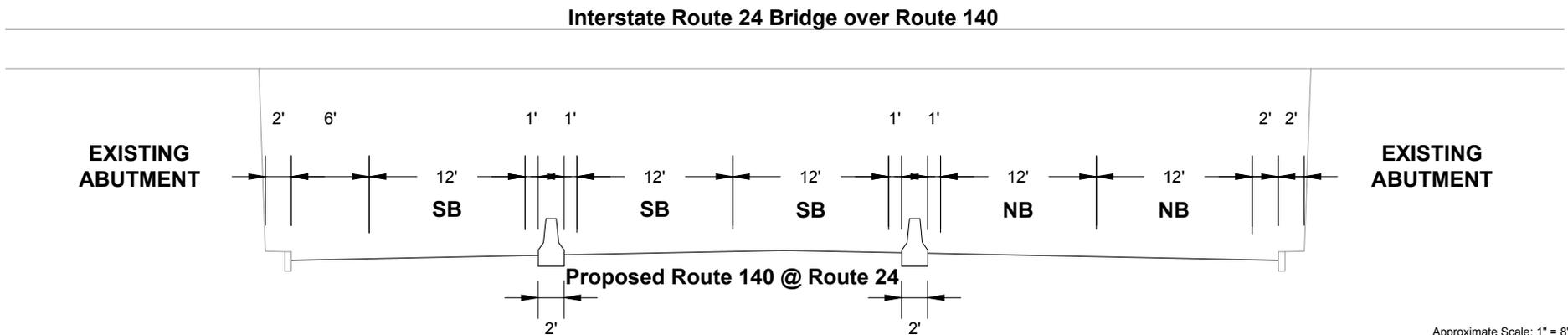
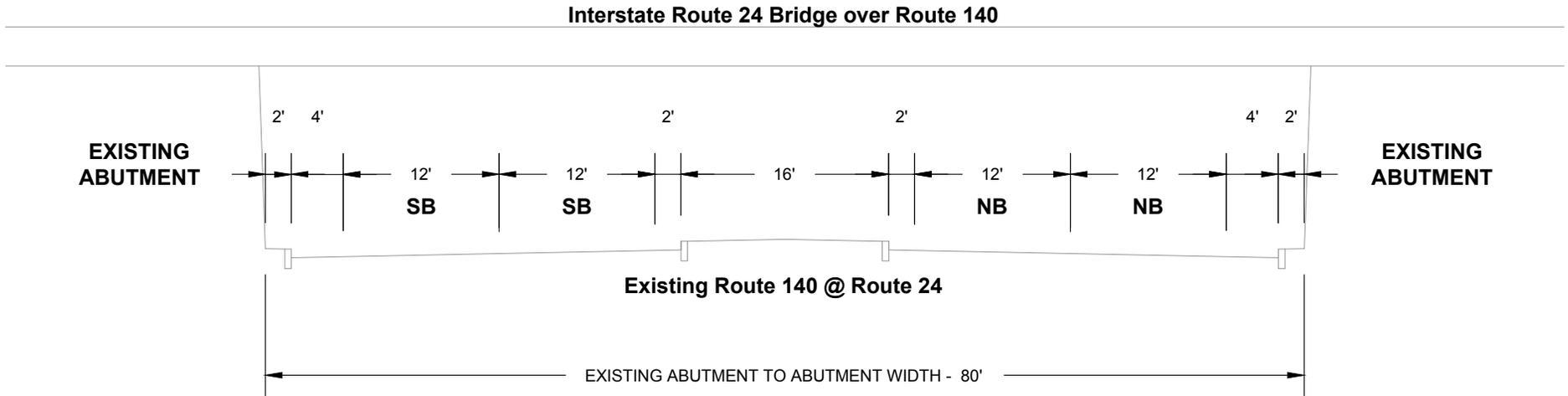


Figure 38. Proposed Improvements: Route 24 NB and SB Ramps/County Street/Route 140 (Exits 12A and 12B)



Not to scale.

Figure 39. Proposed Cross-Section: Route 140 under Route 24 Bridge



Approximate Scale: 1" = 8'-0"

The right-turn lane will be signalized so as to not conflict with the northbound double left-turning movement. The Route 140 SB approach will be widened to allow 2 through lanes and a channelized right-turn lane, capable of accommodating the resultant queues. Route 140 SB beneath Route 24 will be widened to accommodate two through lanes and a barrier separated through lane which accommodates the free right turn from the Route 24 SB off-ramp. This improvement will include updating all traffic signal equipment. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Route 24 NB Ramp (Exit 12A)/County Street (Route 140)

At the Route 24 NB Ramp, the Route 140 SB approach will have 2 through lanes, an added lane from the Route 24 SB ramp, and 1 exclusive left-turn lane. The northbound approach will have 2 through lanes and 2 channelized right-turn lanes, as also shown in **Figure 38**. Under existing conditions, the channelized right-turn lane operates under yield control. With the addition of another lane for the right-turning movement, the channelized right-turns will be signalized. The Route 140 NB right turn approach will be widened to allow two channelized right-turn lanes, capable of accommodating the resultant queues, that will taper to one lane onto Route 24 NB. This improvement will include updating all traffic signal equipment. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

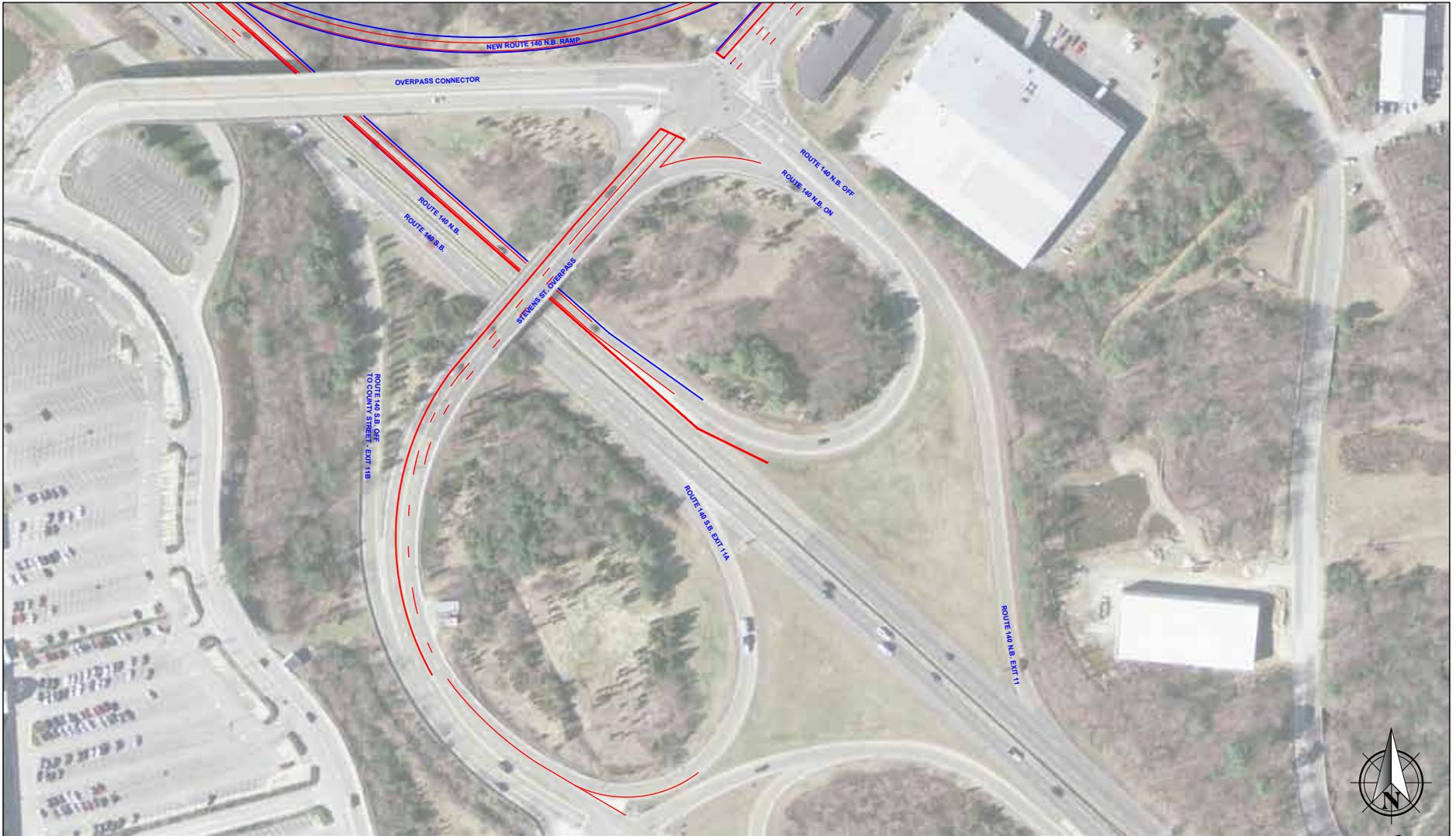
Galleria Mall Drive South/County Street/Route 140 SB Ramps (Exit 11A)

The majority of trips to the project site are expected to use Route 140 SB via Exit 11A. Currently, the Exit 11A ramp to the Stevens Street Connector has vehicular traffic entering into its own lane and then merges with traffic from County Street after approximately 150 feet. The volume from County Street and the Galleria Mall is minimal compared to that coming from Route 140 SB. To facilitate continuous flow from Route 140 SB to the Stevens Street Connector, it is proposed that the ramp maintain its own lane, while the County Street traffic merges from 2 lanes to 1 lane before meeting with the Route 140 SB ramp traffic, as shown in **Figure 40**. The Stevens Street Overpass centerline will shift to the west to allow for 3 travel lanes as it approaches the signal at the Overpass Connector/Route 140 NB Ramps/Stevens Street intersection. The Stevens Street Overpass bridge will be restriped to consist of 3 travel lanes in the northbound and 1 travel lane in the southbound directions. This improvement will include updating all traffic signal equipment. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Overpass Connector/Route 140 NB Ramps/Stevens Street Intersection

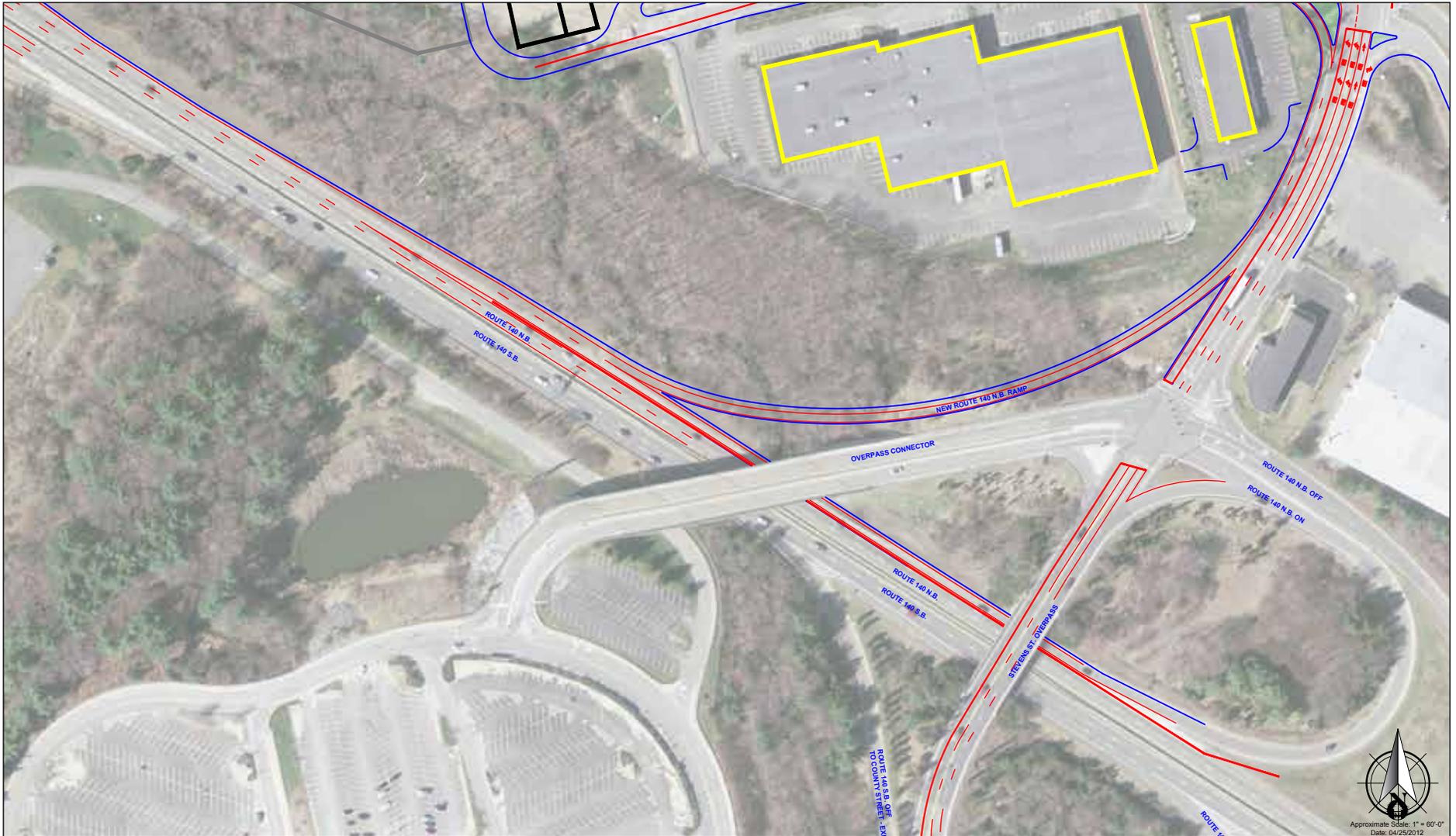
The existing signalization at this intersection cannot process the volumes being added to the northbound Stevens Street Overpass approach and the southbound Stevens Street left-turn lanes efficiently. To improve operations, it is suggested that the conflict between these 2 heavy movements be removed. A new ramp is proposed on Stevens Street to the north of this intersection to allow all Stevens Street southbound traffic to access Route 140 NB prior to this intersection, as shown in **Figure 41**. This will remove the need for the double southbound left-turn at this intersection, requiring only a single shared through/right-turn lane for the Stevens Street southbound approach. The northbound Stevens Street Overpass Approach will have 3 through lanes and a channelized right-turn island. The northbound and eastbound approaches will continue to access Route 140 NB as they currently do. This intersection shall be coordinated with the intersection of O'Connell Way/Stevens Street/LUIP

**Figure 40. Proposed Improvements: Galleria Mall Drive South/Overpass Connector/
Route 140 SB and NB Ramps**



Not to scale.

Figure 41. Proposed Improvements: Route 140 between Exits 11 and 12



Approximate Scale: 1" = 60'-0"
Date: 04/25/2012

Not to scale.

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Phase 1 Drive. This improvement will include updating all traffic signal equipment. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Route 140 NB (between Exit 11 and 12)

The additional ramp from Stevens Street will require some widening of Route 140 NB where the ramp meets the highway. Since the new ramp will enter Route 140 NB approximately 700 feet from the existing on-ramp to the south, it is proposed that this ramp be separated from the main line traffic by a barrier, as shown in **Figure 42**. The traffic from both ramps will merge together before joining with main line Route 140 NB traffic. In addition, Route 140 NB will be widened from 2 lanes to 3 lanes between the new ramp and the approach to the Route 24 NB on-ramp. The approach to the Route 24 northbound ramp will be widened to allow for a double right turn to the ramp as mentioned previously. This improvement will include all planning, permitting, design and construction costs associated with implementing this improvement.

Redistributed volumes at the interchanges under the proposed mitigation are shown in **Figure 43**.

Site Driveways

O'Connell Way/Stevens Street/LUIP Phase 1 Drive

With the added volume at the southern end of Stevens Street and into and out of the project site, O'Connell Way/Stevens Street will need to be signalized. As shown in **Figure 44**, the northbound Stevens Street approach will have 2 left-turn lanes, a through lane, and a right-turn lane. The southbound approach will continue to have a left-turn lane and a through/right-turn lane. The eastbound site drive approach will operate as an uninterrupted channelized right-turn, which will enter into its own lane on Stevens Street. This will allow immediate access onto the new ramp to Route 140 NB. Left-turns and through movements will not be allowed out of the main site driveway, physically restricted by geometry. The westbound approach will operate as left-turn/through lane and a right-turn lane. This intersection shall be coordinated with the intersection of Overpass Connector/Route 140 NB Ramps/Stevens Street Intersection. This improvement will include updating all traffic signal equipment. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

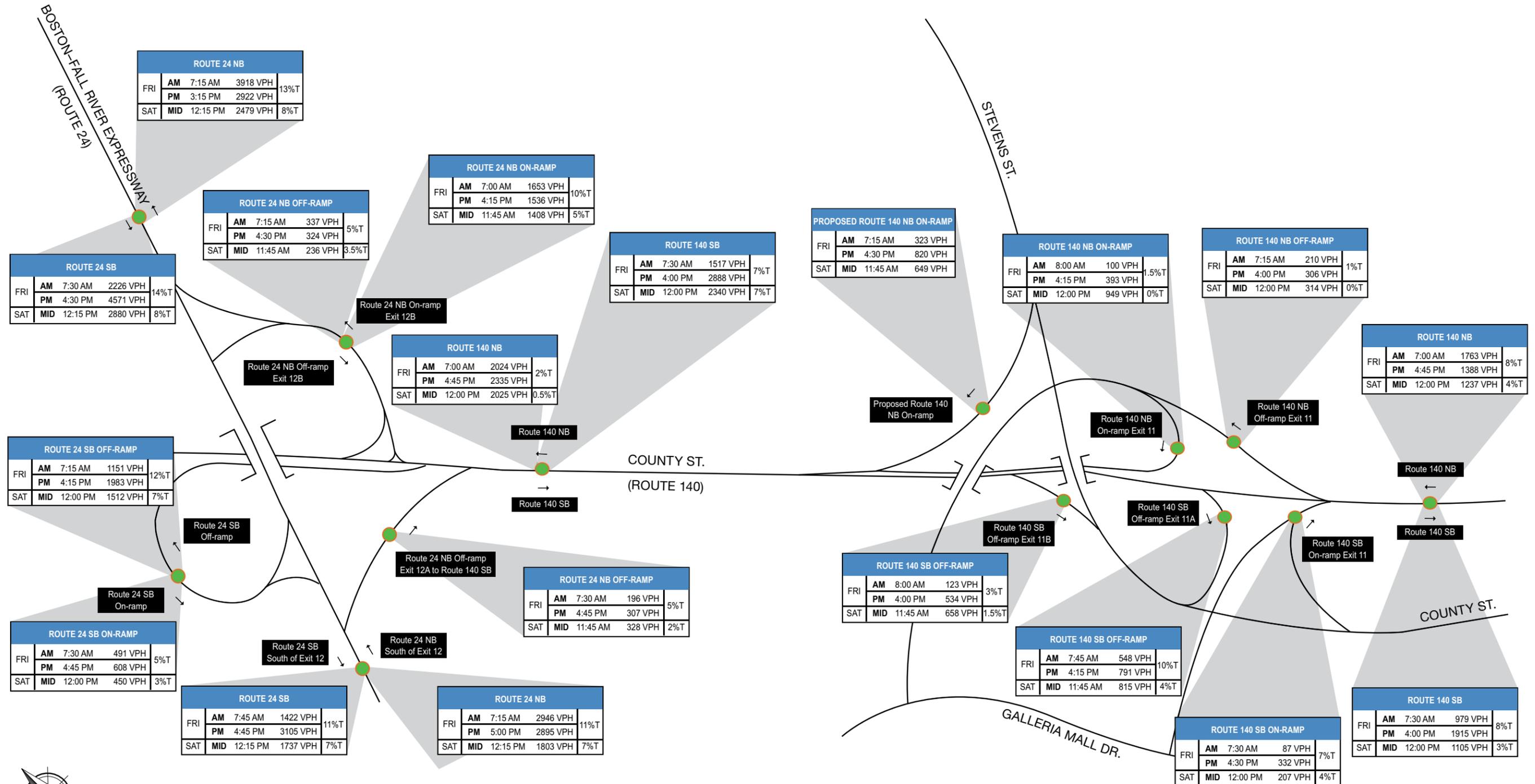
Stevens Street/Proposed Casino Service Road

A secondary service road has been proposed to the east of the proposed garage to accommodate service vehicles generated by Crossroads Center and by the casino itself, as shown in **Figure 45**. The garage exits will be signed so as to prohibit right turns by casino patrons or employees on to that service road. Further, the proponent will work with the City of Taunton and MassDOT to investigate a truck exclusion on Stevens Street north of the service driveway. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Route 140 West of Route 24

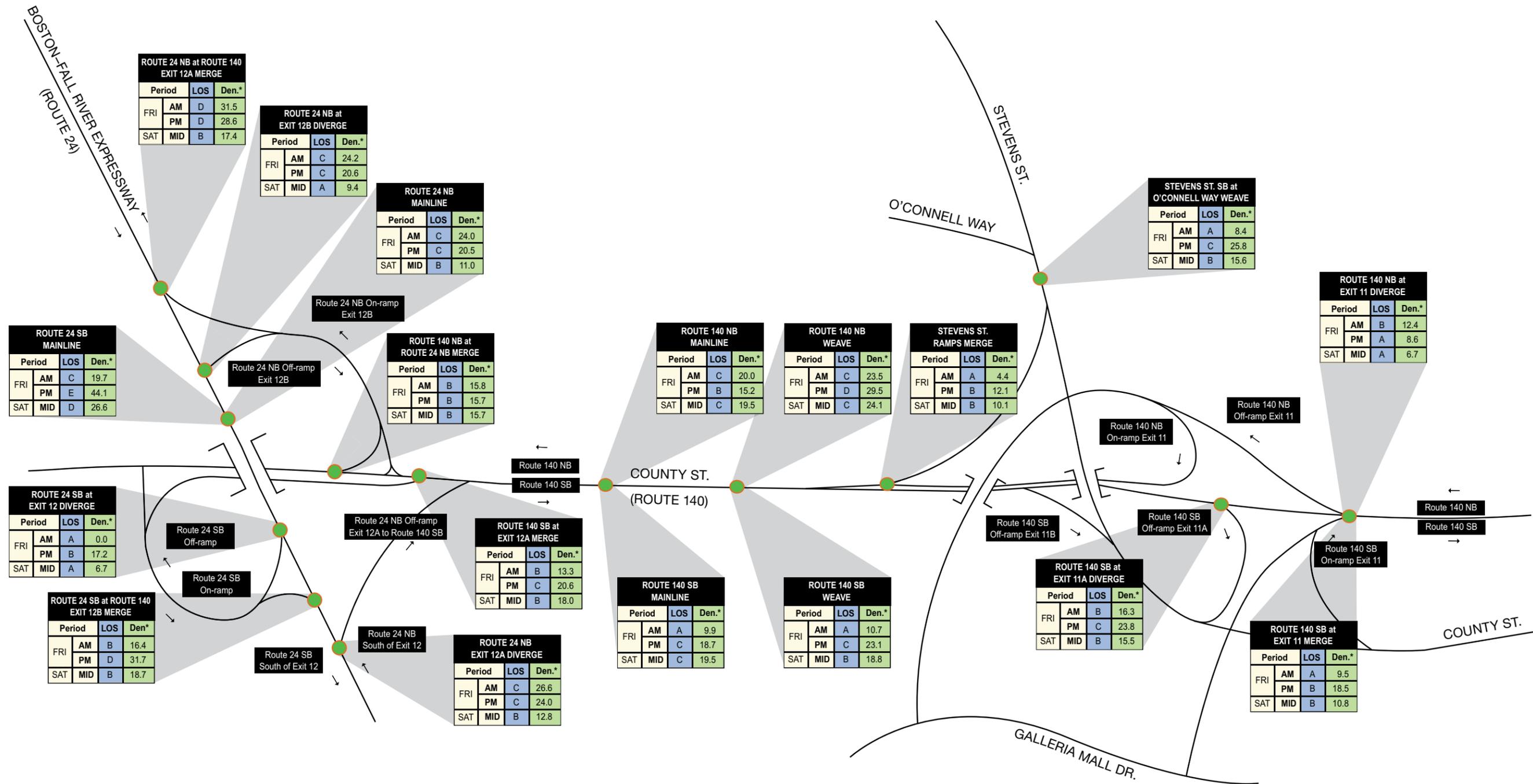
MassDOT Project #605191 involves roadway reconstruction, median installation and sidewalk reconstruction on Route 140 in the City of Taunton. Also included are traffic signal upgrades and drainage improvements. Additionally, MassDOT Project #605679 included the total reconstruction of Harts Four Corners. Four study

Figure 42. Redistributed Interchange Volumes with Build Mitigated Conditions



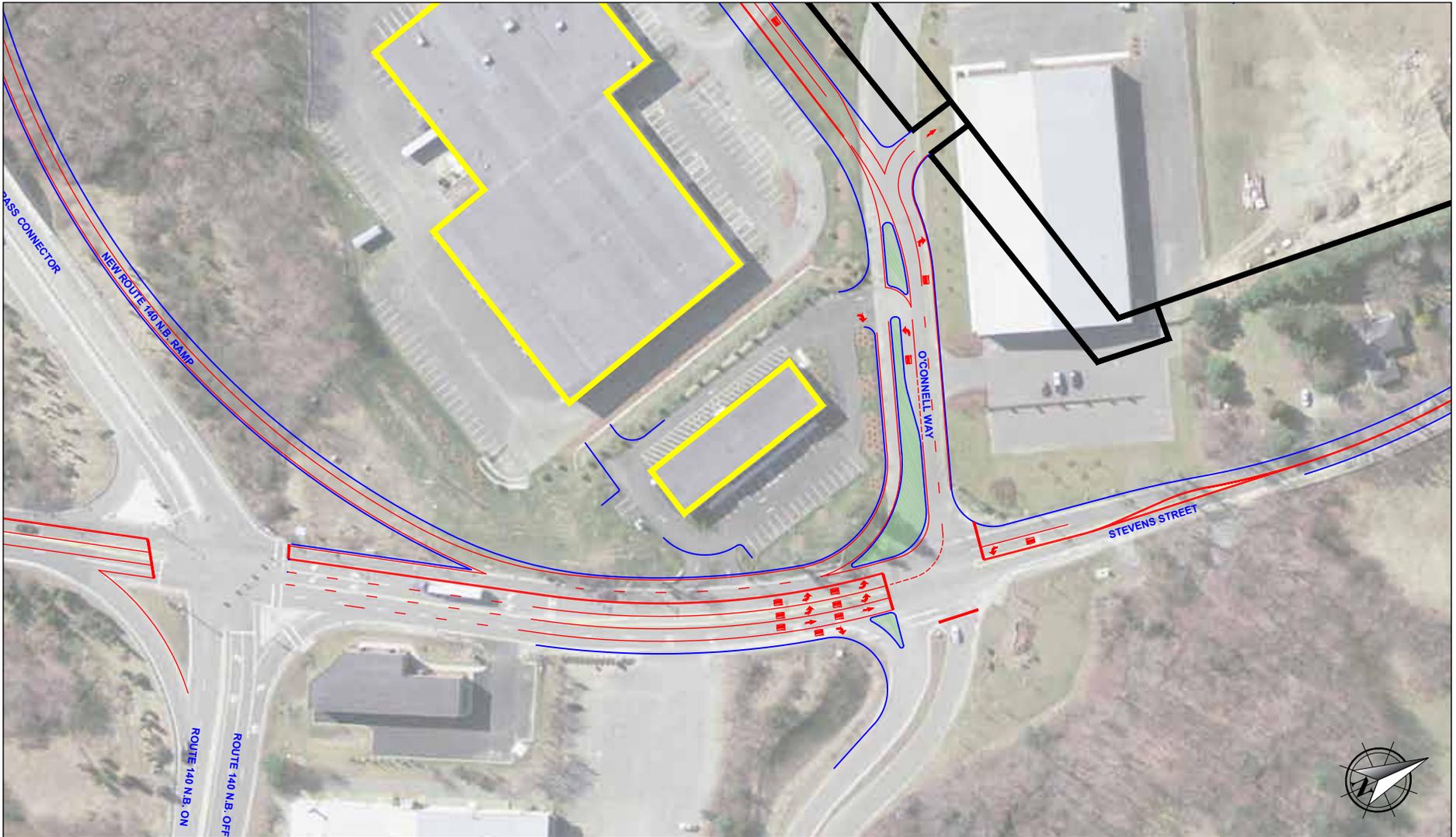
Not to scale.

Figure 43. Build Conditions with Mitigation (2022) Interchange Operations



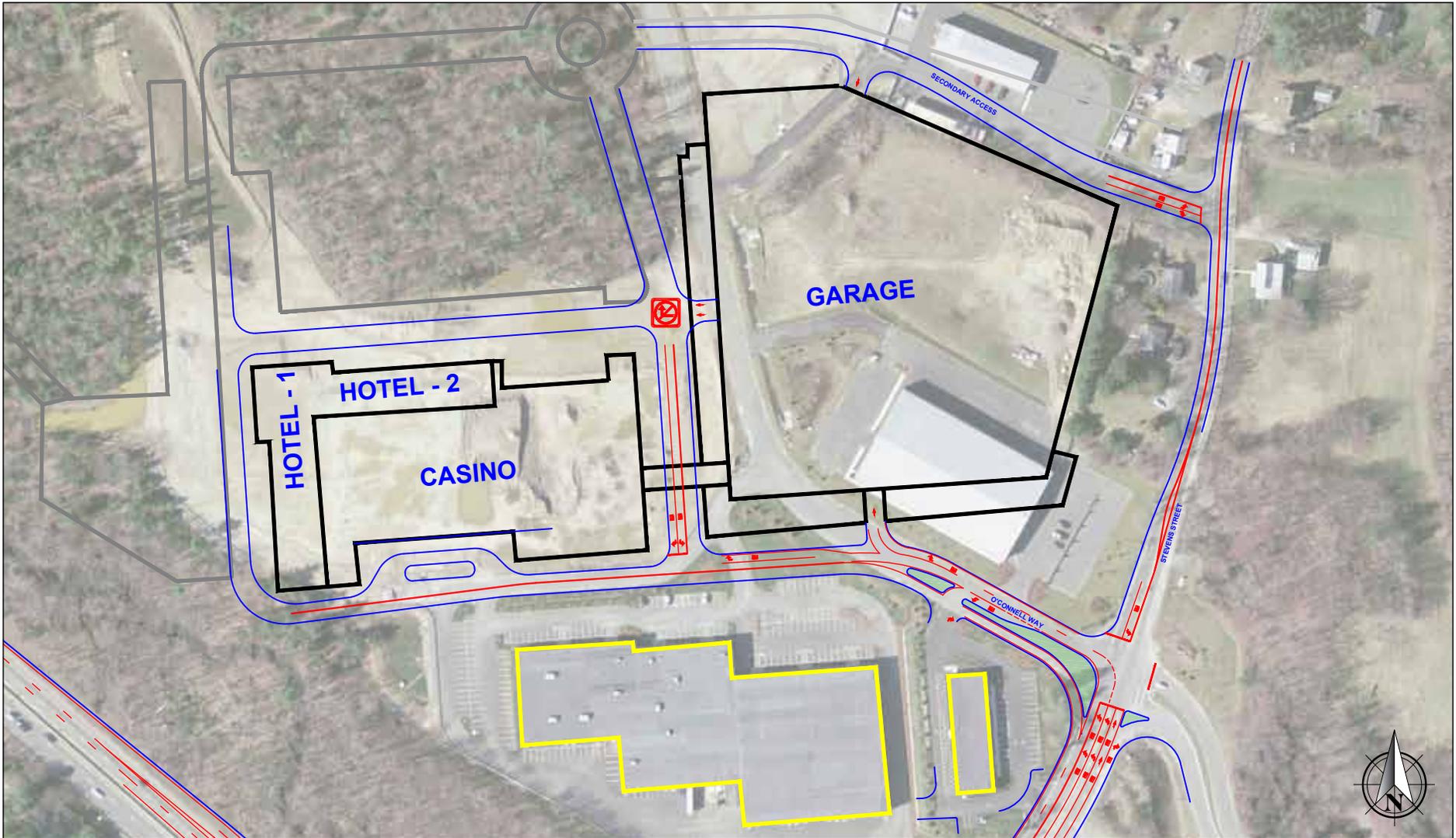
Not to scale.

Figure 44. Proposed Improvements: O'Connell Way/Stevens Street/LUIP Phase 1 Driveway



Not to scale.

Figure 45. Site Circulation



Not to scale.

area intersections with Route 140 are included in this project area: Hart's Four Corners, Mozzone Boulevard, Hess Gas Station/Bristol-Plymouth High School and Erika Drive. While the MassDOT project will widen the road and make positive changes to today's operations, Project-related mitigation at intersections in this corridor include the following measures.

Mozzone Boulevard/County Street (Route 140)

At Mozzone Boulevard/County Street, the northbound Route 140 left-turn movement is very difficult to make during the weekday evening and Saturday mid-day peak hours. Due to the high volumes making this move, the left-most northbound lane operates as a de facto left-turn lane during these times. With added volumes on Route 140, it will be even more difficult to find acceptable gaps in the southbound traffic in order to make the northbound left-turn movement.

To improve operations, a short leading northbound phase is proposed to allow left-turning vehicles to make protected and permissive turns. Re-striping the northbound lanes to have a left-turn only lane and a through lane would allow the leading northbound phase to be actuated only when vehicles are detected in the left-most lane. This signal shall be coordinated with the signals at Erika Drive, the Bristol Plymouth High School Drive and the Route 24/140 interchange. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Bristol Plymouth HS Drive/County Street (Route 140)

The high school driveway and Hess station approaches to this intersection currently operate with significant delays to the driveways, particularly the traffic leaving Bristol-Plymouth High School. With the additional volumes along County Street, the delay for these driveway movements will increase. It is proposed that this intersection, if warranted, be signalized to allow vehicles to enter and exit the driveways more easily. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Erika Drive/County Street (Route 140)

During the Saturday mid-day peak hour, the Erika Drive approach worsens under Build Conditions. By updating the cycle length and phasing splits at this location, all approaches can achieve acceptable operations during all peak hours. No geometric changes are necessary at this intersection. Costs associated with this improvement will include updating the traffic signal controller.

If the casino opening date precedes the implementation of MassDOT project#605191 the intersections of Mozzone Boulevard, Erika Drive and (if constructed) Bristol Plymouth HS Drive shall be coordinated during peak hours as a condition of this mitigation proposal.

Hart's Four Corners -- Hart Street/County Street (Route 140)

This location is assigned as MassDOT project #605679. The 25% plans were approved in September 2011, and design is progressing. The current design proposes that both County Street approaches be widened to 3 lanes consisting of a left-turn lane, a through lane, and a shared through/right-turn. The lane usage for the Hart Street approaches is proposed to remain as a shared left-turn/through lane and a right-turn lane. To further improve operations at this location, it is suggested that both Hart Street approaches be widened at the

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intersection to include a left-turn lane, a through lane, and a right-turn lane. All planning, permitting and construction costs associated with implementing these improvements are included in this improvement.

County Street (Route 140)/Gordon M. Owen Riverway Extension

Under Existing Conditions, the Gordon M. Owen Riverway Extension approach operates with considerable delay during the peak hours. By adjusting the phasing splits at this intersection, the delay for this approach and the intersection overall can be improved. No geometric changes are necessary at this intersection. This improvement will include all costs of updating the traffic signal equipment.

Improvements at Other Locations

High Street/Winthrop Street

The High Street westbound left-turn movement worsens during the weekday morning and Saturday mid-day peak hours, respectively. During the evening peak hour, the Winthrop Street southbound approach also worsens. While this location is already nearing capacity during the evening peak hour under Existing Conditions, mitigation can be done to lessen the impact of the added trips and even improve the operations over the Existing Conditions.

Operational improvements at High Street/Winthrop Street can be achieved without having to do any major geometric changes by updating the signal timings and phasing. Signal phasing changes will allow this intersection to operate at an acceptable level.

Winthrop Street (Route 44) at Highland Street

This intersection will be evaluated and updated signal timings and phasing will be implemented to improve operational conditions.

Emergency Vehicle Pre-emption at Thirteen Signalized Intersections

A total of thirteen existing traffic signals will be outfitted with emergency vehicle priority equipment to allow a rapid response from the firehouse to the Casino site, including any locations where signal modifications are already proposed. Up to ten emergency response vehicles will be outfitted with emitters to trigger the before mentioned emergency vehicle priority equipment. All costs of implementation are included.

East Taunton Neighborhood Improvements

Various “traffic calming” measures are recommended in East Taunton to reduce speeds, improve safety and discourage vehicles traveling to/from the project area from using the residential streets. The proponent will contribute funds to initiate planning for and implementation of a comprehensive traffic calming plan for the area shown in **Figure 46**. The contribution will include an allowance for monitoring project traffic on Stevens Street, Middleboro Avenue and other neighborhood roadways at agreed-upon intervals after opening of each phase of the project. Additionally, specific intersection improvements proposed include the following:

Bristol Plymouth High School Drive/Hart Street/Poole Street

Improvements proposed here include realignment of the High School driveway to align with Poole Street, ADA accommodations and a flashing warning beacon on Hart Street.

Figure 46. Proposed Study Area: East Taunton Neighborhood Monitoring Area



Stevens Street/Middleboro Avenue

Proposed improvements include a flashing warning beacon, ADA accommodations, sidewalk widening on the intersection approaches, and installation of crosswalk markings. Additionally, it is proposed that Stevens Street be signed as a Heavy Vehicle Exclusion.

Stevens Street/Pinehill Street

A raised intersection is proposed at this location. In addition, radar speed control signs both northbound and southbound in advance of Pinehill Street are proposed, along with ADA improvements at the intersection updated crosswalk markings and a posted Heavy Vehicle Exclusion for Pinehill Street.

Middleboro Avenue/Pinehill Street/Caswell Street

A modern roundabout or fully actuated traffic signal control is proposed at this location. Heavy Vehicle exclusion signs can be provided on Pinehill Street. ADA accommodations and crosswalks are also proposed. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

Middleboro Avenue/Old Colony Avenue/Liberty Street

A modern roundabout or fully actuated traffic signal control is proposed at this location. Geometric improvements, ADA accommodations, crosswalks and sidewalks are proposed to provide improved channelization of traffic and redistribute unused roadway space to pedestrians. All planning, permitting, design and construction costs associated with implementing these improvements are included in this improvement.

East Taunton Elementary Driveway at Stevens Street

School zone flashing warning devices will be installed on each approach to the driveway, along with the appropriate signage and pavement markings.

Summary of Intersection Traffic Operations

A summary of intersection operations under Existing, No-Build, Build, and Build Mitigated conditions is shown in Tables 20, 21 and 22 for the AM, PM and Saturday Midday peak hours.

Table 20. Summary of Intersection Operations: AM Peak Hour

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<i>Signalized Intersections</i>								
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	1.9	A	1.5	A	1.5	A	1.5
Galleria EB left/thru thru/right	A	2.8	A	2.9	A	2.9	A	2.9
Route 140 WB right	A	0.2	A	0.3	A	0.7	A	0.7
County NB left/thru thru	A	3.0	A	2.8	A	2.8	A	2.8
County SB left/thru thru	A	3.1	A	2.9	A	2.8	A	2.8
County SB right	A	1.7	A	1.7	A	1.8	A	1.8

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	8.6	B	11.0	B	12.4	A	5.8
Overpass EB left/thru thru/right	B	14.5	B	17.3	C	22.2	D	40.7
Route 140 WB left	B	15.3	B	18.1	C	23.3	D	43.2
Route 140 WB thru	B	14.6	B	17.3	C	22.4	D	40.6
Route 140 WB right	A	5.2	A	6.7	A	8.1	B	13.5
Stevens NB left/thru thru/right	B	12.2	B	15.3	B	17.0	A	2.5
Stevens SB left left	A	4.4	A	4.5	A	7.0	-	-
Stevens SB thru/right	A	4.6	A	4.1	A	3.8	A	1.7
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	6.8	A	7.6	B	14.6	B	11.5
Route 24 WB right	A	0.3	A	0.3	A	0.3	A	0.3
Route 140 NB thru thru	A	9.1	B	10.1	B	10.6	A	7.9
Route 140 NB right	B	11.1	B	13.3	C	33.1	C	22.5
Route 140 SB left	B	15.2	B	15.6	B	16.3	C	33.1
Route 140 SB thru thru	A	0.2	A	0.3	A	0.4	A	0.6
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	B	16.9	B	19.9	C	23.8	B	12.0
Route 24 EB left	C	29.8	C	25.9	C	25.1	C	31.9
Route 24 EB right right	B	16.8	B	18.2	B	19.8	A	3.3
Route 140 NB left	D	35.4	D	40.8	D	47.0	D	48.7
Route 140 NB thru thru	A	8.4	B	12.3	B	15.8	B	12.1
Route 140 SB thru thru/right	C	20.8	C	26.3	C	34.0	B	14.7
Route 140 SB right	-	-	-	-	-	-	A	3.7
9. Mozzone Boulevard/County Street (Route 140)	A	4.0	A	4.0	A	4.1	A	8.3
Mozzone EB left	B	14.9	B	16.1	B	16.3	C	30.4
Mozzone EB right	A	7.6	A	8.0	A	8.2	B	12.9
Route 140 NB left	-	-	-	-	-	--	A	3.3
Route 140 NB left/thru thru	A	4.4	A	4.4	A	4.5	A	8.8
Route 140 SB thru thru/right	A	3.3	A	3.2	A	3.2	A	7.6
11. Erika Drive/County Street (Route 140)	B	13.9	B	14.2	B	14.9	B	14.2
Erika EB left	D	37.6	D	38.8	D	39.8	D	37.2
Erika EB left/thru	D	37.4	D	38.8	D	39.6	D	37.1
Erika EB right	A	7.8	A	7.6	A	7.5	A	7.2
Driveway WB left/thru/right	C	33.0	C	33.5	C	34.0	C	31.5
Route 140 NB left	A	10.0	A	10.0	B	10.4	B	10.5
Route 140 NB thru thru/right	A	8.9	A	8.9	A	9.4	A	9.4
Route 140 SB left/thru thru	B	18.3	B	18.6	B	19.5	B	18.3
Route 1490 SB right	B	10.5	B	11.0	B	11.0	A	9.4
12. Hart Street/County Street (Route 140)**	D	52.1	C	32.1	C	32.2	C	27.4
Hart EB left	-	-	-	-	-	-	C	31.4
Hart EB left/thru	E	56.6	C	32.5	C	32.8	C	33.5
Hart EB right	C	23.8	A	2.1	A	2.1	A	3.4
Hart WB left	-	-	-	-	-	-	D	36.6

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Hart WB left/thru	F	>80.0	D	38.9	D	39.5	C	31.2
Hart WB right	A	8.0	A	4.0	A	4.1	A	4.8
Route 140 NB left	B	19.5	D	40.3	D	41.4	D	42.8
Route 140 NB thru/right	D	43.7	D	37.0	D	37.0	C	30.1
Route 140 SB left	D	45.7	D	50.3	D	50.4	D	45.2
Route 140 SB thru/right	C	25.9	D	38.1	D	37.9	C	28.0
15. Washington Street/Broadway (Route 138)	C	29.3	C	28.4	C	28.5	C	28.5
Washington EB left/thru/right	C	31.3	C	31.2	C	31.2	C	31.2
Washington WB left/thru/right	B	19.9	B	19.7	B	19.7	B	19.7
Broadway NB left/thru/right	C	33.6	C	32.7	C	32.9	C	32.9
Broadway SB left/thru	C	28.2	C	25.5	C	25.7	C	25.7
Broadway SB right	C	22.7	C	22.8	C	22.8	C	22.8
17. Oak Street /Washington Street/Tremont Street (Route 140)	C	29.9	C	30.0	C	30.0		
Tremont EB left	D	35.7	D	36.0	D	35.7		
Tremont EB left/thru/right	D	35.0	C	34.7	D	35.2		
Plaza WB left/thru/right	D	53.6	E	56.6	E	56.6		
Oak NB left/thru thru/right	C	29.0	C	29.6	C	29.7		
Washington SB left/thru	C	32.8	C	30.0	C	30.0		
Washington SB right	A	7.6	A	7.8	A	7.9		
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	11.7	B	12.3	B	12.4		
Cohannet EB left	A	2.2	A	2.3	A	2.3		
Cohannet EB thru thru	B	19.0	B	19.8	B	19.9		
Cohannet EB right	A	2.4	A	2.3	A	2.3		
Main WB right	A	1.4	A	1.6	A	1.6		
Weir NB thru	C	26.8	C	28.2	C	28.2		
Weir NB right	C	20.0	B	19.8	B	19.8		
22. High Street/Winthrop Street (Route 140)	C	24.4	C	24.5	C	29.2	C	28.0
High EB left/thru/right	C	31.9	C	31.8	C	34.6	D	37.6
High WB left	D	53.5	E	58.9	F	>80.0	C	28.4
High WB thru/right	C	33.1	C	29.6	C	32.2	C	24.6
Winthrop NB left	B	12.9	B	13.0	B	16.0	B	18.9
Winthrop NB thru/tight	B	14.7	B	15.5	B	19.4	C	28.0
Winthrop SB left/thru thru/right	C	25.9	C	26.3	C	29.5	C	25.7
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	B	19.8	C	20.5	C	20.5		
Main EB left	B	15.7	B	15.7	B	15.7		
Main EB thru	C	23.7	C	24.9	C	24.9		
Main EB right	A	5.2	A	5.7	A	5.7		
Church WB thru/right	C	23.5	C	24.3	C	24.3		
Summer NB left/thru	C	22.8	C	23.5	C	23.7		
Summer NB right	B	10.9	B	11.5	B	11.5		
33. County Street (Route 140)/Riverway Ext.	E	57.7	C	32.7	D	38.1	C	28.1
County EB left/thru	E	61.5	B	15.9	B	15.2	D	41.8

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
County WB thru	B	12.5	B	14.0	B	13.5	C	21.9
County WB right	A	2.1	A	2.3	A	2.3	A	4.4
Riverway SB left/right	F	>80.0	F	>80.0	F	>80.0	D	40.2
34. Dean Street/Longmeadow Road/Gordon Owen Parkway	E	57.6	D	42.1	D	41.9		
Dean EB left	D	50.0	D	49.7	D	49.7		
Dean EB thru thru/right	E	60.2	D	41.9	D	41.9		
Dean WB left	E	56.1	E	55.8	E	55.8		
Dean WB thru thru/right	B	15.0	B	14.5	B	14.5		
Gordon NB left	F	>80.0	F	>80.0	F	>80.0		
Gordon NB thru	D	39.8	D	39.3	D	39.3		
Gordon NB right	C	21.6	C	22.2	C	22.2		
Longmeadow SB left*	F	>80.0	F	>80.0	F	>80.0		
Longmeadow SB thru/right	D	50.1	D	43.9	D	43.8		
Non-Signalized Intersections								
1. Galleria Mall Driveway North/Overpass Connector								
County EB left/thru	-	-	-	-	-	-		
County WB thru/right	-	-	-	-	-	-		
Overpass SB left/right	-	-	-	-	-	-		
4. O'Connell Way/Stevens Street							B	18.6
O'Connell EB left/thru	C	19.1	D	27.3	F	>50.0	-	-
O'Connell EB right	A	10.0	A	9.8	B	12.3	A	0.4
Driveway WB left/thru	C	24.1	F	>50.0	F	>50.0	D	52.8
Driveway WB right	A	10.0	A	9.7	B	10.0	B	18.9
Stevens NB left left	-	-	-	-	-	-	D	42.3
Stevens NB left/thru	A	3.1	A	4.5	A	8.0	A	7.3
Stevens NB right	A	0.0	A	0.0	A	0.0	A	1.3
Stevens SB left	A	8.1	A	8.8	A	8.8	A	5.8
Stevens SB thru/right	A	0.0	A	0.0	A	0.0	B	14.9
7. Middleboro Avenue/Stevens Street								
Middleboro EB thru/right	A	0.0	A	0.0	A	0.0		
Middleboro WB left/thru	A	0.4	A	0.3	A	0.3		
Stevens NB left/right	D	32.2	C	24.1	C	24.3		
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway								
Hart EB left/thru/right	A	1.7	A	1.3	A	1.3		
Middleboro WB left/thru/right	A	4.2	A	4.9	A	4.9		
Bristol NB left/thru/right	F	-	F	-	F	-		
Poole SB left/thru/right	F	-	F	-	F	-		
10. Bristol Plymouth HS Driveway/County Street (Route 140)								
Hess EB left/thru/right	F	>50.0	C	23.1	C	22.3		
Bristol WB left/thru	F	>50.0	F	>50.0	F	>50.0		
Bristol WB right	C	16.1	C	15.2	B	15.0		

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Route 140 NB left/thru thru/right	A	0.4	A	0.4	A	0.7		
Route 140 SB left/thru thru/right	A	3.4	A	1.9	A	3.8		
13. Galleria Mall Drive South/Galleria Mall Drive								
Drive South WB left	A	7.7	A	7.8	A	7.8		
Drive South WB right	A	6.3	A	6.3	A	6.3		
Mall Drive NB thru	A	0.0	A	0.0	A	7.2		
Mall Drive NB right	A	6.3	A	6.3	A	6.3		
Mall Drive SB left	A	7.1	A	7.1	A	7.1		
Mall Drive SB right	A	6.5	A	6.6	A	6.6		
14. Exeter Street/Bay Street/Broadway (Route 138)								
Exeter EB hard-left/left/right	-	-	-	-	-	-		
Broadway NB left/bear-left/thru	-	-	-	-	-	-		
Broadway SB thru/right/hard-right	-	-	-	-	-	-		
Bay SEB hard-left/bear-right/right	-	-	-	-	-	-		
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)/								
Driveway EB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Pkwy WB left/thru	F	>50.0	F	>50.0	F	>50.0		
Pkwy WB right	F	>50.0	F	>50.0	F	>50.0		
Washington NB left/thru	A	0.0	A	0.0	A	0.0		
Washington NB right	A	0.0	A	0.0	A	0.0		
Washington SB left/thru/right	A	6.0	A	5.1	A	5.1		
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)								
Weir NB left left	A	9.1	A	9.1	A	9.1		
Weir NB thru	A	0.0	A	0.0	A	9.1		
Broadway SB right	A	0.0	A	0.0	A	0.0		
20. Court Street/Western Green (44/138)/Post Office Square								
Post EB right	A	8.5	A	8.5	A	8.5		
Court WB left	A	-	A	-	A	-		
Court WB left/thru	A	-	A	-	A	-		
Court WB right	A	-	A	-	A	-		
Court SB thru/right	B	14.6	B	14.6	B	14.6		
21. Cohannet Street (Route 140)/Western Green (44/138)-								
Cohannet thru/right	-	-	-	-	-	-		
Winthrop NB right	-	-	-	-	-	-		
Western SB left left	-	-	-	-	-	-		
Western SB thru/right	-	-	-	-	-	-		
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street								
Summer EB thru/right	A	0.0	A	0.0	A	0.0		

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Summer WB left/thru	A	6.2	A	5.9	A	6.1		
Ingell NB left/right	F	>50.0	F	>50.0	F	>50.0		
25. County Street (Route 140)/Johnson Street								
County EB left/thru/right	A	0.0	A	0.0	A	0.0		
County WB left/thru/right	A	0.1	A	0.1	A	0.1		
Johnson NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Johnson SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
26. Myricks Street (Route 79)/Route 140 NB Ramps								
Myricks EB left/thru	A	1.3	A	3.3	A	3.2		
Myricks WB thru/right	A	3.6	A	0.0	A	0.0		
Ramps NB left/thru	C	17.7	C	16.5	A	0.0		
Ramps NB right	C	17.7	C	16.5	C	17.0		
27. Myricks Street (Route 79)/Route 140 SB Ramps								
Myricks EB thru/right	A	0.0	A	0.0	A	0.0		
Myricks WB left/thru	A	2.7	A	2.3	A	2.3		
Ramps SB left/thru	C	19.9	C	20.1	A	0.0		
Ramps SB right	C	19.9	C	20.1	C	21.8		
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street								
Middleboro EB left/thru/right	A	5.9	A	5.9	A	5.9		
Middleboro WB left/thru/right	A	0.6	A	0.5	A	0.5		
Liberty NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Old Colony SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
29. Middleboro Avenue/Pinehill Street/Caswell Street								
Middleboro EB left/thru/right	C	22.4	C	17.3	C	17.9		
Middleboro WB left/thru/right	A	-	A	-	A	-		
Caswell NB left/thru/right	E	38.8	D	27.4	D	28.5		
Pinehill left/thru/right	F	>50.0	D	30.1	D	31.2		
30. Stevens Street/Pinehill Street								
Pinehill WB left/thru/right	B	13.9	B	13.8	B	13.9		
Stevens NB left/thru/right	A	0.0	A	0.0	A	0.0		
Stevens SB left/thru/right	A	1.2	A	0.6	A	0.6		
31. F.R. Martin Pkwy/Cohannet Street								
Cohannet EB left/thru	A	5.7	A	5.7	A	5.7		
Cohannet WB thru/right	A	0.0	A	0.0	A	0.0		
Pkwy SB left/right	C	20.0	C	20.2	C	20.6		

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
32. Gordon Owen Pkwy/Riverway Ext./Williams Street								
Gordon EB left/thru/right	A	8.0	A	4.9	A	4.9		
Gordon WB left/thru/right	A	0.1	A	0.0	A	0.0		
Williams NB left/thru/right	F	-	F	-	F	-		
Williams SB left/thru/right	F	-	F	-	F	-		

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

** = Proposed improvements for Hart Street/County Street are at the 25% design stage. An additional through lane is proposed for the northbound and southbound County Street approaches. The No Build and Build Conditions reflect these improvements.

Table 21. Summary of Intersection Operations: PM Peak Hour

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<i>Signalized Intersections</i>								
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	7.1	A	7.1	A	6.0	A	6.0
Galleria EB left/thru thru/right	B	10.5	B	11.2	B	12.1	B	12.1
Route 140 WB right	A	0.1	A	1.1	A	1.1	A	1.1
County NB left/thru thru	A	7.4	A	7.1	A	6.9	A	6.9
County SB left/thru thru	A	8.8	A	9.0	A	9.7	A	9.7
County SB right	A	4.4	A	4.2	A	3.9	A	3.9
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	9.2	A	9.5	F	>80.0	A	9.0
Overpass EB left/thru thru/right	B	16.7	B	18.0	C	34.3	D	46.5
Route 140 WB left	B	16.2	B	17.5	C	30.7	D	40.9
Route 140 WB thru	B	16.7	B	17.9	C	32.6	D	43.7
Route 140 WB right	A	6.2	A	6.6	A	9.4	B	11.1
Stevens NB left/thru thru/right	A	9.3	B	10.4	B	17.4	A	3.5
Stevens SB left left	A	5.4	A	6.3	F	>80.0	-	-
Stevens SB thru/right	A	6.3	A	6.6	A	5.0	A	2.4
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	4.2	A	4.5	B	11.3	A	8.6
Route 24 WB right	A	0.2	A	0.2	A	0.2	A	0.2
Route 140 NB thru thru	B	11.6	B	11.7	B	14.3	A	6.8
Route 140 NB right	A	2.0	A	3.4	C	26.2	B	14.9
Route 140 SB left	B	18.7	B	19.3	C	21.0	D	38.3
Route 140 SB thru thru	A	0.6	A	0.7	A	1.3	A	3.6
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	D	47.9	E	68.4	F	>80.0	B	18.8
Route 24 EB left	C	28.8	C	27.8	C	25.8	D	37.4
Route 24 EB right right	B	19.3	B	19.7	D	35.3	C	26.9
Route 140 NB left	D	48.6	E	55.4	F	>80.0	D	36.3
Route 140 NB thru thru	B	10.9	B	12.7	B	17.0	A	1.1
Route 140 SB thru thru/right	F	>80.0	F	>80.0	F	>80.0	B	18.3
Route 140 SB right	-	-	-	-	-	-	A	6.2
9. Mozzone Boulevard/County Street (Route 140)	B	18.6	C	26.0	C	30.2	B	15.7
Mozzone EB left	C	21.2	B	19.7	B	19.7	C	33.8
Mozzone EB right	B	19.1	C	21.1	C	21.9	B	10.4
Route 140 NB left (de facto)	F	>80.0	F	>80.0	F	>80.0	B	19.2
Route 140 NB left/thru thru	B	15.2	B	17.2	B	19.6	B	10.2
Route 140 SB thru thru/right	A	8.3	A	9.1	A	9.5	B	18.9

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
11. Erika Drive/County Street (Route 140)	C	21.8	C	22.0	C	22.5	C	22.4
Erika EB left	E	55.9	E	55.1	E	55.1	D	49.4
Erika EB left/thru	E	55.5	E	55.6	E	55.6	D	49.9
Erika EB right	A	4.6	A	4.6	A	4.6	A	4.8
Driveway WB left/thru/right	D	46.0	D	46.0	D	46.0	D	37.0
Route 140 NB left	C	20.1	C	23.4	C	27.3	C	28.3
Route 140 NB thru thru/right	A	9.7	B	10.0	B	10.2	B	10.6
Route 140 SB left/thru thru	C	24.6	C	26.8	C	27.4	C	28.8
Route 1490 SB right	B	16.3	D	16.3	D	16.6	B	13.2
12. Hart Street/County Street (Route 140)	F	>80.0	D	38.2	D	39.9	C	30.1
Hart EB left	-	-	-	-	-	-	D	41.7
Hart EB left/thru	F	>80.0	D	50.4	E	56.0	D	40.5
Hart EB right	C	24.8	A	2.5	A	2.6	A	3.6
Hart WB left	-	-	-	-	-	-	D	50.9
Hart WB left/thru	F	>80.0	E	75.9	F	>80.0	D	39.6
Hart WB right	A	8.8	A	3.6	A	3.7	A	4.5
Route 140 NB left	E	56.5	E	61.8	E	67.2	D	48.6
Route 140 NB thru/right	D	35.1	C	28.6	C	28.7	C	22.7
Route 140 SB left	D	36.0	E	59.2	E	61.7	D	54.6
Route 140 SB thru/right	F	>80.0	D	43.7	D	42.6	D	36.3
15. Washington Street/Broadway (Route 138)	D	48.6	D	42.4	D	42.4		
Washington EB left/thru/right	F	>80.0	F	>80.0	F	>80.0		
Washington WB left/thru/right	C	25.7	C	25.3	C	25.3		
Broadway NB left/thru/right	C	22.6	C	23.5	C	23.7		
Broadway SB left/thru	C	23.0	C	24.0	C	24.3		
Broadway SB right	C	21.1	C	22.0	C	22.0		
17. Oak Street /Washington Street/Tremont Street (Route 140)	D	52.6	D	41.0	D	41.2		
Tremont EB left	D	46.7	D	44.6	D	44.3		
Tremont EB left/thru/right	D	46.3	D	44.1	D	44.6		
Plaza WB left/thru/right	F	>80.0	F	>80.0	F	>80.0		
Oak NB left/thru thru/right	C	32.4	C	30.5	C	30.6		
Washington SB left/thru	C	34.6	D	35.2	D	35.3		
Washington SB right	A	7.0	A	7.7	A	7.8		
18. Cohannet Street (Route 140) / Weir Street (Route 138)	A	9.8	B	10.3	B	10.4		
Cohannet EB left	A	2.3	A	2.2	A	2.2		
Cohannet EB thru thru	C	21.0	C	21.5	C	21.7		
Cohannet EB right	A	3.5	A	3.5	A	3.5		
Main WB right	A	2.2	A	2.8	A	2.9		
Weir NB thru	C	21.5	C	21.9	C	21.9		
Weir NB right	B	18.7	B	18.8	B	18.8		
22. High Street/Winthrop Street (Route 140)	E	76.1	E	77.1	F	>80.0	D	45.3
High EB left/thru/right	E	61.8	E	67.8	E	67.8	D	51.0

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
High WB left	F	>80.0	F	>80.0	F	>80.0	D	47.9
High WB thru/right	C	27.4	C	27.5	C	27.5	B	18.4
Winthrop NB left	C	26.6	C	26.8	C	26.8	D	44.6
Winthrop NB thru/tight	C	20.3	C	20.3	C	21.2	D	39.5
Winthrop SB left/thru thru/right	F	>80.0	D	53.5	E	59.5	D	54.0
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	24.3	C	26.3	C	26.2		
Main EB left	C	20.8	B	19.7	B	19.7		
Main EB thru	C	23.4	C	24.2	C	24.2		
Main EB right	A	5.9	A	6.4	A	6.4		
Church WB thru/right	D	38.7	D	43.6	D	43.6		
Summer NB left/thru	C	20.3	C	20.8	C	21.2		
Summer NB right	B	11.3	B	11.6	B	12.0		
33. County Street (Route 140)/Riverway Ext.	B	18.2	C	20.9	C	23.3	C	21.5
County EB left/thru	B	14.5	B	14.7	B	15.1	C	21.0
County WB thru	B	14.1	B	14.8	B	15.1	C	20.9
County WB right	A	2.6	A	2.6	A	2.5	A	4.4
Riverway SB left/right	D	40.6	D	52.2	E	63.4	D	37.3
34. Dean Street/Longmeadow Road/Gordon Owen Parkway	D	42.8	D	49.2	D	49.7		
Dean EB left	D	51.3	D	50.8	D	50.8		
Dean EB thru thru/right	D	40.3	D	46.2	D	46.2		
Dean WB left	F	>80.0	F	>80.0	F	>80.0		
Dean WB thru thru/right	B	19.8	B	18.5	B	18.5		
Gordon NB left	E	75.5	D	52.7	D	53.4		
Gordon NB thru	D	37.7	D	38.7	D	38.7		
Gordon NB right	B	19.8	C	21.9	C	22.0		
Longmeadow SB left*	F	>80.0	F	>80.0	F	>80.0		
Longmeadow SB thru/right	D	40.5	D	42.5	D	42.5		
Non-Signalized Intersections								
1. Galleria Mall Driveway North/Overpass Connector								
County EB left/thru	-	-	-	-	-	-		
County WB thru/right	-	-	-	-	-	-		
Overpass SB left/right	-	-	-	-	-	-		
4. O'Connell Way/Stevens Street							C	29.9
O'Connell EB left/thru	E	42.3	E	41.0	F	-	-	-
O'Connell EB right	B	12.7	B	14.2	F	>50.0	A	1.3
Driveway WB left/thru	F	>50.0	F	>50.0	F	>50.0	D	53.6
Driveway WB right	B	10.1	B	10.5	B	12.6	A	8.6
Stevens NB left left	-	-	-	-	-	-	D	48.1
Stevens NB left/thru	A	2.8	A	2.2	D	31.7	B	11.8
Stevens NB right	A	0.0	A	0.0	A	0.0	A	3.0
Stevens SB left	A	8.2	A	8.4	A	9.8	B	11.2

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Stevens SB thru/right	A	0.0	A	0.0	A	0.0	D	52.8
7. Middleboro Avenue/Stevens Street								
Middleboro EB thru/right	A	0.0	A	0.0	A	0.0		
Middleboro WB left/thru	A	0.5	A	0.5	A	0.5		
Stevens NB left/right	D	29.7	E	40.3	E	42.3		
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway								
Hart EB left/thru/right	A	2.3	A	2.3	A	2.3		
Middleboro WB left/thru/right	A	0.5	A	0.4	A	0.4		
Bristol NB left/thru/right	C	22.1	C	22.9	C	23.1		
Poole SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
10. Bristol Plymouth HS Driveway/County Street (Route 140)								
Hess EB left/thru/right	E	41.1	F	>50.0	F	>50.0		
Bristol WB left/thru	F	>50.0	F	>50.0	F	>50.0		
Bristol WB right	B	11.1	B	12.8	B	13.2		
Route 140 NB left/thru thru/right	A	2.1	A	1.3	A	1.4		
Route 140 SB left/thru thru/right	A	1.0	A	0.4	A	0.4		
13. Galleria Mall Drive South/Galleria Mall Drive								
Drive South WB left	B	14.0	B	11.5	B	11.5		
Drive South WB right	A	7.3	A	7.4	A	7.4		
Mall Drive NB thru	A	8.7	A	8.4	A	8.4		
Mall Drive NB right	A	7.8	A	7.9	A	7.9		
Mall Drive SB left	B	10.5	B	10.1	B	10.1		
Mall Drive SB right	A	8.1	A	7.8	A	7.8		
14. Exeter Street/Bay Street/Broadway (Route 138)								
Exeter EB hard-left/left/right	-	-	-	-	-	-		
Broadway NB left/bear-left/thru	-	-	-	-	-	-		
Broadway SB thru/right/hard-right	-	-	-	-	-	-		
Bay SEB hard-left/bear-right/right	-	-	-	-	-	-		
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)/								
Driveway EB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Pkwy WB left/thru	F	-	F	-	F	-		
Pkwy WB right	F	-	F	-	F	-		
Washington NB left/thru	A	0.3	A	0.3	A	0.3		
Washington NB right	A	0.0	A	0.0	A	0.0		
Washington SB left/thru/right	C	15.1	C	16.4	C	16.5		
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)								
Weir NB left left	B	10.9	B	11.1	B	11.2		
Weir NB thru	B	10.9	A	0.0	A	0.0		
Broadway SB right	A	0.0	A	0.0	A	0.0		

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
20. Court Street/Western Green (44/138)/Post Office Square								
Post EB right	A	8.9	A	8.9	A	8.9		
Court WB left	A	-	A	-	A	-		
Court WB left/thru	A	-	A	-	A	-		
Court WB right	A	-	A	-	A	-		
Court SB thru/right	C	15.7	C	15.7	C	15.6		
21. Cohannet Street (Route 140)/Western Green (44/138)								
Cohannet thru/right	-	-	-	-	-	-		
Winthrop NB right	-	-	-	-	-	-		
Western SB left left	-	-	-	-	-	-		
Western SB thru/right	-	-	-	-	-	-		
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street								
Summer EB thru/right	A	0.0	A	0.0	A	0.0		
Summer WB left/thru	A	7.3	A	7.6	A	8.1		
Ingell NB left/right	F	>50.0	F	>50.0	F	>50.0		
25. County Street (Route 140)/Johnson Street								
County EB left/thru/right	A	0.2	A	0.1	A	0.1		
County WB left/thru/right	A	0.6	A	0.9	A	0.9		
Johnson NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Johnson SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
26. Myricks Street (Route 79)/Route 140 NB Ramps								
Myricks EB left/thru	A	3.4	A	2.9	A	2.9		
Myricks WB thru/right	A	0.0	A	0.0	A	0.0		
Ramps NB left/thru	C	24.4	D	26.7	D	26.7		
Ramps NB right	C	24.4	D	26.7	D	26.7		
27. Myricks Street (Route 79)/Route 140 SB Ramps								
Myricks EB thru/right	A	0.0	A	0.0	A	0.0		
Myricks WB left/thru	A	2.6	A	2.9	A	2.9		
Ramps SB left/thru	F	>50.0	F	>50.0	F	>50.0		
Ramps SB right	F	>50.0	F	>50.0	F	>50.0		
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street								
Middleboro EB left/thru/right	A	5.0	A	5.2	A	5.2		
Middleboro WB left/thru/right	A	0.9	A	0.8	A	0.9		
Liberty NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Old Colony SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
29. Middleboro Avenue/Pinehill Street/Caswell Street								
Middleboro EB left/thru/right	C	19.1	C	17.9	C	18.9		

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Middleboro WB left/thru/right	A	-	A	-	A	-		
Caswell NB left/thru/right	C	17.3	C	16.1	C	16.4		
Pinehill left/thru/right	E	45.6	D	31.4	D	32.3		
30. Stevens Street/Pinehill Street								
Pinehill WB left/thru/right	C	16.5	C	17.2	C	18.6		
Stevens NB left/thru/right	A	0.0	A	0.0	A	0.0		
Stevens SB left/thru/right	A	0.8	A	0.6	A	0.5		
31. F.R. Martin Pkwy/Cohannet Street								
Cohannet EB left/thru	A	5.3	A	5.7	A	5.7		
Cohannet WB thru/right	A	0.0	A	0.0	A	0.0		
Pkwy SB left/right	F	>50.0	F	>50.0	F	>50.0		
32. Gordon Owen Pkwy/Riverway Ext./Williams Street								
Gordon EB left/thru/right	A	4.0	A	4.3	A	4.3		
Gordon WB left/thru/right	A	0.0	A	0.0	A	0.0		
Williams NB left/thru/right	F	-	F	-	F	-		
Williams SB left/thru/right	F	-	F	-	F	-		

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

** = Proposed improvements for Hart Street/County Street are at the 25% design stage. An additional through lane is proposed for the northbound and southbound County Street approaches. The No Build and Build Conditions reflect these improvements.



Table 22. Summary of Intersection Operations: Saturday Midday Peak Hour

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<i>Signalized Intersections</i>								
2. Galleria Mall Drive South/County Street/Route 140 SB Ramps	A	6.9	A	6.9	A	5.4	A	5.4
Galleria EB left/thru thru/right	B	10.4	B	10.9	B	10.9	B	10.9
Route 140 WB right	A	0.1	A	0.1	A	1.0	A	1.0
County NB left/thru thru	A	7.3	A	7.1	A	7.1	A	7.1
County SB left/thru thru	A	7.3	A	7.2	A	8.0	A	8.0
County SB right	A	5.4	A	5.6	A	5.6	A	5.6
3. Overpass Connector/Route 140 NB Ramps/Stevens Street	A	9.1	A	9.4	D	36.1	B	11.3
Overpass EB left/thru thru/right	B	15.3	B	16.4	C	34.5	D	47.5
Route 140 WB left	B	15.6	B	15.4	C	30.3	D	39.9
Route 140 WB thru	B	15.9	B	17.0	D	35.2	D	46.6
Route 140 WB right	A	6.3	A	6.2	A	8.3	A	9.6
Stevens NB left/thru thru/right	A	7.2	A	8.3	B	16.9	A	3.7
Stevens SB left left	A	5.1	A	5.2	F	>80.0	-	-
Stevens SB thru/right	A	4.2	A	4.5	A	4.0	A	2.6
5. Route 24 NB Ramp (Exit 12B)/County Street (Route 140)	A	4.4	A	4.5	A	5.2	A	6.9
Route 24 WB right	A	0.2	A	0.2	A	0.2	A	0.2
Route 140 NB thru thru	B	11.4	B	11.5	B	13.2	B	10.5
Route 140 NB right	A	1.1	A	1.1	A	3.6	A	6.9
Route 140 SB left	B	17.8	B	18.9	C	22.1	C	30.6
Route 140 SB thru thru	A	0.4	A	0.4	A	0.8	A	2.9
6. Route 24 SB Ramp (Exit 12A)/County Street (Route 140)	C	23.0	C	23.3	D	51.5	C	20.1
Route 24 EB left	C	29.1	C	30.2	C	26.3	B	18.2
Route 24 EB right right	B	19.0	B	18.8	C	23.5	A	6.9
Route 140 NB left	D	39.6	D	38.6	E	59.0	C	33.0
Route 140 NB thru thru	A	9.7	A	9.6	B	16.8	A	9.8
Route 140 SB thru thru/right	C	32.9	C	34.1	F	>80.0	D	48.7
Route 140 SB right	-	-	-	-	-	-	A	2.2
9. Mozzone Boulevard/County Street (Route 140)	B	11.4	B	14.0	B	16.3	B	16.3
Mozzone EB left	C	21.1	C	21.5	C	21.3	C	32.4
Mozzone EB right	B	14.1	B	14.4	B	15.6	A	9.6
Route 140 NB left (de facto)	-	-	D	54.6	E	74.6	C	20.6
Route 140 NB thru	B	15.6	B	13.4	B	15.1	B	12.9
Route 140 SB thru thru/right	A	5.9	A	6.1	A	6.4	B	17.9

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
11. Erika Drive/County Street (Route 140)	C	26.4	C	25.4	C	25.8	C	23.6
Erika EB left	D	52.2	D	52.6	E	55.4	D	50.6
Erika EB left/thru	D	52.3	D	52.7	E	55.6	D	50.8
Erika EB right	A	3.7	A	3.8	A	3.8	A	4.4
Driveway WB left/thru/right	E	63.0	E	64.0	E	64.0	D	47.0
Route 140 NB left	C	27.7	C	25.6	C	27.5	C	33.8
Route 140 NB thru thru/right	B	11.6	B	11.5	B	11.4	B	11.4
Route 140 SB left/thru thru	C	34.9	C	33.1	C	32.6	C	28.6
Route 140 SB right	C	21.2	C	21.9	C	21.9	B	14.7
12. Hart Street/County Street (Route 140)**	F	>80.0	D	36.0	D	37.0	C	30.0
Hart EB left	-	-	-	-	-	-	D	37.4
Hart EB left/thru	E	77.4	D	39.8	D	42.1	D	37.7
Hart EB right	C	20.6	A	2.4	A	2.5	A	3.5
Hart WB left	-	-	-	-	-	-	D	46.3
Hart WB left/thru	F	>80.0	E	59.1	E	65.5	D	36.6
Hart WB right	A	8.3	A	3.8	A	3.8	A	4.6
Route 140 NB left	D	42.3	E	55.9	E	59.7	D	47.2
Route 140 NB thru/right	E	69.6	C	31.7	C	31.6	C	25.6
Route 140 SB left	D	50.8	E	56.3	E	57.7	D	52.1
Route 140 SB thru/right	F	>80.0	D	44.2	D	43.7	D	36.9
15. Washington Street/Broadway (Route 138)	C	25.1	C	26.3	C	26.4		
Washington EB left/thru/right	D	40.4	D	44.8	D	44.8		
Washington WB left/thru/right	C	23.5	C	23.4	C	23.4		
Broadway NB left/thru/right	C	22.5	C	22.8	C	23.1		
Broadway SB left/thru	C	20.2	C	20.8	C	21.1		
Broadway SB right	B	17.9	B	18.0	B	18.0		
17. Oak Street /Washington Street/Tremont Street (Route 140)	D	38.2	D	37.1	D	37.3		
Tremont EB left	D	50.7	D	49.8	D	49.4		
Tremont EB left/thru/right	D	50.0	D	49.3	D	49.7		
Plaza WB left/thru/right	E	71.8	E	66.4	E	67.0		
Oak NB left/thru thru/right	C	21.9	C	21.4	C	21.6		
Washington SB left/thru	D	52.9	D	52.0	D	52.3		
Washington SB right	B	14.6	B	15.5	B	15.6		
18. Cohannet Street (Route 140) / Weir Street (Route 138)	B	10.9	B	11.3	B	11.4		
Cohannet EB left	A	2.2	A	2.2	A	2.2		
Cohannet EB thru thru	C	21.8	C	22.5	C	22.7		
Cohannet EB right	A	2.8	A	2.7	A	2.7		
Main WB right	A	1.5	A	1.8	A	1.9		
Weir NB thru	C	21.6	C	21.8	C	21.8		
Weir NB right	B	19.0	B	19.0	B	19.0		

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
22. High Street/Winthrop Street (Route 140)	C	33.4	D	35.9	D	38.1	C	33.9
High EB left/thru/right	C	30.9	C	29.9	C	29.9	D	43.8
High WB left	E	59.0	D	54.6	E	71.7	D	38.0
High WB thru/right	C	26.3	C	25.8	C	25.8	C	23.3
Winthrop NB left	C	21.5	C	21.7	C	21.7	C	22.4
Winthrop NB thru/right	C	23.0	C	25.6	C	27.3	D	37.9
Winthrop SB left/thru thru/right	D	48.2	E	57.3	E	57.3	C	26.7
23. Main Street (Route 140/44)/Church Green (Route 44)/Summer Street (Route 140)	C	21.4	C	23.0	C	22.9		
Main EB left	C	21.4	C	22.5	C	22.5		
Main EB thru	C	25.1	C	27.3	C	27.3		
Main EB right	A	6.8	A	7.6	A	7.7		
Church WB thru/right	C	27.9	C	29.8	C	29.8		
Summer NB left/thru	B	19.0	B	19.3	B	19.6		
Summer NB right	B	10.7	B	11.0	B	11.3		
33. County Street (Route 140)/Riverway Ext.	C	34.5	B	15.5	B	16.3		
County EB left/thru	B	13.7	B	13.7	B	14.0		
County WB thru	B	13.8	B	13.9	B	14.2		
County WB right	A	2.9	A	2.8	A	2.7		
Riverway SB left/right	F	>80.0	C	32.1	D	35.5		
34. Dean Street/Longmeadow Road/Gordon Owen Parkway	D	36.3	D	37.9	D	38.0		
Dean EB left	D	51.7	D	51.1	D	51.1		
Dean EB thru thru/right	D	37.5	D	39.5	D	39.5		
Dean WB left	E	64.8	E	64.5	E	65.9		
Dean WB thru thru/right	B	17.8	B	18.0	B	18.0		
Gordon NB left	D	37.9	D	37.4	D	37.2		
Gordon NB thru	D	35.3	D	35.2	D	35.2		
Gordon NB right	B	17.4	B	17.9	B	18.0		
Longmeadow SB left*	F	>80.0	F	>80.0	F	>80.0		
Longmeadow SB thru/right	D	35.6	D	35.2	D	35.2		
Non-Signalized Intersections								
1. Galleria Mall Driveway North/County Road/Overpass Connector								
County EB left/thru	-	-	-	-	-	-		
County WB thru/right	-	-	-	-	-	-		
Overpass SB left/right	-	-	-	-	-	-		

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
4. O'Connell Way/Stevens Street							B	18.0
O'Connell EB left/thru	C	17.3	C	17.1	F	>50.0	-	-
O'Connell EB right	B	10.1	B	10.1	F	>50.0	A	1.0
Driveway WB left/thru	C	18.2	C	21.9	F	>50.0	D	50.5
Driveway WB right	A	9.6	A	9.6	B	11.1	B	19.8
Stevens NB left left	-	-	-	-	-	-	D	35.8
Stevens NB left/thru	A	2.1	A	1.9	B	12.3	A	4.2
Stevens NB right	A	0.0	A	0.0	A	0.0	A	1.2
Stevens SB left	A	7.8	A	7.9	A	9.0	A	7.9
Stevens SB thru/right	A	0.0	A	0.0	A	0.0	C	20.3
7. Middleboro Avenue/Stevens Street								
Middleboro EB thru/right	A	0.0	A	0.0	A	0.0		
Middleboro WB left/thru	A	0.4	A	0.2	A	0.2		
Stevens NB left/right	C	21.6	C	21.8	C	22.4		
8. Hart Street/Middleboro Avenue/Poole Street/ Bristol Plymouth HS Driveway								
Hart EB left/thru/right	A	2.0	A	2.0	A	2.0		
Middleboro WB left/thru/right	A	0.1	A	0.0	A	0.0		
Bristol NB left/thru/right	B	12.3	B	11.7	B	11.7		
Poole SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
10. Bristol Plymouth HS Driveway/County Street (Route 140)								
Hess EB left/thru/right	C	17.5	C	23.1	D	26.4		
Bristol WB left/thru	E	47.8	F	>50.0	F	>50.0		
Bristol WB right	B	11.3	B	12.6	B	12.9		
Route 140 NB left/thru thru/right	A	0.9	A	0.7	A	0.8		
Route 140 SB left/thru thru/right	A	0.2	A	0.3	A	0.3		
13. Galleria Mall Drive South/Galleria Mall Drive								
Drive South WB left	B	12.8	B	13.6	B	13.6		
Drive South WB right	A	8.1	A	8.3	A	8.3		
Mall Drive NB thru	A	8.7	A	8.8	A	8.8		
Mall Drive NB right	A	7.4	A	7.5	A	7.5		
Mall Drive SB left	B	10.9	B	11.3	B	11.3		
Mall Drive SB right	A	7.8	A	7.8	A	7.8		
14. Exeter Street/Bay Street/Broadway (Route 138)								
Exeter EB hard-left/left/right	-	-	-	-	-	-		
Broadway NB left/bear-left/thru	-	-	-	-	-	-		
Broadway SB thru/right/hard-right	-	-	-	-	-	-		
Bay SEB hard-left/bear-right/right	-	-	-	-	-	-		

Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
16. Washington Street (Route 140)/F.R. Martin Pkwy (Route 140)/								
Driveway EB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Pkwy WB left/thru	F	>50.0	F	>50.0	F	>50.0		
Pkwy WB right	F	>50.0	F	>50.0	F	>50.0		
Washington NB left/thru	A	0.0	A	0.0	A	0.0		
Washington NB right	A	0.0	A	0.0	A	0.0		
Washington SB left/thru/right	A	6.0	A	5.6	A	5.7		
19. Court Street/Broadway (Route 138)/Weir Street (Route 138)								
Weir NB left left	A	9.6	A	9.9	A	10.0		
Weir NB thru	A	0.0	A	0.0	A	0.0		
Broadway SB right	A	0.0	A	0.0	A	0.0		
20. Court Street/Western Green (44/138)/Post Office Square								
Post EB right	A	8.4	A	8.4	A	8.4		
Court WB left	A	-	A	-	A	-		
Court WB left/thru	A	-	A	-	A	-		
Court WB right	A	-	A	-	A	-		
Court SB thru/right	B	13.1	B	13.3	B	13.3		
21. Cohannet Street (Route 140)/Western Green (44/138)								
Cohannet thru/right	-	-	-	-	-	-		
Winthrop NB right	-	-	-	-	-	-		
Western SB left left	-	-	-	-	-	-		
Western SB thru/right	-	-	-	-	-	-		
24. Summer Street (Route 140)/County Street (Route 140)/Ingell Street								
Summer EB thru/right	A	0.0	A	0.0	A	0.0		
Summer WB left/thru	A	5.4	A	5.6	A	6.0		
Ingell NB left/right	E	46.7	E	45.4	F	>50.0		
25. County Street (Route 140)/Johnson Street								
County EB left/thru/right	A	0.0	A	0.0	A	0.0		
County WB left/thru/right	A	0.6	A	0.5	A	0.5		
Johnson NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Johnson SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
26. Myricks Street (Route 79)/Route 140 NB Ramps								
Myricks EB left/thru	A	2.6	A	2.7	A	2.6		
Myricks WB thru/right	A	0.0	A	0.0	A	0.0		
Ramps NB left/thru	C	15.3	C	15.8	C	17.0		
Ramps NB right	C	15.3	C	15.8	C	17.0		

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Intersection	Existing (2012)		No-Build (2022)		Build (2022)		Build Mitigated (2022)	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
27. Myricks Street (Route 79)/Route 140 SB Ramps								
Myricks EB thru/right	A	0.0	A	0.0	A	0.0		
Myricks WB left/thru	A	1.8	A	1.5	A	1.5		
Ramps SB left/thru	C	17.2	C	18.5	C	22.3		
Ramps SB right	C	17.2	C	18.5	C	22.3		
28. Middleboro Avenue/ Old Colony Avenue/Liberty Street								
Middleboro EB left/thru/right	A	4.9	A	4.9	A	5.1		
Middleboro WB left/thru/right	A	0.9	A	0.7	A	0.7		
Liberty NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Old Colony SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
29. Middleboro Avenue/Pinehill Street/Caswell Street								
Middleboro EB left/thru/right	B	14.1	B	12.8	B	13.5		
Middleboro WB left/thru/right	A	-	A	-	A	-		
Caswell NB left/thru/right	B	13.9	B	13.0	B	13.4		
Pinehill left/thru/right	C	23.8	C	21.6	C	22.9		
30. Stevens Street/Pinehill Street								
Pinehill WB left/thru/right	B	12.7	B	13.0	B	13.7		
Stevens NB left/thru/right	A	0.0	A	0.0	A	0.0		
Stevens SB left/thru/right	A	0.6	A	0.6	A	0.5		
31. F.R. Martin Pkwy/Cohannet Street								
Cohannet EB left/thru	A	5.2	A	5.5	A	5.6		
Cohannet WB thru/right	A	0.0	A	0.0	A	0.0		
Pkwy SB left/right	C	22.3	D	25.2	D	27.0		
32. Gordon Owen Pkwy/Riverway Ext./Williams Street								
Gordon EB left/thru/right	A	3.5	A	3.0	A	3.0		
Gordon WB left/thru/right	A	0.1	A	0.0	A	0.0		
Williams NB left/thru/right	F	>50.0	F	>50.0	F	>50.0		
Williams SB left/thru/right	F	>50.0	F	>50.0	F	>50.0		

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.

m = 95th percentile queue is metered by upstream traffic signal.

* = 25' left-turn pocket added during calibration process.

** = Proposed improvements for Hart Street/County Street are at the 25% design stage. An additional through lane is proposed for the northbound and southbound County Street approaches. The No Build and Build Conditions reflect these improvements.

As shown in the tables above, implementation of the proposed mitigation will bring operations at each of the affected locations back to acceptable levels under Build conditions.

Summary of Interchange Operations

Figure 43, above, illustrates interchange operations for the Build Mitigated Conditions for the Friday AM, Friday PM, and Saturday Midday peak hours. The proposed mitigation will result in the following improvements, and/or changes, to operating conditions at the Route 24/140 and Route 140/Stevens Street interchanges:

Route 24 Southbound at Exit 12

Widening of the Route 24 southbound off-ramps at Exit 12B from one to two lanes will allow for the creation of a second deceleration lane from Route 24. The existing deceleration lane at Exit 12B is currently 2,700 feet in length. The proposed, second deceleration lane would be approximately 100 feet in length and will significantly reduce the impact of diverging maneuvers on Route 24 southbound traffic (approximately 1,983 vehicles per hour during the PM Peak hour) and improving operating conditions from LOS F to LOS B during the Friday PM peak hour.

While this improvement will facilitate diverging maneuvers from Route 24 onto Exit 12A, the Route 24 southbound mainline, will continue to operate at capacity (LOS) during the Friday PM peak hour with a density of approximately 44.1 passenger cars/lane/hour – less than one passenger car/lane/hour below the threshold for LOS F. Thus, traffic interferences during this time period, such as unexpected lane maneuvers, breakdowns, etc. could easily result in reductions in free flow travel speed and potentially cause temporary queuing conditions along the mainline, either upstream of and/or at exit ramp. It should be noted that the Route 24 southbound mainline is currently running at or close to capacity today during the Friday PM peak hour, but will continue to operate at an acceptable LOS (LOS D or better) during all other time periods.

Route 24 Southbound at Route 140 Southbound Merge

The merge condition created from the added lane from the Route 24 southbound approach at Route 140 southbound will operate at LOS C or better during all time periods.

New Stevens Street Ramp to Route 140 Northbound

The addition of the new Stevens Street ramp will create a weave condition on Stevens Street southbound between O'Connell Way and the new ramp. The weave is expected to operate at LOS C or better under all conditions.

Stevens Street Ramps Merge

The addition of the new Stevens Street ramp will create a merge condition upstream of Route 140 northbound and is expected to operate at LOS B or better under all conditions.

Route 140 NB (between Exit 11 and 12)

A new ramp is proposed on Stevens Street to the north of this intersection to allow all Stevens Street southbound traffic to access Route 140 NB prior to this intersection,

The additional ramp from Stevens Street will require some widening of Route 140 NB where the ramp meets the highway. Since the new ramp will enter Route 140 NB approximately 700 feet from the

existing on-ramp to the south, it is proposed that this ramp be separated from the main line traffic by a barrier, as shown in **Figure 42**. The traffic from both ramps will merge together before joining with main line Route 140 NB traffic. In addition, Route 140 NB will be widened from 2 lanes to 3 lanes between the new ramp and the approach to the Route 24 NB on-ramp.

These improvements introduce a new merge and weave condition. The new merge of the existing Route 140 on-ramp from Stevens Street with the proposed new ramp will operate at LOS B in the worst-case condition. The weave of this combined ramp with Route 140 NB will operate at LOS C in the worst case condition.

There will also be a new weave at the channelized right turn from O'Connell Way with Stevens Street traffic to the new ramp (140 NB). This will operate at LOS C during the worst case condition.

Transportation Demand Management Measures

The traffic analyses conducted for this study, including the mitigation analyses discussed above, have taken a "worst case" approach in that no reduction in trips to and from the site was assumed to result from Transportation Demand Management (TDM) measures. To ensure the success of the Project, a comprehensive TDM program has also been developed by the proponent. The elements of the TDM program are described below.

Public Transportation

To promote use of public transportation, the proponent will do the following:

Patrons

- Encourage patrons to travel to the casino via public transportation (commuter rail). Once operations begin at the Taunton Depot commuter rail station, the proponent is willing to explore establishing a shuttle bus service that would provide a connection between the station and the Casino. This would allow patrons from the Boston area to travel to the site without using their automobiles. The potential service would be tied into the train schedule, with the number and size of the shuttle vehicles determined based on the demand. It is also anticipated that if demand is sufficient to warrant a shuttle bus service, the vehicles used for this service would use a clean energy source (such as compressed natural gas - CNG), or use hybrid vehicles to minimize emissions. Prior to implementation of the South Coast Rail project, the proponent is willing to meet with GATRA representatives to explore the possibility of expanding/modifying their existing service to include the Casino project site.
- Establish a web page that describes all the public transportation travel options available to patrons.

Employees

- Encourage employees to travel to the casino via public transportation (commuter rail). The proponent is willing to explore establishing a shuttle bus service that would provide

a connection between the Taunton Depot commuter rail station on Route 140 and the casino. This would allow employees from potential employment centers such as New Bedford or Fall River to travel to work at the Casino Project without having to drive the entire distance. Again, the vehicles used for the shuttle service would use a clean energy source (such as compressed natural gas - CNG), or use hybrid vehicles to minimize emissions. As noted above, the potential shuttle service could be coordinated with existing shuttle bus services operated by GATRA in the Lakeville/Middleborough/Wareham area that could provide a means for employees living in Taunton or Wareham to commute to the Casino Project site without using their automobiles.

- Post information regarding MBTA schedules, shuttle bus services, ride matching opportunities, etc. in employee break areas.
- Establish a web page that describes all the public transportation travel options available employees.

High Occupancy Vehicles

To promote the use of high occupancy vehicles as a transportation alternative for patrons and employees at the Casino Project, the proponent will:

Patrons

- Encourage patrons to travel to the casino by high occupancy vehicles such as buses or limousines. Convenient bus and limousine drop-off and pick-up areas will be designated within the structured parking facility. On-site bus and limousine "layover" facilities will also be provided.
- Establish a web page that describes all the public transportation and high occupancy vehicle travel options available to patrons.

Employees

- Establish car and van pool programs that will be available to all employees. The program will also use the free services of MassRIDES (<http://www.commute.com/>) to assist in matching potential van pool participants.
- Establish a web page for employees where they can enter basic data to facilitate ride matching. The data would include information such as:
 - Zip Code;
 - Gender preference (if specified);
 - Smoking preference (if specified);
 - Driving preference; and
 - Work schedule (work days, departure times, return times)

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- Establish a shuttle bus system on the site for employees to travel between employee parking facilities and the casino. The on-site employee shuttle vehicles will also be powered by a clean energy source (CNG), or use hybrid vehicles to minimize emissions.
- Provide preferential parking spaces for employees who are ride sharing participants as an incentive to become involved in a car or van pool. These designated car or van pool spaces will be located closest to the employee shuttle bus stops in the employee parking areas.
- Provide preferential parking spaces for employees who drive Hybrid or clean fuel vehicles. These designated spaces will be located closest to the employee shuttle stops.
- Provide electric vehicle charging stations in the parking garage.
- Post data pertaining to rideshare programs in employees break areas.

Additional TDM Measures/Project Amenities

- Set aside designated spaces in the structure parking facility for patrons who use shared cars, such as Zip cars (<http://www.zipcar.com/>).
- Designate an on-site TDM coordinator to oversee implementation and maintenance of the TDM program. The coordinator will also work with MassDOT, SERPEDD, other businesses and Transportation Management Associations (TMA) in the region to identify opportunities to expand the proposed TDM programs.

East Taunton Neighborhood Improvements

The proponent will work with the City of Taunton to plan for and implement a program of traffic calming improvements in East Taunton and other locations near the site. These measures could include solutions as appropriate for individual locations selected from the following menu:

- **Speed restriction signs** -- both permanent, and moveable to indicate motorists' speeds in real time;
- **Speed humps** – rounded, raised areas placed across the roadway, generally 10-14' long in the direction of travel. They are often tapered as they reach the curb on each end to allow for drainage. They are suitable for locations where very low speeds are desired and reasonable.
- **Speed tables** – flat-topped speed humps, often constructed with brick or other textured materials on the flat section. They have a higher design speed than speed humps. They are good for locations where low speeds are desired, but a somewhat smooth ride is needed for larger vehicles.
- **Raised crosswalks** -- speed tables outfitted with crosswalk markings and signage to channelize pedestrian crossings. They are good for locations where pedestrian crossings occur at haphazard locations and vehicle speeds are higher.
- **Raised intersections** – raised crosswalks that expanded to cover an entire intersection, with ramps on all approaches and often with textured materials on the flat section. These are good for locations with substantial pedestrian activity.

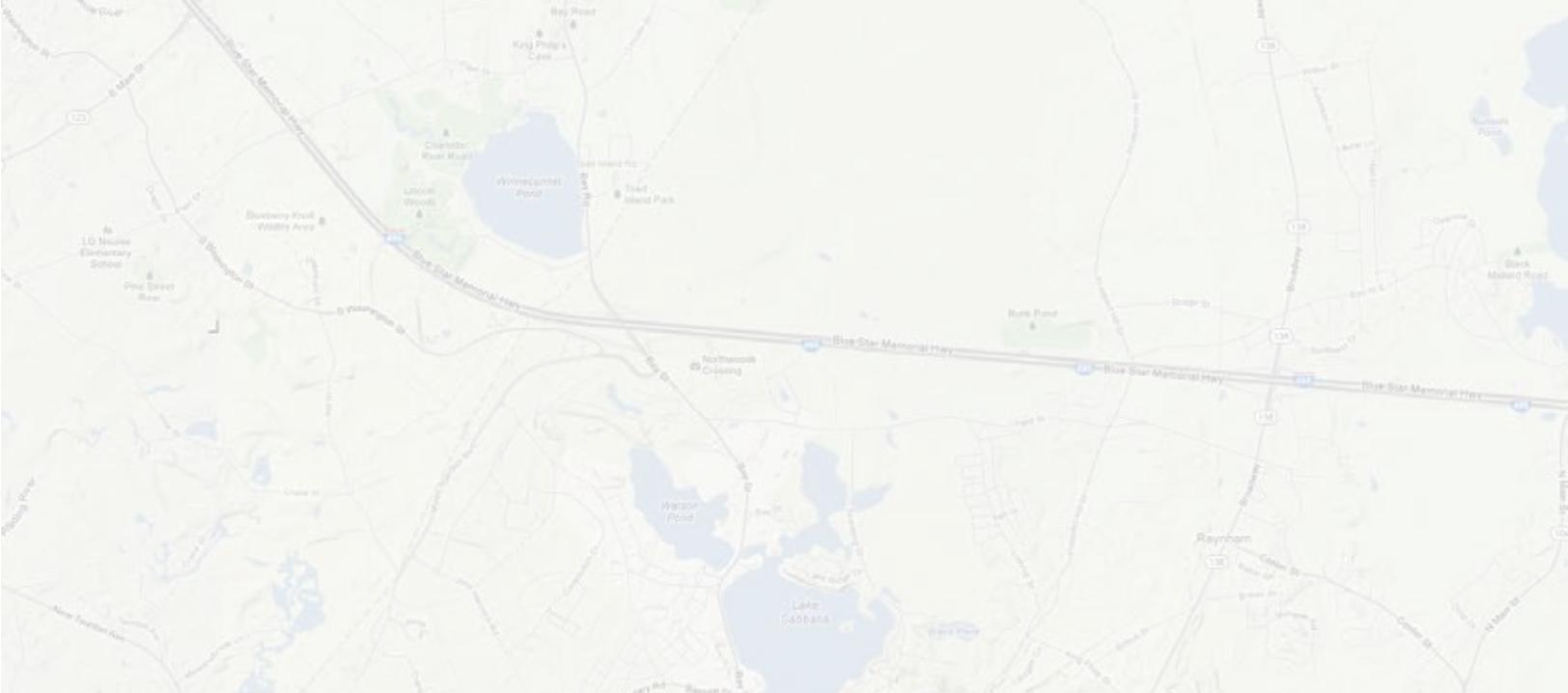
- **Textured pavement** – the use of stamped pavement or alternate pavement materials to create a more visible and uneven surface for vehicles to cross. These can be used to emphasize a crosswalk, an entire intersection, or even a larger area as appropriate.
- **Traffic circles** – as contrasted with a traffic rotary, these are raised islands within neighborhoods that are used to moderate speeds and improve safety. They can be combined with landscaping in the center. At an intersection, they can calm two streets at once. They are only suitable where large vehicle traffic is not a major concern, but there are speed, volume or safety problems.
- **Roundabouts** – Roundabouts require traffic to circulate around a center island. Unlike traffic circles, they are better used on higher volume streets to slow speeds and allocate right-of-way between conflicting movements. They are good for locations with a history of accidents or where queuing needs to be addressed. They are an inexpensive alternative to a traffic signal.
- **Chicanes** – these are curb extensions that alternate from one side of the street to another, forming a “zig-zag” path for the vehicles. These are suitable for low-volume streets where on-street parking is desired.
- **Re-aligned intersections** – changes in alignment that convert “T” intersections into curving streets that meet at right angles. Thus a former “straight-through” movement becomes a turning movement. They are one of the few traffic calming measures suitable for T-intersections.
- **Neckdowns** – these curb extensions reduce the roadway width from curb to curb, shortening crossing distances for pedestrians, and tightening turning radii at corners, reducing the speeds of turning vehicles. They are good for locations with significant pedestrian activity and also where there is the need to define a curbside parking or service lane.
- **“Gateway Islands”** – short, raised center islands located along the center of a two way street that narrow the travel lanes. They are often landscaped as well. These are suited to mark entrances to residential neighborhoods and can be combined with landscaping or “gateway” signing to alert drivers that they are entering a residential zone.
- **Truck/bus exclusions** – employed by many communities to keep trucks and buses to designated routes and to avoid their travel on residential streets. Such restrictions must be paired with acceptable detour routes and be approved by MassDOT.

Conclusions

This study has identified necessary traffic improvements that will improve existing conditions and accommodate casino traffic, as shown above. The Tribe will be responsible for the payment of all costs of improvements to transportation infrastructure including, but not limited to, road construction, road maintenance and traffic signals necessitated by the Project. The objective of these traffic improvements is to construct a road system by which traffic to and from the Project can have direct ingress and egress to the site via a major roadway without having to navigate through minor or residential roads within the City roadway network system. The goal is to provide integrated road system improvements that will mitigate adverse traffic impacts caused by the Project and to allow safe flow of traffic to and from the Project particularly on the southern end of Stevens Street at the interchange, avoiding residential neighborhoods to the north, as well as along Route 140 and Route 24 servicing the Project and other state and local roads without adverse impact to the City. The timing, amount, implementation and cost of the traffic improvements will be negotiated in good faith by the City and the Tribe .

Prior to the Opening Date, the Tribe will cause to be constructed or otherwise implemented the traffic improvements set forth here. The Tribe will use its reasonable efforts to mitigate traffic, safety and circulation issues relating to ingress and egress to the site. Mitigation will also include appropriate transportation demand management and traffic calming measures, as described above.

Over the long-term, the Tribe will work cooperatively with the City of Taunton to seek funding from the Commonwealth and the federal government to construct improvements on Routes 140 and 24 in an effort to mitigate regional traffic concerns as contemplated by MassDOT prior to the date of this proposal.



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