

December 29, 2023

Mr. Robert Rocchio, P.E.
Chief Engineer of Infrastructure
Rhode Island Department of Transportation
Two Capitol Hill
Providence, RI 02903

Re: Proposed Mixed-Use Development
The MET
500 Veterans Memorial Parkway
East Providence, Rhode Island

Dear Mr. Rocchio:

Crossman Engineering has been retained by *Marshall Management, LLC*, the applicant for a proposed major land development project on Veterans Memorial Parkway in the City of East Providence, RI. As you are aware, we have been working with the city, abutters, owner and the site engineer, Bohler Engineering as part of the local and state review process. In accordance with our recent coordination meeting, regarding submission of a Preliminary PAP, we have prepared this letter as a supplement to a March, 2023 Traffic Impact Study (TIAS) prepared by Vanasse & Associates, Inc (VAI) for the subject property as part of their preliminary planning level effort completed over the last few years with the city for the site redevelopment project.

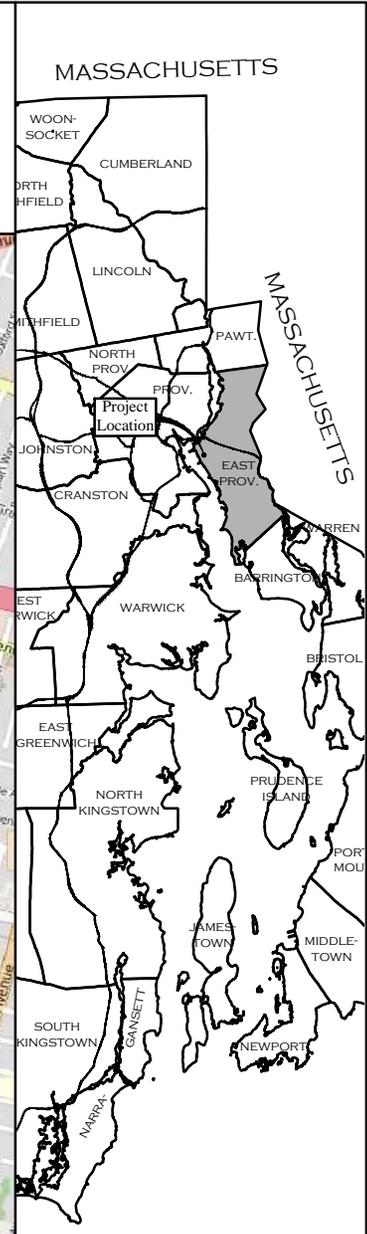
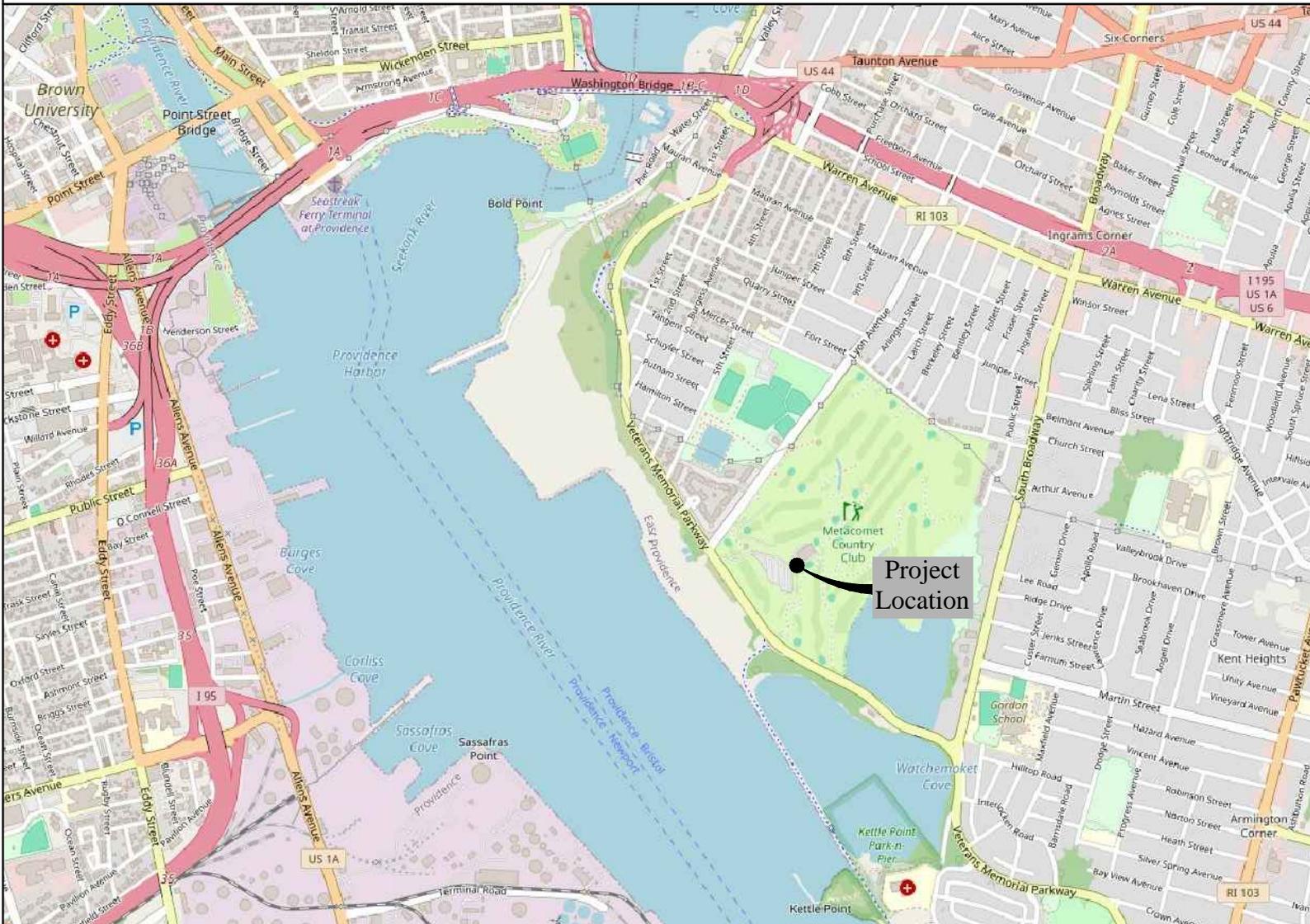
As part of our current effort, Crossman will be responsible for updating and advancing the recommendations made in the original VAI planning level study, to the final design stage for the off-site improvements, and complete the required permitting with the Rhode Island Department of Transportation (RIDOT) and other applicable state agencies. The supplemental information is being provided to the Department as part of the initial phase of permitting of off-site improvements for this large-scale project, where conceptual approval of the major infrastructure modifications is necessary before advancing to final design. In accordance with our recent coordination meeting regarding the development proposal, we are submitting this letter report and Conceptual Design Plan in support of the proposed off-site mitigation design. Crossman would like to advance this alternative as part of a Preliminary Physical Alteration Permit (Pre-PAP) to obtain your conceptual approval before advancing to a formal permit application.

Briefly describing the project, the 138-acre property is located along the easterly side of Veterans Memorial Parkway abutting Lyon Avenue to the north and Fort Street to the east. Refer to Figure 1 on the following page for project location in East Providence. The property is the former *Metacomet Country Club*, a private 18-hole golf course that had been operating on the site for over 100 years. The development proposal includes maintaining 9 holes of the former course along the waterfront area to the south, and developing the upland portion of the site along Lyon Avenue with a mixture of residential and commercial uses. Access will be provided from both Veterans Memorial Parkway and Lyon Avenue.



The MET

EAST PROVIDENCE, RHODE ISLAND



TOWN / CITY LOCATION	<u>LOCUS MAP</u> NO SCALE
----------------------	------------------------------

The study data and plans included herein support the conceptual design for modifications to Veterans Memorial Parkway between South Broadway and 5th Street that are necessitated to provide safe and adequate access to the new development. The improvements propose intersection upgrades at two major junctions along the Parkway, including installation of a modern roundabout at Lyon Avenue, and geometric improvements at South Broadway. The Lyon Avenue junction will become the major intersection along the Parkway as envisioned in the *East Providence Comprehensive Plan, 2015* update. Modifications at this location have long been considered including an upgrade to a “context sensitive” roundabout design that was originally proposed as part of the Chevron property development, *Village on the Waterfront*, over 15 years ago. In order to be consistent with the city’s long-term vision of the Parkway and future access to the waterfront at this location, the current proposal to limit introduction of a new major junction was a key consideration in the conceptual design for access to the site and required off-site roadway modifications. The access design proposed for the site utilizes the context sensitive roundabout approach at an existing intersection to accommodate future estimated traffic demands along the Parkway.

In addition to the changes at Lyon Avenue, the existing access driveway to the Metacomet site on Veterans Memorial Parkway will be relocated further to the south to provide greater separation from Lyon Avenue, and will have restrictive movements to limit visual and operational impacts. In order to promote use of the roundabout as means of access to the Parkway from the development, two new driveways are proposed on Lyon Avenue for a total of three points of access to the project. As part of the Veterans Memorial Parkway intersection designs, the roadway is proposed to be widened to four lanes for approximately 1,600 feet through Lyon Avenue and the site access road. In addition, further south, the South Broadway intersection will be modified to provide a simplified and more conventional 3-way junction with traffic calming measures to enhance safety at the intersection.

The planning level VAI TIAS provided a comprehensive review of the immediate project area including infrastructure assessment, traffic data, safety analysis of the project area roadways and intersections and an operational analysis of existing and future traffic conditions along with general recommendations for appropriate mitigation, where determined necessary. The following study provides an update of the information presented in the VAI report, but focuses more on the segments of roadways and the intersections under jurisdiction of the RIDOT requiring state review and approvals. These areas are further defined and analyzed under existing and future build conditions to assist in the decision-making process for the appropriate mitigation to support the project. A defined summary of the potential issues and recommendations, including detailed plans to provide safe and efficient access to *The MET* mixed-use development are provided. The study includes a summary of the project area roadways under consideration, and updates to the traffic counts, trip generation and operational analysis as a supplement to the original planning level study that has also been submitted with the application to the city for local approvals.

Project Area

As previously noted, the subject property is situated along the easterly side of Veterans Memorial Parkway between Lyon Avenue and South Broadway. The 138-acre site was the location of the former *Metacomet Country Club*, an 18-hole private golf course. Other land uses in the immediate area of the development proposal can be described as primarily residential along the frontage of Veterans Memorial Parkway between I-195 and Pawtucket Avenue, with numerous side street intersections providing access to

residential neighborhoods to the east. Commercial uses such as the *Metacomet Office Park* in the vicinity of Lyon Avenue are also present along the roadway.

Industrial uses were previously located to the west along the waterfront, including the Chevron property (former *Cumberland Farms/Gulf Oil* site) opposite the subject lot that is currently under consideration for a mixed-use development, and the former *BP/Amoco* facility, on the *Kettle Point* property. These heavy commercial uses have since been abandoned, and the properties have been incorporated into the Southern Waterfront Redevelopment District established by the city, which extends south of the I-195 corridor. This southern district is divided into three Special Development Sub-Districts including from the south; Kettle Point, Veterans Memorial Parkway and Bold Point Harbor sub-districts.

The redevelopment stages of each sub-district vary with *Kettle Point* recently becoming fully redeveloped with residential townhouses and apartments, and a medical office facility, *University Orthopedics*. The Chevron property within the Veterans Memorial Parkway sub-district, has been remediated and is available for redevelopment as noted. The *Wilkes Barre Pier* to the northern end of the Parkway in the vicinity of *Bold Point Park* remains active for the off-loading of petroleum products, though redevelopment of this site is currently under consideration along with the adjacent South Quay, which is presently targeted for use as an off-shore wind support facility.

Recreational uses in the area include the *Squantum Woods Reservation* and a city owned open space park to the immediate south of *Kettle Point*. The former *Metacomet Country Club* that will maintain a nine-hole public golf course and the *Pierce Field* athletic complex are situated along Lyon Avenue. The East Bay Bike Path parallels the Parkway along the westerly side of the road.

Based upon the good operating characteristics of the immediate servicing roadways including Veterans Memorial Parkway and Lyon Avenue, and the anticipated traffic volumes associated with the proposed development, a study impact area was defined for this project as it relates to state review. The limits of our analysis focused on Veterans Memorial Parkway between Mauran Avenue and South Broadway, and Lyon Avenue in the immediate area, including the intersection of these two roadways. Figure 2 on the following page depicts the subject site and the general project area under consideration as part of the study.

ROADWAYS

Veterans Memorial Parkway

Veterans Memorial Parkway serves as a urban minor arterial between I-195 and Pawtucket Avenue in the western section of the City of East Providence. It provides immediate local access to abutting properties but also links to higher order facilities including Interstate 195 to the north and Pawtucket Avenue to the south. The 2.3-mile Parkway meanders between a north/south and east/west orientation in the project area, and for this study will be referenced as a north/south route. The Parkway was constructed between 1910 and 1920 and is an example of the "Parkway Movement" of the early twentieth century. It was designed by the firm of *Frederic Law Olmstead*, which designed *Central Park* in New York City. Veterans Memorial Parkway was designated as a "Scenic Roadway" in 1992 by the Rhode Island Scenic Roadway Board. It is a state roadway and is maintained by the Rhode Island Department of Environmental Management (RIDEM) in cooperation with the RIDOT.



The MET

EAST PROVIDENCE, RHODE ISLAND



SCALE: 1"=800'

Veterans Memorial Parkway in the project area is a 40 mph, variable width two-lane roadway consisting of one 13-foot travel lane and a variable 3-5-foot shoulder in each direction. The pavement condition of the Parkway can be classified as fair to poor in some limited areas, and is clearly delineated with a double yellow centerline, and white shoulder markings. Bituminous berm is provided along both sides of the road to control stormwater runoff, though adjacent erosion along the edge of pavement from stormwater runoff was evident.

The adjacent photograph depicts the typical characteristics of Veterans Memorial Parkway along the property frontage shown on the left, looking south from the existing site driveway. As can be seen, the roadway alignment is relatively straight and level along the property frontage, though to the south it becomes curvilinear and declines to the waterfront along the cove. The bike path is situated on the right side of the photograph running between the roadway and *Chevron* property along the waterfront of the Providence River. No sidewalks are available for pedestrians, though the East Bay Bike Path runs parallel along the westerly side of the road in this area. The Parkway is also serviced by the Rhode Island Public Transit Authority (RIPTA), though no bus shelters or pullouts are available to transit riders and buses. The utility corridor is located underground, with a few service poles at cross streets and to properties. Lighting is provided on individual aluminum pole standards along the easterly side of the Parkway for nighttime illumination of the roadway and intersections.



It should be noted that the RIDOT has the roadway scheduled for upgrade in 2025 as part of the department's Pavement Management Program. The work associated with this project will be limited to pavement resurfacing and minor safety enhancements as appropriate.

Lyon Avenue

Lyon Avenue is a local city street, operating as a collector roadway within the grid pattern of streets within the residential neighborhood. It provides immediate local access to abutting residential, recreational and commercial properties, but also links to higher order facilities including Veterans Memorial Parkway to the west and Warren Avenue to the east, where it is signalized. Along its length, Lyon Avenue is a two lane 28-foot roadway consisting of a 12-foot travel lane and a 2-foot shoulder in each direction. The road is delineated with a double yellow centerline and white shoulder pavement markings as



seen in the photograph on the previous page looking east from Veterans Memorial Parkway, with the subject property on the right. The roadway alignment is relatively straight and level, though there is a minor crest curve to the immediate east of Lyon Avenue.

There is no curbing or sidewalk on either side of the road along the property frontage, but both are introduced east of Mercer Street extending to Warren Avenue. The pavement surface was determined to be in good condition with no observed cracking or signs of deterioration. The roadway is posted at 25 mph and there are signed parking restrictions on both sides along the segment between Veterans Memorial Parkway and Mercer Street where no homes are present. Utility poles are situated along the northerly side of the road with lighting fixtures located sporadically on the poles for nighttime illumination.

INTERSECTIONS

Veterans Memorial Parkway at Lyon Avenue

The major intersection under review as part of this study is the junction of the Parkway with Lyon Avenue due its location in relation to the site and the proposed access driveways to the development. This intersection will service a large percentage of the site related traffic, while also potentially linking to the waterfront from the Chevron property to the west as was previously noted. Lyon Avenue intersects Veterans Memorial Parkway, to form an unsignalized 3-way, "T" type junction with *Stop* control on the minor Lyon Avenue approach. The Veterans Memorial Parkway northbound and southbound approaches to the intersection provide a single all-purpose lane. In addition, the Lyon Avenue westbound approach also provides a single lane for both right and left turning vehicles.

Veterans Memorial Parkway at South Broadway

South Broadway intersects the Parkway to form an unsignalized 3-way "T" type junction with *Stop* control on the minor South Broadway approach. The Veterans Memorial Parkway northbound approach to the intersection provides single all-purpose lane. The southbound approach has two lanes including a separate left turn lane that was recently added through restriping of the Parkway as part of the *Kettle Point* development project. This additional lane provides a refuge for turning vehicles, while allowing unimpeded through traffic flow on the main roadway. The South Broadway westbound approach contains a separate left turn and right turn lane for improved efficiency. These features can be seen in the adjacent aerial photograph of the junction.

It should be noted that there are several geometric factors that impact operations of the intersection, specifically a sharp curve introduced on South Broadway at the terminus of the road, hindering sight lines for westbound vehicles approaching the intersection, and their ability to see



stopped vehicles at the stop line. In addition, there is a large landscaped median island that contains a stone memorial plaque for a veteran. This large median affects left turns both exiting off the Parkway and turning from South Broadway. The median creates a large separation of entering and exiting traffic for

South Broadway, where the southbound left turn lane on the Parkway extends beyond the side street exiting approach. This creates a segmented left turn lane that permits exiting traffic from South Broadway to turn if a single left turning vehicle is queued past the minor approach. This operation can be more efficient if there is only one southbound vehicle turning left, where it allows both movements to operate simultaneously in a northbound gap in traffic. Though this operation allows for more efficient use of available gaps in main street traffic, it often creates confusion to drivers on the appropriate location to turn from the main road, and when to turn during periods of longer southbound left turn lane queues.

Traffic Volumes

Existing traffic flow characteristics for this area were developed from a traffic counting program conducted by Crossman and review of available record data from the RIDOT, the VAI TIAS, and from previous traffic studies completed along the Parkway in the immediate project area. The data collection for this updated effort included Automatic Traffic Recorder (ATR) counts on Veterans Memorial Parkway, Lyon Avenue and South Broadway, and Manual Turning Movement Counts (TMC) at the Veterans Memorial Parkway intersections with Lyon Avenue and with South Broadway during the weekday morning and afternoon peak periods and Saturday mid-day period, consistent with the previous data collection effort completed by VAI.

It was necessary to update this base data as the counts utilized in the VAI study were collected during the pandemic period when traffic volumes were not representative of average daily traffic demand conditions. This new information provides the opportunity to use post pandemic data instead of adjusted data that is not reflective of current conditions where commuting travel patterns have typically changed. As indicated, data was also reviewed from record information available from the RIDOT and from multiple studies completed for projects along the Parkway over the last two decades. Review of this information determined that daily traffic volumes along the Parkway have remained relatively consistent since the year 2000, though as expected are slightly lower during peak periods due to changes in commuting patterns over the last few years. Figure 3 on the following page depicts the peak hour turning movement volumes during the weekday morning, afternoon and Saturday peak periods. Complete count information is included in the Attachment.

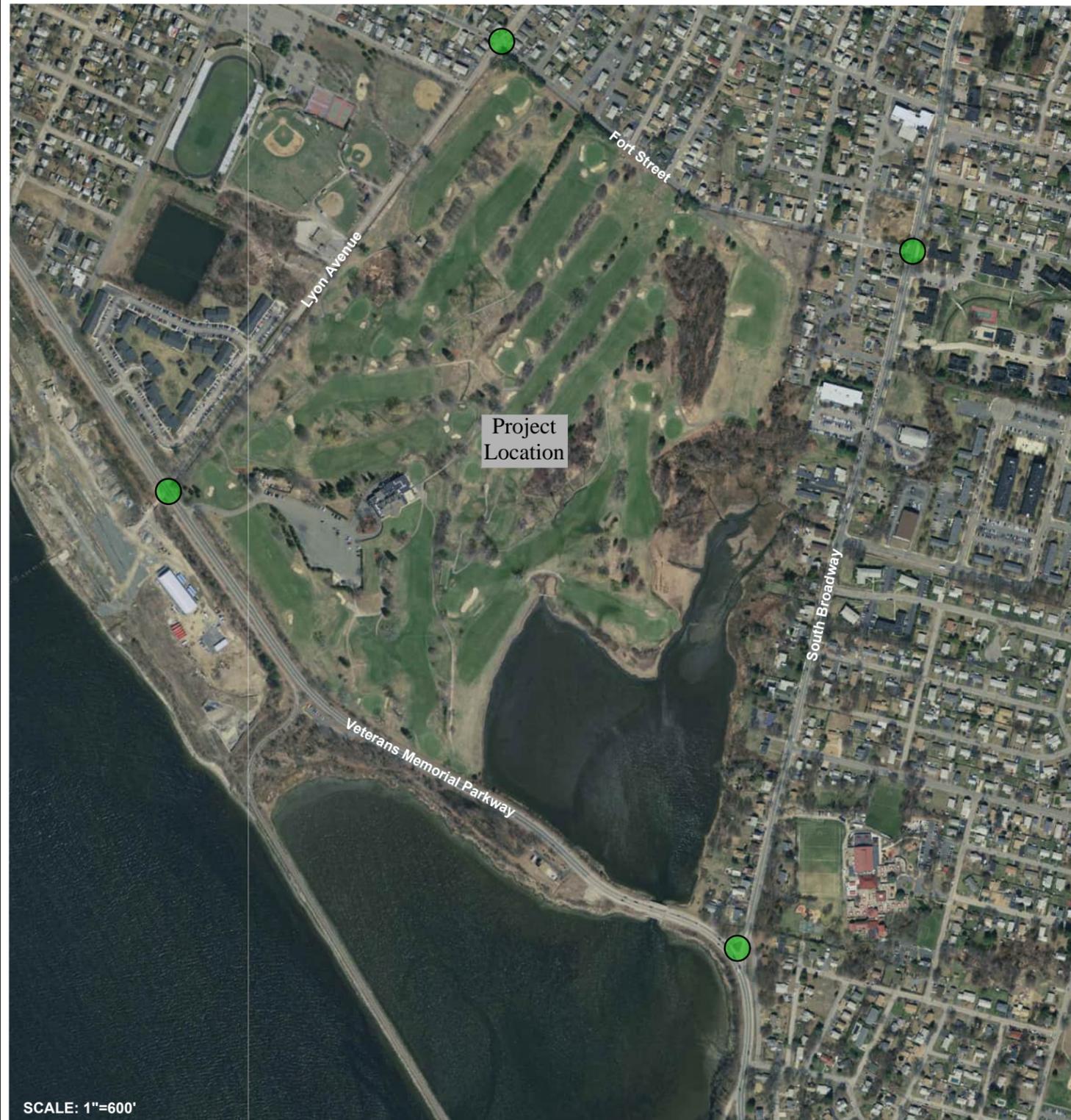
Based upon the November 2023 ATR count program, Veterans Memorial Parkway was found to service approximately 16,500 vehicles per day (vpd) on an average weekday and 13,200 vpd on a Saturday. On a typical weekday along the Parkway just south of Lyon Avenue, traffic volumes begin to increase at 6:00 AM, with a morning peak hour of approximately 1,300 vehicles occurring between 7:00 and 8:00 AM. After 9:00 AM, the volumes decreased to between 850 and 950 vehicles per hour (vph), before increasing to the afternoon peak after 2:00 PM. The afternoon peak hour occurred between 4:00 and 5:00 PM with similar peak volumes of approximately 1,300 vph. On a Saturday there is no defined AM and PM peak as volumes gradually increase over the day peaking in the mid-day period between 10:00 AM and 4:00 PM where volumes average between 850 and 950 vph.

Lyon Avenue was found to service approximately 1,050 vehicles per day during the week and 600 vpd on a Saturday. On a typical weekday along the Lyon Avenue, traffic volumes begin to increase at 6:00 AM, with a morning peak hour of approximately 100 vehicles occurring between 8:00 and 9:00 AM. After 9:00 AM, the volumes decreased to between 60 and 80 vehicles per hour, before increasing to the afternoon peak after 2:00 PM. The afternoon peak hour occurred between 4:00 and 5:00 PM with similar peak volumes of approximately 100 vph. On a Saturday there is no defined AM and PM peak as volumes gradually increase over the day peaking in the mid-day period between 10:00 AM and 4:00 PM where volumes average between 35 and 55 vph.

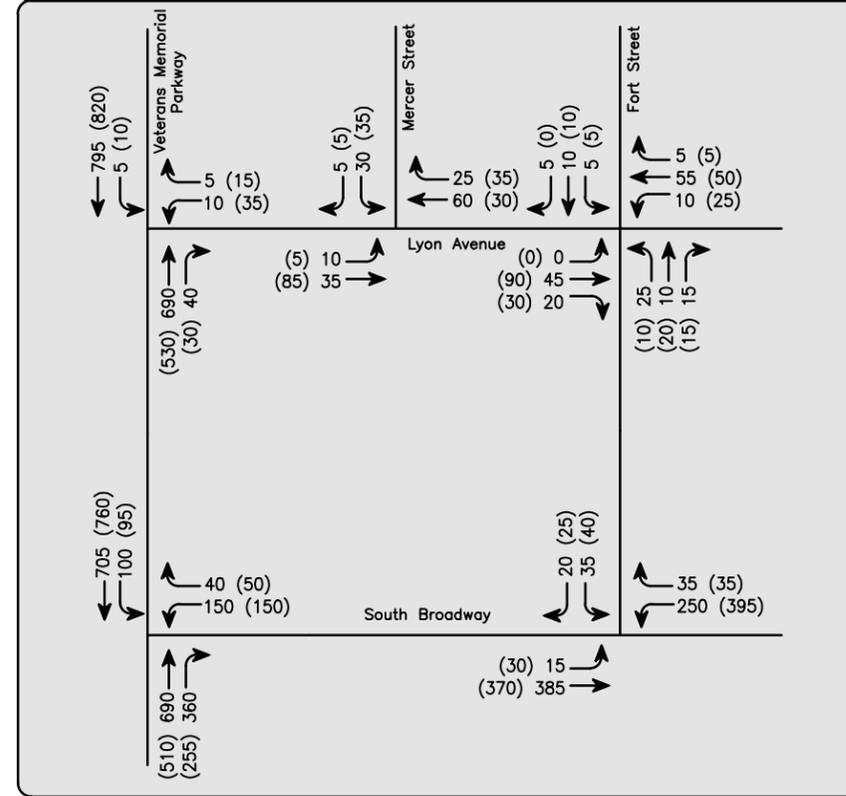


The MET

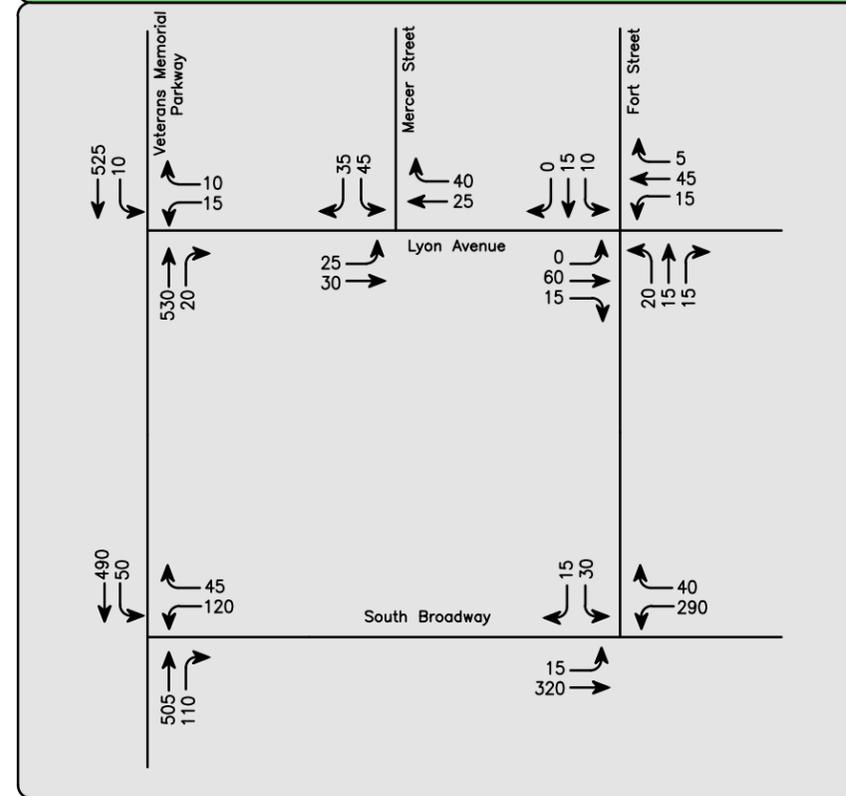
EAST PROVIDENCE, RHODE ISLAND



Weekday Volumes



Saturday Volumes (11:30 - 12:30)



LEGEND:

- TURN LANE
- XXX AM PEAK VOLUMES (7:30 TO 8:30)
- (XXX) PM PEAK VOLUMES (4:30 TO 5:30)
- STUDY INTERSECTION

Existing Traffic Volumes

Figure 3

South Broadway was found to service approximately 5,900 vehicles per day during the week and 4,100 on a Saturday. On a typical weekday along the roadway, traffic volumes begin to increase at 6:00 AM, with a morning peak hour of approximately 600 vehicles occurring between 8:00 and 9:00 AM. After 9:00 AM, the volumes decreased to between 350 and 450 vehicles per hour, before increasing to the afternoon peak after 2:00 PM. The afternoon peak hour occurred between 4:00 and 5:00 PM with similar peak volumes of approximately 550 vph. On a Saturday there is no defined AM and PM peak as volumes gradually increase over the day, peaking in the mid-day period between 11:00 AM and 3:00 PM where volumes average between 290 and 320 vph.

A manual turning movement count program was also conducted in November 2023 to confirm current traffic conditions at key project study intersections. The counts were completed at the Veterans Memorial Parkway intersections with Lyon Avenue and with South Broadway and compared to the VAI and historical count data as post COVID conditions have impacted commuter travel patterns and associated volumes on a daily basis. Data was collected during the weekday morning peak from 7:00 to 9:00 AM, the weekday afternoon peak from 3:00 to 6:00 PM and a Saturday from 11:00 to 2:00 PM. Between Lyon Avenue and South Broadway, Veterans Memorial Parkway was found to service approximately 1,535 vehicles during the morning peak hour with 730 northbound and 805 southbound. During the afternoon peak hour approximately 1,415 vehicles were recorded, with 560 northbound and 855 southbound. During the Saturday mid-day peak hour approximately 1,090 vehicles were recorded, with 550 northbound and 540 southbound. The manual counts were found to be consistent with the ATR data and general volumes from previous studies within the project area, though slightly lower as noted earlier. One exception though was the morning peak, where during this period, the overall approach volume was consistent but it was found that a greater number of vehicles were using South Broadway to travel north to I-195 instead of staying on the Parkway.

Trip Generation

To understand the potential traffic impact of a proposed development, estimates of anticipated traffic to be generated by that particular land use must be calculated. As previously discussed, the site development proposal includes construction of multiple buildings containing both residential and commercial uses. The residential component will include 844 apartments and 46 townhouses for a total of 890 residential units. The commercial component will include a shopping center of approximately 153,000 square feet containing an 85,000 square foot grocery market as the major anchor, and a mixture of retail, restaurant and professional service businesses in multiple buildings along the Parkway. A pedestrian oriented walkable *village* area containing a small cluster of buildings is proposed abutting a nine-hole public golf course that will cover over 48-acres of the site, maintaining a public recreational area along Watchemoket Cove utilizing the current course with a modified layout. This area will also contain an overlook and amphitheater with vistas of the golf course and the cove. An open space buffer area will also be created along the easterly portion of the property fronting Fort Street and the northeast corner of the property along Lyon Avenue. Figure 4 on the following page depicts the site layout and access plan, prepared by *Bohler Engineering*.

For this site, projected traffic volumes for the mixed-use project were based on use of trip generation factors. These factors are taken from the "*Trip Generation*" manual, an informational report published by the Institute of Transportation Engineers (ITE), a national professional organization for traffic and transportation engineers. The data provided in the ITE report are based on extensive traffic studies for



The MET

EAST PROVIDENCE, RHODE ISLAND



SCALE: 1"=800'

various types of land uses (residential, commercial, industrial, etc.). This data has been found to be very reliable and provides a sound basis for estimating future trips to new developments.

For the proposed 890 residential unit component of the project, Land Use Code 215 Single Family Attached Housing (46 units), Land Use Code 220 Multifamily Housing - Low-Rise (240 units) and Land Use Code 221 Multifamily Housing - Mid-Rise (604 units) were reviewed for applicability in developing an estimate of site related vehicles trips. For the golf course and retail components of the project Land Use Code 430 Golf Course (9-holes) and Land Use Code 821 Shopping Center with Supermarket (153,000 square feet) were utilized respectively. The appropriate worksheets from the manual are included in the Attachments along with the trip estimate calculations. Table 1 provides a summary of the peak hour volumes estimated for the proposed large scale mixed-use project utilizing the ITE factors.

TABLE 1
Trip Generation Summary

<u>Description</u>		<u>Enter</u>	<u>Exit</u>	<u>Total</u>
<u>AM PEAK HOUR</u>				
ITE Land Use Code 215	Single Family Attached	7	15	22
ITE Land Use Code 220	Multifamily (Low-Rise)	23	73	96
ITE Land Use Code 221	Multifamily (Mid-Rise)	52	172	224
ITE Land Use Code 430	Golf Course	13	3	16
ITE Land Use Code 821	Shopping Plaza w/Market	335	205	540
TOTAL		430	468	898
<u>PM PEAK HOUR</u>				
ITE Land Use Code 215	Single Family Attached	15	11	26
ITE Land Use Code 220	Multifamily (Low-Rise)	77	45	122
ITE Land Use Code 221	Multifamily (Mid-Rise)	144	92	236
ITE Land Use Code 430	Golf Course	14	12	26
ITE Land Use Code 821	Shopping Plaza w/Market	662	718	1,380
TOTAL		912	878	1,790
<u>SATURDAY MD PEAK HOUR</u>				
ITE Land Use Code 215	Single Family Attached	12	14	26
ITE Land Use Code 220	Multifamily (Low-Rise)	50	48	98
ITE Land Use Code 221	Multifamily (Mid-Rise)	120	116	236
ITE Land Use Code 430	Golf Course	13	14	27
ITE Land Use Code 821	Shopping Plaza w/Market	722	693	1,415
TOTAL		917	885	1,802

As can be seen in Table 1, the development project, with the mixture and size of uses proposed, will generate a relatively high volume of vehicles trips on the servicing roadways during the daily peak periods of traffic. It is very important to note that the volumes referenced in the table will not all be new to the servicing roadway, as a combination of *pass-by* and *internal capture* factors can account for between 25 and 40 percent of the commercial component related generated vehicle trips. In a mixed-use development such as The MET, the large residential component of the project will contribute a significant amount of the trips to and from the commercial uses proposed, specifically the grocery market and other smaller service-oriented retailers proposed within the shopping center element. These inter-related trips from the residents to the businesses do not generate trips at the site driveways or on the adjacent roads, they are all internal to the site. These trips, along with the pass-by factor where drivers that are already on the adjacent roadway, enter and exit the site, were not applied to reduce intersection volumes to ensure appropriate design treatments and off-site mitigation to provide for safe and efficient access to the property and along the adjacent servicing roadways. This is an appropriate method of design as these factors can be highly variable depending on the final makeup of inter-related uses within a mixed-use site.

It should be noted that a trip is defined as a one-way vehicle movement, therefore driving to and from the site, for example is equivalent to two trips. In developing the intersection volumes to be analyzed under build conditions, a directional distribution of the site traffic was estimated. The distribution was based on the traffic data collected defining the current traffic patterns at the study intersections and routes available to higher order roadways. The distribution values utilized for the study intersections are provided in the Attachment for reference.

Operational Analysis

The key to any traffic impact analysis is the evaluation of roadway operations during peak traffic periods on the servicing roadway system. This situation would occur when the site-generated traffic, combined with the traffic volumes on the main roadways result in the highest one-hour volume serviced along a roadway segment, or through an intersection. Review of the traffic data and proposed land use found that the weekday morning and afternoon peak hours along with the Saturday mid-day peak period would represent this worst-case combination of site-generated traffic with the servicing roadway peak traffic conditions.

As part of this study, we focused the main intersections within the project area including the Veterans Memorial Parkway intersections with Lyon Avenue and with South Broadway and South Broadway with Fort Street. In addition, the new site driveway intersections with both Veterans Memorial Parkway and with Lyon Avenue were analyzed in order to design the appropriate geometric and control treatments. The two existing intersections along the Parkway were analyzed for existing conditions in order to provide a basis of comparison of current operations versus the proposed mitigation.

In order to properly assess the impacts of a development, future traffic conditions of area roadways should be estimated for the period when the development is constructed and fully occupied. Typically, the expansion of base traffic is calculated when a project is to be constructed over an extended period (+3 to 5 years). In all instances, area growth that may affect capacity results should be considered. For this project a future five-year design period was estimated for the project. It is not anticipated that base traffic volumes along the adjacent servicing roadways will discernably change from existing conditions as the adjacent neighborhoods and properties in this section of the city are substantially built, where little to no growth should occur along the immediate roadways servicing the property. As noted earlier, the *Kettle Point* property has been fully developed as of the summer of 2023. This was also coordinated with the city

where no known projects are under construction or review that would impact traffic conditions in the immediate project area.

One area which could potentially impact traffic conditions in the future, is development along the waterfront. Though no proposals are presently under consideration by the city, the potential for future development exists. Therefore, to be conservative in our analysis, existing volumes were expanded by 1.5 percent per year for the five-year design period. For this project, a No-Build analysis scenario was not completed as the scale of the off-site mitigation is being designed to accommodate the future build condition, and it is not necessary to define the need and scale, or lack thereof, to provide improvements along the servicing roadways, absent of the subject project. Figure 5 on the following page depicts the estimated future traffic volumes at the study intersections.

Based upon the increase in traffic during peak periods related to full development of the subject property, it is apparent that improvements are necessary along Veterans Memorial Parkway and at key intersections. As previously discussed, this main arterial is different than most roadways under state jurisdiction, where property access and design elements require careful consideration and coordination with appropriate agencies as it was designated as a Scenic Roadway in 1992. Introduction of new driveways and potential intersection control have been discouraged where possible as outlined in the *Veterans Memorial Parkway Stewardship Plan* prepared by the Rhode Island Scenic Roadways Board in 1999. The design for this project has been considerate of those concerns for changes to the general scenic character of the Parkway and design elements proposed will be consistent with the goals of the *Plan*, and be approved by the agency to mitigate any potential adverse impacts.

As such, a new driveway to the site with control (roundabout or traffic signal), has not been proposed along Veterans Memorial Parkway. The existing driveway will be modified and shifted further south away from the Lyon Avenue intersection while maintaining the stop-controlled driveway approach. The Lyon Avenue junction will now become the major intersection along the Parkway as improvements at this location have long been considered and were defined in the *East Providence Comprehensive Plan 2015* update, including an upgrade to a "context sensitive" roundabout that was reviewed as part of the Chevron property development, *Village on the Waterfront*, proposed over 15 years ago. Development of the Chevron site is still anticipated and their access to the Parkway would be preferred at Lyon Avenue to meet the goals of the city and Waterfront Commission, minimizing new intersections requiring vehicle control and preserving the Parkway's scenic character. Considering both projects and the sensitivity of the introduction of new intersections and the type of intersection control, it is more prudent and appropriate to limit changes to the Parkway at this existing intersection location, and propose the appropriate context-sensitive roundabout control design.

Eliminating the need for operational control with a roundabout or traffic signal at the site access road on Veterans Memorial Parkway was attained by restricting left turning traffic exiting the site. The left turn restriction will limit exiting traffic to right turns only, which can easily be accommodated as designed. Shifting the left turn exiting traffic (southbound) to Lyon Avenue eliminates the need for a roundabout or traffic signal control at the site access road, which would be warranted under full access conditions. Also, it is important to note, that regardless of this current access design proposal restricting left turns at the site driveway, upgrade to vehicle control to a roundabout or traffic signal at Lyon Avenue would be warranted to accommodate future traffic demands. With the design proposed, vehicle control (roundabout), is limited to only one location and at an existing intersection that will also benefit access to the waterfront and the motoring public that travel these roadways on a daily basis.



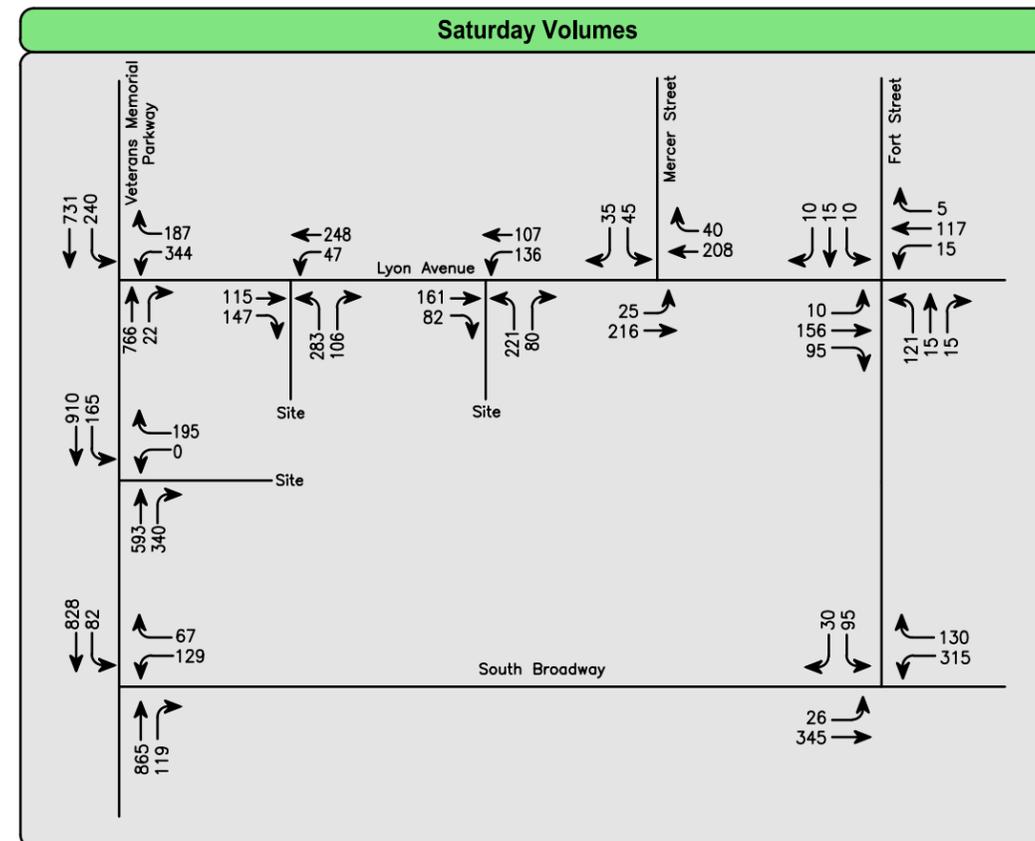
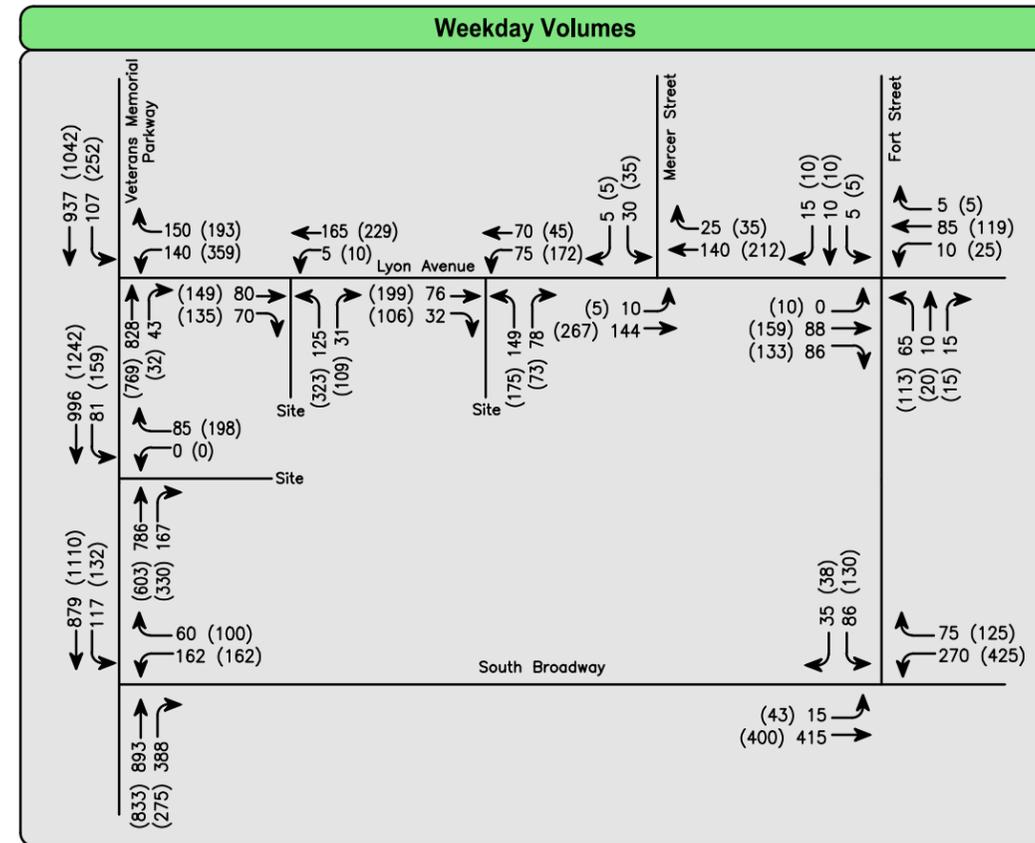
The MET

EAST PROVIDENCE, RHODE ISLAND



SCALE: 1"=600'

Proposed Traffic Volumes



LEGEND:

- TURN LANE
- XXX AM PEAK VOLUMES
- (XXX) PM PEAK VOLUMES
- STUDY INTERSECTION

Figure 5

The roundabout proposed requires two entry lanes on all approaches to accommodate the demand as shown in Figure 5 during daily peak conditions. The mitigation plan presented in the Attachments depicts the modifications to a 1,600-foot section of Veterans Memorial Parkway to transition to the two-lane approaches and back to a single lane in each direction. Southbound traffic will be permitted to turn left and enter at the site access road location to help distribute site related traffic between the commercial and residential components of the development. Two new driveways are proposed on Lyon Avenue, a primary driveway to the commercial area and a secondary driveway further to the east near the residential apartments. It is estimated that much of the residential traffic will utilize Lyon Avenue as a primary access/egress route due to the location of the residential component at the easterly end of the site closer to Fort Street.

The results of the design analysis for existing and future traffic conditions are presented in Table 2 and Table 3 respectfully. The existing conditions analysis evaluates peak conditions for the unsignalized conditions at each study intersection. The future build analysis evaluates the proposed design condition with a roundabout at Lyon Avenue, and unsignalized conditions at the existing junctions and proposed points of access to the development.

Table 2 - Existing Level of Service Summary

Location / Movement	2023 EXISTING CONDITIONS												
	AM Peak Hour				PM Peak Hour				Saturday MD Peak Hour				
	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c	
<i>Veterans Memorial Parkway at Lyon Ave (U)</i>													
Parkway SB Left	A	9.3	1	0.01	A	8.7	1	0.01	A	8.7	1	0.01	
Lyon Ave WB Left/Right	D	26.6	1	0.14	E	35.9	2	0.32	C	19.6	1	0.10	
OVERALL	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Veterans Memorial Parkway at South Broadway (U)</i>													
Parkway SB Left	B	12.0	1	0.18	B	10.1	1	0.13	A	9.1	1	0.06	
SBroadway WB Left	F	115.9	8	0.97	F	61.1	6	0.76	C	21.2	2	0.37	
SBroadway WB Right	B	12.9	1	0.09	B	11.4	1	0.09	B	10.8	1	0.07	
OVERALL	-	-	-	-	-	-	-	-	-	-	-	-	
<i>South Broadway at Fort Street (U)</i>													
SBroadway NB Left	A	7.9	1	0.01	A	8.4	1	0.03	A	8.0	1	0.01	
Fort EB Left/Right	B	13.9	1	0.13	C	17.1	1	0.19	B	13.7	1	0.11	
OVERALL	-	-	-	-	-	-	-	-	-	-	-	-	

As can be seen in Table 2, traffic along the main roadways is unimpeded and operates with limited delay for left turning traffic during all peak traffic conditions reviewed for this project. The movements that do experience greater delays and operate at LOS E and F during peak traffic conditions are the minor side street approaches trying to access the high volume arterial of Veterans Memorial Parkway. The delays at Lyon Avenue do not result in traffic congestion or extended queuing due to the low volume of traffic currently serviced on the minor approach. The delays also do not result in reduced safety with minor approach drivers attempting to access gaps that are insufficient to traverse that often occurs at congested locations.

The South Broadway intersection which services much higher volumes on the minor approach, experiences greater delays and queuing with 4 to 6 vehicles typically queued during peak hours and observed maximum queue of up to 11 vehicles. Regarding safety, the crash rate involving angle crashes at this location is higher due to the greater congested condition, coupled with the unconventional geometry previously described. The South Broadway intersection with Fort Street operates in an acceptable manner with minor delays during all analysis periods.

The Future Build condition operational results defined in Table 3 on the following page includes a number of roadway improvements as previously defined that will efficiently accommodate future estimated design volumes. As can be seen, the intersections as designed all operate in an efficient manner at an acceptable level of service, including the roundabout at Lyon Avenue and the unsignalized site driveway intersections with Veterans Memorial Parkway and with Lyon Avenue.

The only intersection that currently and in the future, will continue to operate with extended vehicle delays for the minor approach traffic, is at South Broadway. Improvements were investigated at this location including a roundabout and traffic signalization. Due to environmental and geometric constraints at this location, it does not appear to be feasible to construct the required two-lane roundabout without extensive environmental and property impacts because of required grading and its location along Watchemoket Cove. It is therefore recommended that initial improvements be limited to geometric modifications that will address the issue previously defined relating to operations and safety. These improvements would lend to future safety enhancements including signalization of an existing intersection of two major routes in this area of the city that presently operates in a constrained manner during peak traffic conditions.

This approach is consistent with the Stewardship Plan prepared by the Scenic Roadways Board that recommends that "signalization should only be considered when essential for traffic safety". The base underground infrastructure for a traffic signal could be included in the initial improvements, and when determined appropriate based upon an additional future study of the intersection, when warranted a traffic signal could easily be installed. The signal equipment would be designed in a context-sensitive manner with black features and as appropriate, ornamental equipment consistent with historical area installations.

As indicated earlier, the intent of this supplemental study is to demonstrate that the project can be constructed with the mitigation proposed to limit any potential adverse impacts to the servicing roadways. The results of the operational analysis determined that the estimated increase in traffic during the peak periods resulting from the proposed mixed-use project can be accommodated along the Veterans Memorial Parkway and Lyon Avenue including their major junction, with the defined improvements.

Table 3 - Future Build Level of Service Summary

Location / Movement	2028 FUTURE BUILD CONDITIONS											
	AM Peak Hour				PM Peak Hour				Saturday MD Peak Hour			
	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c
<i>Veterans Memorial Parkway at Lyon Ave (R)</i>												
Parkway SB Left/Thru	A	7.9	3	0.48	C	16.0	7	0.73	B	10.3	4	0.54
Parkway NB Thru/Right	A	6.3	2	0.39	A	7.3	3	0.42	A	7.1	2	0.41
Lyon Ave WB Left/Right	A	9.1	2	0.28	B	12.5	3	0.51	B	12.0	3	0.49
OVERALL	A	7.5	-	-	B	12.6	-	-	A	9.6	-	-
<i>Veterans Memorial Parkway at Site Access Road (U)</i>												
Parkway SB Left	B	10.1	1	0.11	A	9.7	1	0.18	A	9.7	1	0.19
Site Access Dr WB Right	C	18.4	1	0.26	C	19.0	3	0.46	C	18.5	3	0.45
<i>Veterans Memorial Parkway at South Broadway (U)</i>												
Parkway SB Left	B	11.1	1	0.18	B	10.8	1	0.19	B	10.6	1	0.12
SBroadway WB Left	F	>50	12	1.32	F	>50	14	1.64	F	>50	6	0.85
SBroadway WB Right	B	13.5	1	0.13	B	13.8	1	0.21	B	13.4	1	0.14
<i>South Broadway at Fort Street (U)</i>												
SBroadway NB Left	A	8.1	0	0.01	A	8.8	1	0.05	A	8.4	1	0.03
Fort EB Left/Right	C	18.2	2	0.33	E	42.1	5	0.68	C	20.3	2	0.37
<i>Lyon at West Site Driveway (U)</i>												
Lyon WB Left	A	7.6	0	0.00	A	8.0	0	0.01	A	8.0	1	0.04
Site Access NB Left	B	11.2	1	0.19	C	20.4	5	0.61	C	22.2	4	0.60
Site Access NB Right	A	8.8	1	0.03	A	9.7	1	0.13	A	9.4	1	0.12
<i>Lyon at East Site Driveway (U)</i>												
Lyon WB Left	A	7.6	1	0.06	A	8.6	1	0.16	A	8.2	1	0.12
Site Access NB Left	B	12.8	1	0.26								
Site Access NB Right	A	9.1	1	0.09	E	36.6	7	0.75	D	30.5	6	0.72

A substantial effort and due diligence have been completed to advance the design to this phase, and it is crucial in the process that the RIDOT agree in concept with a preliminary design as we seek local approvals, and before the design can be advanced to the final engineering phase for formal approval by the RIDOT. As part your initial review of these documents, we will work with your office to make adjustments as determined appropriate, to obtain your approval of the design. We will also be working with the City of East Providence and immediate abutters as we finalize the conceptual design presented herein to ensure all impacted parties are partners in the enhancements being proposed.

Upon agreement of the conceptual design, it is requested that the Department confirm in writing to our attention, that the design concept for access and egress to the property is appropriate and can be submitted for full engineering review by the state. We understand that a formal permit will be required as part of the Physical Alteration Permit process where final engineering plans and drainage designs will be provided to the Department for review and approval.

Very truly yours,
Crossman Engineering, Inc.

A handwritten signature in black ink, appearing to read "Paul J. Bannon". The signature is fluid and cursive, with a long horizontal stroke at the end.

Paul J. Bannon
Senior Project Director

Attachment

Cc: Steve Pristawa, Josh Berlinsky, Paul Pisano

ATTACHMENTS

-
- A. Traffic Data
 - B. Trip Generation
 - C. Operational Analysis
 - D. Off-Site Mitigation Plan

ATTACHMENT A – Traffic Data

Automatic Traffic Recorder Counts

Veterans Memorial Parkway

Lyon Avenue

South Broadway

Intersection Turning Movement Counts

Veterans Memorial Parkway at Lyon Avenue

Veterans Memorial Parkway at South Broadway

South Broadway at Fort Street

A

Automatic Traffic Recorder Counts

Veterans Memorial Parkway

Lyon Avenue

South Broadway

Veterans Memorial Parkway

Transportation Data Corporation

Veterans Memorial Parkway
 east of Lyon Avenue
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05774CVOLUME
 Site Code: 2814

Start Time	23-Oct-23 Mon	24-Oct-23 Tue	25-Oct-23 Wed	26-Oct-23 Thu	27-Oct-23 Fri	28-Oct-23 Sat	29-Oct-23 Sun	Week Average
12:00 AM	*	93	76	89	128	217	190	132
01:00	*	47	48	55	72	132	131	81
02:00	*	30	30	39	30	76	68	46
03:00	*	30	38	34	40	52	32	38
04:00	*	81	104	135	105	52	31	85
05:00	*	246	276	285	251	111	80	208
06:00	*	753	807	758	721	255	189	580
07:00	*	1259	1356	1319	1214	432	259	973
08:00	*	1168	1262	1283	1198	556	417	981
09:00	*	877	927	1012	891	727	553	831
10:00	*	838	835	851	850	850	739	827
11:00	*	850	870	893	903	877	766	860
12:00 PM	*	941	837	976	966	907	964	932
01:00	*	938	952	962	995	849	816	919
02:00	*	1261	1250	1270	1239	932	810	1127
03:00	*	1327	1294	1345	1260	951	867	1174
04:00	*	1182	1249	1263	1202	928	756	1097
05:00	*	1185	1237	1211	1101	848	729	1052
06:00	*	976	910	967	877	853	753	889
07:00	*	662	647	712	753	685	676	689
08:00	*	533	537	576	606	564	522	556
09:00	*	331	446	412	476	485	368	420
10:00	*	255	238	279	406	466	282	321
11:00	*	180	181	218	341	355	168	240
Total	0	16043	16407	16944	16625	13160	11166	
Percentage	0.0%	106.5%	109.0%	112.5%	110.4%	87.4%	74.2%	
AM Peak	-	07:00	07:00	07:00	07:00	11:00	11:00	-
Vol.	-	1259	1356	1319	1214	877	766	-
PM Peak	-	15:00	15:00	15:00	15:00	15:00	12:00	-
Vol.	-	1327	1294	1345	1260	951	964	-

Transportation Data Corporation

Veterans Memorial Parkway
 east of Lyon Avenue
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

Mario Perone, mperone1@verizon.net
 tel (781) 587-0086 cell (781) 439-4999

05774CVOLUME
 Site Code: 2814

Start Time	30-Oct-23 Mon	31-Oct-23 Tue	01-Nov-23 Wed	02-Nov-23 Thu	03-Nov-23 Fri	04-Nov-23 Sat	05-Nov-23 Sun	Week Average
12:00 AM	86	*	*	*	*	*	*	86
01:00	48	*	*	*	*	*	*	48
02:00	34	*	*	*	*	*	*	34
03:00	39	*	*	*	*	*	*	39
04:00	91	*	*	*	*	*	*	91
05:00	257	*	*	*	*	*	*	257
06:00	691	*	*	*	*	*	*	691
07:00	1259	*	*	*	*	*	*	1259
08:00	1168	*	*	*	*	*	*	1168
09:00	837	*	*	*	*	*	*	837
10:00	786	*	*	*	*	*	*	786
11:00	788	*	*	*	*	*	*	788
12:00 PM	824	*	*	*	*	*	*	824
01:00	886	*	*	*	*	*	*	886
02:00	1105	*	*	*	*	*	*	1105
03:00	1210	*	*	*	*	*	*	1210
04:00	1238	*	*	*	*	*	*	1238
05:00	1153	*	*	*	*	*	*	1153
06:00	806	*	*	*	*	*	*	806
07:00	631	*	*	*	*	*	*	631
08:00	485	*	*	*	*	*	*	485
09:00	339	*	*	*	*	*	*	339
10:00	219	*	*	*	*	*	*	219
11:00	179	*	*	*	*	*	*	179
Total	15159	0	0	0	0	0	0	
Percentage	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	-	-	-	-	-	-	-
Vol.	1259	-	-	-	-	-	-	-
PM Peak	16:00	-	-	-	-	-	-	-
Vol.	1238	-	-	-	-	-	-	-

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Veterans Memorial Parkway
east of Lyon Avenue
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774Cvolume
Site Code: 2814

Start Time	23-Oct-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	68	25	47	29	53	36	81	47	62	34	137	80	116	74
01:00	*	*	32	15	36	12	36	19	52	20	39	16	86	46	87	44
02:00	*	*	18	12	19	11	22	17	14	16	18	14	51	25	44	24
03:00	*	*	9	21	17	21	18	16	20	20	16	20	28	24	21	11
04:00	*	*	27	54	22	82	34	101	28	77	28	78	19	33	12	19
05:00	*	*	61	185	81	195	75	210	73	178	72	192	30	81	30	50
06:00	*	*	282	471	282	525	263	495	264	457	273	487	90	165	74	115
07:00	*	*	647	612	692	664	677	642	583	631	650	637	161	271	108	151
08:00	*	*	558	610	598	664	589	694	534	664	570	658	229	327	192	225
09:00	*	*	406	471	387	540	454	558	372	519	405	522	250	477	219	334
10:00	*	*	395	443	372	463	369	482	382	468	380	464	349	501	315	424
11:00	*	*	386	464	411	459	402	491	427	476	406	472	374	503	324	442
12:00 PM	*	*	451	490	408	429	464	512	468	498	448	482	437	470	441	523
01:00	*	*	474	464	463	489	489	473	540	455	492	470	395	454	406	410
02:00	*	*	625	636	640	610	593	677	605	634	616	639	459	473	414	396
03:00	*	*	765	562	687	607	785	560	666	594	726	581	505	446	483	384
04:00	*	*	707	475	715	534	730	533	713	489	716	508	484	444	408	348
05:00	*	*	731	454	773	464	731	480	636	465	718	466	438	410	404	325
06:00	*	*	527	449	504	406	512	455	445	432	497	436	427	426	385	368
07:00	*	*	371	291	365	282	401	311	387	366	381	312	385	300	354	322
08:00	*	*	322	211	309	228	347	229	307	299	321	242	274	290	282	240
09:00	*	*	184	147	247	199	245	167	279	197	239	178	282	203	199	169
10:00	*	*	154	101	142	96	166	113	242	164	176	118	240	226	173	109
11:00	*	*	115	65	120	61	137	81	218	123	148	82	217	138	106	62
Total	0	0	8315	7728	8337	8070	8592	8352	8336	8289	8397	8108	6347	6813	5597	5569
Day	0	0	16043		16407		16944		16625		16505		13160		11166	
AM Peak	-	-	07:00	07:00	07:00	07:00	07:00	08:00	07:00	08:00	07:00	08:00	11:00	11:00	11:00	11:00
Vol.	-	-	647	612	692	664	677	694	583	664	650	658	374	503	324	442
PM Peak	-	-	15:00	14:00	17:00	14:00	15:00	14:00	16:00	14:00	15:00	14:00	15:00	14:00	15:00	12:00
Vol.	-	-	765	636	773	610	785	677	713	634	726	639	505	473	483	523

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Veterans Memorial Parkway
east of Lyon Avenue
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774Cvolume
Site Code: 2814

Start Time	30-Oct-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	66	20	*	*	*	*	*	*	*	*	66	20	*	*	*	*
01:00	33	15	*	*	*	*	*	*	*	*	33	15	*	*	*	*
02:00	22	12	*	*	*	*	*	*	*	*	22	12	*	*	*	*
03:00	18	21	*	*	*	*	*	*	*	*	18	21	*	*	*	*
04:00	20	71	*	*	*	*	*	*	*	*	20	71	*	*	*	*
05:00	74	183	*	*	*	*	*	*	*	*	74	183	*	*	*	*
06:00	241	450	*	*	*	*	*	*	*	*	241	450	*	*	*	*
07:00	647	612	*	*	*	*	*	*	*	*	647	612	*	*	*	*
08:00	579	589	*	*	*	*	*	*	*	*	579	589	*	*	*	*
09:00	389	448	*	*	*	*	*	*	*	*	389	448	*	*	*	*
10:00	379	407	*	*	*	*	*	*	*	*	379	407	*	*	*	*
11:00	356	432	*	*	*	*	*	*	*	*	356	432	*	*	*	*
12:00 PM	416	408	*	*	*	*	*	*	*	*	416	408	*	*	*	*
01:00	479	407	*	*	*	*	*	*	*	*	479	407	*	*	*	*
02:00	588	517	*	*	*	*	*	*	*	*	588	517	*	*	*	*
03:00	697	513	*	*	*	*	*	*	*	*	697	513	*	*	*	*
04:00	735	503	*	*	*	*	*	*	*	*	735	503	*	*	*	*
05:00	704	449	*	*	*	*	*	*	*	*	704	449	*	*	*	*
06:00	396	410	*	*	*	*	*	*	*	*	396	410	*	*	*	*
07:00	337	294	*	*	*	*	*	*	*	*	337	294	*	*	*	*
08:00	276	209	*	*	*	*	*	*	*	*	276	209	*	*	*	*
09:00	212	127	*	*	*	*	*	*	*	*	212	127	*	*	*	*
10:00	138	81	*	*	*	*	*	*	*	*	138	81	*	*	*	*
11:00	125	54	*	*	*	*	*	*	*	*	125	54	*	*	*	*
Total	7927	7232	0	0	0	0	0	0	0	0	7927	7232	0	0	0	0
Day	15159		0	0	0	0	0	0	0	0	15159		0	0	0	0
AM Peak	07:00	07:00	-	-	-	-	-	-	-	-	07:00	07:00	-	-	-	-
Vol.	647	612	-	-	-	-	-	-	-	-	647	612	-	-	-	-
PM Peak	16:00	14:00	-	-	-	-	-	-	-	-	16:00	14:00	-	-	-	-
Vol.	735	517	-	-	-	-	-	-	-	-	735	517	-	-	-	-

Comb. Total	15159	16043	16407	16944	16625	31664	13160	11166
ADT	ADT 16,236	AADT 16,236						

Lyon Avenue

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Lyon Avenue north of
Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774AVOLUME
Site Code: 05774

Start Time	23-Oct-23 Mon	24-Oct-23 Tue	25-Oct-23 Wed	26-Oct-23 Thu	27-Oct-23 Fri	28-Oct-23 Sat	29-Oct-23 Sun	Week Average
12:00 AM	*	3	3	4	12	19	33	12
01:00	*	7	6	6	13	11	29	12
02:00	*	2	2	1	0	3	2	2
03:00	*	0	0	0	2	4	1	1
04:00	*	4	4	2	5	0	2	3
05:00	*	4	1	7	4	1	3	3
06:00	*	13	11	14	15	4	4	10
07:00	*	51	45	44	54	12	11	36
08:00	*	100	102	103	106	24	10	74
09:00	*	66	72	76	61	23	19	53
10:00	*	65	67	72	74	44	19	57
11:00	*	73	79	71	66	40	29	60
12:00 PM	*	60	66	79	71	41	20	56
01:00	*	58	61	82	89	35	19	57
02:00	*	86	89	95	81	35	30	69
03:00	*	103	98	97	95	46	26	78
04:00	*	70	78	106	76	52	26	68
05:00	*	84	92	85	68	41	22	65
06:00	*	38	48	47	52	34	20	40
07:00	*	33	30	42	28	26	13	29
08:00	*	30	23	28	22	19	19	24
09:00	*	10	27	22	23	18	17	20
10:00	*	17	12	6	29	30	17	18
11:00	*	9	11	12	21	26	18	16
Total	0	986	1027	1101	1067	588	409	
Percentage	0.0%	114.3%	119.0%	127.6%	123.6%	68.1%	47.4%	
AM Peak	-	08:00	08:00	08:00	08:00	10:00	00:00	-
Vol.	-	100	102	103	106	44	33	-
PM Peak	-	15:00	15:00	16:00	15:00	16:00	14:00	-
Vol.	-	103	98	106	95	52	30	-

Transportation Data Corporation

Lyon Avenue north of
Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05774AVOLUME
Site Code: 05774

Start Time	30-Oct-23 Mon	31-Oct-23 Tue	01-Nov-23 Wed	02-Nov-23 Thu	03-Nov-23 Fri	04-Nov-23 Sat	05-Nov-23 Sun	Week Average
12:00 AM	23	*	*	*	*	*	*	23
01:00	12	*	*	*	*	*	*	12
02:00	2	*	*	*	*	*	*	2
03:00	3	*	*	*	*	*	*	3
04:00	2	*	*	*	*	*	*	2
05:00	1	*	*	*	*	*	*	1
06:00	13	*	*	*	*	*	*	13
07:00	47	*	*	*	*	*	*	47
08:00	95	*	*	*	*	*	*	95
09:00	69	*	*	*	*	*	*	69
10:00	78	*	*	*	*	*	*	78
11:00	77	*	*	*	*	*	*	77
12:00 PM	68	*	*	*	*	*	*	68
01:00	71	*	*	*	*	*	*	71
02:00	96	*	*	*	*	*	*	96
03:00	80	*	*	*	*	*	*	80
04:00	74	*	*	*	*	*	*	74
05:00	66	*	*	*	*	*	*	66
06:00	33	*	*	*	*	*	*	33
07:00	18	*	*	*	*	*	*	18
08:00	16	*	*	*	*	*	*	16
09:00	13	*	*	*	*	*	*	13
10:00	7	*	*	*	*	*	*	7
11:00	11	*	*	*	*	*	*	11
Total	975	0	0	0	0	0	0	
Percentage	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	-	-	-	-	-	-	-
Vol.	95	-	-	-	-	-	-	-
PM Peak	14:00	-	-	-	-	-	-	-
Vol.	96	-	-	-	-	-	-	-

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Lyon Avenue north of
Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774Avolume
Site Code: 05774

Start Time	23-Oct-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	2	1	3	0	0	4	6	6	3	3	7	12	19	14
01:00	*	*	0	7	2	4	2	4	2	11	2	6	4	7	4	25
02:00	*	*	1	1	1	1	0	1	0	0	0	1	1	2	1	1
03:00	*	*	0	0	0	0	0	0	1	1	0	0	2	2	0	1
04:00	*	*	2	2	1	3	1	1	2	3	2	2	0	0	1	1
05:00	*	*	1	3	0	1	3	4	1	3	1	3	0	1	1	2
06:00	*	*	9	4	5	6	10	4	8	7	8	5	3	1	3	1
07:00	*	*	34	17	29	16	30	14	39	15	33	16	8	4	9	2
08:00	*	*	78	22	78	24	76	27	70	36	76	27	7	17	4	6
09:00	*	*	41	25	39	33	39	37	35	26	38	30	13	10	9	10
10:00	*	*	37	28	36	31	43	29	33	41	37	32	29	15	11	8
11:00	*	*	33	40	35	44	34	37	33	33	34	38	23	17	14	15
12:00 PM	*	*	32	28	33	33	38	41	35	36	34	34	17	24	12	8
01:00	*	*	26	32	35	26	48	34	44	45	38	34	20	15	14	5
02:00	*	*	46	40	42	47	45	50	42	39	44	44	20	15	19	11
03:00	*	*	52	51	48	50	50	47	58	37	52	46	25	21	10	16
04:00	*	*	27	43	37	41	58	48	39	37	40	42	33	19	17	9
05:00	*	*	36	48	43	49	42	43	32	36	38	44	23	18	12	10
06:00	*	*	24	14	27	21	21	26	32	20	26	20	26	8	10	10
07:00	*	*	15	18	20	10	18	24	16	12	17	16	17	9	6	7
08:00	*	*	16	14	17	6	14	14	11	11	14	11	14	5	14	5
09:00	*	*	4	6	17	10	10	12	15	8	12	9	10	8	10	7
10:00	*	*	6	11	3	9	4	2	11	18	6	10	21	9	9	8
11:00	*	*	5	4	7	4	7	5	10	11	7	6	16	10	11	7
Total	0	0	527	459	558	469	593	508	575	492	562	479	339	249	220	189
Day	0	0	986		1027		1101		1067		1041		588		409	
AM Peak	-	-	08:00	11:00	08:00	11:00	08:00	09:00	08:00	10:00	08:00	11:00	10:00	08:00	00:00	01:00
Vol.	-	-	78	40	78	44	76	37	70	41	76	38	29	17	19	25
PM Peak	-	-	15:00	15:00	15:00	15:00	16:00	14:00	15:00	13:00	15:00	15:00	16:00	12:00	14:00	15:00
Vol.	-	-	52	51	48	50	58	50	58	45	52	46	33	24	19	16

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Lyon Avenue north of
Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774Avolume
Site Code: 05774

Start Time	30-Oct-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
12:00 AM	9	14	*	*	*	*	*	*	*	*	*	9	14	*	*	*	*
01:00	1	11	*	*	*	*	*	*	*	*	*	1	11	*	*	*	*
02:00	1	1	*	*	*	*	*	*	*	*	*	1	1	*	*	*	*
03:00	1	2	*	*	*	*	*	*	*	*	*	1	2	*	*	*	*
04:00	0	2	*	*	*	*	*	*	*	*	*	0	2	*	*	*	*
05:00	0	1	*	*	*	*	*	*	*	*	*	0	1	*	*	*	*
06:00	9	4	*	*	*	*	*	*	*	*	*	9	4	*	*	*	*
07:00	31	16	*	*	*	*	*	*	*	*	*	31	16	*	*	*	*
08:00	68	27	*	*	*	*	*	*	*	*	*	68	27	*	*	*	*
09:00	41	28	*	*	*	*	*	*	*	*	*	41	28	*	*	*	*
10:00	43	35	*	*	*	*	*	*	*	*	*	43	35	*	*	*	*
11:00	37	40	*	*	*	*	*	*	*	*	*	37	40	*	*	*	*
12:00 PM	31	37	*	*	*	*	*	*	*	*	*	31	37	*	*	*	*
01:00	38	33	*	*	*	*	*	*	*	*	*	38	33	*	*	*	*
02:00	44	52	*	*	*	*	*	*	*	*	*	44	52	*	*	*	*
03:00	33	47	*	*	*	*	*	*	*	*	*	33	47	*	*	*	*
04:00	43	31	*	*	*	*	*	*	*	*	*	43	31	*	*	*	*
05:00	24	42	*	*	*	*	*	*	*	*	*	24	42	*	*	*	*
06:00	15	18	*	*	*	*	*	*	*	*	*	15	18	*	*	*	*
07:00	10	8	*	*	*	*	*	*	*	*	*	10	8	*	*	*	*
08:00	7	9	*	*	*	*	*	*	*	*	*	7	9	*	*	*	*
09:00	5	8	*	*	*	*	*	*	*	*	*	5	8	*	*	*	*
10:00	5	2	*	*	*	*	*	*	*	*	*	5	2	*	*	*	*
11:00	4	7	*	*	*	*	*	*	*	*	*	4	7	*	*	*	*
Total Day	500	475	0	0	0	0	0	0	0	0	0	500	475	0	0	0	0
AM Peak	08:00	11:00	-	-	-	-	-	-	-	-	-	08:00	11:00	-	-	-	-
Vol.	68	40	-	-	-	-	-	-	-	-	-	68	40	-	-	-	-
PM Peak	14:00	14:00	-	-	-	-	-	-	-	-	-	14:00	14:00	-	-	-	-
Vol.	44	52	-	-	-	-	-	-	-	-	-	44	52	-	-	-	-

Comb. Total	975	986	1027	1101	1067	2016	588	409
ADT	ADT 1,031	AADT 1,031						

South Broadway

Transportation Data Corporation

S. Broadway
south of Martin Street
City, State: E. Providence, RI
Client: Crossman/P. Bannon

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05774BVOLUME
Site Code: 2814

Start Time	23-Oct-23 Mon	24-Oct-23 Tue	25-Oct-23 Wed	26-Oct-23 Thu	27-Oct-23 Fri	28-Oct-23 Sat	29-Oct-23 Sun	Week Average
12:00 AM	*	12	16	19	24	48	43	27
01:00	*	12	11	11	19	19	30	17
02:00	*	14	4	10	11	18	29	14
03:00	*	5	8	5	6	13	16	9
04:00	*	15	14	23	16	7	13	15
05:00	*	42	47	48	39	29	15	37
06:00	*	149	144	158	164	65	44	121
07:00	*	485	496	491	398	128	80	346
08:00	*	651	561	565	478	196	119	428
09:00	*	365	336	309	287	230	165	282
10:00	*	272	307	311	296	288	179	276
11:00	*	270	338	305	324	322	245	301
12:00 PM	*	344	327	371	373	292	245	325
01:00	*	345	322	330	343	270	210	303
02:00	*	414	446	437	496	311	189	382
03:00	*	515	499	592	519	318	188	438
04:00	*	578	510	543	463	283	205	430
05:00	*	534	483	588	456	302	185	425
06:00	*	323	332	351	321	262	151	290
07:00	*	219	218	232	242	219	154	214
08:00	*	144	160	175	176	154	94	150
09:00	*	78	112	108	122	142	88	108
10:00	*	56	53	61	103	123	67	77
11:00	*	31	38	56	75	74	30	51
Total	0	5873	5782	6099	5751	4113	2784	
Percentage	0.0%	115.9%	114.1%	120.4%	113.5%	81.2%	55.0%	
AM Peak	-	08:00	08:00	08:00	08:00	11:00	11:00	-
Vol.	-	651	561	565	478	322	245	-
PM Peak	-	16:00	16:00	15:00	15:00	15:00	12:00	-
Vol.	-	578	510	592	519	318	245	-

Transportation Data Corporation

S. Broadway
south of Martin Street
City, State: E. Providence, RI
Client: Crossman/P. Bannon

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05774BVOLUME
Site Code: 2814

Start Time	30-Oct-23 Mon	31-Oct-23 Tue	01-Nov-23 Wed	02-Nov-23 Thu	03-Nov-23 Fri	04-Nov-23 Sat	05-Nov-23 Sun	Week Average
12:00 AM	16	*	*	*	*	*	*	16
01:00	10	*	*	*	*	*	*	10
02:00	8	*	*	*	*	*	*	8
03:00	7	*	*	*	*	*	*	7
04:00	19	*	*	*	*	*	*	19
05:00	40	*	*	*	*	*	*	40
06:00	147	*	*	*	*	*	*	147
07:00	477	*	*	*	*	*	*	477
08:00	550	*	*	*	*	*	*	550
09:00	296	*	*	*	*	*	*	296
10:00	256	*	*	*	*	*	*	256
11:00	310	*	*	*	*	*	*	310
12:00 PM	284	*	*	*	*	*	*	284
01:00	283	*	*	*	*	*	*	283
02:00	394	*	*	*	*	*	*	394
03:00	487	*	*	*	*	*	*	487
04:00	497	*	*	*	*	*	*	497
05:00	445	*	*	*	*	*	*	445
06:00	253	*	*	*	*	*	*	253
07:00	183	*	*	*	*	*	*	183
08:00	103	*	*	*	*	*	*	103
09:00	80	*	*	*	*	*	*	80
10:00	38	*	*	*	*	*	*	38
11:00	37	*	*	*	*	*	*	37
Total	5220	0	0	0	0	0	0	
Percentage	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	-	-	-	-	-	-	-
Vol.	550	-	-	-	-	-	-	-
PM Peak	16:00	-	-	-	-	-	-	-
Vol.	497	-	-	-	-	-	-	-

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

S. Broadway
south of Martin Street
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774Bvolume
Site Code: 2814

Start Time	23-Oct-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	5	7	9	7	8	11	11	13	8	10	19	29	20	23
01:00	*	*	6	6	5	6	7	4	11	8	7	6	9	10	17	13
02:00	*	*	5	9	2	2	6	4	5	6	4	5	9	9	18	11
03:00	*	*	3	2	5	3	2	3	2	4	3	3	7	6	5	11
04:00	*	*	9	6	6	8	12	11	9	7	9	8	2	5	7	6
05:00	*	*	26	16	32	15	29	19	25	14	28	16	14	15	9	6
06:00	*	*	67	82	70	74	69	89	77	87	71	83	36	29	23	21
07:00	*	*	355	130	343	153	352	139	259	139	327	140	83	45	50	30
08:00	*	*	483	168	395	166	386	179	296	182	390	174	118	78	57	62
09:00	*	*	205	160	192	144	174	135	152	135	181	144	124	106	88	77
10:00	*	*	141	131	171	136	169	142	171	125	163	134	169	119	97	82
11:00	*	*	158	112	192	146	167	138	178	146	174	136	165	157	129	116
12:00 PM	*	*	178	166	174	153	205	166	194	179	188	166	144	148	114	131
01:00	*	*	176	169	152	170	158	172	171	172	164	171	124	146	97	113
02:00	*	*	241	173	257	189	245	192	286	210	257	191	160	151	92	97
03:00	*	*	338	177	321	178	402	190	342	177	351	180	169	149	90	98
04:00	*	*	398	180	324	186	357	186	304	159	346	178	140	143	110	95
05:00	*	*	344	190	301	182	426	162	287	169	340	176	167	135	95	90
06:00	*	*	189	134	192	140	192	159	195	126	192	140	138	124	84	67
07:00	*	*	109	110	109	109	124	108	97	145	110	118	102	117	83	71
08:00	*	*	70	74	69	91	80	95	92	84	78	86	64	90	44	50
09:00	*	*	44	34	46	66	54	54	54	68	50	56	71	71	42	46
10:00	*	*	28	28	20	33	29	32	53	50	32	36	68	55	33	34
11:00	*	*	11	20	19	19	34	22	37	38	25	25	41	33	13	17
Total	0	0	3589	2284	3406	2376	3687	2412	3308	2443	3498	2382	2143	1970	1417	1367
Day	0	0	5873		5782		6099		5751		5880		4113		2784	
AM Peak	-	-	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	10:00	11:00	11:00	11:00
Vol.	-	-	483	168	395	166	386	179	296	182	390	174	169	157	129	116
PM Peak	-	-	16:00	17:00	16:00	14:00	17:00	14:00	15:00	14:00	15:00	14:00	15:00	14:00	12:00	12:00
Vol.	-	-	398	190	324	189	426	192	342	210	351	191	169	151	114	131

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

S. Broadway
south of Martin Street
City, State: E. Providence, RI
Client: Crossman/P. Bannon

05774Bvolume
Site Code: 2814

Start Time	30-Oct-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
12:00 AM	4	12	*	*	*	*	*	*	*	*	*	4	12	*	*	*	*
01:00	5	5	*	*	*	*	*	*	*	*	*	5	5	*	*	*	*
02:00	5	3	*	*	*	*	*	*	*	*	*	5	3	*	*	*	*
03:00	4	3	*	*	*	*	*	*	*	*	*	4	3	*	*	*	*
04:00	12	7	*	*	*	*	*	*	*	*	*	12	7	*	*	*	*
05:00	22	18	*	*	*	*	*	*	*	*	*	22	18	*	*	*	*
06:00	73	74	*	*	*	*	*	*	*	*	*	73	74	*	*	*	*
07:00	344	133	*	*	*	*	*	*	*	*	*	344	133	*	*	*	*
08:00	392	158	*	*	*	*	*	*	*	*	*	392	158	*	*	*	*
09:00	174	122	*	*	*	*	*	*	*	*	*	174	122	*	*	*	*
10:00	139	117	*	*	*	*	*	*	*	*	*	139	117	*	*	*	*
11:00	161	149	*	*	*	*	*	*	*	*	*	161	149	*	*	*	*
12:00 PM	127	157	*	*	*	*	*	*	*	*	*	127	157	*	*	*	*
01:00	141	142	*	*	*	*	*	*	*	*	*	141	142	*	*	*	*
02:00	236	158	*	*	*	*	*	*	*	*	*	236	158	*	*	*	*
03:00	312	175	*	*	*	*	*	*	*	*	*	312	175	*	*	*	*
04:00	349	148	*	*	*	*	*	*	*	*	*	349	148	*	*	*	*
05:00	297	148	*	*	*	*	*	*	*	*	*	297	148	*	*	*	*
06:00	125	128	*	*	*	*	*	*	*	*	*	125	128	*	*	*	*
07:00	95	88	*	*	*	*	*	*	*	*	*	95	88	*	*	*	*
08:00	41	62	*	*	*	*	*	*	*	*	*	41	62	*	*	*	*
09:00	36	44	*	*	*	*	*	*	*	*	*	36	44	*	*	*	*
10:00	20	18	*	*	*	*	*	*	*	*	*	20	18	*	*	*	*
11:00	18	19	*	*	*	*	*	*	*	*	*	18	19	*	*	*	*
Total	3132	2088	0	0	0	0	0	0	0	0	0	3132	2088	0	0	0	0
Day	5220		0	0	0	0	0	0	0	0	0	5220		0	0	0	0
AM Peak	08:00	08:00	-	-	-	-	-	-	-	-	-	08:00	08:00	-	-	-	-
Vol.	392	158	-	-	-	-	-	-	-	-	-	392	158	-	-	-	-
PM Peak	16:00	15:00	-	-	-	-	-	-	-	-	-	16:00	15:00	-	-	-	-
Vol.	349	175	-	-	-	-	-	-	-	-	-	349	175	-	-	-	-

Comb. Total	5220	5873	5782	6099	5751	11100	4113	2784
ADT	ADT 5,745	AADT 5,745						

A

Intersection Turning Movement Counts

Veterans Memorial Parkway at Lyon Avenue
Veterans Memorial Parkway at South Broadway
South Broadway at Fort Street

Veterans Memorial Parkway at Lyon Avenue

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774A
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	1	0	3	0	6	182	0	0	0	0	0	1	0	123	0	1	317
07:15 AM	0	0	2	0	3	190	0	0	0	0	0	2	0	147	2	0	346
07:30 AM	2	0	3	0	9	166	0	0	0	0	0	6	0	212	0	0	398
07:45 AM	1	0	5	0	9	135	0	0	0	0	0	2	0	233	2	0	387
Total	4	0	13	0	27	673	0	0	0	0	0	11	0	715	4	1	1448
08:00 AM	0	0	1	0	16	198	0	0	0	0	0	2	0	203	1	0	421
08:15 AM	1	0	6	0	8	156	0	0	0	0	0	2	0	142	2	0	317
08:30 AM	2	0	5	0	18	140	0	0	0	0	0	2	0	144	4	0	315
08:45 AM	2	0	7	0	18	146	0	0	0	0	0	2	0	131	10	0	316
Total	5	0	19	0	60	640	0	0	0	0	0	8	0	620	17	0	1369
Grand Total	9	0	32	0	87	1313	0	0	0	0	0	19	0	1335	21	1	2817
Apprch %	22	0	78	0	6.2	93.8	0	0	0	0	0	100	0	98.4	1.5	0.1	
Total %	0.3	0	1.1	0	3.1	46.6	0	0	0	0	0	0.7	0	47.4	0.7	0	
Cars & Peds	6	0	31	0	86	1280	0	0	0	0	0	19	0	1308	21	1	2752
% Cars & Peds	66.7	0	96.9	0	98.9	97.5	0	0	0	0	0	100	0	98	100	100	97.7
Trucks & Buses	2	0	1	0	0	4	0	0	0	0	0	0	0	8	0	0	15
% Trucks & Buses	22.2	0	3.1	0	0	0.3	0	0	0	0	0	0	0	0.6	0	0	0.5
Bikes by Direction	1	0	0	0	1	29	0	0	0	0	0	0	0	19	0	0	50
% Bikes by Direction	11.1	0	0	0	1.1	2.2	0	0	0	0	0	0	0	1.4	0	0	1.8

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	2	0	2	3	190	0	0	193	0	0	0	2	2	0	147	2	0	149	346
07:30 AM	2	0	3	0	5	9	166	0	0	175	0	0	0	6	6	0	212	0	0	212	398
07:45 AM	1	0	5	0	6	9	135	0	0	144	0	0	0	2	2	0	233	2	0	235	387
08:00 AM	0	0	1	0	1	16	198	0	0	214	0	0	0	2	2	0	203	1	0	204	421
Total Volume	3	0	11	0	14	37	689	0	0	726	0	0	0	12	12	0	795	5	0	800	1552
% App. Total	21.4	0	78.6	0	5.1	94.9	0	0	0	0	0	100	0	99.4	0.6	0					
PHF	.375	.000	.550	.000	.583	.578	.870	.000	.000	.848	.000	.000	.000	.500	.500	.000	.853	.625	.000	.851	.922
Cars & Peds	2	0	10	0	12	36	674	0	0	710	0	0	0	12	12	0	781	5	0	786	1520
% Cars & Peds	66.7	0	90.9	0	85.7	97.3	97.8	0	0	97.8	0	0	0	100	100	0	98.2	100	0	98.3	97.9
Trucks & Buses	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	11
% Trucks & Buses	33.3	0	9.1	0	14.3	0	0.4	0	0	0.4	0	0	0	0	0	0	0.8	0	0	0.8	0.7
Bikes by Direction	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	0	8	0	0	8	21
% Bikes by Direction	0	0	0	0	0	2.7	1.7	0	0	1.8	0	0	0	0	0	0	1.0	0	0	1.0	1.4

Transportation Data Corporation
 Mario Perone, mperone1@verizon.net
 tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774A
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	3	0	6	180	0	0	0	0	0	1	0	120	0	1	311
07:15 AM	0	0	2	0	2	190	0	0	0	0	0	2	0	139	2	0	337
07:30 AM	2	0	3	0	9	161	0	0	0	0	0	6	0	209	0	0	390
07:45 AM	0	0	4	0	9	128	0	0	0	0	0	2	0	231	2	0	376
Total	2	0	12	0	26	659	0	0	0	0	0	11	0	699	4	1	1414
08:00 AM	0	0	1	0	16	195	0	0	0	0	0	2	0	202	1	0	417
08:15 AM	1	0	6	0	8	149	0	0	0	0	0	2	0	139	2	0	307
08:30 AM	2	0	5	0	18	134	0	0	0	0	0	2	0	142	4	0	307
08:45 AM	1	0	7	0	18	143	0	0	0	0	0	2	0	126	10	0	307
Total	4	0	19	0	60	621	0	0	0	0	0	8	0	609	17	0	1338
Grand Total	6	0	31	0	86	1280	0	0	0	0	0	19	0	1308	21	1	2752
Apprch %	16.2	0	83.8	0	6.3	93.7	0	0	0	0	0	100	0	98.3	1.6	0.1	
Total %	0.2	0	1.1	0	3.1	46.5	0	0	0	0	0	0.7	0	47.5	0.8	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	2	0	2	2	190	0	0	192	0	0	0	2	2	0	139	2	0	141	337
07:30 AM	2	0	3	0	5	9	161	0	0	170	0	0	0	6	6	0	209	0	0	209	390
07:45 AM	0	0	4	0	4	9	128	0	0	137	0	0	0	2	2	0	231	2	0	233	376
08:00 AM	0	0	1	0	1	16	195	0	0	211	0	0	0	2	2	0	202	1	0	203	417
Total Volume	2	0	10	0	12	36	674	0	0	710	0	0	0	12	12	0	781	5	0	786	1520
% App. Total	16.7	0	83.3	0		5.1	94.9	0	0		0	0	0	100		0	99.4	0.6	0		
PHF	.250	.000	.625	.000	.600	.563	.864	.000	.000	.841	.000	.000	.000	.500	.500	.000	.845	.625	.000	.843	.911

Transportation Data Corporation
 Mario Perone, mperone1@verizon.net
 tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774A
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
07:45 AM	1	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	5
Total	1	0	1	0	0	2	0	0	0	0	0	0	0	7	0	0	11
08:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	4
Grand Total	2	0	1	0	0	4	0	0	0	0	0	0	0	8	0	0	15
Apprch %	66.7	0	33.3	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	13.3	0	6.7	0	0	26.7	0	0	0	0	0	0	0	53.3	0	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
07:45 AM	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	5
Total Volume	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	11
% App. Total	50	0	50	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.250	.000	.250	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.583	.000	.000	.583	.550

Transportation Data Corporation
 Mario Perone, mperone1@verizon.net
 tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774A
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	1	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	5
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	6	0	0	7
07:30 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0	6
Total	1	0	0	0	1	12	0	0	0	0	0	0	0	9	0	0	23
08:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
08:15 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	3	0	0	9
08:30 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	1	0	0	7
08:45 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	8
Total	0	0	0	0	0	17	0	0	0	0	0	0	0	10	0	0	27
Grand Total	1	0	0	0	1	29	0	0	0	0	0	0	0	19	0	0	50
Apprch %	100	0	0	0	3.3	96.7	0	0	0	0	0	0	0	100	0	0	
Total %	2	0	0	0	2	58	0	0	0	0	0	0	0	38	0	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
08:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	9
08:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	7
08:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8
Total Volume	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	10	0	0	10	27
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.708	.000	.000	.708	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.750

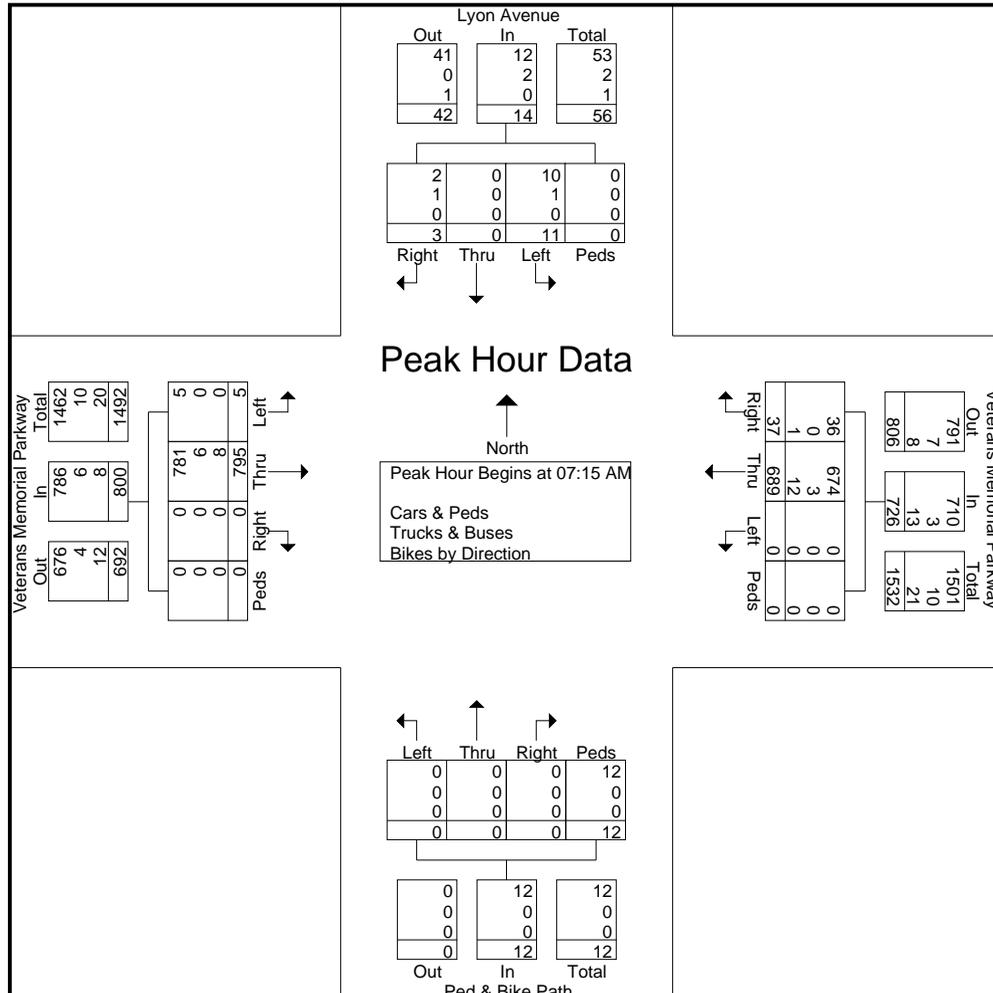
Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774A
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	2	0	2	3	190	0	0	193	0	0	0	2	2	0	147	2	0	149	346
07:30 AM	2	0	3	0	5	9	166	0	0	175	0	0	0	6	6	0	212	0	0	212	398
07:45 AM	1	0	5	0	6	9	135	0	0	144	0	0	0	2	2	0	233	2	0	235	387
08:00 AM	0	0	1	0	1	16	198	0	0	214	0	0	0	2	2	0	203	1	0	204	421
Total Volume	3	0	11	0	14	37	689	0	0	726	0	0	0	12	12	0	795	5	0	800	1552
% App. Total	21.4	0	78.6	0		5.1	94.9	0	0		0	0	0	100		0	99.4	0.6	0		
PHF	.375	.000	.550	.000	.583	.578	.870	.000	.000	.848	.000	.000	.000	.500	.500	.000	.853	.625	.000	.851	.922
Cars & Peds	2	0	10	0	12	36	674	0	0	710	0	0	0	12	12	0	781	5	0	786	1520
% Cars & Peds	66.7	0	90.9	0	85.7	97.3	97.8	0	0	97.8	0	0	0	100	100	0	98.2	100	0	98.3	97.9
Trucks & Buses	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	11
% Trucks & Buses	33.3	0	9.1	0	14.3	0	0.4	0	0	0.4	0	0	0	0	0	0	0.8	0	0	0.8	0.7
Bikes by Direction	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	0	8	0	0	8	21
% Bikes by Direction	0	0	0	0	0	2.7	1.7	0	0	1.8	0	0	0	0	0	0	1.0	0	0	1.0	1.4



Transportation Data Corporation
 Mario Perone, mperone1@verizon.net
 tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AA
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
03:00 PM	7	0	6	0	9	175	0	0	0	0	0	5	0	182	4	0	388
03:15 PM	7	0	7	0	5	170	0	0	0	0	0	1	0	160	4	0	354
03:30 PM	7	0	8	0	8	133	0	0	0	0	0	0	0	186	5	0	347
03:45 PM	4	0	4	0	4	147	0	0	0	0	0	3	0	189	5	0	356
Total	25	0	25	0	26	625	0	0	0	0	0	9	0	717	18	0	1445
04:00 PM	2	0	8	0	7	141	0	0	0	0	0	7	0	182	4	0	351
04:15 PM	2	0	7	0	7	111	0	0	0	0	0	7	0	173	7	0	314
04:30 PM	6	0	10	0	4	130	0	0	0	0	0	3	0	167	1	0	321
04:45 PM	2	0	3	0	6	163	0	0	0	0	0	3	0	197	0	0	374
Total	12	0	28	0	24	545	0	0	0	0	0	20	0	719	12	0	1360
05:00 PM	6	0	9	0	7	122	0	0	0	0	0	6	0	198	1	0	349
05:15 PM	3	0	12	0	9	116	0	0	0	0	0	3	0	219	3	0	365
05:30 PM	5	0	11	0	6	128	0	0	0	0	0	3	0	205	3	0	361
05:45 PM	1	0	4	0	14	88	0	0	0	0	0	8	0	182	4	0	301
Total	15	0	36	0	36	454	0	0	0	0	0	20	0	804	11	0	1376
Grand Total	52	0	89	0	86	1624	0	0	0	0	0	49	0	2240	41	0	4181
Apprch %	36.9	0	63.1	0	5	95	0	0	0	0	0	100	0	98.2	1.8	0	
Total %	1.2	0	2.1	0	2.1	38.8	0	0	0	0	0	1.2	0	53.6	1	0	
Cars & Peds	51	0	85	0	84	1549	0	0	0	0	0	49	0	2164	38	0	4020
% Cars & Peds	98.1	0	95.5	0	97.7	95.4	0	0	0	0	0	100	0	96.6	92.7	0	96.1
Trucks & Buses	0	0	1	0	0	5	0	0	0	0	0	0	0	6	1	0	13
% Trucks & Buses	0	0	1.1	0	0	0.3	0	0	0	0	0	0	0	0.3	2.4	0	0.3
Bikes by Direction	1	0	3	0	2	70	0	0	0	0	0	0	0	70	2	0	148
% Bikes by Direction	1.9	0	3.4	0	2.3	4.3	0	0	0	0	0	0	0	3.1	4.9	0	3.5

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	0	3	0	5	6	163	0	0	169	0	0	0	3	3	0	197	0	0	197	374
05:00 PM	6	0	9	0	15	7	122	0	0	129	0	0	0	6	6	0	198	1	0	199	349
05:15 PM	3	0	12	0	15	9	116	0	0	125	0	0	0	3	3	0	219	3	0	222	365
05:30 PM	5	0	11	0	16	6	128	0	0	134	0	0	0	3	3	0	205	3	0	208	361
Total Volume	16	0	35	0	51	28	529	0	0	557	0	0	0	15	15	0	819	7	0	826	1449
% App. Total	31.4	0	68.6	0		5	95	0	0		0	0	0	100		0	99.2	0.8	0		
PHF	.667	.000	.729	.000	.797	.778	.811	.000	.000	.824	.000	.000	.000	.625	.625	.000	.935	.583	.000	.930	.969
Cars & Peds	15	0	33	0	48	26	500	0	0	526	0	0	0	15	15	0	791	6	0	797	1386
% Cars & Peds	93.8	0	94.3	0	94.1	92.9	94.5	0	0	94.4	0	0	0	100	100	0	96.6	85.7	0	96.5	95.7
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
% Trucks & Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.2	0.2
Bikes by Direction	1	0	2	0	3	2	28	0	0	30	0	0	0	0	0	0	26	1	0	27	60
% Bikes by Direction	6.3	0	5.7	0	5.9	7.1	5.3	0	0	5.4	0	0	0	0	0	0	3.2	14.3	0	3.3	4.1

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AA
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
03:00 PM	7	0	6	0	9	167	0	0	0	0	0	5	0	174	4	0	372
03:15 PM	7	0	6	0	5	154	0	0	0	0	0	1	0	155	4	0	332
03:30 PM	7	0	7	0	8	126	0	0	0	0	0	0	0	179	5	0	332
03:45 PM	4	0	4	0	4	144	0	0	0	0	0	3	0	182	4	0	345
Total	25	0	23	0	26	591	0	0	0	0	0	9	0	690	17	0	1381
04:00 PM	2	0	8	0	7	138	0	0	0	0	0	7	0	177	4	0	343
04:15 PM	2	0	7	0	7	109	0	0	0	0	0	7	0	169	7	0	308
04:30 PM	6	0	10	0	4	125	0	0	0	0	0	3	0	164	1	0	313
04:45 PM	2	0	3	0	5	155	0	0	0	0	0	3	0	191	0	0	359
Total	12	0	28	0	23	527	0	0	0	0	0	20	0	701	12	0	1323
05:00 PM	5	0	9	0	6	117	0	0	0	0	0	6	0	193	1	0	337
05:15 PM	3	0	12	0	9	107	0	0	0	0	0	3	0	209	3	0	346
05:30 PM	5	0	9	0	6	121	0	0	0	0	0	3	0	198	2	0	344
05:45 PM	1	0	4	0	14	86	0	0	0	0	0	8	0	173	3	0	289
Total	14	0	34	0	35	431	0	0	0	0	0	20	0	773	9	0	1316
Grand Total	51	0	85	0	84	1549	0	0	0	0	0	49	0	2164	38	0	4020
Apprch %	37.5	0	62.5	0	5.1	94.9	0	0	0	0	0	100	0	98.3	1.7	0	0
Total %	1.3	0	2.1	0	2.1	38.5	0	0	0	0	0	1.2	0	53.8	0.9	0	0

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	0	3	0	5	5	155	0	0	160	0	0	0	3	3	0	191	0	0	191	359
05:00 PM	5	0	9	0	14	6	117	0	0	123	0	0	0	6	6	0	193	1	0	194	337
05:15 PM	3	0	12	0	15	9	107	0	0	116	0	0	0	3	3	0	209	3	0	212	346
05:30 PM	5	0	9	0	14	6	121	0	0	127	0	0	0	3	3	0	198	2	0	200	344
Total Volume	15	0	33	0	48	26	500	0	0	526	0	0	0	15	15	0	791	6	0	797	1386
% App. Total	31.2	0	68.8	0		4.9	95.1	0	0		0	0	0	100		0	99.2	0.8	0		
PHF	.750	.000	.688	.000	.800	.722	.806	.000	.000	.822	.000	.000	.000	.625	.625	.000	.946	.500	.000	.940	.965

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AA
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
03:30 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	4
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
Total	0	0	1	0	0	4	0	0	0	0	0	0	0	4	1	0	10
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Grand Total	0	0	1	0	0	5	0	0	0	0	0	0	0	6	1	0	13
Apprch %	0	0	100	0	0	100	0	0	0	0	0	0	0	85.7	14.3	0	
Total %	0	0	7.7	0	0	38.5	0	0	0	0	0	0	0	46.2	7.7	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
03:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
03:30 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	3
Total Volume	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	0	4	1	0	5	10
% App. Total	0	0	100	0		0	100	0	0		0	0	0	0		0	80	20	0		
PHF	.000	.000	.250	.000	.250	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.500	.250	.000	.417	.625

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AA
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
03:00 PM	0	0	0	0	0	8	0	0	0	0	0	0	0	7	0	0	15
03:15 PM	0	0	1	0	0	14	0	0	0	0	0	0	0	5	0	0	20
03:30 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	6	0	0	11
03:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	8
Total	0	0	1	0	0	30	0	0	0	0	0	0	0	23	0	0	54
04:00 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	8
04:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0	6
04:30 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	8
04:45 PM	0	0	0	0	1	8	0	0	0	0	0	0	0	6	0	0	15
Total	0	0	0	0	1	18	0	0	0	0	0	0	0	18	0	0	37
05:00 PM	1	0	0	0	1	5	0	0	0	0	0	0	0	4	0	0	11
05:15 PM	0	0	0	0	0	9	0	0	0	0	0	0	0	9	0	0	18
05:30 PM	0	0	2	0	0	6	0	0	0	0	0	0	0	7	1	0	16
05:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	9	1	0	12
Total	1	0	2	0	1	22	0	0	0	0	0	0	0	29	2	0	57
Grand Total	1	0	3	0	2	70	0	0	0	0	0	0	0	70	2	0	148
Apprch %	25	0	75	0	2.8	97.2	0	0	0	0	0	0	0	97.2	2.8	0	
Total %	0.7	0	2	0	1.4	47.3	0	0	0	0	0	0	0	47.3	1.4	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	0	6	0	0	6	15
05:00 PM	1	0	0	0	1	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	11
05:15 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	9	0	0	9	18
05:30 PM	0	0	2	0	2	0	6	0	0	6	0	0	0	0	0	0	7	1	0	8	16
Total Volume	1	0	2	0	3	2	28	0	0	30	0	0	0	0	0	0	26	1	0	27	60
% App. Total	33.3	0	66.7	0		6.7	93.3	0	0		0	0	0	0		0	96.3	3.7	0		
PHF	.250	.000	.250	.000	.375	.500	.778	.000	.000	.833	.000	.000	.000	.000	.000	.000	.722	.250	.000	.750	.833

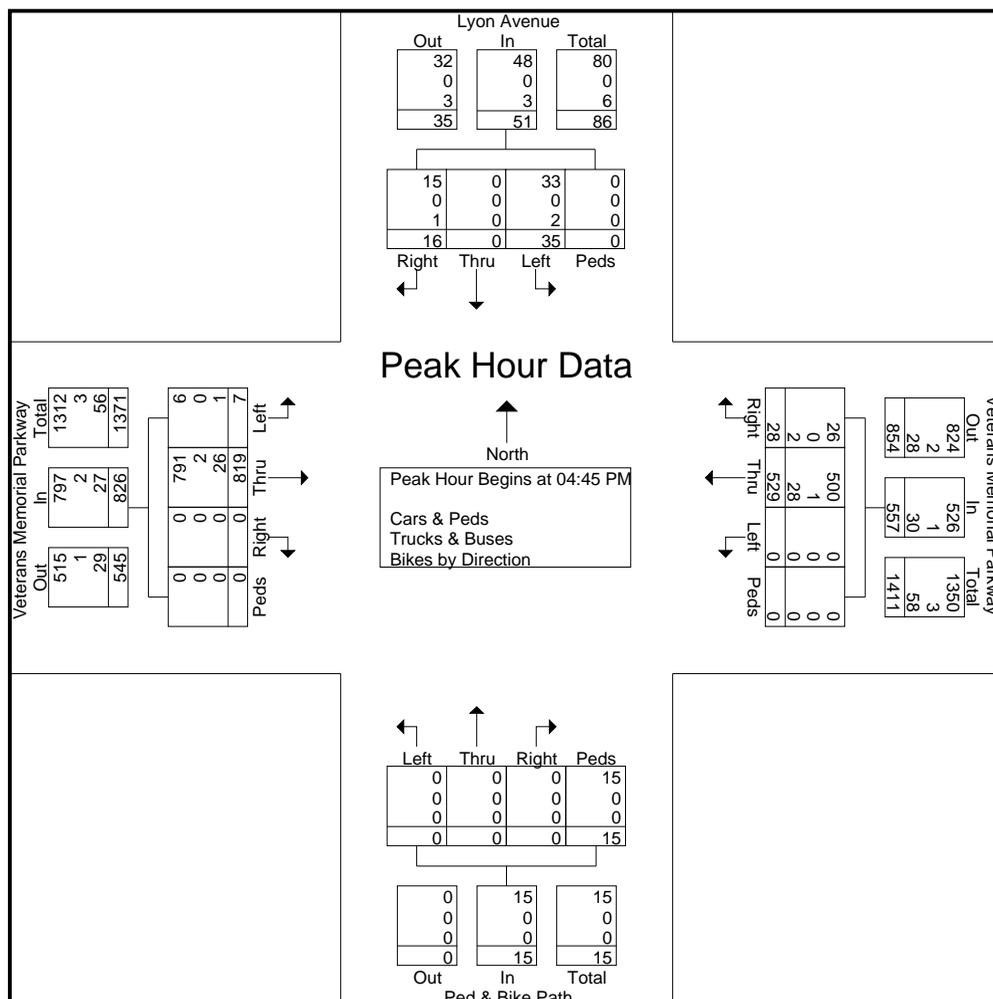
Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774AA
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	0	3	0	5	6	163	0	0	169	0	0	0	3	3	0	197	0	0	197	374
05:00 PM	6	0	9	0	15	7	122	0	0	129	0	0	0	6	6	0	198	1	0	199	349
05:15 PM	3	0	12	0	15	9	116	0	0	125	0	0	0	3	3	0	219	3	0	222	365
05:30 PM	5	0	11	0	16	6	128	0	0	134	0	0	0	3	3	0	205	3	0	208	361
Total Volume	16	0	35	0	51	28	529	0	0	557	0	0	0	15	15	0	819	7	0	826	1449
% App. Total	31.4	0	68.6	0		5	95	0	0		0	0	0	100		0	99.2	0.8	0		
PHF	.667	.000	.729	.000	.797	.778	.811	.000	.000	.824	.000	.000	.000	.625	.625	.000	.935	.583	.000	.930	.969
Cars & Peds	15	0	33	0	48	26	500	0	0	526	0	0	0	15	15	0	791	6	0	797	1386
% Cars & Peds	93.8	0	94.3	0	94.1	92.9	94.5	0	0	94.4	0	0	0	100	100	0	96.6	85.7	0	96.5	95.7
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
% Trucks & Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.2	0.2
Bikes by Direction	1	0	2	0	3	2	28	0	0	30	0	0	0	0	0	0	26	1	0	27	60
% Bikes by Direction	6.3	0	5.7	0	5.9	7.1	5.3	0	0	5.4	0	0	0	0	0	0	3.2	14.3	0	3.3	4.1



Transportation Data Corporation
 Mario Perone, mperone1@verizon.net
 tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AAA
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	1	0	4	135	0	0	0	0	0	7	0	116	1	0	264
11:15 AM	1	0	5	0	4	132	0	0	0	0	0	9	0	104	1	0	256
11:30 AM	3	0	3	0	5	120	0	0	0	0	0	5	0	106	1	0	243
11:45 AM	1	0	2	0	6	142	0	0	0	0	0	7	0	138	2	0	298
Total	5	0	11	0	19	529	0	0	0	0	0	28	0	464	5	0	1061
12:00 PM	2	0	4	0	7	136	0	0	3	0	0	4	0	119	1	0	276
12:15 PM	1	0	2	0	1	121	0	0	0	0	0	4	0	131	0	0	260
12:30 PM	3	0	6	0	2	134	0	0	0	0	0	5	0	136	2	0	288
12:45 PM	1	0	8	0	4	140	0	0	0	0	0	5	0	119	2	0	279
Total	7	0	20	0	14	531	0	0	3	0	0	18	0	505	5	0	1103
01:00 PM	0	0	1	0	3	123	0	0	0	0	0	5	0	122	3	0	257
01:15 PM	0	0	6	0	2	116	0	0	0	0	0	5	0	121	1	0	251
01:30 PM	2	0	2	0	4	145	0	0	0	0	0	3	0	120	2	0	278
01:45 PM	2	0	3	1	9	128	0	0	0	0	0	7	0	127	2	0	279
Total	4	0	12	1	18	512	0	0	0	0	0	20	0	490	8	0	1065
Grand Total	16	0	43	1	51	1572	0	0	3	0	0	66	0	1459	18	0	3229
Apprch %	26.7	0	71.7	1.7	3.1	96.9	0	0	4.3	0	0	95.7	0	98.8	1.2	0	
Total %	0.5	0	1.3	0	1.6	48.7	0	0	0.1	0	0	2	0	45.2	0.6	0	
Cars & Peds	16	0	38	1	45	1401	0	0	3	0	0	66	0	1213	18	0	2801
% Cars & Peds	100	0	88.4	100	88.2	89.1	0	0	100	0	0	100	0	83.1	100	0	86.7
Trucks & Buses	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Trucks & Buses	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	0	5	0	6	170	0	0	0	0	0	0	0	246	0	0	427
% Bikes by Direction	0	0	11.6	0	11.8	10.8	0	0	0	0	0	0	0	16.9	0	0	13.2

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	1	0	2	0	3	6	142	0	0	148	0	0	0	7	7	0	138	2	0	140	298
12:00 PM	2	0	4	0	6	7	136	0	0	143	3	0	0	4	7	0	119	1	0	120	276
12:15 PM	1	0	2	0	3	1	121	0	0	122	0	0	0	4	4	0	131	0	0	131	260
12:30 PM	3	0	6	0	9	2	134	0	0	136	0	0	0	5	5	0	136	2	0	138	288
Total Volume	7	0	14	0	21	16	533	0	0	549	3	0	0	20	23	0	524	5	0	529	1122
% App. Total	33.3	0	66.7	0		2.9	97.1	0	0		13	0	0	87		0	99.1	0.9	0		
PHF	.583	.000	.583	.000	.583	.571	.938	.000	.000	.927	.250	.000	.000	.714	.821	.000	.949	.625	.000	.945	.941
Cars & Peds	7	0	14	0	21	15	467	0	0	482	3	0	0	20	23	0	444	5	0	449	975
% Cars & Peds	100	0	100	0	100	93.8	87.6	0	0	87.8	100	0	0	100	100	0	84.7	100	0	84.9	86.9
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	0	0	0	0	1	66	0	0	67	0	0	0	0	0	0	80	0	0	80	147
% Bikes by Direction	0	0	0	0	0	6.3	12.4	0	0	12.2	0	0	0	0	0	0	15.3	0	0	15.1	13.1

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AAA
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	1	0	4	125	0	0	0	0	0	7	0	100	1	0	238
11:15 AM	1	0	5	0	4	124	0	0	0	0	0	9	0	88	1	0	232
11:30 AM	3	0	3	0	5	115	0	0	0	0	0	5	0	79	1	0	211
11:45 AM	1	0	2	0	6	125	0	0	0	0	0	7	0	112	2	0	255
Total	5	0	11	0	19	489	0	0	0	0	0	28	0	379	5	0	936
12:00 PM	2	0	4	0	6	124	0	0	3	0	0	4	0	100	1	0	244
12:15 PM	1	0	2	0	1	100	0	0	0	0	0	4	0	116	0	0	224
12:30 PM	3	0	6	0	2	118	0	0	0	0	0	5	0	116	2	0	252
12:45 PM	1	0	5	0	3	121	0	0	0	0	0	5	0	104	2	0	241
Total	7	0	17	0	12	463	0	0	3	0	0	18	0	436	5	0	961
01:00 PM	0	0	0	0	3	104	0	0	0	0	0	5	0	98	3	0	213
01:15 PM	0	0	5	0	2	101	0	0	0	0	0	5	0	100	1	0	214
01:30 PM	2	0	2	0	4	128	0	0	0	0	0	3	0	95	2	0	236
01:45 PM	2	0	3	1	5	116	0	0	0	0	0	7	0	105	2	0	241
Total	4	0	10	1	14	449	0	0	0	0	0	20	0	398	8	0	904
Grand Total	16	0	38	1	45	1401	0	0	3	0	0	66	0	1213	18	0	2801
Apprch %	29.1	0	69.1	1.8	3.1	96.9	0	0	4.3	0	0	95.7	0	98.5	1.5	0	
Total %	0.6	0	1.4	0	1.6	50	0	0	0.1	0	0	2.4	0	43.3	0.6	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	1	0	2	0	3	6	125	0	0	131	0	0	0	7	7	0	112	2	0	114	255
12:00 PM	2	0	4	0	6	6	124	0	0	130	3	0	0	4	7	0	100	1	0	101	244
12:15 PM	1	0	2	0	3	1	100	0	0	101	0	0	0	4	4	0	116	0	0	116	224
12:30 PM	3	0	6	0	9	2	118	0	0	120	0	0	0	5	5	0	116	2	0	118	252
Total Volume	7	0	14	0	21	15	467	0	0	482	3	0	0	20	23	0	444	5	0	449	975
% App. Total	33.3	0	66.7	0		3.1	96.9	0	0		13	0	0	87		0	98.9	1.1	0		
PHF	.583	.000	.583	.000	.583	.625	.934	.000	.000	.920	.250	.000	.000	.714	.821	.000	.957	.625	.000	.951	.956

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AAA
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	
Total %	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774AAA
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Lyon Avenue From North				Veterans Memorial Parkway From East				Ped & Bike Path From South				Veterans Memorial Parkway From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	10	0	0	0	0	0	0	0	16	0	0	26
11:15 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	16	0	0	24
11:30 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	27	0	0	32
11:45 AM	0	0	0	0	0	17	0	0	0	0	0	0	0	26	0	0	43
Total	0	0	0	0	0	40	0	0	0	0	0	0	0	85	0	0	125
12:00 PM	0	0	0	0	1	12	0	0	0	0	0	0	0	19	0	0	32
12:15 PM	0	0	0	0	0	21	0	0	0	0	0	0	0	15	0	0	36
12:30 PM	0	0	0	0	0	16	0	0	0	0	0	0	0	20	0	0	36
12:45 PM	0	0	3	0	1	19	0	0	0	0	0	0	0	15	0	0	38
Total	0	0	3	0	2	68	0	0	0	0	0	0	0	69	0	0	142
01:00 PM	0	0	1	0	0	18	0	0	0	0	0	0	0	24	0	0	43
01:15 PM	0	0	1	0	0	15	0	0	0	0	0	0	0	21	0	0	37
01:30 PM	0	0	0	0	0	17	0	0	0	0	0	0	0	25	0	0	42
01:45 PM	0	0	0	0	4	12	0	0	0	0	0	0	0	22	0	0	38
Total	0	0	2	0	4	62	0	0	0	0	0	0	0	92	0	0	160
Grand Total	0	0	5	0	6	170	0	0	0	0	0	0	0	246	0	0	427
Apprch %	0	0	100	0	3.4	96.6	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	1.2	0	1.4	39.8	0	0	0	0	0	0	0	57.6	0	0	

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	0	0	3	0	3	1	19	0	0	20	0	0	0	0	0	0	15	0	0	15	38
01:00 PM	0	0	1	0	1	0	18	0	0	18	0	0	0	0	0	0	24	0	0	24	43
01:15 PM	0	0	1	0	1	0	15	0	0	15	0	0	0	0	0	0	21	0	0	21	37
01:30 PM	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	25	0	0	25	42
Total Volume	0	0	5	0	5	1	69	0	0	70	0	0	0	0	0	0	85	0	0	85	160
% App. Total	0	0	100	0		1.4	98.6	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.417	.000	.417	.250	.908	.000	.000	.875	.000	.000	.000	.000	.000	.000	.850	.000	.000	.850	.930

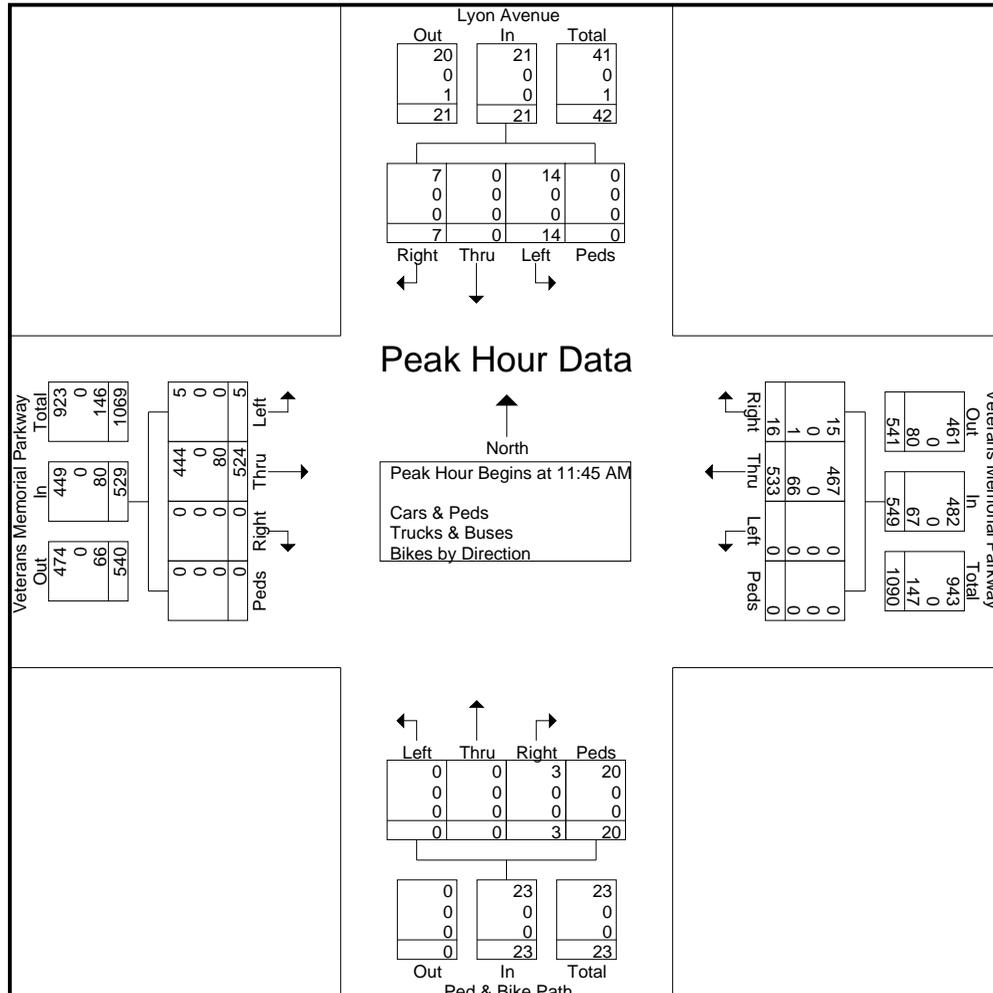
Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N/S: Lyon Avenue/Bike Path
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774AAA
Site Code : 2814
Start Date : 10/28/2023
Page No : 1

Start Time	Lyon Avenue From North					Veterans Memorial Parkway From East					Ped & Bike Path From South					Veterans Memorial Parkway From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	1	0	2	0	3	6	142	0	0	148	0	0	0	7	7	0	138	2	0	140	298
12:00 PM	2	0	4	0	6	7	136	0	0	143	3	0	0	4	7	0	119	1	0	120	276
12:15 PM	1	0	2	0	3	1	121	0	0	122	0	0	0	4	4	0	131	0	0	131	260
12:30 PM	3	0	6	0	9	2	134	0	0	136	0	0	0	5	5	0	136	2	0	138	288
Total Volume	7	0	14	0	21	16	533	0	0	549	3	0	0	20	23	0	524	5	0	529	1122
% App. Total	33.3	0	66.7	0		2.9	97.1	0	0		13	0	0	87		0	99.1	0.9	0		
PHF	.583	.000	.583	.000	.583	.571	.938	.000	.000	.927	.250	.000	.000	.714	.821	.000	.949	.625	.000	.945	.941
Cars & Peds	7	0	14	0	21	15	467	0	0	482	3	0	0	20	23	0	444	5	0	449	975
% Cars & Peds	100	0	100	0	100	93.8	87.6	0	0	87.8	100	0	0	100	100	0	84.7	100	0	84.9	86.9
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	0	0	0	0	1	66	0	0	67	0	0	0	0	0	0	80	0	0	80	147
% Bikes by Direction	0	0	0	0	0	6.3	12.4	0	0	12.2	0	0	0	0	0	0	15.3	0	0	15.1	13.1



Veterans Memorial Parkway at South Broadway

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774B
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Groups Printed- Cars & Peds

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
07:00 AM	10	14	0	38	191	0	111	7	0	371
07:15 AM	7	25	0	48	179	0	132	8	0	399
07:30 AM	3	35	0	92	165	0	203	9	0	507
07:45 AM	7	40	0	104	126	0	202	30	0	509
Total	27	114	0	282	661	0	648	54	0	1786
08:00 AM	11	36	0	81	203	0	160	41	0	532
08:15 AM	8	36	0	77	151	0	136	17	0	425
08:30 AM	10	35	0	80	135	0	139	9	0	408
08:45 AM	8	23	0	71	148	0	122	7	0	379
Total	37	130	0	309	637	0	557	74	0	1744
Grand Total	64	244	0	591	1298	0	1205	128	0	3530
Apprch %	20.8	79.2	0	31.3	68.7	0	90.4	9.6	0	
Total %	1.8	6.9	0	16.7	36.8	0	34.1	3.6	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	3	35	0	38	92	165	0	257	203	9	0	212	507
07:45 AM	7	40	0	47	104	126	0	230	202	30	0	232	509
08:00 AM	11	36	0	47	81	203	0	284	160	41	0	201	532
08:15 AM	8	36	0	44	77	151	0	228	136	17	0	153	425
Total Volume	29	147	0	176	354	645	0	999	701	97	0	798	1973
% App. Total	16.5	83.5	0		35.4	64.6	0		87.8	12.2	0		
PHF	.659	.919	.000	.936	.851	.794	.000	.879	.863	.591	.000	.860	.927

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774B
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Groups Printed- Trucks & Buses

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
07:00 AM	0	1	0	0	0	0	0	1	0	2
07:15 AM	0	0	0	2	0	0	2	0	0	4
07:30 AM	0	3	0	2	0	0	3	0	0	8
07:45 AM	0	0	0	2	2	0	1	1	0	6
Total	0	4	0	6	2	0	6	2	0	20
08:00 AM	0	0	0	1	1	0	0	0	0	2
08:15 AM	1	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	1	0	0	1	0	0	2
08:45 AM	0	1	0	0	0	0	0	0	0	1
Total	1	1	0	2	1	0	1	0	0	6
Grand Total	1	5	0	8	3	0	7	2	0	26
Apprch %	16.7	83.3	0	72.7	27.3	0	77.8	22.2	0	
Total %	3.8	19.2	0	30.8	11.5	0	26.9	7.7	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
07:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	2	0	0	2	2	0	0	2	4
07:30 AM	0	3	0	3	2	0	0	2	3	0	0	3	8
07:45 AM	0	0	0	0	2	2	0	4	1	1	0	2	6
Total Volume	0	4	0	4	6	2	0	8	6	2	0	8	20
% App. Total	0	100	0	0	75	25	0	0	75	25	0	0	0
PHF	.000	.333	.000	.333	.750	.250	.000	.500	.500	.500	.000	.667	.625

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:00 AM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774B
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	0	0	1
08:45 AM	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	2
Grand Total	0	1	0	0	1	0	0	0	0	2
Apprch %	0	100	0	0	100	0	0	0	0	
Total %	0	50	0	0	50	0	0	0	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	1	0	1	0	0	0	0	2
% App. Total	0	100	0	100	0	100	0	100	0	0	0	0	
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	.500

Transportation Data Corporation

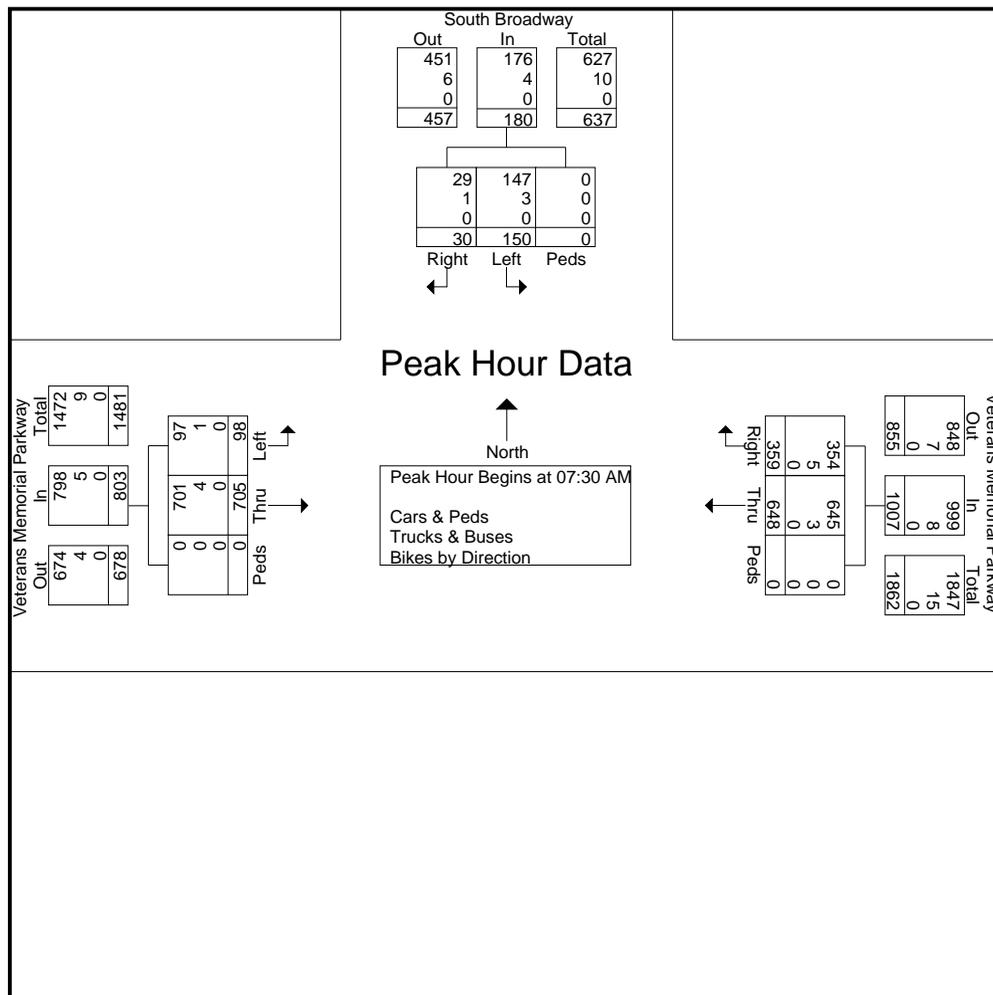
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774B
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	3	38	0	41	94	165	0	259	206	9	0	215	515
07:45 AM	7	40	0	47	106	128	0	234	203	31	0	234	515
08:00 AM	11	36	0	47	82	204	0	286	160	41	0	201	534
08:15 AM	9	36	0	45	77	151	0	228	136	17	0	153	426
Total Volume	30	150	0	180	359	648	0	1007	705	98	0	803	1990
% App. Total	16.7	83.3	0		35.7	64.3	0		87.8	12.2	0		
PHF	.682	.938	.000	.957	.847	.794	.000	.880	.856	.598	.000	.858	.932
Cars & Peds	29	147	0	176	354	645	0	999	701	97	0	798	1973
% Cars & Peds	96.7	98.0	0	97.8	98.6	99.5	0	99.2	99.4	99.0	0	99.4	99.1
Trucks & Buses	1	3	0	4	5	3	0	8	4	1	0	5	17
% Trucks & Buses	3.3	2.0	0	2.2	1.4	0.5	0	0.8	0.6	1.0	0	0.6	0.9
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BB
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
03:00 PM	7	42	0	39	160	0	139	27	0	414
03:15 PM	14	36	0	76	143	0	147	23	0	439
03:30 PM	8	35	0	61	127	0	156	20	0	407
03:45 PM	4	29	0	60	147	0	190	12	0	442
Total	33	142	0	236	577	0	632	82	0	1702
04:00 PM	5	48	0	66	136	0	159	9	0	423
04:15 PM	6	30	0	55	102	0	161	23	0	377
04:30 PM	8	33	0	83	127	0	160	15	0	426
04:45 PM	11	35	0	52	142	0	185	21	0	446
Total	30	146	0	256	507	0	665	68	0	1672
05:00 PM	14	39	0	66	114	0	170	27	0	430
05:15 PM	10	44	0	51	108	0	207	20	0	440
05:30 PM	9	24	0	52	119	0	196	16	0	416
05:45 PM	6	31	0	63	94	0	183	7	0	384
Total	39	138	0	232	435	0	756	70	0	1670
Grand Total	102	426	0	724	1519	0	2053	220	0	5044
Apprch %	19.3	80.7	0	32.3	67.7	0	90.3	9.7	0	
Total %	2	8.4	0	14.4	30.1	0	40.7	4.4	0	
Cars & Peds	101	420	0	720	1513	0	2049	218	0	5021
% Cars & Peds	99	98.6	0	99.4	99.6	0	99.8	99.1	0	99.5
Trucks & Buses	1	6	0	4	3	0	3	2	0	19
% Trucks & Buses	1	1.4	0	0.6	0.2	0	0.1	0.9	0	0.4
Bikes by Direction	0	0	0	0	3	0	1	0	0	4
% Bikes by Direction	0	0	0	0	0.2	0	0	0	0	0.1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	8	33	0	41	83	127	0	210	160	15	0	175	426
04:45 PM	11	35	0	46	52	142	0	194	185	21	0	206	446
05:00 PM	14	39	0	53	66	114	0	180	170	27	0	197	430
05:15 PM	10	44	0	54	51	108	0	159	207	20	0	227	440
Total Volume	43	151	0	194	252	491	0	743	722	83	0	805	1742
% App. Total	22.2	77.8	0		33.9	66.1	0		89.7	10.3	0		
PHF	.768	.858	.000	.898	.759	.864	.000	.885	.872	.769	.000	.887	.976
Cars & Peds	43	150	0	193	251	490	0	741	721	83	0	804	1738
% Cars & Peds	100	99.3	0	99.5	99.6	99.8	0	99.7	99.9	100	0	99.9	99.8
Trucks & Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
% Trucks & Buses	0	0.7	0	0.5	0.4	0	0	0.1	0	0	0	0	0.1
Bikes by Direction	0	0	0	0	0	1	0	1	1	0	0	1	2
% Bikes by Direction	0	0	0	0	0	0.2	0	0.1	0.1	0	0	0.1	0.1

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774BB
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Groups Printed- Cars & Peds

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
03:00 PM	7	41	0	39	159	0	137	27	0	410
03:15 PM	14	34	0	74	140	0	147	23	0	432
03:30 PM	7	35	0	61	126	0	156	18	0	403
03:45 PM	4	27	0	60	147	0	189	12	0	439
Total	32	137	0	234	572	0	629	80	0	1684
04:00 PM	5	48	0	65	136	0	159	9	0	422
04:15 PM	6	30	0	55	102	0	161	23	0	377
04:30 PM	8	32	0	82	127	0	160	15	0	424
04:45 PM	11	35	0	52	142	0	185	21	0	446
Total	30	145	0	254	507	0	665	68	0	1669
05:00 PM	14	39	0	66	114	0	169	27	0	429
05:15 PM	10	44	0	51	107	0	207	20	0	439
05:30 PM	9	24	0	52	119	0	196	16	0	416
05:45 PM	6	31	0	63	94	0	183	7	0	384
Total	39	138	0	232	434	0	755	70	0	1668
Grand Total	101	420	0	720	1513	0	2049	218	0	5021
Apprch %	19.4	80.6	0	32.2	67.8	0	90.4	9.6	0	
Total %	2	8.4	0	14.3	30.1	0	40.8	4.3	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	8	32	0	40	82	127	0	209	160	15	0	175	424
04:45 PM	11	35	0	46	52	142	0	194	185	21	0	206	446
05:00 PM	14	39	0	53	66	114	0	180	169	27	0	196	429
05:15 PM	10	44	0	54	51	107	0	158	207	20	0	227	439
Total Volume	43	150	0	193	251	490	0	741	721	83	0	804	1738
% App. Total	22.3	77.7	0		33.9	66.1	0		89.7	10.3	0		
PHF	.768	.852	.000	.894	.765	.863	.000	.886	.871	.769	.000	.885	.974

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774BB
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Groups Printed- Trucks & Buses

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
03:00 PM	0	1	0	0	0	0	2	0	0	3
03:15 PM	0	2	0	2	2	0	0	0	0	6
03:30 PM	1	0	0	0	1	0	0	2	0	4
03:45 PM	0	2	0	0	0	0	1	0	0	3
Total	1	5	0	2	3	0	3	2	0	16
04:00 PM	0	0	0	1	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	2	0	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	1	6	0	4	3	0	3	2	0	19
Apprch %	14.3	85.7	0	57.1	42.9	0	60	40	0	
Total %	5.3	31.6	0	21.1	15.8	0	15.8	10.5	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
03:00 PM	0	1	0	1	0	0	0	0	2	0	0	2	3
03:15 PM	0	2	0	2	2	2	0	4	0	0	0	0	6
03:30 PM	1	0	0	1	0	1	0	1	0	2	0	2	4
03:45 PM	0	2	0	2	0	0	0	0	1	0	0	1	3
Total Volume	1	5	0	6	2	3	0	5	3	2	0	5	16
% App. Total	16.7	83.3	0		40	60	0		60	40	0		
PHF	.250	.625	.000	.750	.250	.375	.000	.313	.375	.250	.000	.625	.667

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774BB
Site Code : 2814
Start Date : 10/25/2023
Page No : 1

Groups Printed- Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
03:00 PM	0	0	0	0	1	0	0	0	0	1
03:15 PM	0	0	0	0	1	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	0	0	2
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1	0	0	2
Grand Total	0	0	0	0	3	0	1	0	0	4
Apprch %	0	0	0	0	100	0	100	0	0	
Total %	0	0	0	0	75	0	25	0	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
03:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	2
% App. Total	0	0	0	0	0	100	0	50	0	0	0	0	50
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.500

Transportation Data Corporation

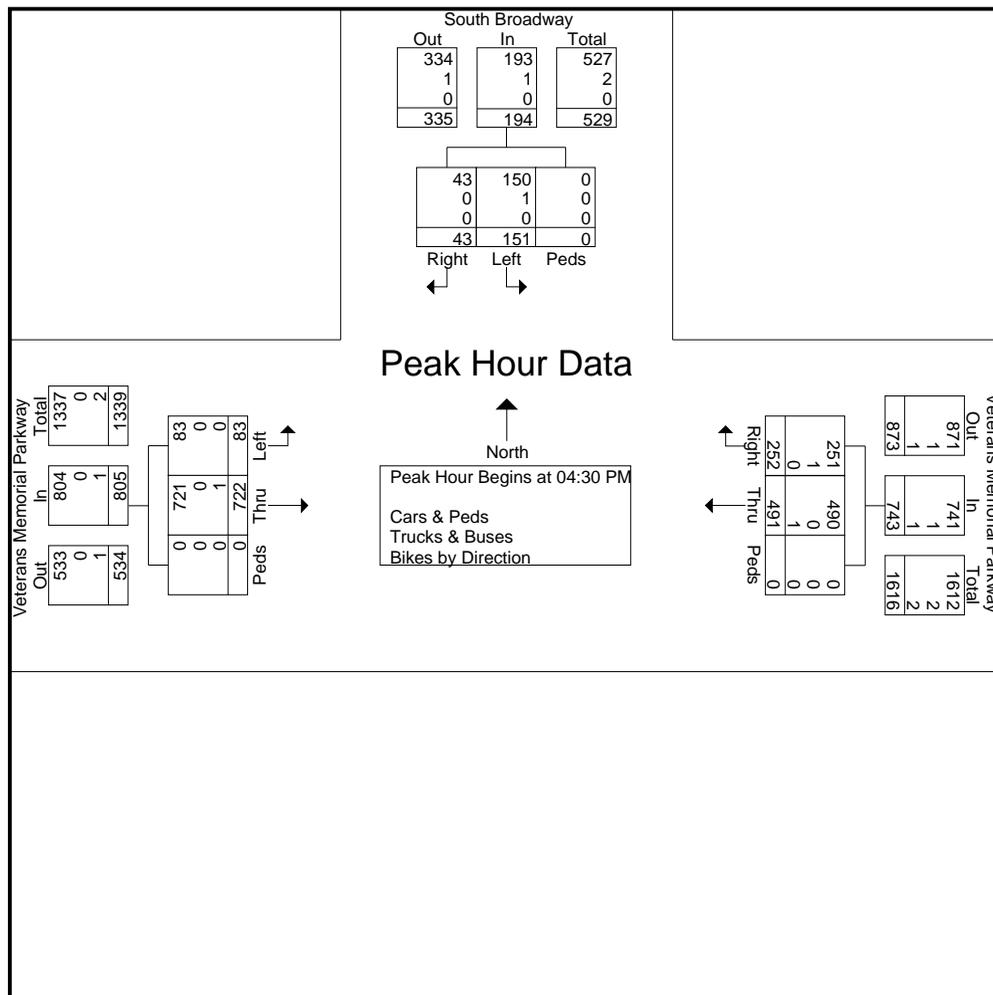
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BB
 Site Code : 2814
 Start Date : 10/25/2023
 Page No : 1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	8	33	0	41	83	127	0	210	160	15	0	175	426
04:45 PM	11	35	0	46	52	142	0	194	185	21	0	206	446
05:00 PM	14	39	0	53	66	114	0	180	170	27	0	197	430
05:15 PM	10	44	0	54	51	108	0	159	207	20	0	227	440
Total Volume	43	151	0	194	251	490	0	741	721	83	0	804	1738
% App. Total	22.2	77.8	0		33.9	66.1	0		89.7	10.3	0		
PHF	.768	.858	.000	.898	.759	.864	.000	.885	.872	.769	.000	.887	.976
Cars & Peds	43	150	0	193	251	490	0	741	721	83	0	804	1738
% Cars & Peds	100	99.3	0	99.5	99.6	99.8	0	99.7	99.9	100	0	99.9	99.8
Trucks & Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
% Trucks & Buses	0	0.7	0	0.5	0.4	0	0	0.1	0	0	0	0	0.1
Bikes by Direction	0	0	0	0	0	1	0	1	1	0	0	1	2
% Bikes by Direction	0	0	0	0	0	0.2	0	0.1	0.1	0	0	0.1	0.1



Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774BBB
Site Code : 2814
Start Date : 10/28/2023
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
11:00 AM	6	37	0	39	110	0	82	12	0	286
11:15 AM	10	30	0	30	132	0	85	14	0	301
11:30 AM	6	29	0	32	110	0	80	5	0	262
11:45 AM	8	27	0	22	124	0	96	10	0	287
Total	30	123	0	123	476	0	343	41	0	1136
12:00 PM	9	37	0	33	113	0	93	11	0	296
12:15 PM	2	24	0	23	105	0	115	6	0	275
12:30 PM	4	28	0	28	117	0	106	14	0	297
12:45 PM	15	25	0	27	97	0	109	6	0	279
Total	30	114	0	111	432	0	423	37	0	1147
01:00 PM	5	32	0	19	100	0	96	13	0	265
01:15 PM	4	31	0	25	104	0	91	11	0	266
01:30 PM	12	22	0	26	118	0	94	2	0	274
01:45 PM	8	31	0	22	110	0	104	6	0	281
Total	29	116	0	92	432	0	385	32	0	1086
Grand Total	89	353	0	326	1340	0	1151	110	0	3369
Apprch %	20.1	79.9	0	19.6	80.4	0	91.3	8.7	0	
Total %	2.6	10.5	0	9.7	39.8	0	34.2	3.3	0	
Cars & Peds	89	349	0	325	1338	0	1151	109	0	3361
% Cars & Peds	100	98.9	0	99.7	99.9	0	100	99.1	0	99.8
Trucks & Buses	0	1	0	0	1	0	0	1	0	3
% Trucks & Buses	0	0.3	0	0	0.1	0	0	0.9	0	0.1
Bikes by Direction	0	3	0	1	1	0	0	0	0	5
% Bikes by Direction	0	0.8	0	0.3	0.1	0	0	0	0	0.1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	27	0	35	22	124	0	146	96	10	0	106	287
12:00 PM	9	37	0	46	33	113	0	146	93	11	0	104	296
12:15 PM	2	24	0	26	23	105	0	128	115	6	0	121	275
12:30 PM	4	28	0	32	28	117	0	145	106	14	0	120	297
Total Volume	23	116	0	139	106	459	0	565	410	41	0	451	1155
% App. Total	16.5	83.5	0		18.8	81.2	0		90.9	9.1	0		
PHF	.639	.784	.000	.755	.803	.925	.000	.967	.891	.732	.000	.932	.972
Cars & Peds	23	115	0	138	106	458	0	564	410	40	0	450	1152
% Cars & Peds	100	99.1	0	99.3	100	99.8	0	99.8	100	97.6	0	99.8	99.7
Trucks & Buses	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks & Buses	0	0	0	0	0	0	0	0	0	2.4	0	0.2	0.1
Bikes by Direction	0	1	0	1	0	1	0	1	0	0	0	0	2
% Bikes by Direction	0	0.9	0	0.7	0	0.2	0	0.2	0	0	0	0	0.2

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BBB
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Cars & Peds

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
11:00 AM	6	37	0	39	110	0	82	12	0	286
11:15 AM	10	30	0	30	132	0	85	14	0	301
11:30 AM	6	29	0	32	110	0	80	5	0	262
11:45 AM	8	26	0	22	124	0	96	10	0	286
Total	30	122	0	123	476	0	343	41	0	1135
12:00 PM	9	37	0	33	113	0	93	11	0	296
12:15 PM	2	24	0	23	105	0	115	6	0	275
12:30 PM	4	28	0	28	116	0	106	13	0	295
12:45 PM	15	24	0	26	97	0	109	6	0	277
Total	30	113	0	110	431	0	423	36	0	1143
01:00 PM	5	32	0	19	99	0	96	13	0	264
01:15 PM	4	30	0	25	104	0	91	11	0	265
01:30 PM	12	22	0	26	118	0	94	2	0	274
01:45 PM	8	30	0	22	110	0	104	6	0	280
Total	29	114	0	92	431	0	385	32	0	1083
Grand Total	89	349	0	325	1338	0	1151	109	0	3361
Apprch %	20.3	79.7	0	19.5	80.5	0	91.3	8.7	0	
Total %	2.6	10.4	0	9.7	39.8	0	34.2	3.2	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	26	0	34	22	124	0	146	96	10	0	106	286
12:00 PM	9	37	0	46	33	113	0	146	93	11	0	104	296
12:15 PM	2	24	0	26	23	105	0	128	115	6	0	121	275
12:30 PM	4	28	0	32	28	116	0	144	106	13	0	119	295
Total Volume	23	115	0	138	106	458	0	564	410	40	0	450	1152
% App. Total	16.7	83.3	0		18.8	81.2	0		91.1	8.9	0		
PHF	.639	.777	.000	.750	.803	.923	.000	.966	.891	.769	.000	.930	.973

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774BBB
Site Code : 2814
Start Date : 10/28/2023
Page No : 1

Groups Printed- Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	0	0	0	0	1
12:45 PM	0	1	0	1	0	0	0	0	0	2
Total	0	1	0	1	1	0	0	0	0	3
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	1
Grand Total	0	3	0	1	1	0	0	0	0	5
Apprch %	0	100	0	50	50	0	0	0	0	
Total %	0	60	0	20	20	0	0	0	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:00 PM													
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
12:45 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
Total Volume	0	1	0	1	1	1	0	2	0	0	0	0	3
% App. Total	0	100	0		50	50	0		0	0	0		
PHF	.000	.250	.000	.250	.250	.250	.000	.500	.000	.000	.000	.000	.375

Transportation Data Corporation

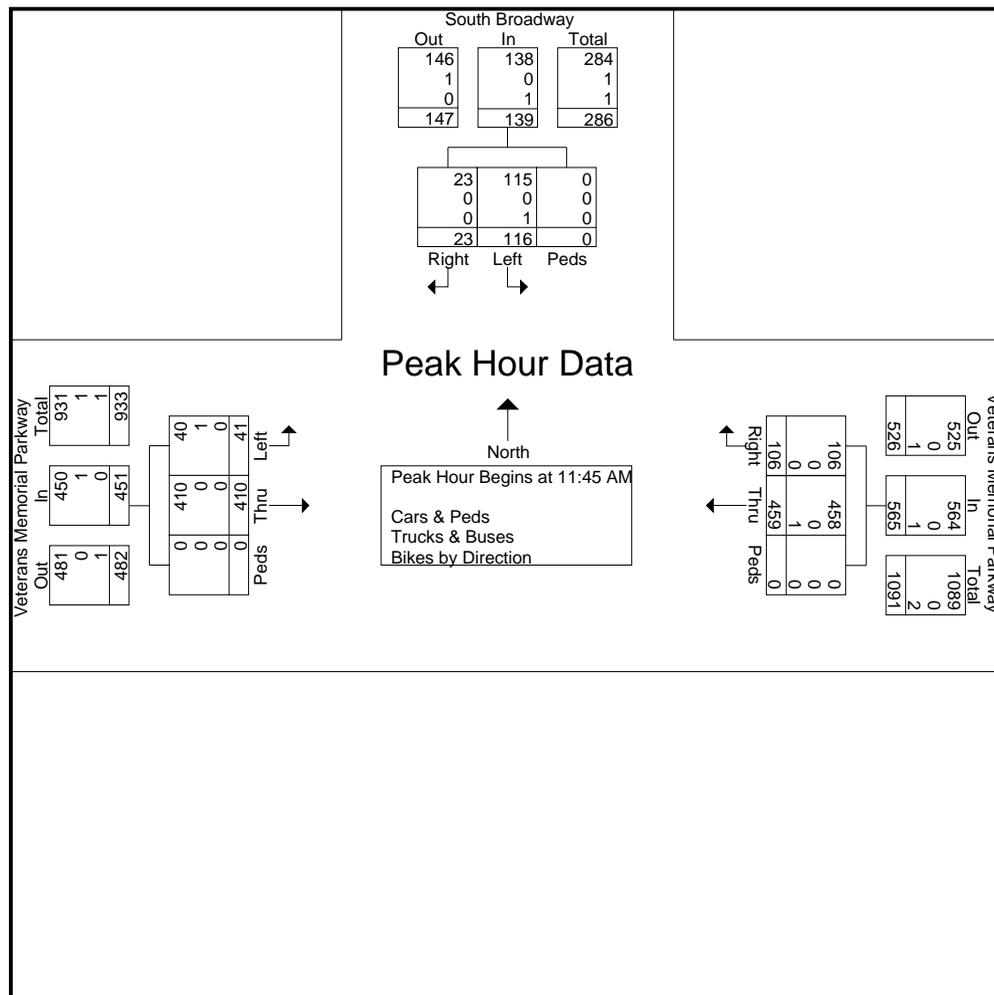
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BBB
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	27	0	35	22	124	0	146	96	10	0	106	287
12:00 PM	9	37	0	46	33	113	0	146	93	11	0	104	296
12:15 PM	2	24	0	26	23	105	0	128	115	6	0	121	275
12:30 PM	4	28	0	32	28	117	0	145	106	14	0	120	297
Total Volume	23	116	0	139	106	459	0	565	410	41	0	451	1155
% App. Total	16.5	83.5	0		18.8	81.2	0		90.9	9.1	0		
PHF	.639	.784	.000	.755	.803	.925	.000	.967	.891	.732	.000	.932	.972
Cars & Peds	23	115	0	138	106	458	0	564	410	40	0	450	1152
% Cars & Peds	100	99.1	0	99.3	100	99.8	0	99.8	100	97.6	0	99.8	99.7
Trucks & Buses	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks & Buses	0	0	0	0	0	0	0	0	0	2.4	0	0.2	0.1
Bikes by Direction	0	1	0	1	0	1	0	1	0	0	0	0	2
% Bikes by Direction	0	0.9	0	0.7	0	0.2	0	0.2	0	0	0	0	0.2



South Broadway at Fort Street

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
E/W: Veterans Memorial Parkway
City, State: E. Providence, RI
Client: Crossman/P. Bannon

File Name : 05774BBB
Site Code : 2814
Start Date : 10/28/2023
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
11:00 AM	6	37	0	39	110	0	82	12	0	286
11:15 AM	10	30	0	30	132	0	85	14	0	301
11:30 AM	6	29	0	32	110	0	80	5	0	262
11:45 AM	8	27	0	22	124	0	96	10	0	287
Total	30	123	0	123	476	0	343	41	0	1136
12:00 PM	9	37	0	33	113	0	93	11	0	296
12:15 PM	2	24	0	23	105	0	115	6	0	275
12:30 PM	4	28	0	28	117	0	106	14	0	297
12:45 PM	15	25	0	27	97	0	109	6	0	279
Total	30	114	0	111	432	0	423	37	0	1147
01:00 PM	5	32	0	19	100	0	96	13	0	265
01:15 PM	4	31	0	25	104	0	91	11	0	266
01:30 PM	12	22	0	26	118	0	94	2	0	274
01:45 PM	8	31	0	22	110	0	104	6	0	281
Total	29	116	0	92	432	0	385	32	0	1086
Grand Total	89	353	0	326	1340	0	1151	110	0	3369
Apprch %	20.1	79.9	0	19.6	80.4	0	91.3	8.7	0	
Total %	2.6	10.5	0	9.7	39.8	0	34.2	3.3	0	
Cars & Peds	89	349	0	325	1338	0	1151	109	0	3361
% Cars & Peds	100	98.9	0	99.7	99.9	0	100	99.1	0	99.8
Trucks & Buses	0	1	0	0	1	0	0	1	0	3
% Trucks & Buses	0	0.3	0	0	0.1	0	0	0.9	0	0.1
Bikes by Direction	0	3	0	1	1	0	0	0	0	5
% Bikes by Direction	0	0.8	0	0.3	0.1	0	0	0	0	0.1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	27	0	35	22	124	0	146	96	10	0	106	287
12:00 PM	9	37	0	46	33	113	0	146	93	11	0	104	296
12:15 PM	2	24	0	26	23	105	0	128	115	6	0	121	275
12:30 PM	4	28	0	32	28	117	0	145	106	14	0	120	297
Total Volume	23	116	0	139	106	459	0	565	410	41	0	451	1155
% App. Total	16.5	83.5	0		18.8	81.2	0		90.9	9.1	0		
PHF	.639	.784	.000	.755	.803	.925	.000	.967	.891	.732	.000	.932	.972
Cars & Peds	23	115	0	138	106	458	0	564	410	40	0	450	1152
% Cars & Peds	100	99.1	0	99.3	100	99.8	0	99.8	100	97.6	0	99.8	99.7
Trucks & Buses	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks & Buses	0	0	0	0	0	0	0	0	0	2.4	0	0.2	0.1
Bikes by Direction	0	1	0	1	0	1	0	1	0	0	0	0	2
% Bikes by Direction	0	0.9	0	0.7	0	0.2	0	0.2	0	0	0	0	0.2

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BBB
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Cars & Peds

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
11:00 AM	6	37	0	39	110	0	82	12	0	286
11:15 AM	10	30	0	30	132	0	85	14	0	301
11:30 AM	6	29	0	32	110	0	80	5	0	262
11:45 AM	8	26	0	22	124	0	96	10	0	286
Total	30	122	0	123	476	0	343	41	0	1135
12:00 PM	9	37	0	33	113	0	93	11	0	296
12:15 PM	2	24	0	23	105	0	115	6	0	275
12:30 PM	4	28	0	28	116	0	106	13	0	295
12:45 PM	15	24	0	26	97	0	109	6	0	277
Total	30	113	0	110	431	0	423	36	0	1143
01:00 PM	5	32	0	19	99	0	96	13	0	264
01:15 PM	4	30	0	25	104	0	91	11	0	265
01:30 PM	12	22	0	26	118	0	94	2	0	274
01:45 PM	8	30	0	22	110	0	104	6	0	280
Total	29	114	0	92	431	0	385	32	0	1083
Grand Total	89	349	0	325	1338	0	1151	109	0	3361
Apprch %	20.3	79.7	0	19.5	80.5	0	91.3	8.7	0	
Total %	2.6	10.4	0	9.7	39.8	0	34.2	3.2	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	26	0	34	22	124	0	146	96	10	0	106	286
12:00 PM	9	37	0	46	33	113	0	146	93	11	0	104	296
12:15 PM	2	24	0	26	23	105	0	128	115	6	0	121	275
12:30 PM	4	28	0	32	28	116	0	144	106	13	0	119	295
Total Volume	23	115	0	138	106	458	0	564	410	40	0	450	1152
% App. Total	16.7	83.3	0		18.8	81.2	0		91.1	8.9	0		
PHF	.639	.777	.000	.750	.803	.923	.000	.966	.891	.769	.000	.930	.973

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BBB
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	South Broadway From North			Veterans Memorial Parkway From East			Veterans Memorial Parkway From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	0	0	0	0	1
12:45 PM	0	1	0	1	0	0	0	0	0	2
Total	0	1	0	1	1	0	0	0	0	3
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	1
Grand Total	0	3	0	1	1	0	0	0	0	5
Apprch %	0	100	0	50	50	0	0	0	0	
Total %	0	60	0	20	20	0	0	0	0	

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
12:45 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
Total Volume	0	1	0	1	1	1	0	2	0	0	0	0	3
% App. Total	0	100	0		50	50	0		0	0	0		
PHF	.000	.250	.000	.250	.250	.250	.000	.500	.000	.000	.000	.000	.375

Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:00 PM

Transportation Data Corporation

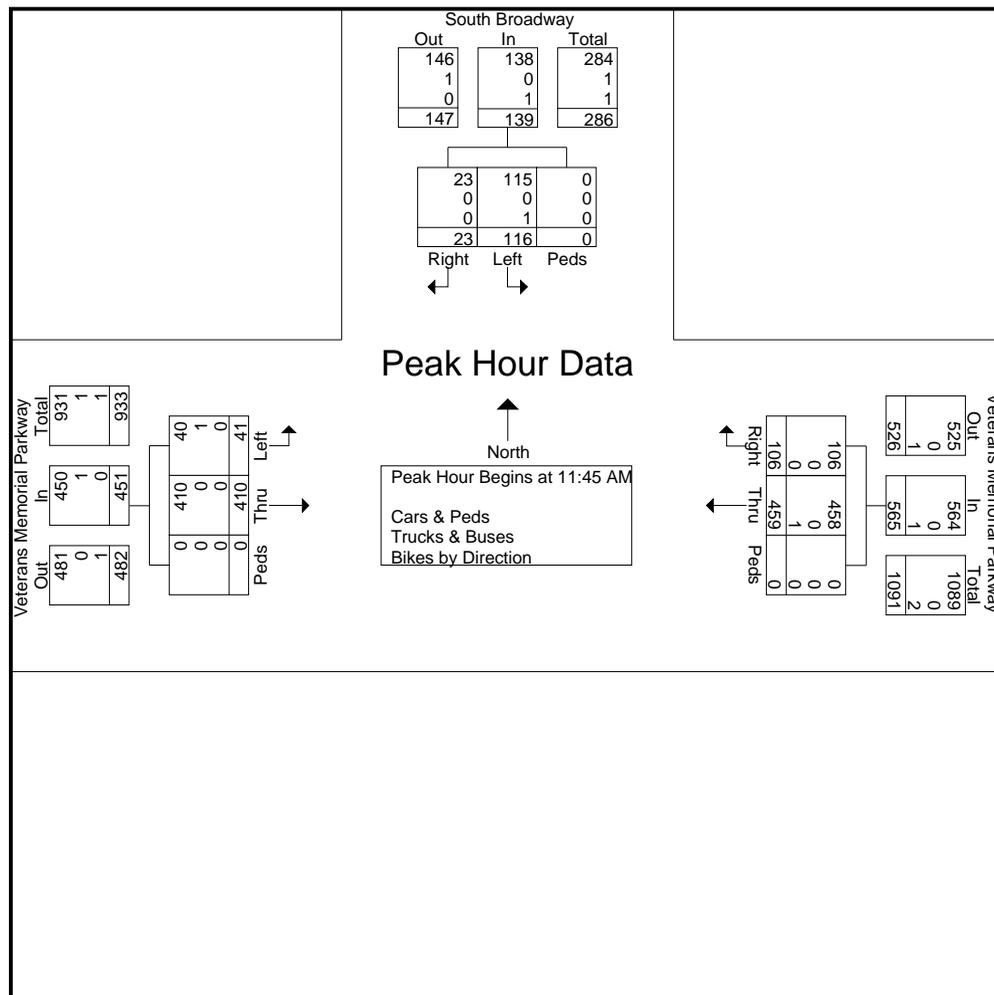
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N: South Broadway
 E/W: Veterans Memorial Parkway
 City, State: E. Providence, RI
 Client: Crossman/P. Bannon

File Name : 05774BBB
 Site Code : 2814
 Start Date : 10/28/2023
 Page No : 1

Start Time	South Broadway From North				Veterans Memorial Parkway From East				Veterans Memorial Parkway From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	27	0	35	22	124	0	146	96	10	0	106	287
12:00 PM	9	37	0	46	33	113	0	146	93	11	0	104	296
12:15 PM	2	24	0	26	23	105	0	128	115	6	0	121	275
12:30 PM	4	28	0	32	28	117	0	145	106	14	0	120	297
Total Volume	23	116	0	139	106	459	0	565	410	41	0	451	1155
% App. Total	16.5	83.5	0		18.8	81.2	0		90.9	9.1	0		
PHF	.639	.784	.000	.755	.803	.925	.000	.967	.891	.732	.000	.932	.972
Cars & Peds	23	115	0	138	106	458	0	564	410	40	0	450	1152
% Cars & Peds	100	99.1	0	99.3	100	99.8	0	99.8	100	97.6	0	99.8	99.7
Trucks & Buses	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks & Buses	0	0	0	0	0	0	0	0	0	2.4	0	0.2	0.1
Bikes by Direction	0	1	0	1	0	1	0	1	0	0	0	0	2
% Bikes by Direction	0	0.9	0	0.7	0	0.2	0	0.2	0	0	0	0	0.2



APPENDIX B – Trip Generation

ITE Trip Generation Summary

ITE Land Use Code

ITE Land Use Code 215 – Single-Family Attached Housing

ITE Land Use Code 220 – Multifamily Housing (Low-Rise)

ITE Land Use Code 221 – Multifamily Housing (Mid-Rise)

ITE Land Use Code 430 – Golf Course

ITE Land Use Code 821 – Shopping Plaza with Supermarket

B

ITE Trip Generation Summary

Trip Generation Summary

<u>DAILY</u>	<u>Description</u>	<u>Enter</u>	<u>Exit</u>	<u>Total</u>
ITE Land Use Code 215	Single Family Attached	166	166	332
ITE Land Use Code 220	Multifamily (Low-Rise)	809	809	1,618
ITE Land Use Code 221	Multifamily (Mid-Rise)	1,371	1,371	2,742
ITE Land Use Code 430	Golf Course	137	137	274
ITE Land Use Code 821	Shopping Plaza w/Market	<u>7,219</u>	<u>7,219</u>	<u>14,438</u>
	TOTAL	9,702	9,702	19,404

AM PEAK HOUR

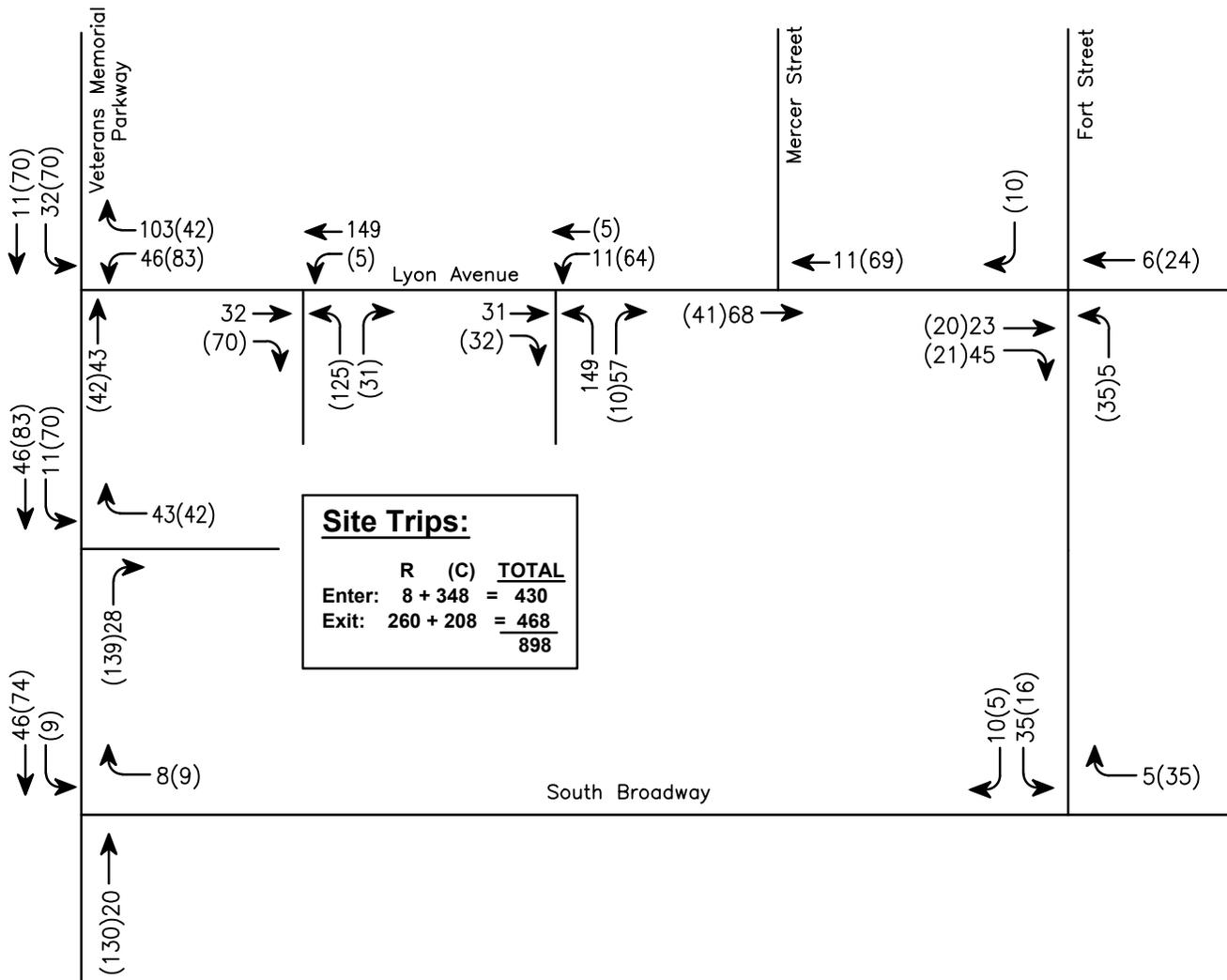
ITE Land Use Code 215	Single Family Attached	7	15	22
ITE Land Use Code 220	Multifamily (Low-Rise)	23	73	96
ITE Land Use Code 221	Multifamily (Mid-Rise)	52	172	224
ITE Land Use Code 430	Golf Course	13	3	16
ITE Land Use Code 821	Shopping Plaza w/Market	<u>335</u>	<u>205</u>	<u>540</u>
	TOTAL	430	468	898

PM PEAK HOUR

ITE Land Use Code 215	Single Family Attached	15	11	26
ITE Land Use Code 220	Multifamily (Low-Rise)	77	45	122
ITE Land Use Code 221	Multifamily (Mid-Rise)	144	92	236
ITE Land Use Code 430	Golf Course	14	12	26
ITE Land Use Code 821	Shopping Plaza w/Market	<u>662</u>	<u>718</u>	<u>1,380</u>
	TOTAL	912	878	1,790

SATURDAY MD PEAK HOUR

ITE Land Use Code 215	Single Family Attached	12	14	26
ITE Land Use Code 220	Multifamily (Low-Rise)	50	48	98
ITE Land Use Code 221	Multifamily (Mid-Rise)	120	116	236
ITE Land Use Code 430	Golf Course	13	14	27
ITE Land Use Code 821	Shopping Plaza w/Market	<u>722</u>	<u>693</u>	<u>1,415</u>
	TOTAL	917	885	1,802

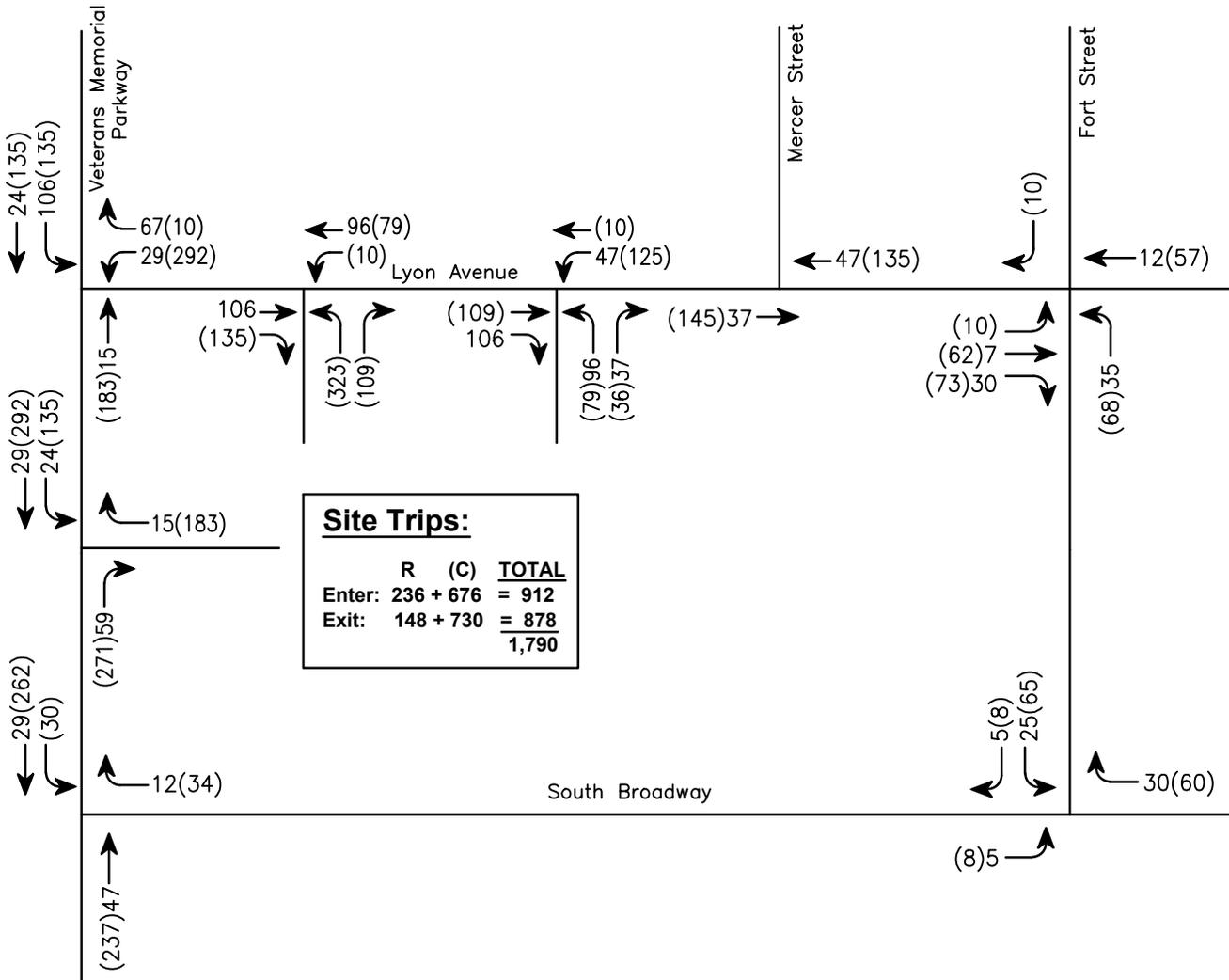


CROSSMAN ENGINEERING

151 Centerville Road | Warwick, Rhode Island 02886

**SITE TRIP DISTRIBUTION
WEEKDAY AM PEAK HOUR**

**THE MET
EAST PROVIDENCE, RHODE ISLAND**



Site Trips:

	R	(C)	TOTAL
Enter:	236	+ 676	= 912
Exit:	148	+ 730	= 878
			1,790

LEGEND

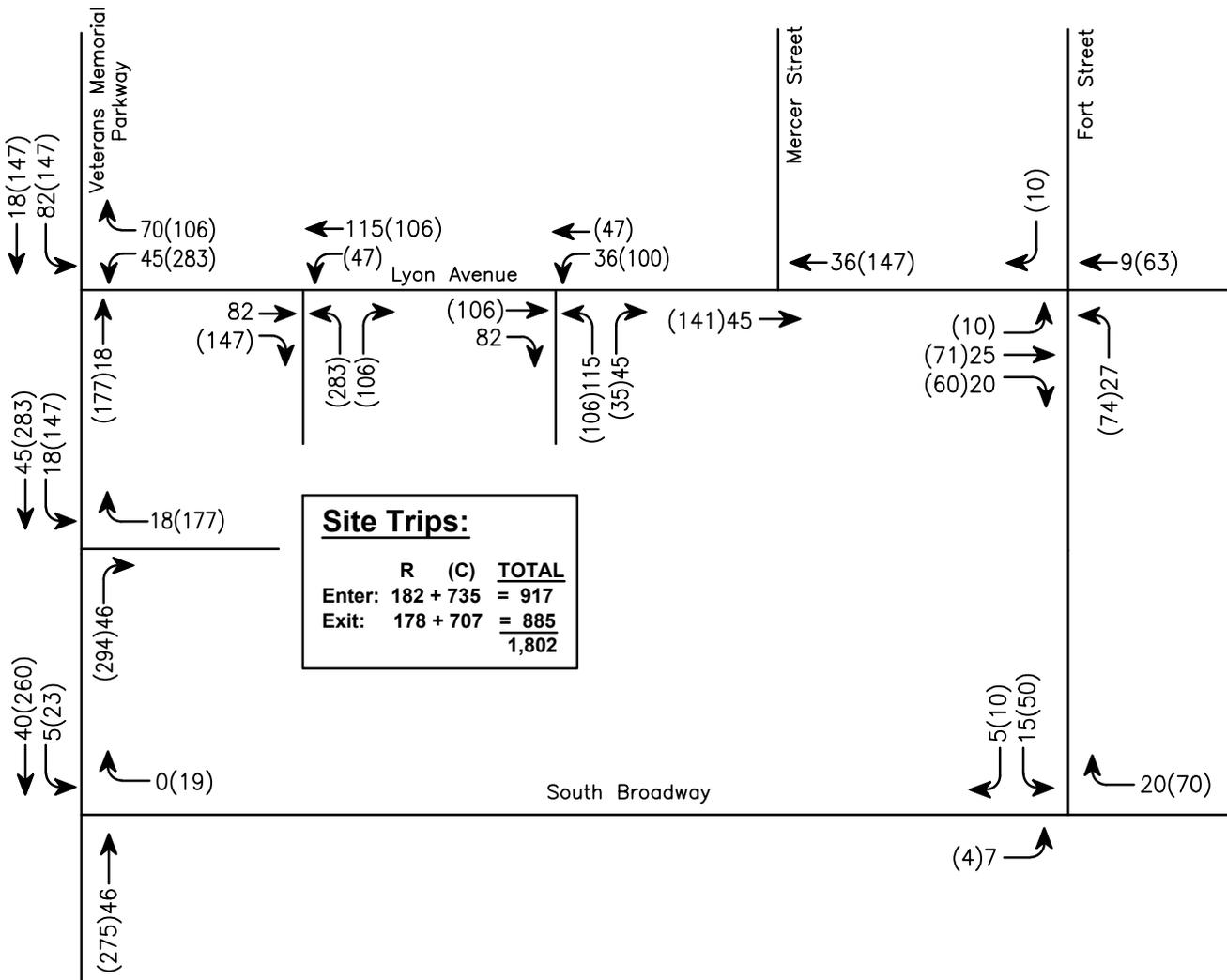
R = RESIDENTIAL
(C) = COMMERCIAL



151 Centerville Road | Warwick, Rhode Island 02886

**SITE TRIP DISTRIBUTION
WEEKDAY PM PEAK HOUR**

**THE MET
EAST PROVIDENCE, RHODE ISLAND**



Site Trips:

	R	(C)	TOTAL
Enter:	182	+ 735	= 917
Exit:	178	+ 707	= 885
			1,802

LEGEND

R = RESIDENTIAL
(C) = COMMERCIAL

Calculations;

ITE Land Use Code 215 – Single Family Attached

Independent Variable (X) = Dwelling Units

X = 46

Daily *Directional Distribution 50% Entering, 50% Exiting*

T = 7.2 (X)

T = 7.2 (46)

T = 332

Enter: 166

Exit: 166

Total 332

AM Peak *Directional Distribution 31% Entering, 69% Exiting*

T = 0.48 (X)

T = 0.48 (46)

T = 22

Enter: 7

Exit: 15

Total 22

PM Peak *Directional Distribution 57% Entering, 43% Exiting*

T = 0.57 (X)

T = 0.57 (46)

T = 26

Enter: 15

Exit: 11

Total 26

Sat. MD Peak *Directional Distribution 48% Entering, 52% Exiting*

T = 0.57 (X)

T = 0.57 (46)

T = 26

Enter: 12

Exit: 14

Total 26

ITE Land Use Code 220 – Multifamily Housing (Low-Rise)

Independent Variable (X) = Dwelling Units

X = 240

Daily *Directional Distribution 50% Entering, 50% Exiting*

T = 6.74 (X)

T = 6.74 (240)

T = 1,618

Enter: 809

Exit: 809

Total 1,618

AM Peak *Directional Distribution 24% Entering, 76% Exiting*

T = 0.40 (X)

T = 0.40 (240)

T = 96

Enter: 23

Exit: 73

Total 96

PM Peak *Directional Distribution 63% Entering, 37% Exiting*

T = 0.51 (X)

T = 0.51 (240)

T = 122

Enter: 77

Exit: 45

Total 122

Sat. MD Peak *Directional Distribution 51% Entering, 49% Exiting*

T = 0.41 (X)

T = 0.41 (240)

T = 98

Enter: 50

Exit: 48

98

ITE Land Use Code 221 – Multifamily Housing (Mid-Rise)

Independent Variable (X) = Dwelling Units

X = 604

Daily Directional Distribution 50% Entering, 50% Exiting

T = 4.54 (X)

T = 4.54 (604)

T = 2,742

Enter: 1,371

Exit: 1,371

Total 2742

AM Peak Directional Distribution 23% Entering, 77% Exiting

T = 0.37 (X)

T = 0.37 (604)

T = 224

Enter: 52

Exit: 172

Total 224

PM Peak Directional Distribution 61% Entering, 39% Exiting

T = 0.39 (X)

T = 0.39 (604)

T = 236

Enter: 144

Exit: 92

Total 236

Sat. MD Peak Directional Distribution 51% Entering, 49% Exiting

T = 0.39 (X)

T = 0.39 (604)

T = 236

Enter: 120

Exit: 116

Total 236

ITE Land Use Code 430 – Golf Course

Independent Variable (X) = Holes

X = 9 holes

Daily *Directional Distribution 50% Entering, 50% Exiting*

T = 30.38 (X)

T = 30.38 (9)

T = 274

Enter: 137

Exit: 137

Total 274

AM Peak *Directional Distribution 79% Entering, 21% Exiting*

T = 1.76 (X)

T = 1.76 (9)

T = 16

Enter: 13

Exit: 3

Total 16

PM Peak *Directional Distribution 53% Entering, 47% Exiting*

T = 2.91 (X)

T = 2.91 (9)

T = 26

Enter: 14

Exit: 12

Total 26

Sat. MD Peak *Directional Distribution 49% Entering, 51% Exiting*

T = 3.03 (X)

T = 3.03 (9)

T = 27

Enter: 13

Exit: 14

Total 27

ITE Land Use Code 821 – Shopping Plaza with Supermarket

Independent Variable (X) = Thousand Gross Floor Area X = 152.8

Daily Directional Distribution 50% Entering, 50% Exiting

T = 94.49 (X)	Enter: 7,219
T = 94.49 (152.8)	Exit: 7,219
T = 14,438	Total 14,438

AM Peak Directional Distribution 62% Entering, 38% Exiting

T = 3.53 (X)	Enter: 335
T = 3.53 (152.8)	Exit: 205
T = 540	Total 540

PM Peak Directional Distribution 48% Entering, 52% Exiting

T = 9.03 (X)	Enter: 662
T = 9.03 (152.8)	Exit: 718
T = 1,380	Total 1,380

Sat. MD Peak Directional Distribution 51% Entering, 49% Exiting

T = 9.26(X)	Enter: 722
T = 9.26 (152.8)	Exit: 693
T = 1,415	Total 1,415

B

ITE Land Use Code

ITE Land Use Code 215 – Single-Family Attached Housing

ITE Land Use Code 220 – Multifamily Housing (Low-Rise)

ITE Land Use Code 221 – Multifamily Housing (Mid-Rise)

ITE Land Use Code 430 – Golf Course

ITE Land Use Code 821 – Shopping Plaza with Supermarket

ITE Land Use Code 215 – Single-Family Attached Housing

Land Use: 215

Single-Family Attached Housing

Description

Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.

Additional Data

The database for this land use includes duplexes (defined as a single structure with two distinct dwelling units, typically joined side-by-side and each with at least one outside entrance) and townhouses/rowhouses (defined as a single structure with three or more distinct dwelling units, joined side-by-side in a row and each with an outside entrance).

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Utah, Virginia, and Wisconsin.

Source Numbers

168, 204, 211, 237, 305, 306, 319, 321, 357, 390, 418, 525, 571, 583, 638, 735, 868, 869, 870, 896, 912, 959, 1009, 1046, 1056, 1058, 1077

Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 22

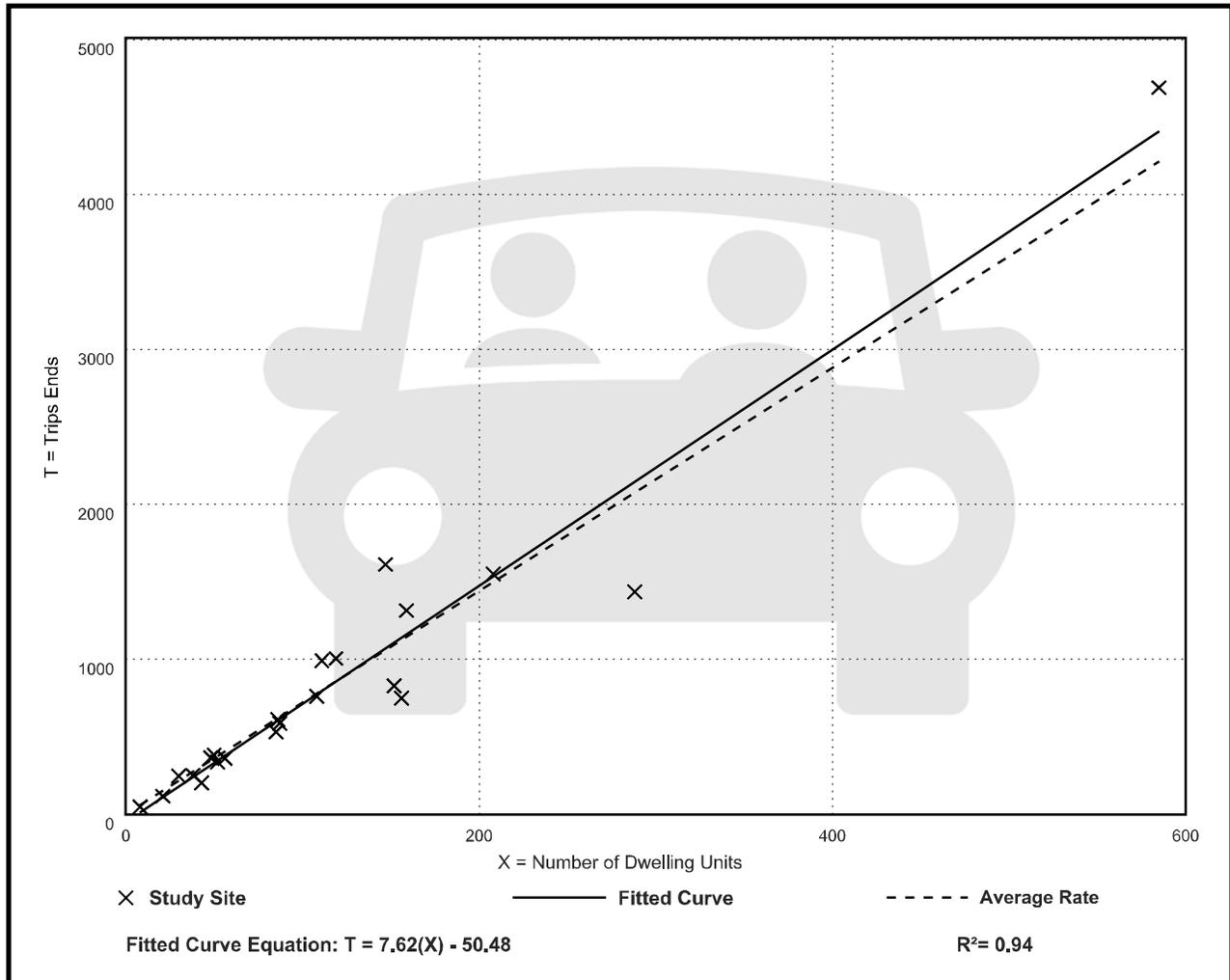
Avg. Num. of Dwelling Units: 120

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday,**

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 46

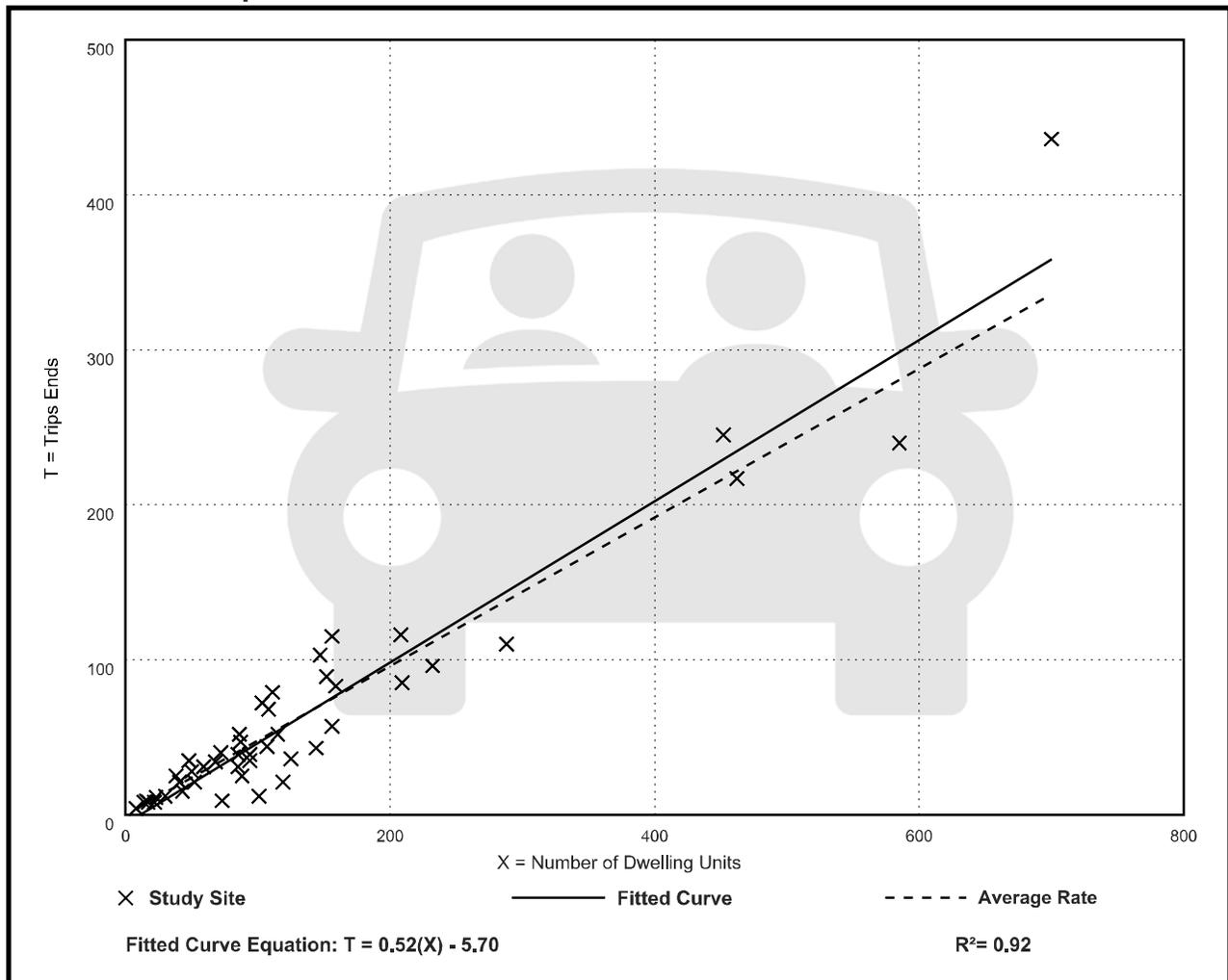
Avg. Num. of Dwelling Units: 135

Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 51

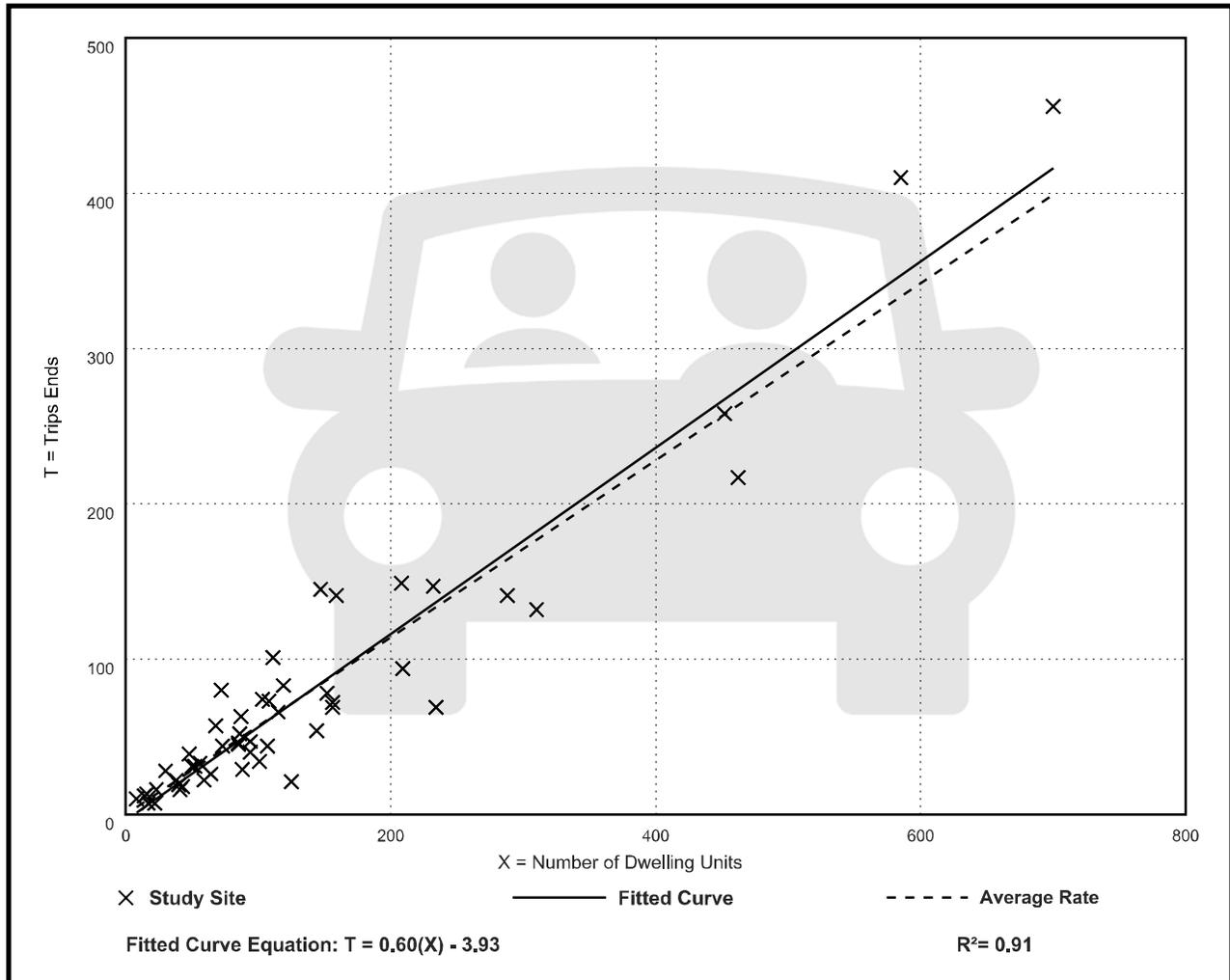
Avg. Num. of Dwelling Units: 136

Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 5

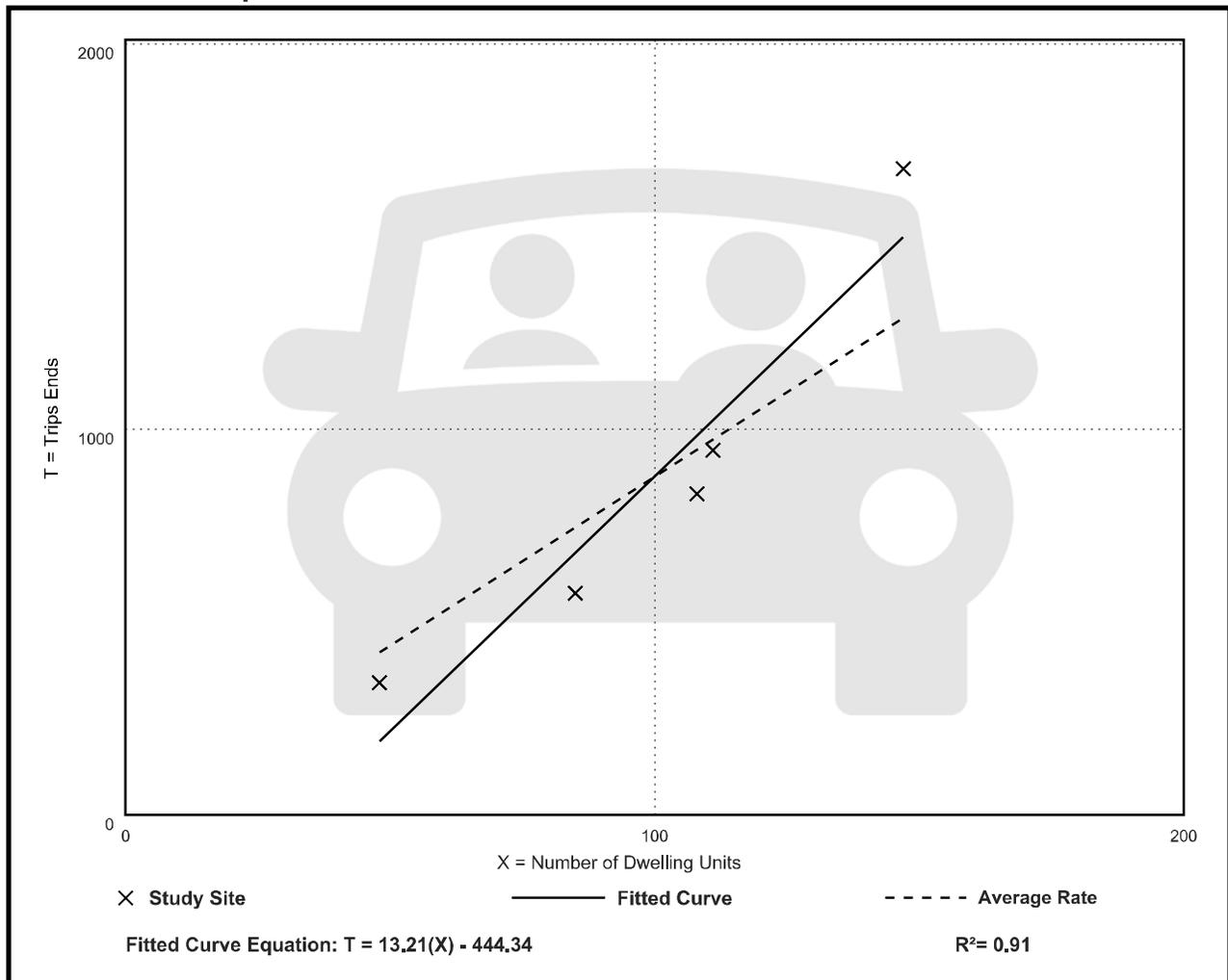
Avg. Num. of Dwelling Units: 100

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
8.76	6.75 - 11.40	2.02

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 7

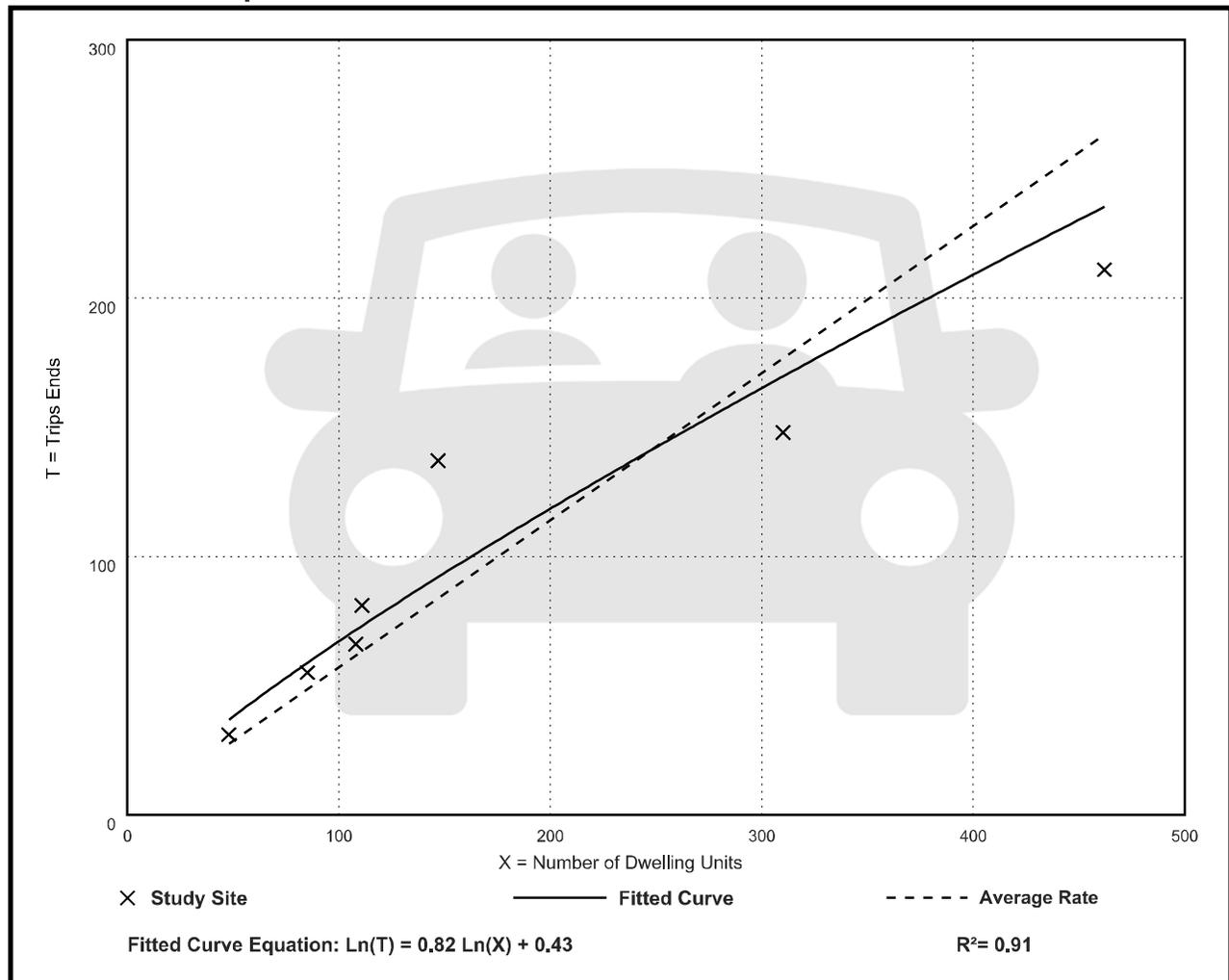
Avg. Num. of Dwelling Units: 182

Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.46 - 0.93	0.17

Data Plot and Equation



ITE Land Use Code 220 – Multifamily Housing (Low-Rise)

Land Use: 220

Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
- A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.
- A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.
- A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), affordable housing (Land Use 223), and off-campus student apartment (low-rise) (Land Use 225) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip

generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in British Columbia (CAN), California, Delaware, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, and Washington.

Source Numbers

188, 204, 237, 300, 305, 306, 320, 321, 357, 390, 412, 525, 530, 579, 583, 638, 864, 866, 896, 901, 903, 904, 936, 939, 944, 946, 947, 948, 963, 964, 966, 967, 1012, 1013, 1014, 1036, 1047, 1056, 1071, 1076

Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 22

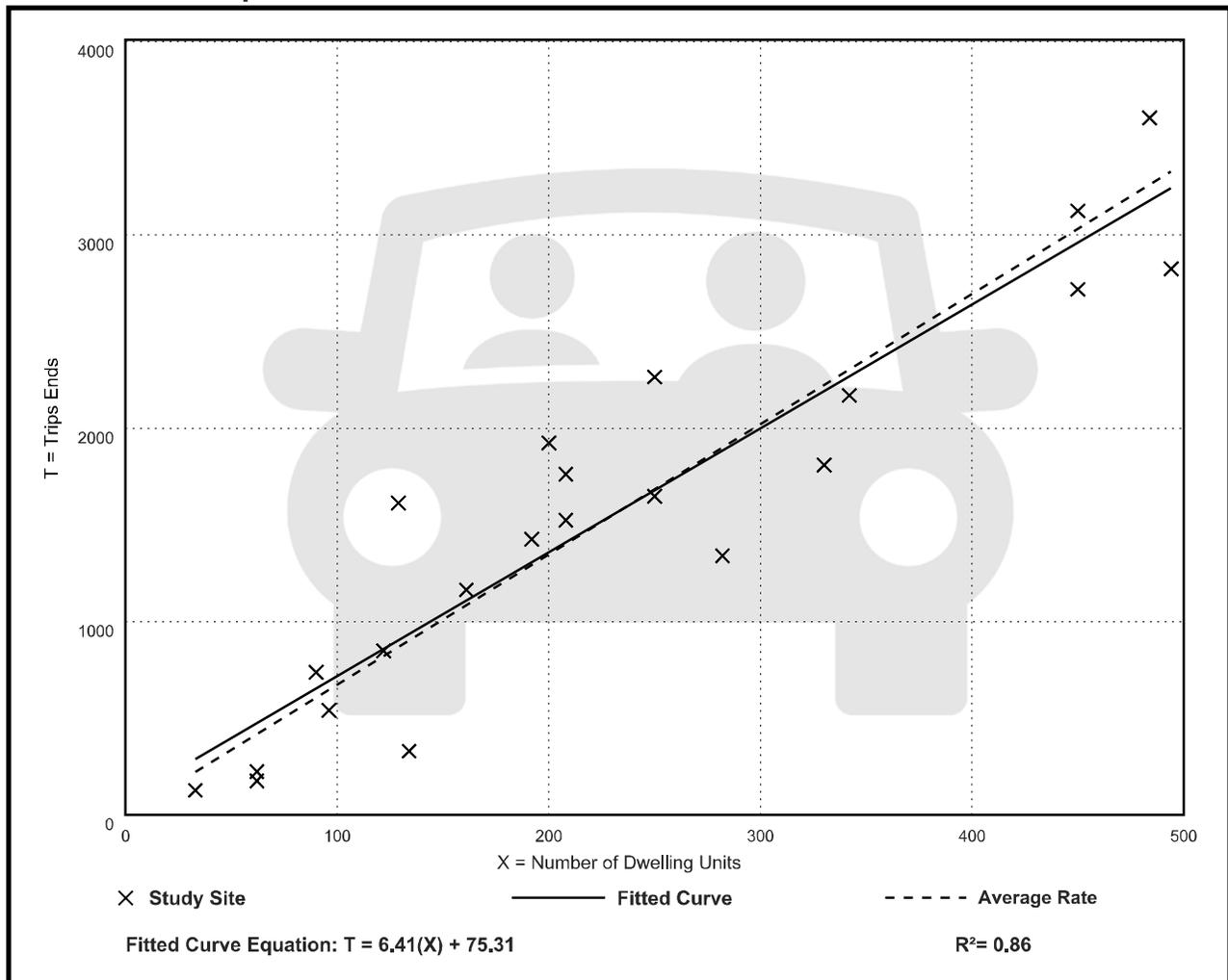
Avg. Num. of Dwelling Units: 229

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 49

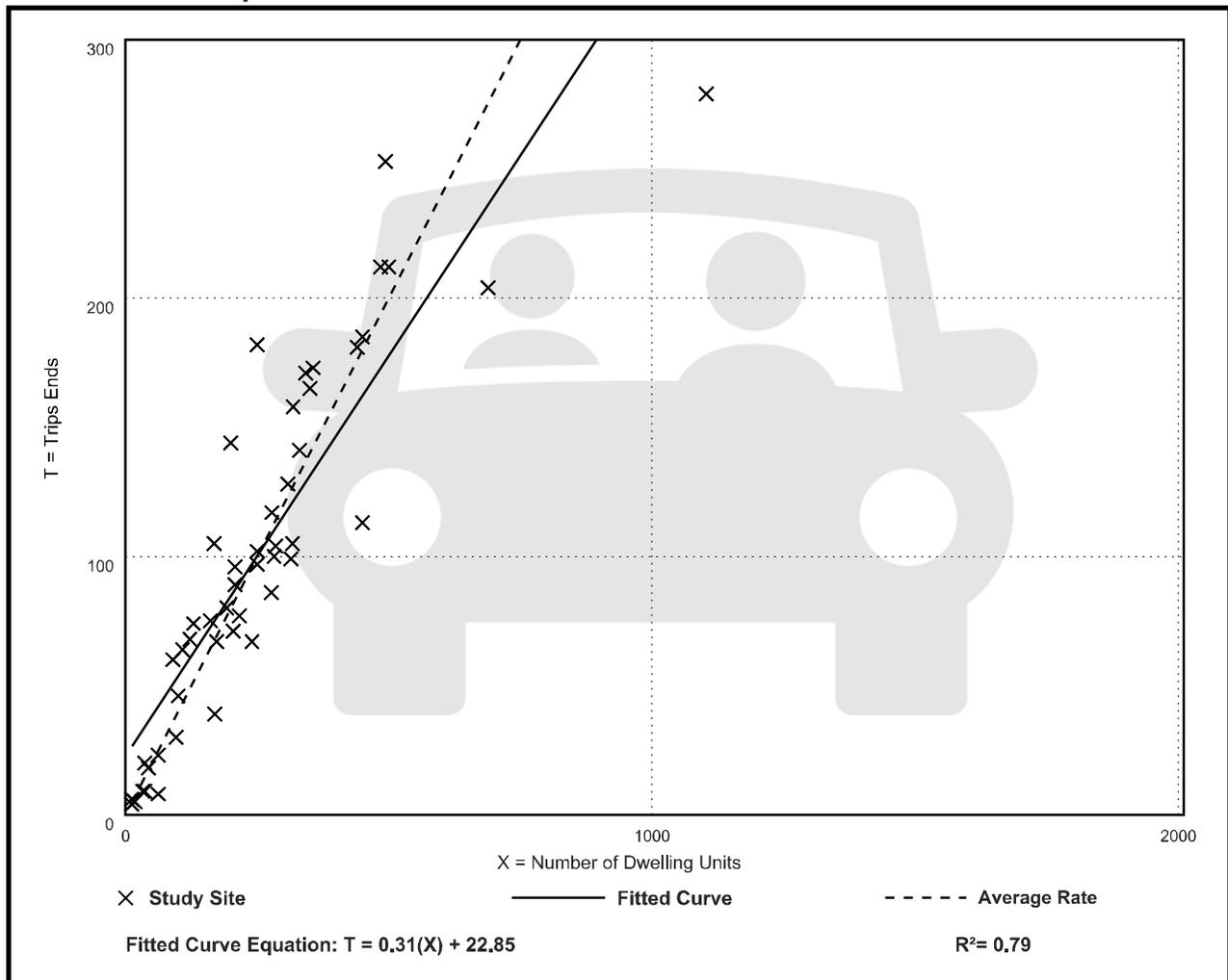
Avg. Num. of Dwelling Units: 249

Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 59

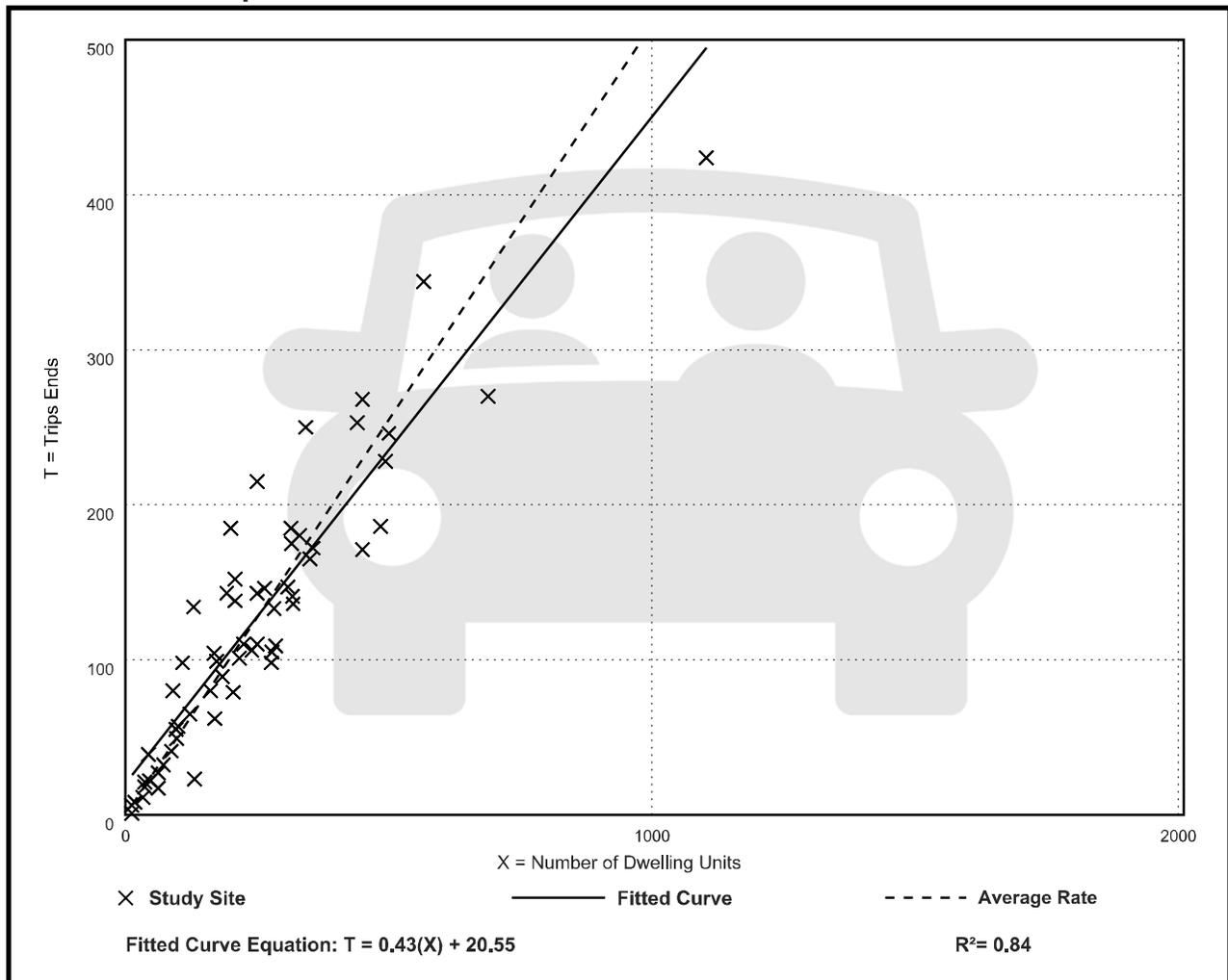
Avg. Num. of Dwelling Units: 241

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Dwelling Units: 282

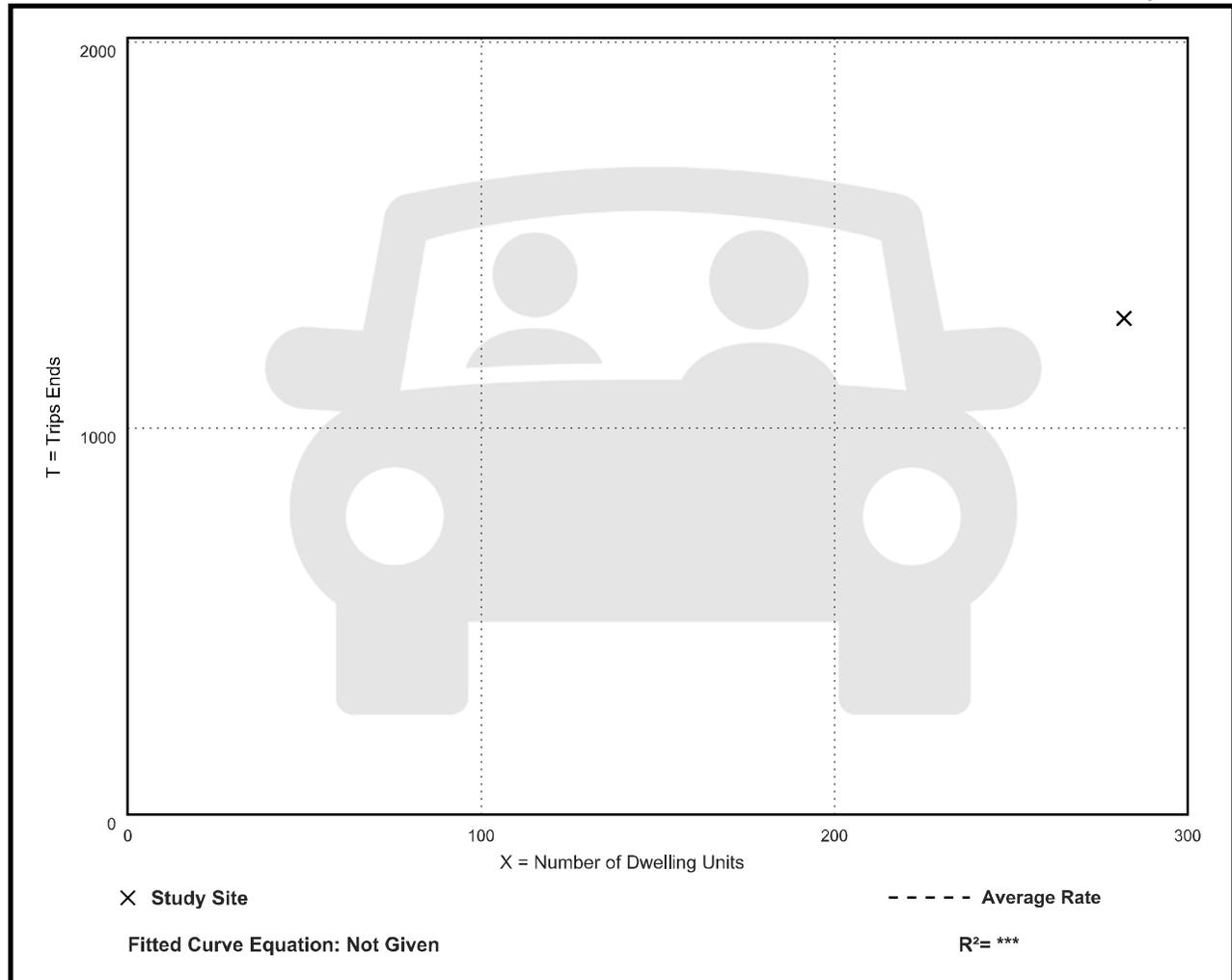
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.55	4.55 - 4.55	***

Data Plot and Equation

Caution – Small Sample Size



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Dwelling Units: 282

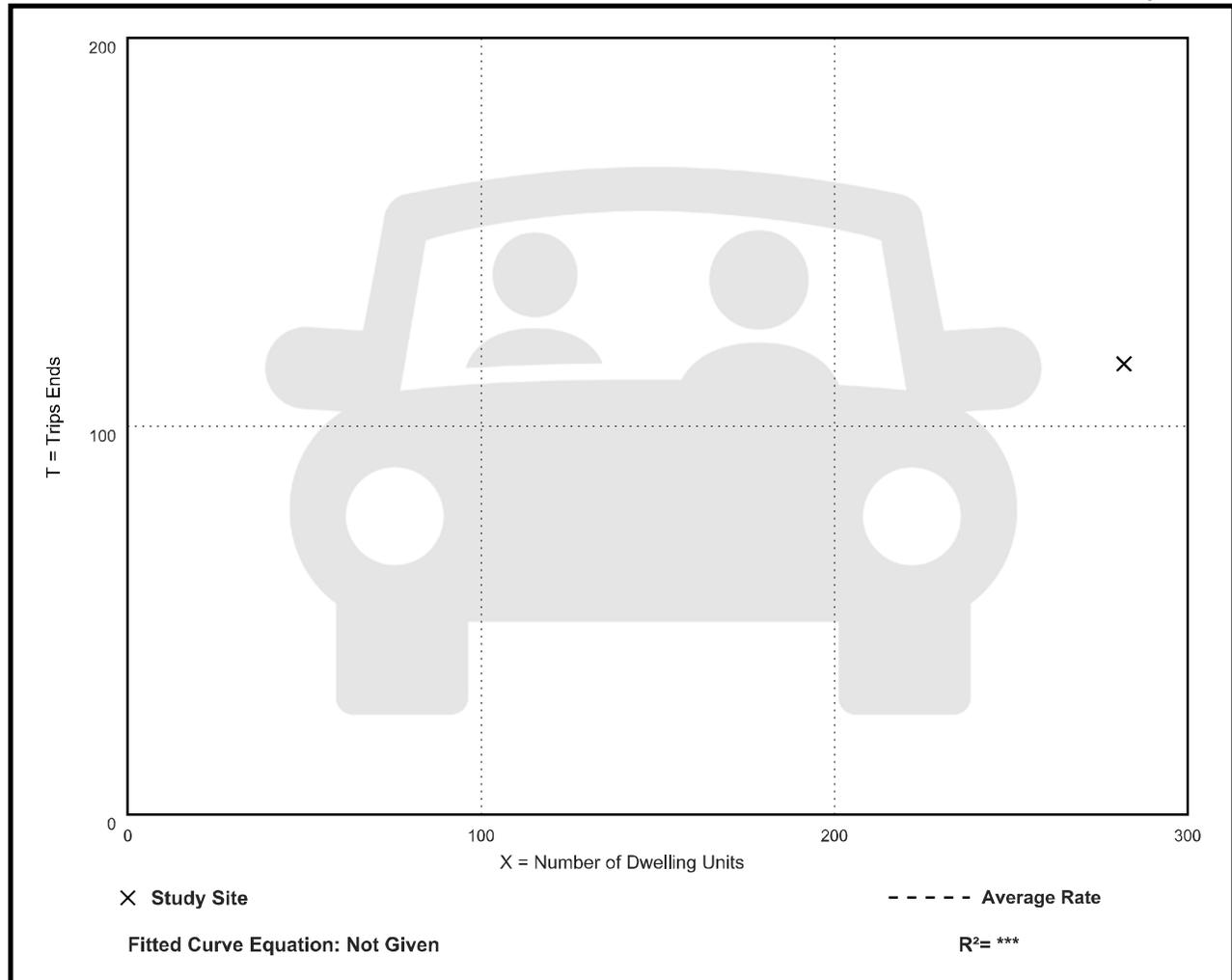
Directional Distribution: Not Available

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.41	0.41 - 0.41	***

Data Plot and Equation

Caution – Small Sample Size



ITE Land Use Code 221 – Multifamily Housing (Mid-Rise)

Land Use: 221

Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 11

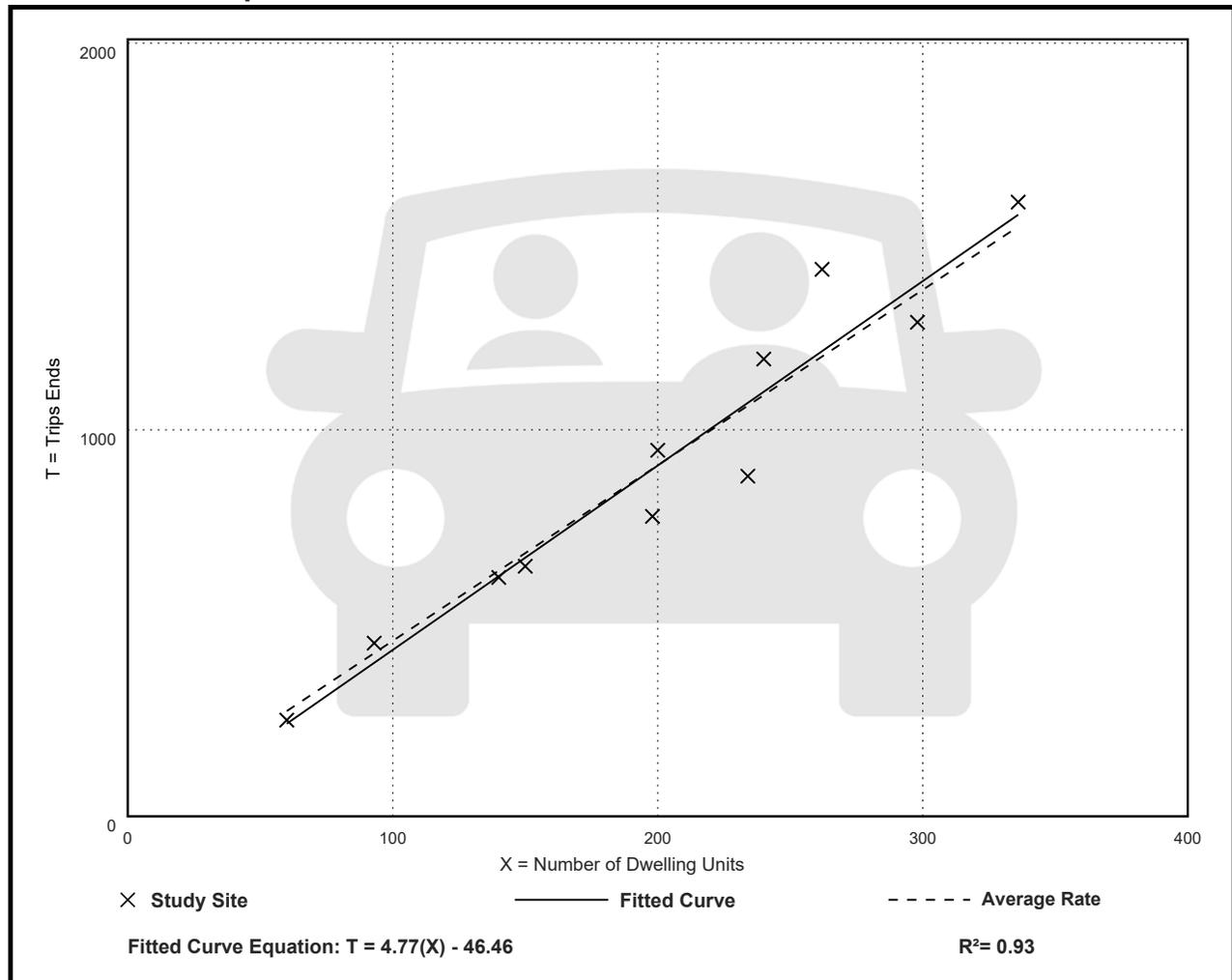
Avg. Num. of Dwelling Units: 201

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

Data Plot and Equation



Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 30

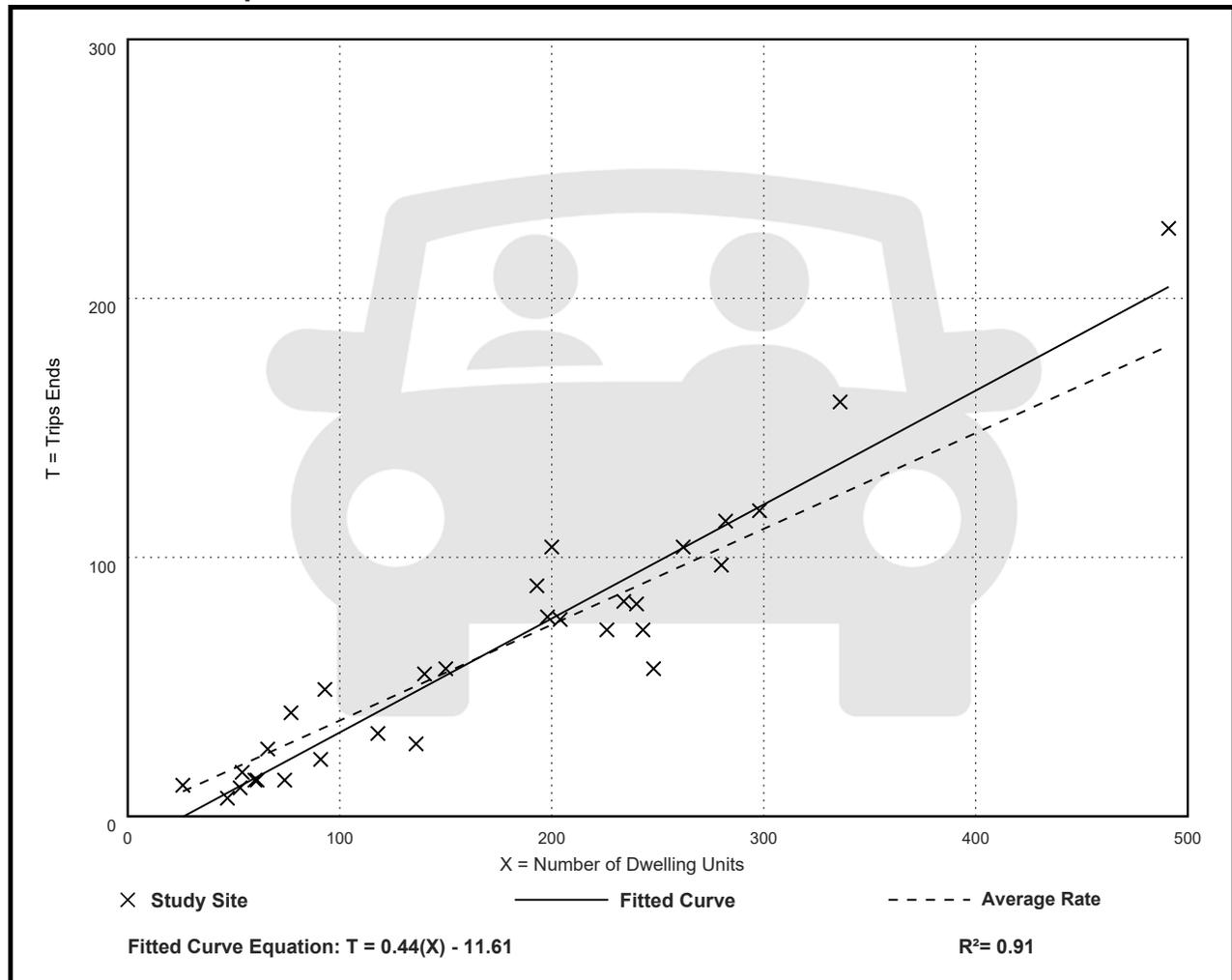
Avg. Num. of Dwelling Units: 173

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 31

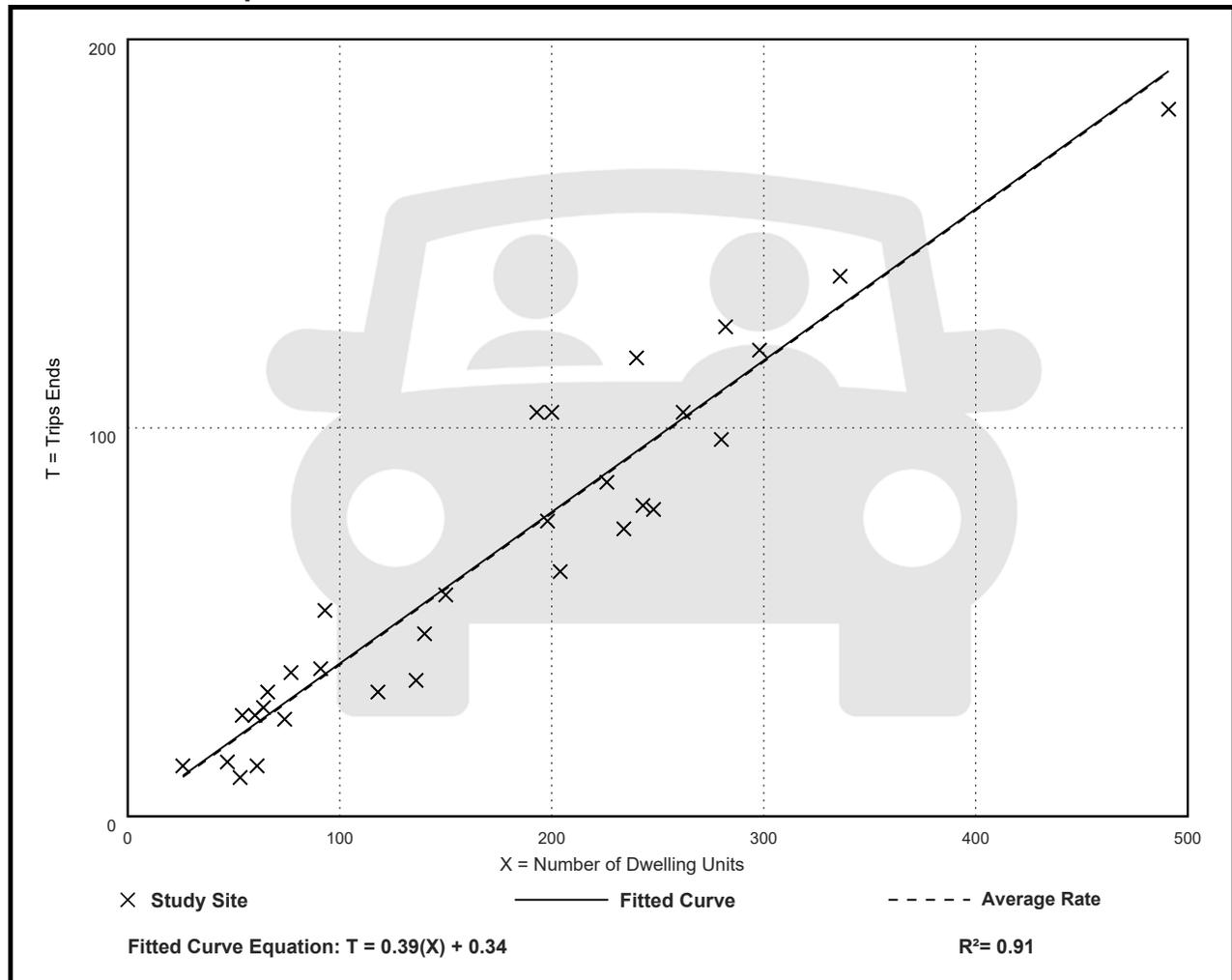
Avg. Num. of Dwelling Units: 169

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 5

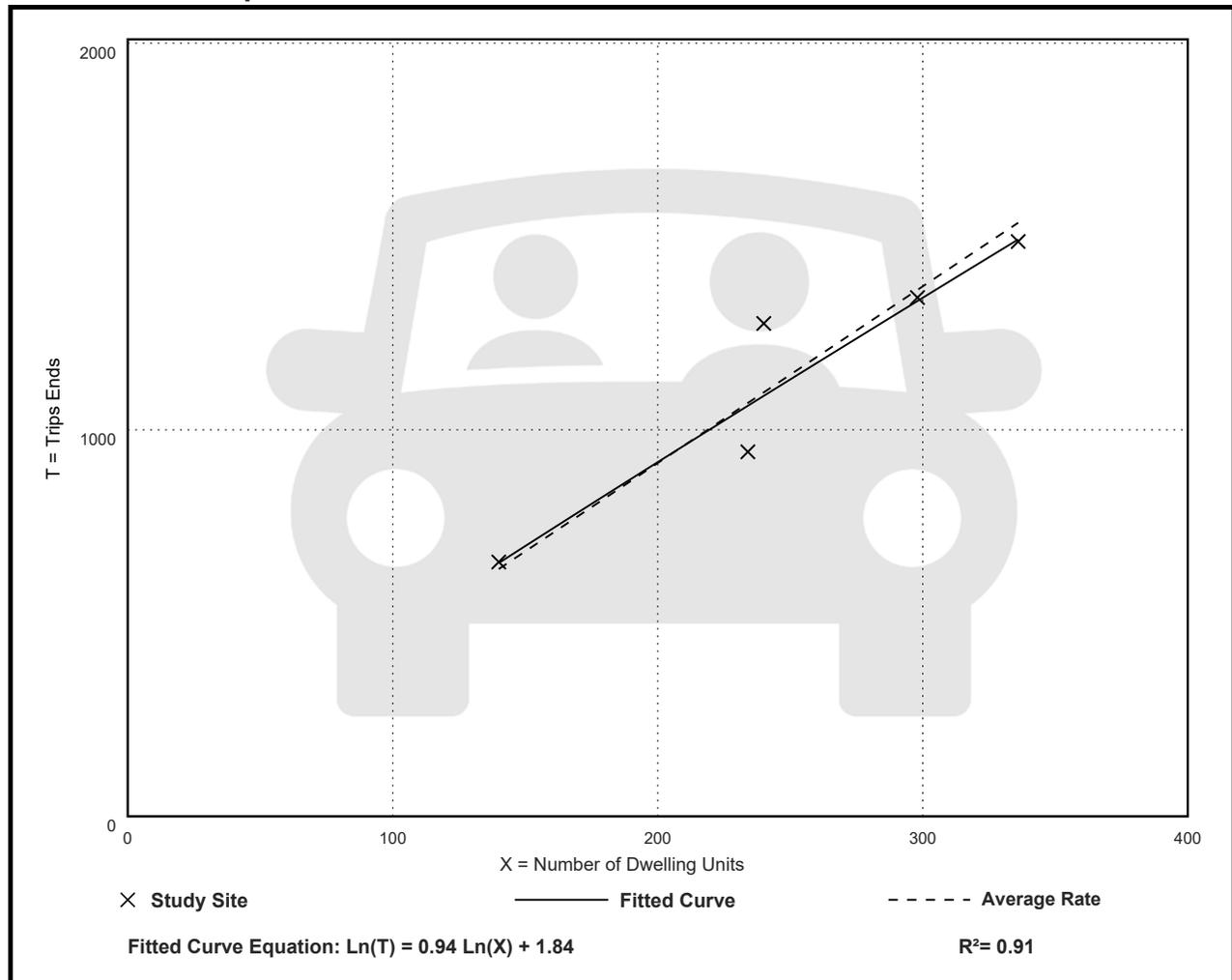
Avg. Num. of Dwelling Units: 250

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.57	4.03 - 5.31	0.46

Data Plot and Equation



Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

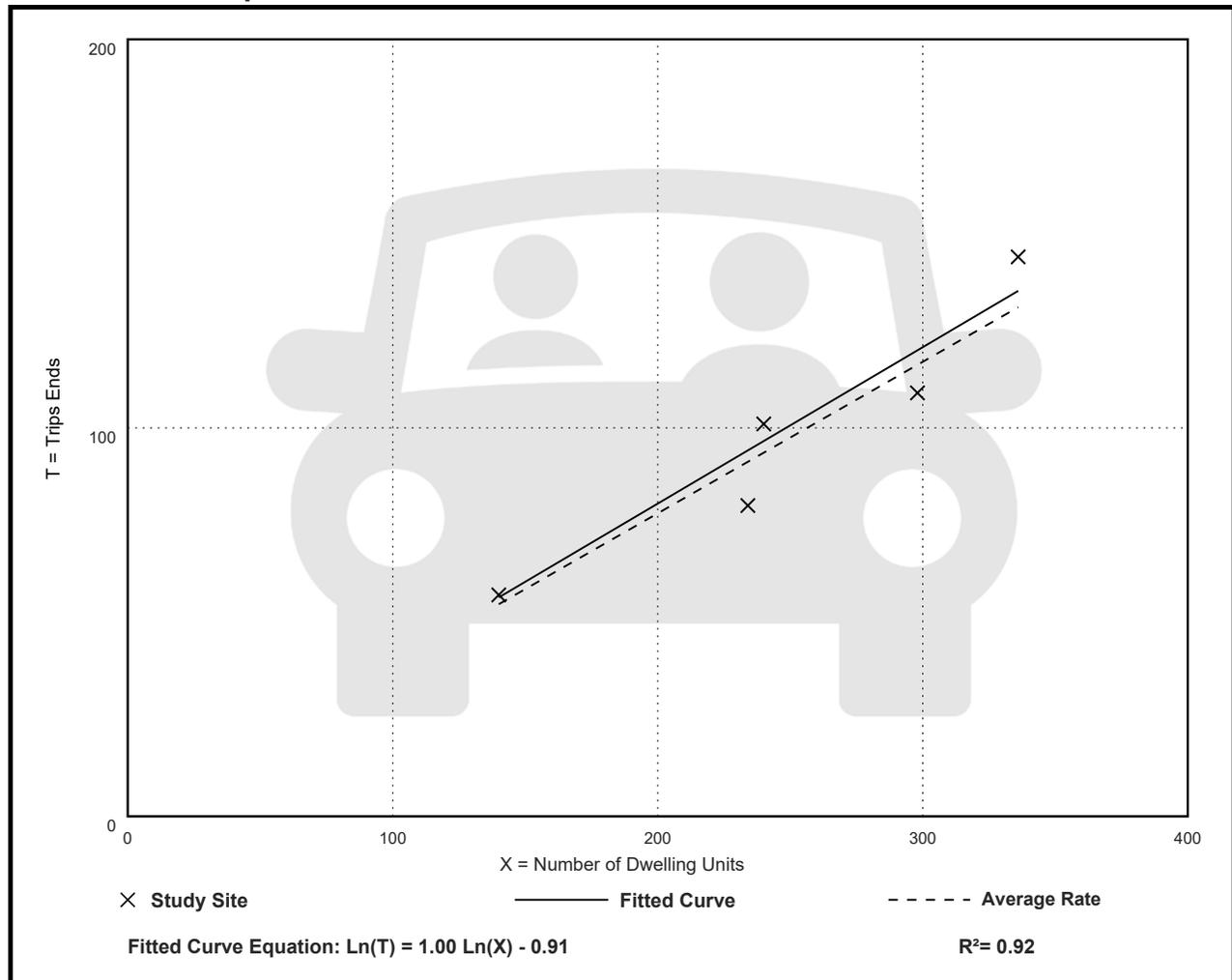
Avg. Num. of Dwelling Units: 250

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.34 - 0.43	0.04

Data Plot and Equation



ITE Land Use Code 430 – Golf Course

Land Use: 430

Golf Course

Description

A golf course is an expansive landscaped area that includes a series of golf holes, each consisting of a tee, fairway, and putting green. The site may have a driving range, clubhouse with a pro shop, restaurant, lounge, or banquet facility. Miniature golf course (Land Use 431), golf driving range (Land Use 432), and multipurpose recreational facility (Land Use 435) are related uses.

Additional Data

The golf courses in this land use are 9-, 18-, and 36-hole municipal courses.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, New Jersey, New York, Oregon, Pennsylvania, and Vermont.

Source Numbers

378, 407, 440, 629, 728, 925, 940, 970

Golf Course (430)

Vehicle Trip Ends vs: Holes
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 4

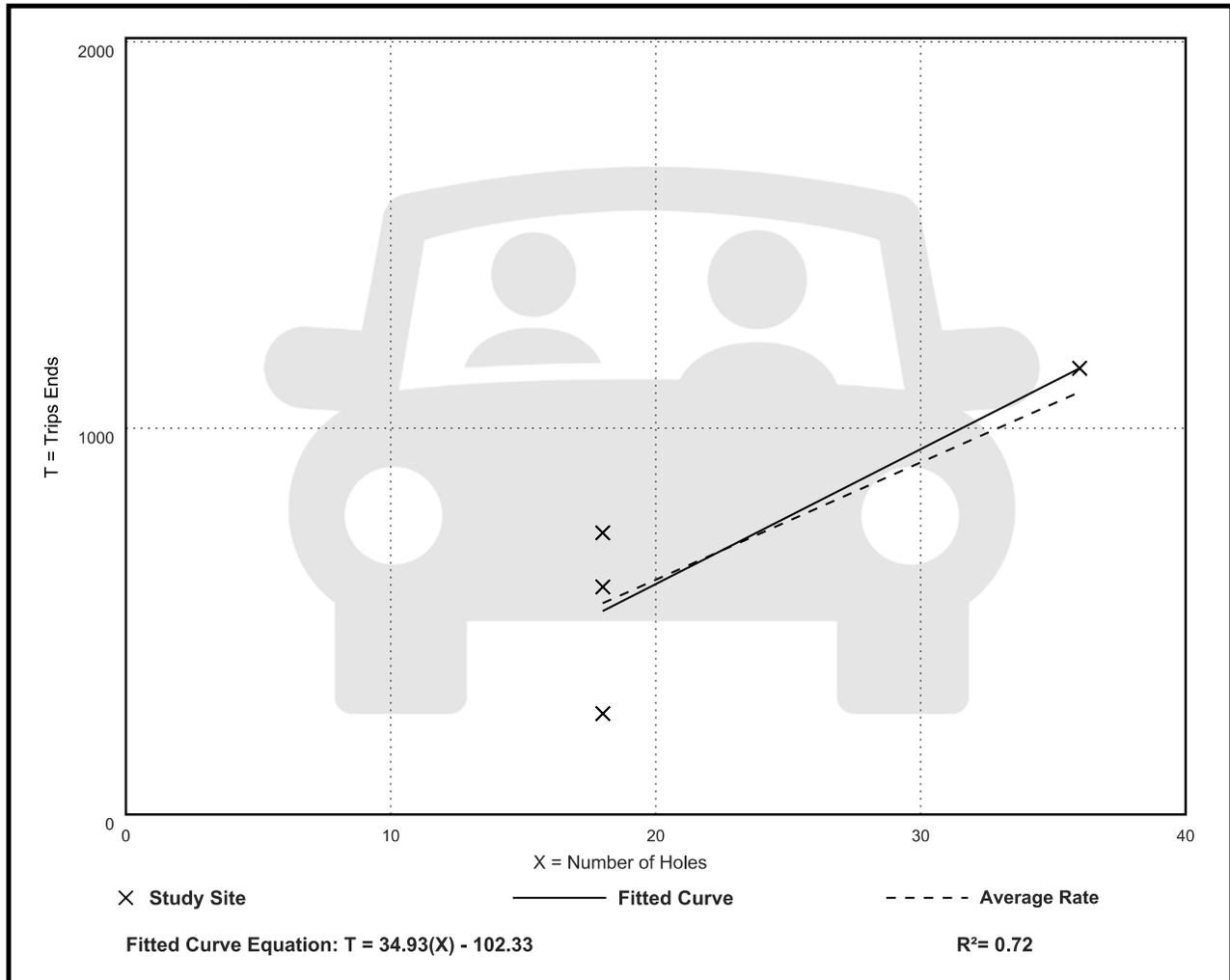
Avg. Num. of Holes: 23

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Hole

Average Rate	Range of Rates	Standard Deviation
30.38	14.50 - 40.50	9.88

Data Plot and Equation



Golf Course (430)

Vehicle Trip Ends vs: Holes

On a: **Weekday,**

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 15

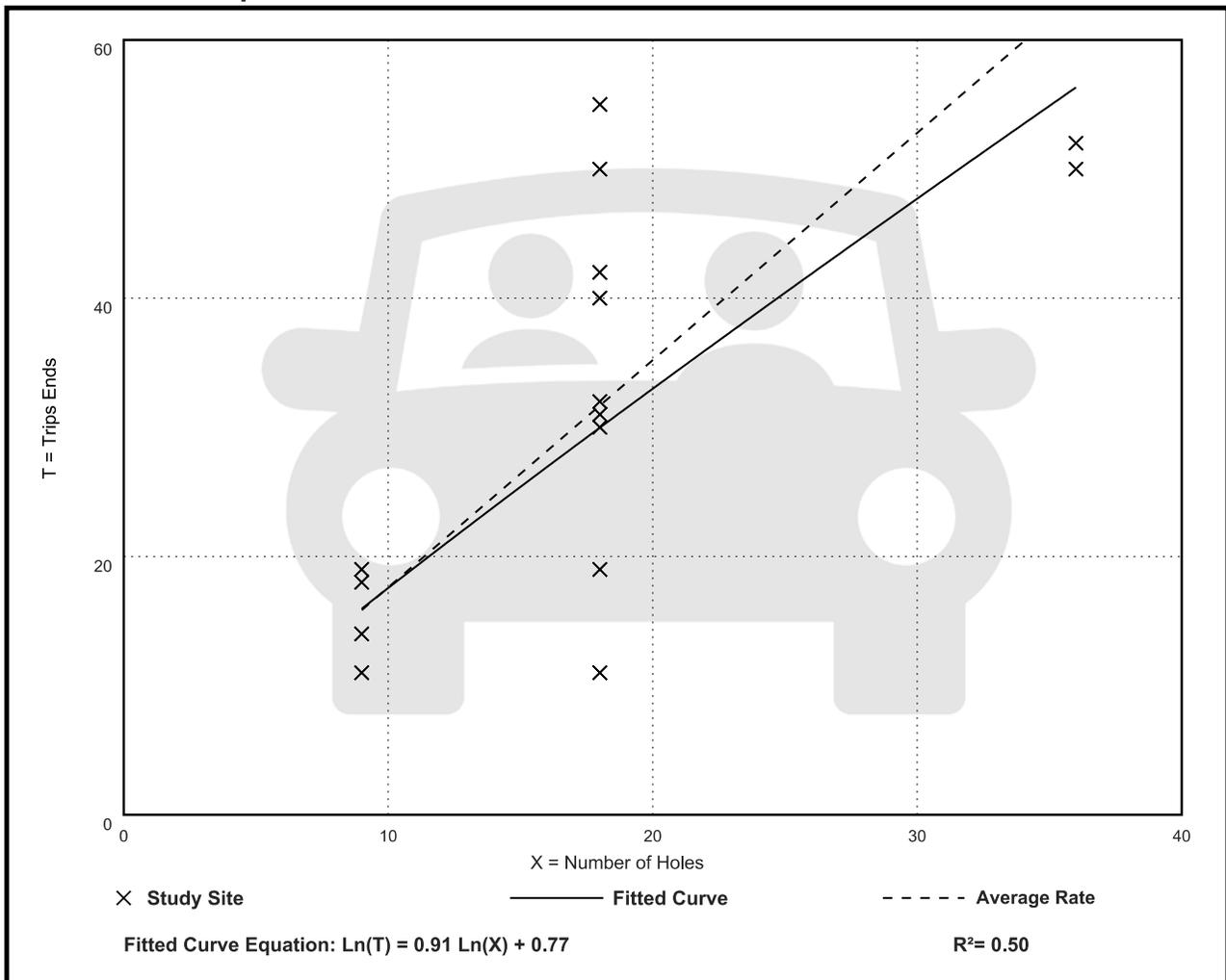
Avg. Num. of Holes: 18

Directional Distribution: 79% entering, 21% exiting

Vehicle Trip Generation per Hole

Average Rate	Range of Rates	Standard Deviation
1.76	0.61 - 3.06	0.64

Data Plot and Equation



Golf Course (430)

Vehicle Trip Ends vs: Holes

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. Num. of Holes: 18

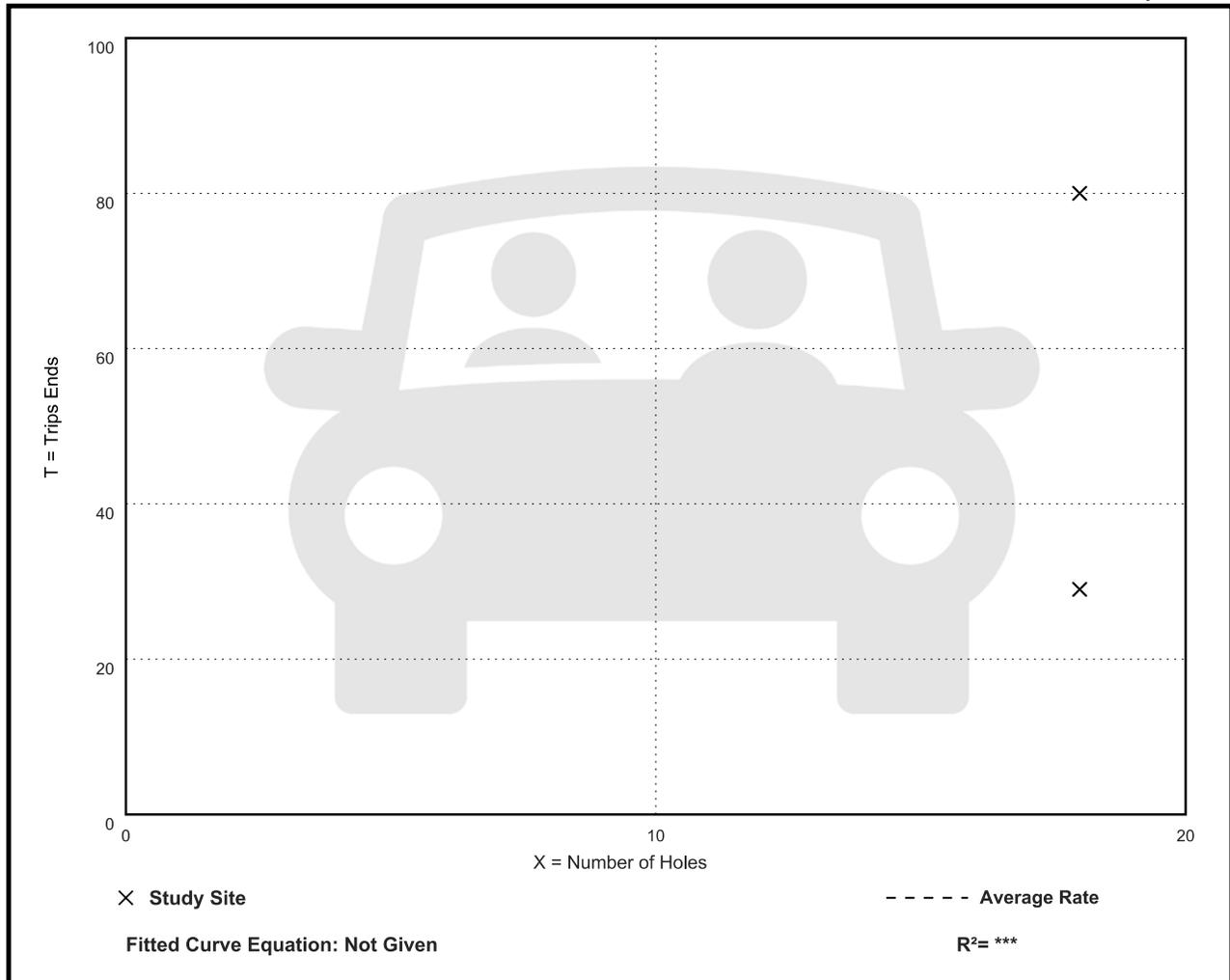
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Hole

Average Rate	Range of Rates	Standard Deviation
3.03	1.61 - 4.44	***

Data Plot and Equation

Caution – Small Sample Size



ITE Land Use Code 821 – Shopping Plaza with Supermarket

Land Use: 821

Shopping Plaza (40-150k)

Description

A shopping plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has between 40,000 and 150,000 square feet of gross leasable area (GLA). The term “plaza” in the land use name rather than “center” is simply a means of distinction between the different shopping center size ranges. Various other names are commonly used to categorize a shopping plaza within this size range, depending on its specific size and tenants, such as neighborhood center, community center, and fashion center.

Its major tenant is often a supermarket but many sites are anchored by home improvement, discount, or other stores. A shopping plaza typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants. A shopping plaza is almost always open-air and the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between shopping plaza and shopping center (Land Use 820) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

The 40,000 square feet GFA threshold between shopping plaza and strip retail plaza (Land Use 822) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land Use 820), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

Land Use Subcategory

The presence or absence of a supermarket in a shopping plaza has been determined to have a measurable effect on site trip generation. Therefore, data are presented for two subcategories for this land use: sites with a supermarket anchor and sites without a supermarket.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Minnesota, Nevada, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Texas, Vermont, Virginia, Washington, and Wisconsin.

Source Numbers

105, 110, 156, 159, 186, 198, 204, 211, 213, 239, 259, 260, 295, 301, 304, 305, 307, 317, 319, 358, 376, 390, 400, 404, 437, 444, 446, 507, 580, 598, 658, 728, 908, 926, 944, 946, 960, 973, 974, 1004, 1009, 1025, 1069

Shopping Plaza (40-150k) - Supermarket - Yes (821)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 17

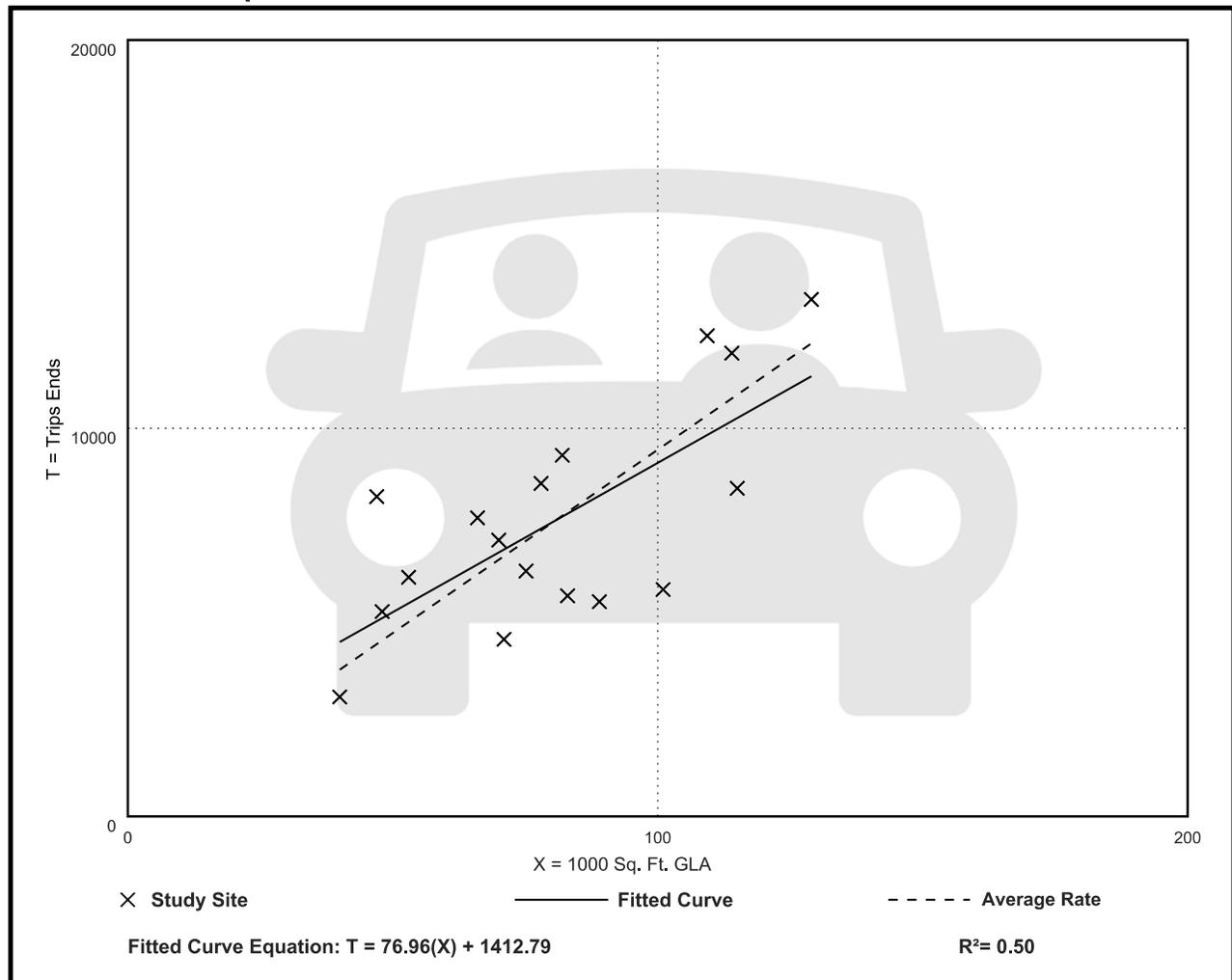
Avg. 1000 Sq. Ft. GLA: 81

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
94.49	57.86 - 175.32	26.55

Data Plot and Equation



Shopping Plaza (40-150k) - Supermarket - Yes (821)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 16

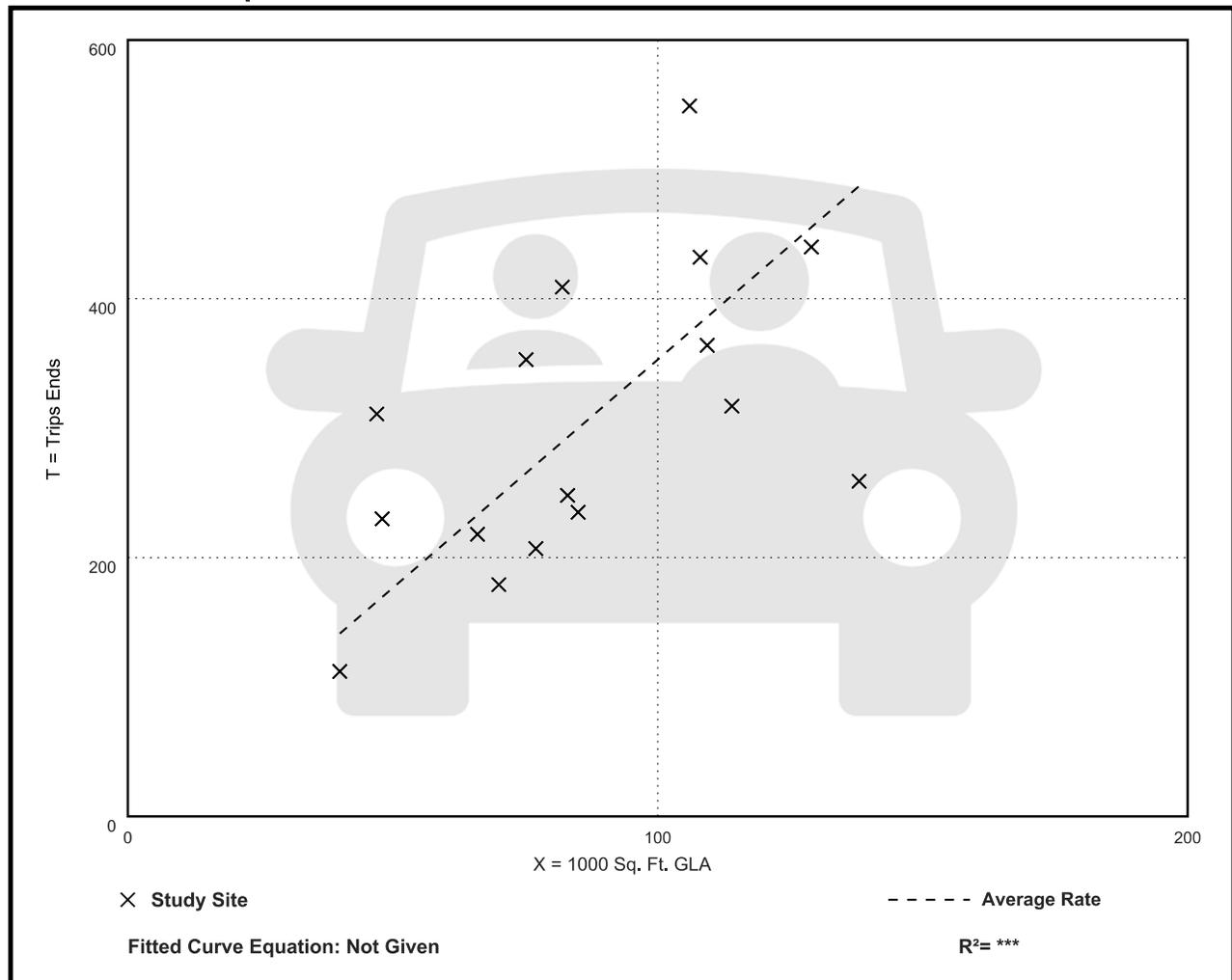
Avg. 1000 Sq. Ft. GLA: 86

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.53	1.88 - 6.62	1.17

Data Plot and Equation



Shopping Plaza (40-150k) - Supermarket - Yes (821)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 51

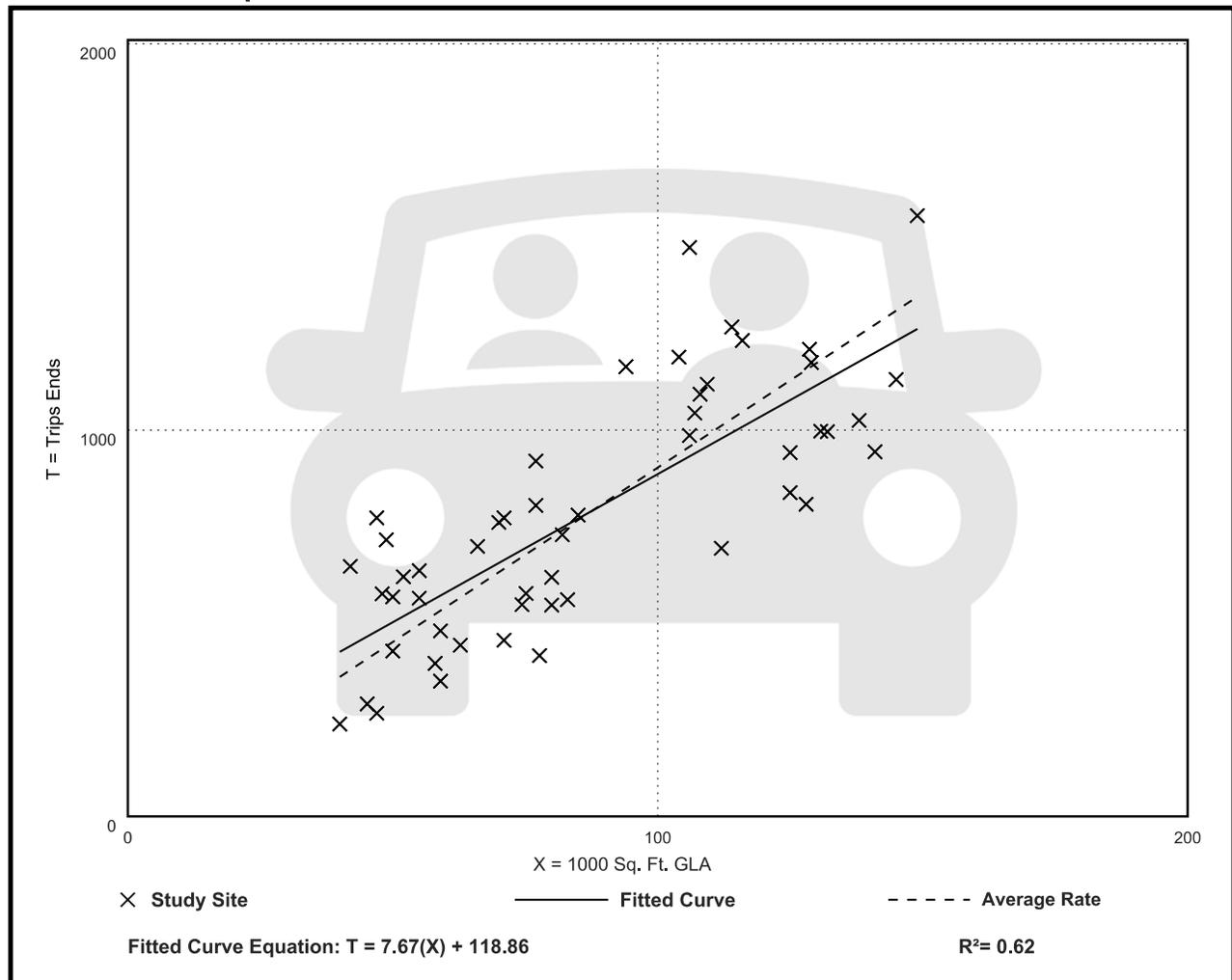
Avg. 1000 Sq. Ft. GLA: 87

Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
9.03	5.35 - 16.45	2.37

Data Plot and Equation



Shopping Plaza (40-150k) - Supermarket - Yes (821)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 17

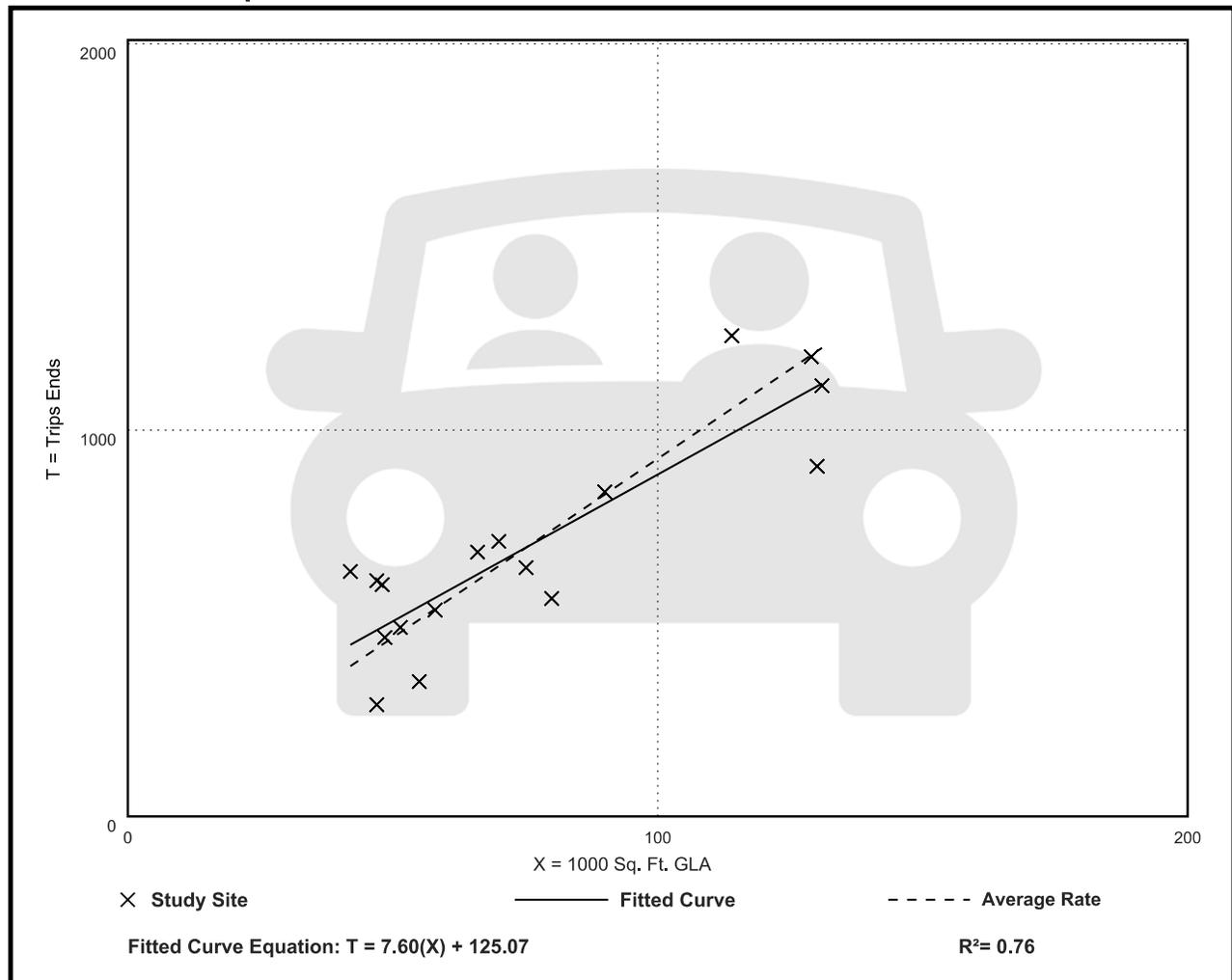
Avg. 1000 Sq. Ft. GLA: 75

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
9.26	6.15 - 15.10	2.07

Data Plot and Equation



APPENDIX C – Operational Analysis

Existing Conditions

- Veterans Memorial Parkway at Lyon Avenue
- Veterans Memorial Parkway at South Broadway
- South Broadway at Fort Street

Future Build Conditions

- Veterans Memorial Parkway at Lyon Avenue
- Veterans Memorial Parkway at Site Access Road
- Veterans Memorial Parkway at South Broadway
- South Broadway at Fort Street
- Lyon Avenue at West Site Driveway
- Lyon Avenue at East Site Driveway

C

Existing Weekday AM/PM and Saturday Mid-Day Peak Hours

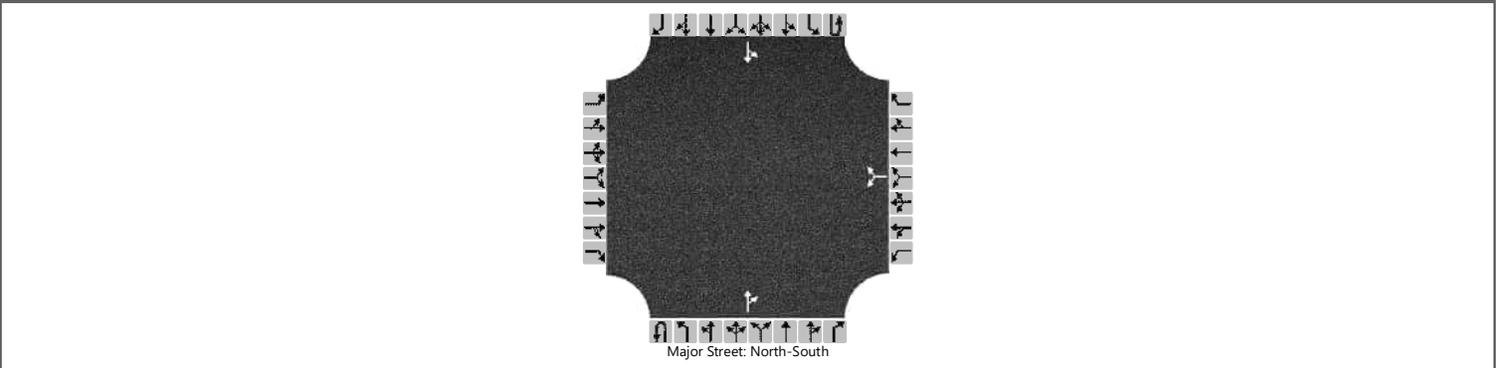
Veterans Memorial Parkway at Lyon Avenue
Veterans Memorial Parkway at South Broadway
South Broadway at Fort Street

Veterans Memorial Parkway at Lyon Avenue

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at Lyon		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2023			North/South Street	Vets Parkway		
Time Analyzed	AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						10		15			690	40		5	795	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						6.40		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

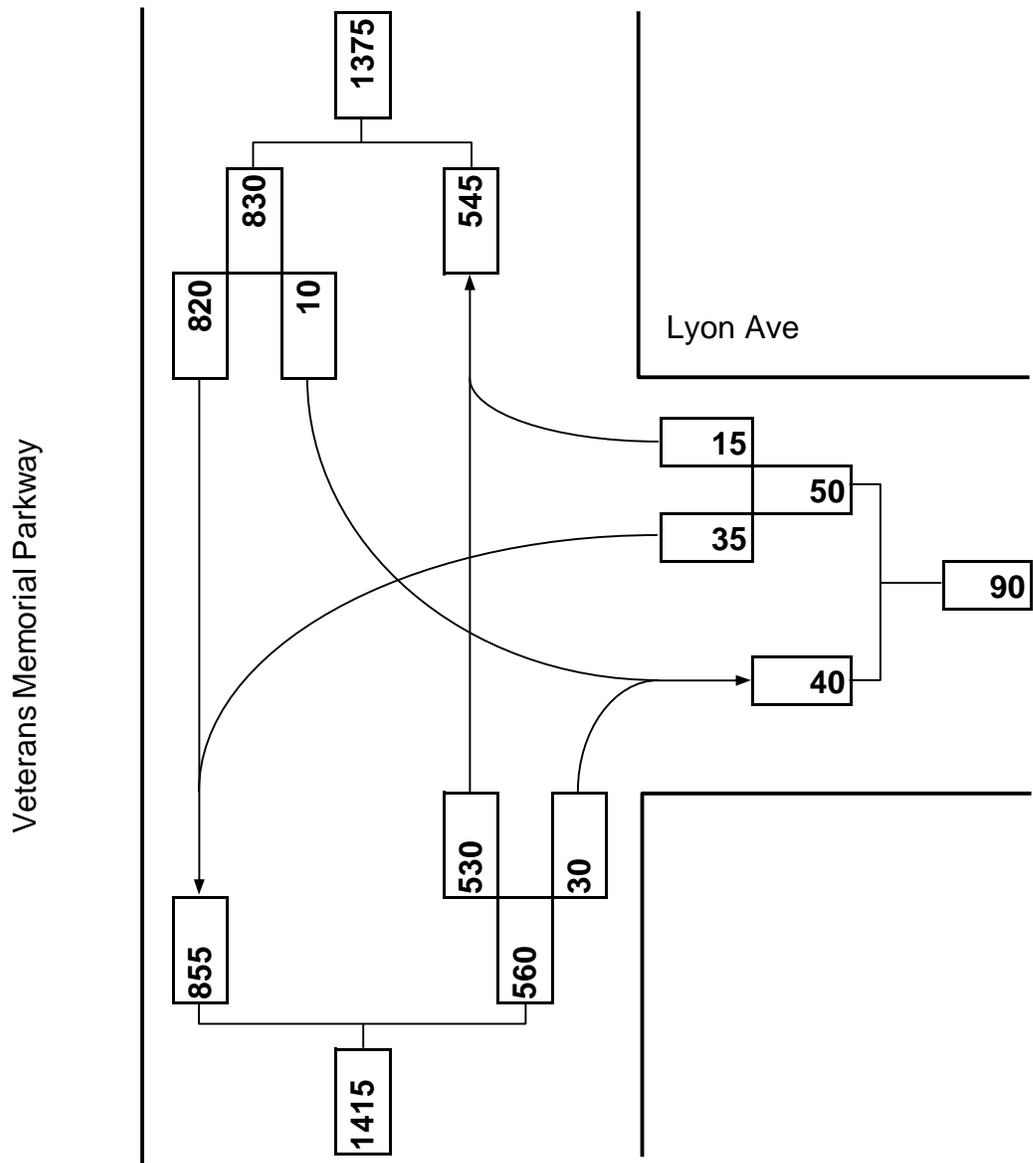
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						27									5	
Capacity, c (veh/h)						194									836	
v/c Ratio						0.14									0.01	
95% Queue Length, Q ₉₅ (veh)						0.5									0.0	
Control Delay (s/veh)						26.6									9.3	
Level of Service (LOS)						D									A	
Approach Delay (s/veh)						26.6									0.2	
Approach LOS						D										

Turning Movement Diagram

Major Street: Veterans Parkway
City/Town: East Providence
Reference No.: 2814
Existing: PM Peak

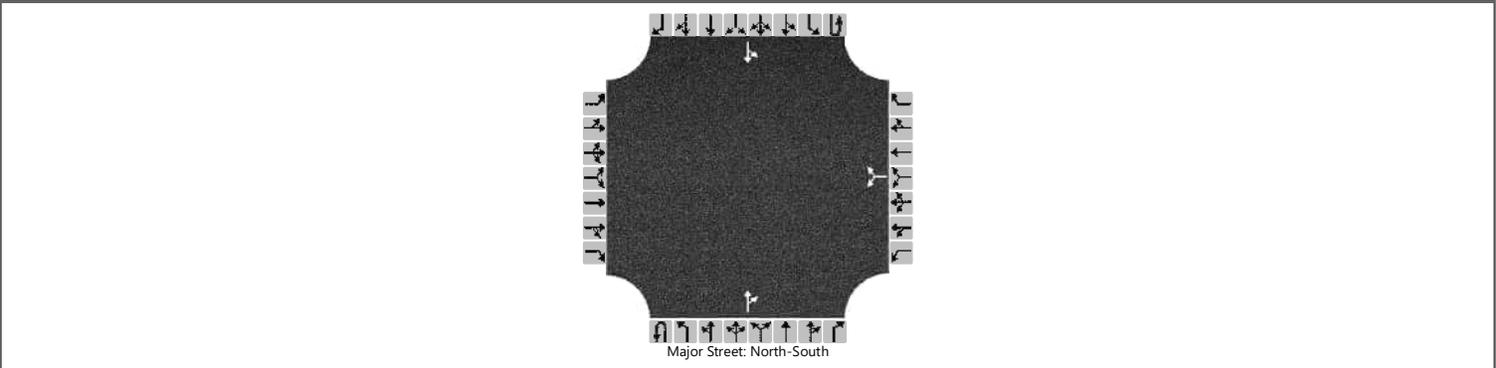
Minor Street: Lyon Ave
Day of Week: Weekday
Peak Period: 4:30-5:30 PM
Future: n/a



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at Lyon		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2023			North/South Street	Vets Parkway		
Time Analyzed	PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						35		15			530	30		10	820	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						6.40		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54									11	
Capacity, c (veh/h)						170									980	
v/c Ratio						0.32									0.01	
95% Queue Length, Q ₉₅ (veh)						1.3									0.0	
Control Delay (s/veh)						35.9									8.7	
Level of Service (LOS)						E									A	
Approach Delay (s/veh)						35.9									0.3	
Approach LOS						E										



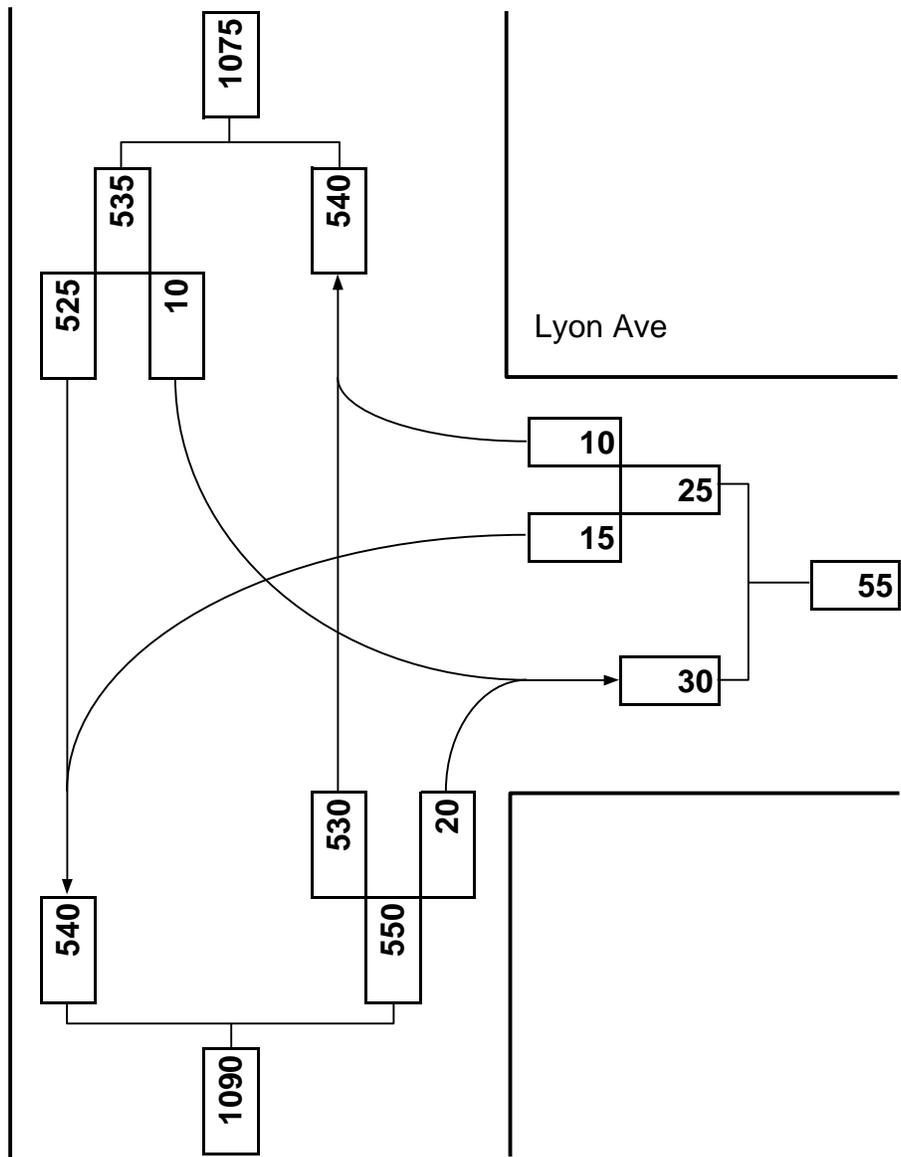
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	Mid-Day

Minor Street:	Lyon Ave
Day of Week:	Saturday
Peak Period:	11:30-12:30 PM
Future:	n/a



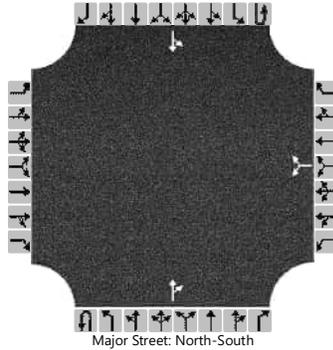
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at Lyon		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2023			North/South Street	Vets Parkway		
Time Analyzed	Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						15		10			530	20		10	525	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						6.40		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						27									11	
Capacity, c (veh/h)						274									989	
v/c Ratio						0.10									0.01	
95% Queue Length, Q ₉₅ (veh)						0.3									0.0	
Control Delay (s/veh)						19.6									8.7	
Level of Service (LOS)						C									A	
Approach Delay (s/veh)						19.6									0.3	
Approach LOS						C										

Veterans Memorial Parkway at South Broadway



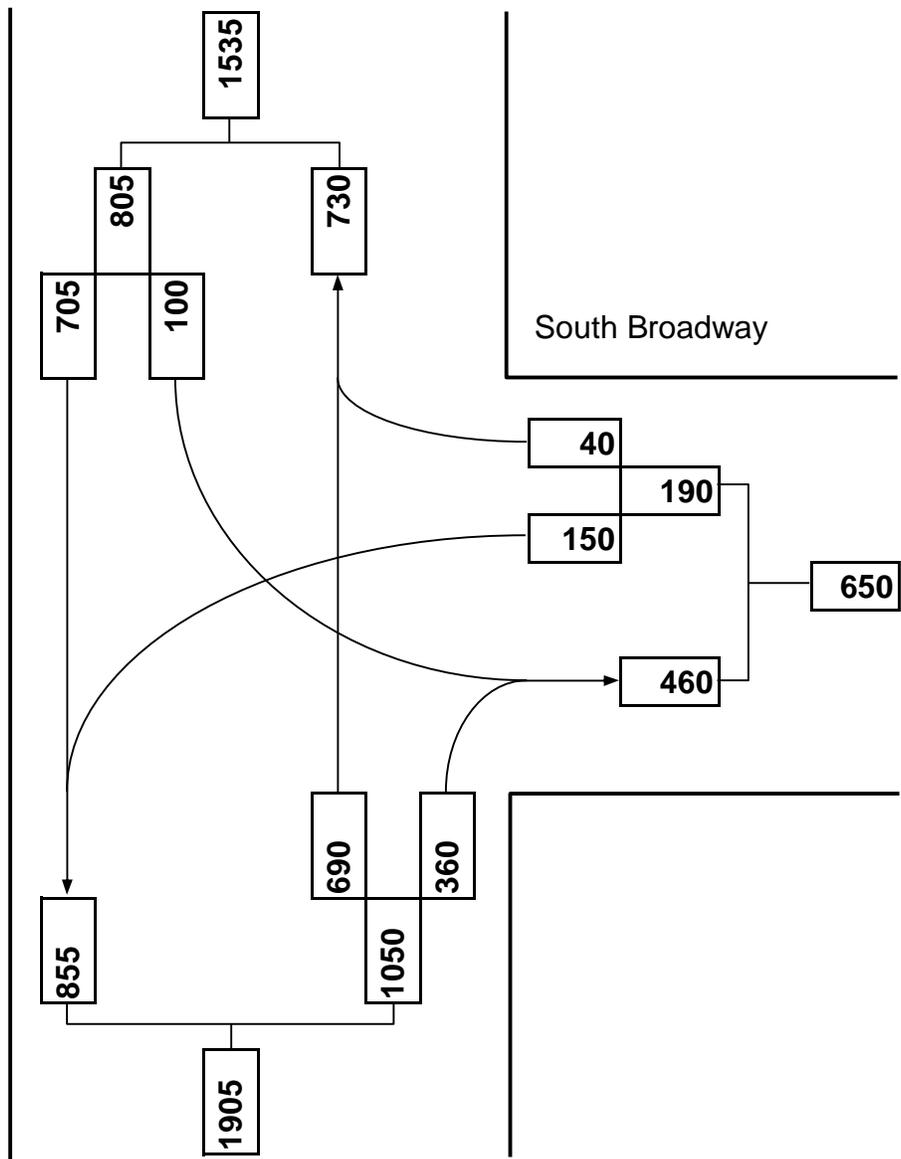
Turning Movement Diagram

Major Street: Veterans Parkway
City/Town: East Providence
Reference No.: 2814
Existing: AM Peak

Minor Street: South Broadway
Day of Week: Weekday
Peak Period: 7:30-8:30 AM
Future: n/a



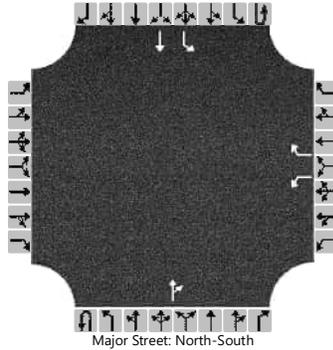
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at SBroadway		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	South Broadway		
Analysis Year	2023			North/South Street	Vets Parkway		
Time Analyzed	AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						150		40			690	360		100	705	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2								4.1	
Critical Headway (sec)						4.50		4.50								4.10	
Base Follow-Up Headway (sec)						3.5		3.3								2.2	
Follow-Up Headway (sec)						3.50		3.30								2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						163		43								109	
Capacity, c (veh/h)						168		500								620	
v/c Ratio						0.97		0.09								0.18	
95% Queue Length, Q ₉₅ (veh)						7.5		0.3								0.6	
Control Delay (s/veh)						115.9		12.9								12.0	
Level of Service (LOS)						F		B								B	
Approach Delay (s/veh)					94.2								1.5				
Approach LOS					F												



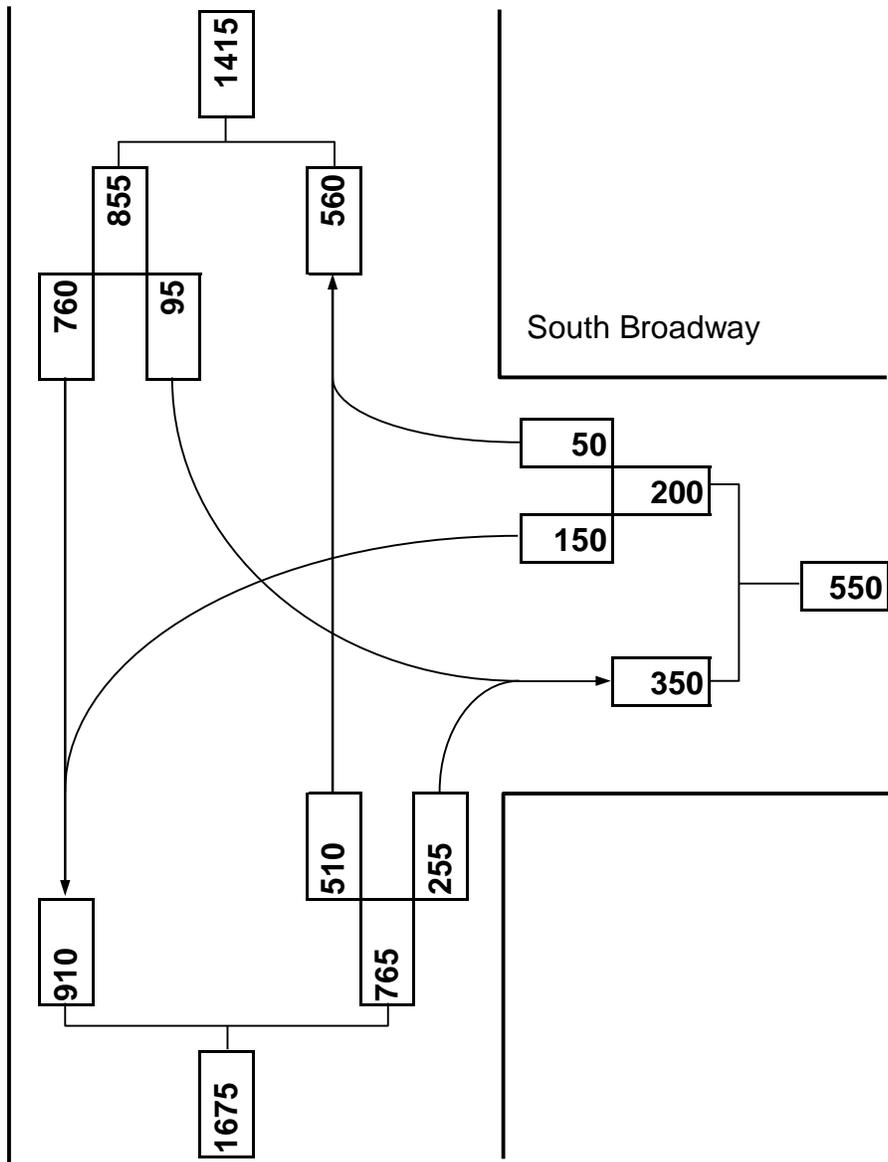
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	PM Peak

Minor Street:	South Broadway
Day of Week:	Weekday
Peak Period:	4:30-5:30 PM
Future:	n/a



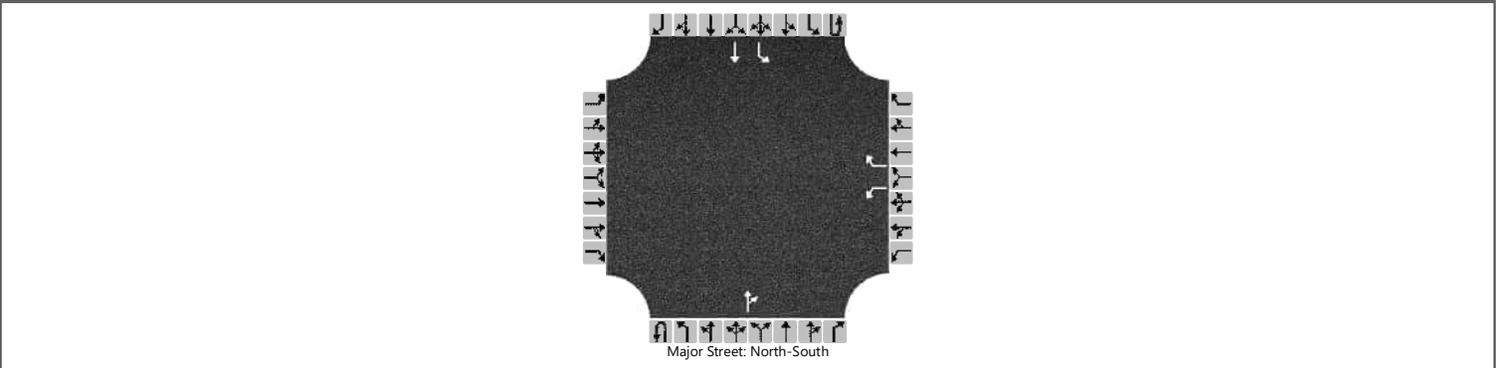
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at SBroadway		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	South Broadway		
Analysis Year	2023			North/South Street	Vets Parkway		
Time Analyzed	PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						150		50			510	255		95	760	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						4.50		4.50							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						163		54							103		
Capacity, c (veh/h)						214		620							810		
v/c Ratio						0.76		0.09							0.13		
95% Queue Length, Q ₉₅ (veh)						5.3		0.3							0.4		
Control Delay (s/veh)						61.1		11.4							10.1		
Level of Service (LOS)						F		B							B		
Approach Delay (s/veh)						48.6								1.1			
Approach LOS						E											



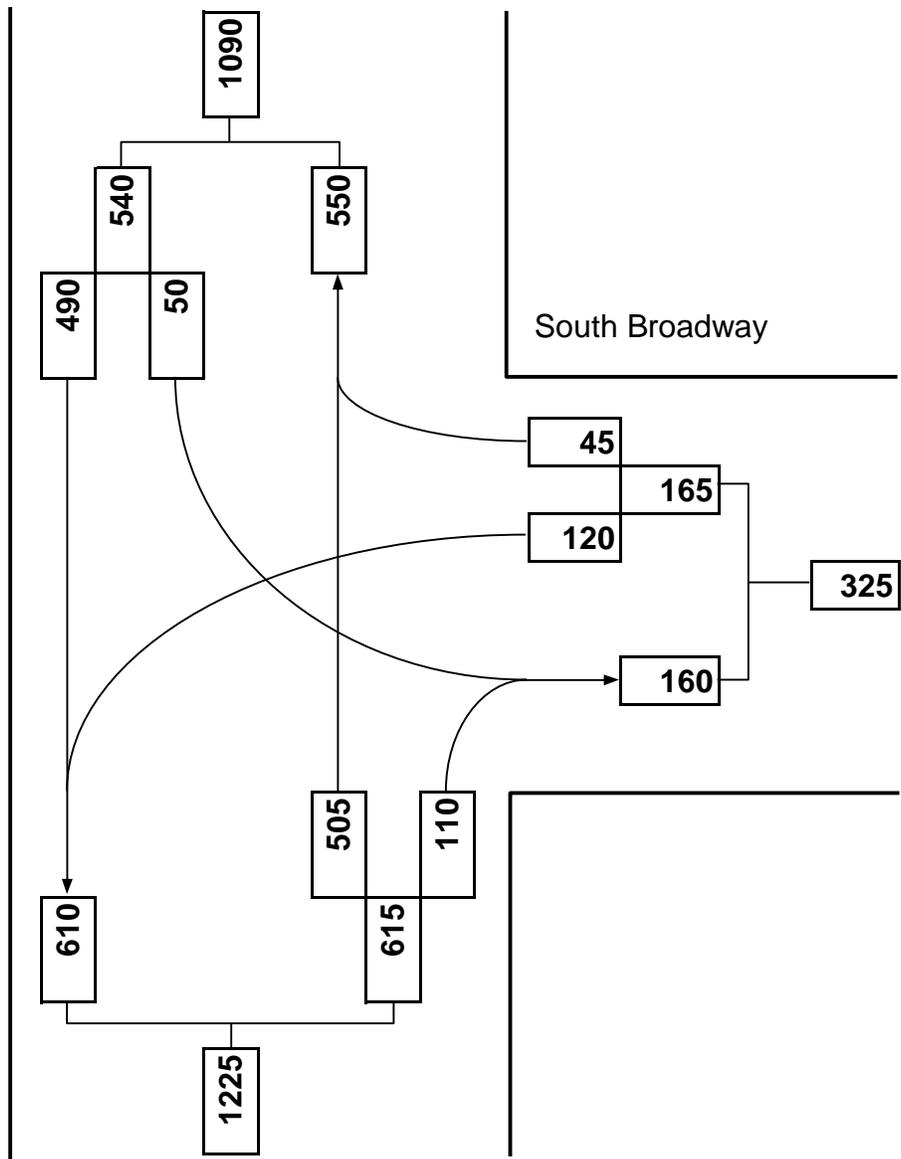
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	Mid-Day

Minor Street:	South Broadway
Day of Week:	Saturday
Peak Period:	11:30-12:30 PM
Future:	n/a



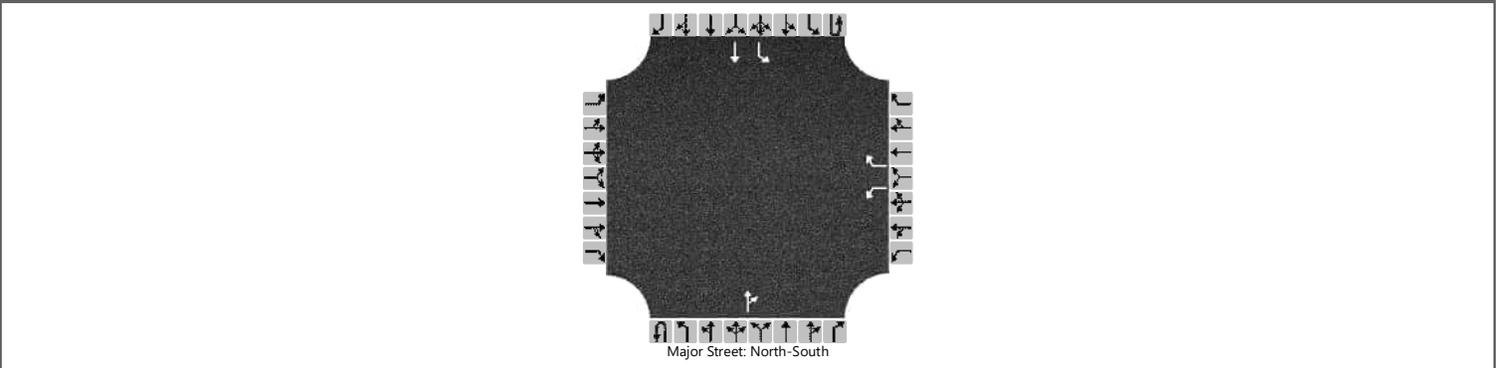
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at SBroadway		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	South Broadway		
Analysis Year	2023			North/South Street	Vets Parkway		
Time Analyzed	Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						120		45			505	110		50	490	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						4.50		4.50							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						130		49							54		
Capacity, c (veh/h)						351		665							931		
v/c Ratio						0.37		0.07							0.06		
95% Queue Length, Q ₉₅ (veh)						1.7		0.2							0.2		
Control Delay (s/veh)						21.2		10.8							9.1		
Level of Service (LOS)						C		B							A		
Approach Delay (s/veh)						18.4								0.8			
Approach LOS						C											

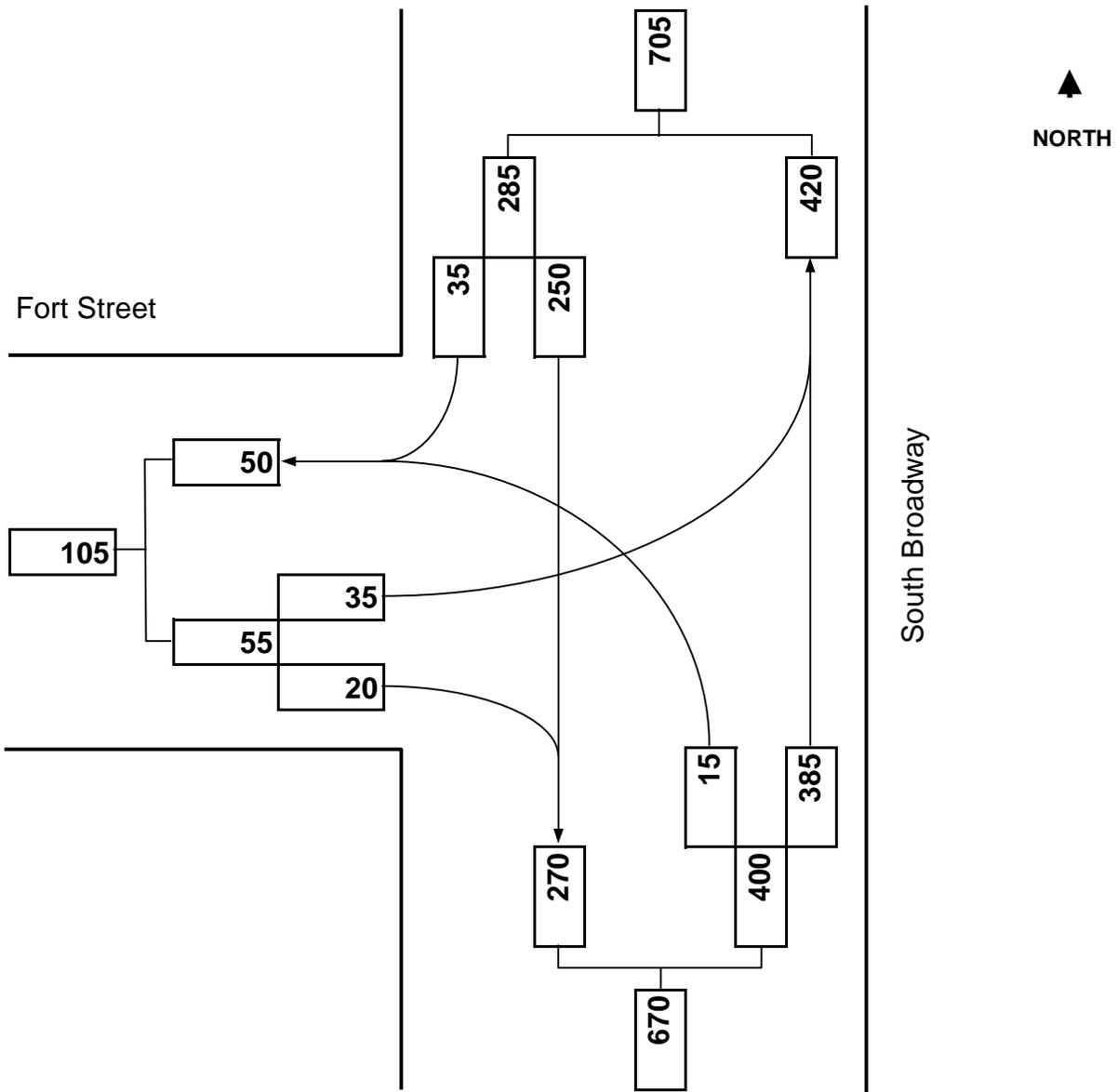
South Broadway at Fort Street



Turning Movement Diagram

Major Street: South Broadway
City/Town: East Providence
Reference No.: 2814
Existing: AM Peak

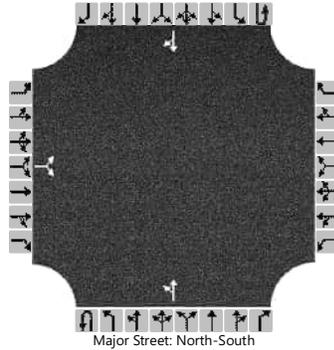
Minor Street: Fort Street
Day of Week: Weekday
Peak Period: 7:30-8:30 AM
Future: n/a



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	SBroadway at Fort		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Fort Street		
Analysis Year	2023			North/South Street	South Broadway		
Time Analyzed	AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		35		20						15	385				250	35
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

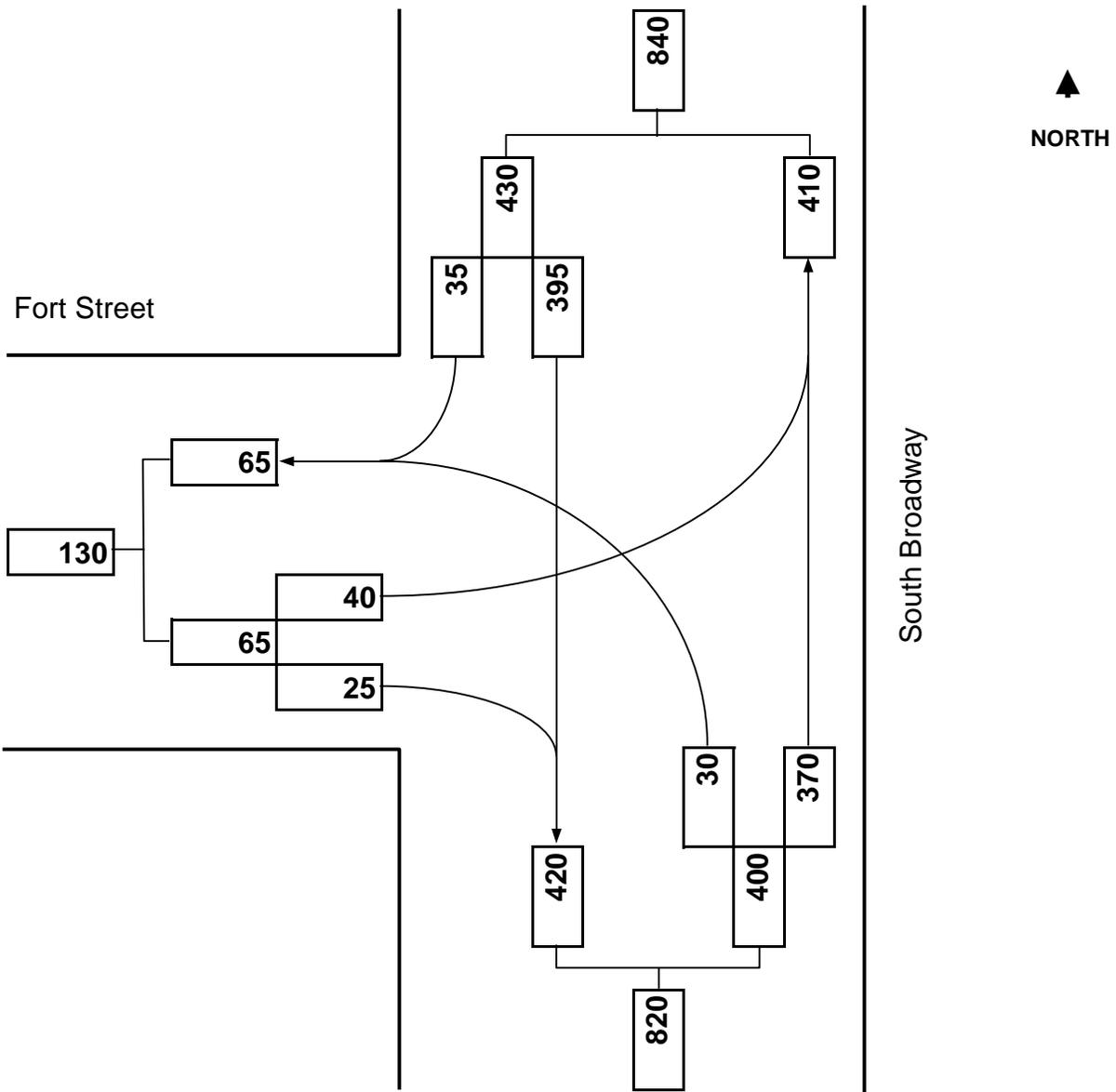
Flow Rate, v (veh/h)			60							16							
Capacity, c (veh/h)			463							1262							
v/c Ratio			0.13							0.01							
95% Queue Length, Q ₉₅ (veh)			0.4							0.0							
Control Delay (s/veh)			13.9							7.9							
Level of Service (LOS)			B							A							
Approach Delay (s/veh)		13.9								0.4							
Approach LOS		B								A							



Turning Movement Diagram

Major Street: South Broadway
City/Town: East Providence
Reference No.: 2814
Existing: PM Peak

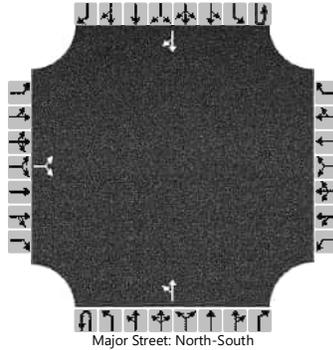
Minor Street: Fort Street
Day of Week: Weekday
Peak Period: 4:30-5:30 PM
Future: n/a



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	SBroadway at Fort		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Fort Street		
Analysis Year	2023			North/South Street	South Broadway		
Time Analyzed	PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		40		25						30	370				395	35
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

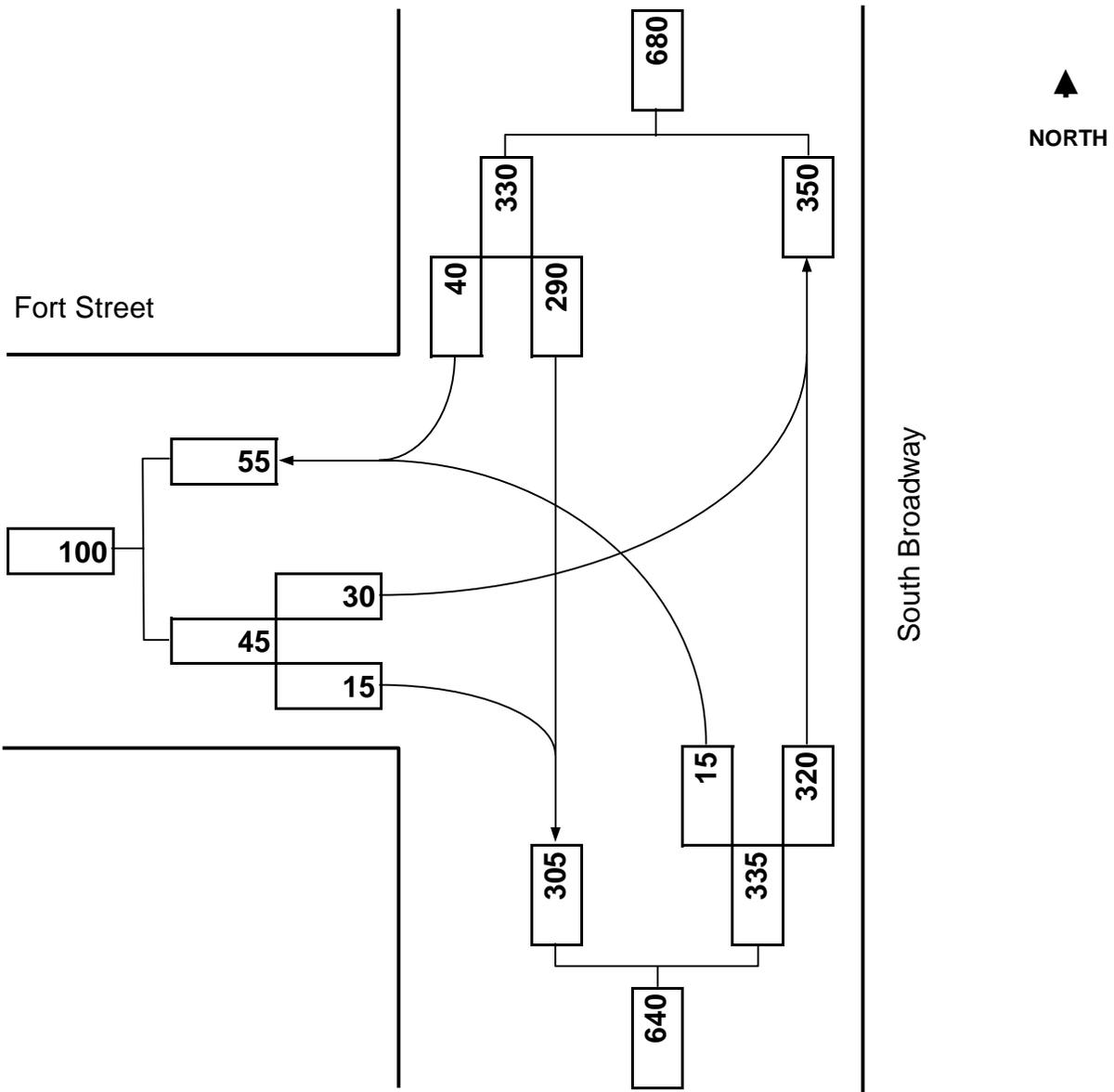
Flow Rate, v (veh/h)			71							33						
Capacity, c (veh/h)			367							1105						
v/c Ratio			0.19							0.03						
95% Queue Length, Q ₉₅ (veh)			0.7							0.1						
Control Delay (s/veh)			17.1							8.4						
Level of Service (LOS)			C							A						
Approach Delay (s/veh)	17.1								0.9							
Approach LOS	C															



Turning Movement Diagram

Major Street: South Broadway
City/Town: East Providence
Reference No.: 2814
Existing: Saturday Mid-Day

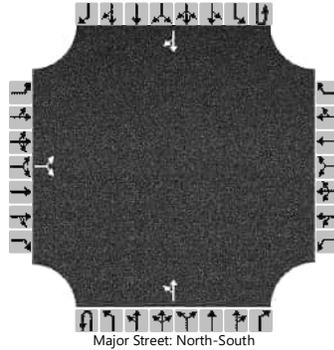
Minor Street: Fort Street
Day of Week: Saturday
Peak Period: 11:30-12:30 PM
Future: n/a



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	SBroadway at Fort		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Fort Street		
Analysis Year	2023			North/South Street	South Broadway		
Time Analyzed	Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		30		15						15	320				290	40
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			49							16						
Capacity, c (veh/h)			461							1211						
v/c Ratio			0.11							0.01						
95% Queue Length, Q ₉₅ (veh)			0.4							0.0						
Control Delay (s/veh)			13.7							8.0						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	13.7								0.5							
Approach LOS	B															

C

Future Build Weekday AM/PM and Saturday Mid-Day Peak Hour

Veterans Memorial Parkway at Lyon Avenue
Veterans Memorial Parkway at Site Access Road
Veterans Memorial Parkway at South Broadway
 South Broadway at Fort Street
 Lyon Avenue at West Site Driveway
 Lyon Avenue at East Site Driveway

Veterans Memorial Parkway at Lyon Avenue



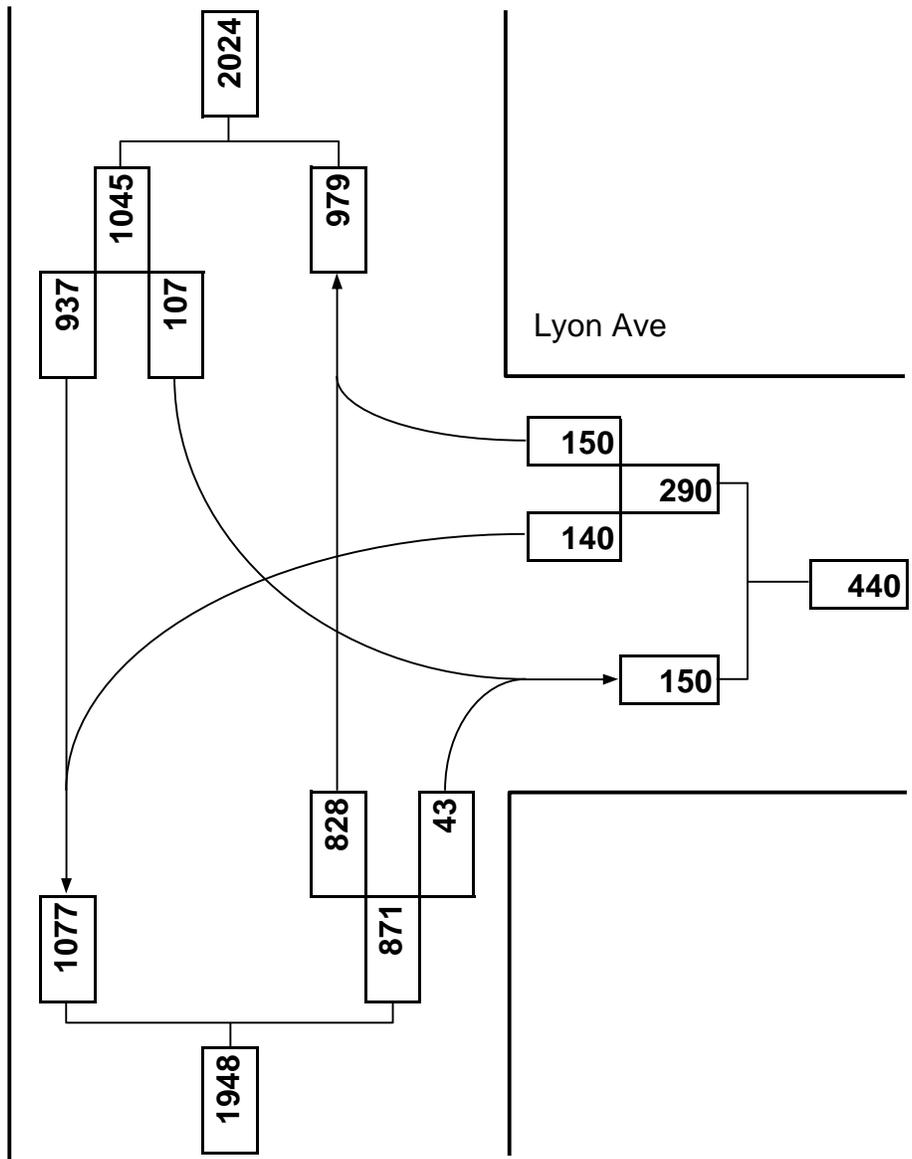
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

Minor Street:	Lyon Ave
Day of Week:	Weekday
Peak Period:	AM Peak
Future:	Build



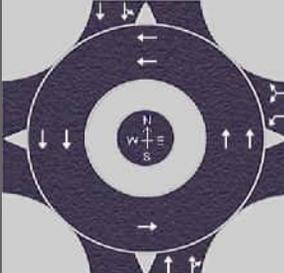
Veterans Memorial Parkway



HCS7 Roundabouts Report

General Information

Site Information

Analyst	Traffic Section		Intersection	Vets Parkway at Lyon Ave
Agency or Co.	Crossman		E/W Street Name	Lyon Ave
Date Performed	12/08/2023		N/S Street Name	Vets Parkway
Analysis Year	2025		Analysis Time Period (hrs)	0.25
Time Analyzed	AM Peak		Peak Hour Factor	0.92
Project Description	The MET		Jurisdiction	East Providence

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	0	0	0	1	1	0	0	0	2	0	0	0	2	0
Lane Assignment					L		LR		T		TR		LT		T	
Volume (V), veh/h					0	140		150	0		828	43	0	107	937	
Percent Heavy Vehicles, %					0	0		0	0		0	0	0	0	0	
Flow Rate (V _{PCE}), pc/h					0	152		163	0		900	47	0	116	1018	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					2				1				2			
Pedestrians Crossing, p/h					0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.6453	4.3276		4.5436	4.5436		4.6453	4.3276	
Follow-Up Headway (s)				2.6667	2.5352		2.5352	2.5352		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass									
Entry Flow (v _e), pc/h				167	148		445	502		533	601	
Entry Volume, veh/h				167	148		445	502		533	601	
Circulating Flow (v _c), pc/h	1286			900			116			152		
Exiting Flow (v _{ex}), pc/h	163			0			1063			1170		
Capacity (C _{PCE}), pc/h				590	661		1278	1278		1174	1248	
Capacity (c), veh/h				590	661		1278	1278		1174	1248	
v/c Ratio (x)				0.28	0.22		0.35	0.39		0.45	0.48	

Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass									
Lane Control Delay (d), s/veh				9.9	8.1		6.1	6.6		7.9	7.9	
Lane LOS				A	A		A	A		A	A	
95% Queue, veh				1.2	0.9		1.6	1.9		2.4	2.7	
Approach Delay, s/veh				9.1			6.3			7.9		
Approach LOS				A			A			A		
Intersection Delay, s/veh LOS	7.4						A					



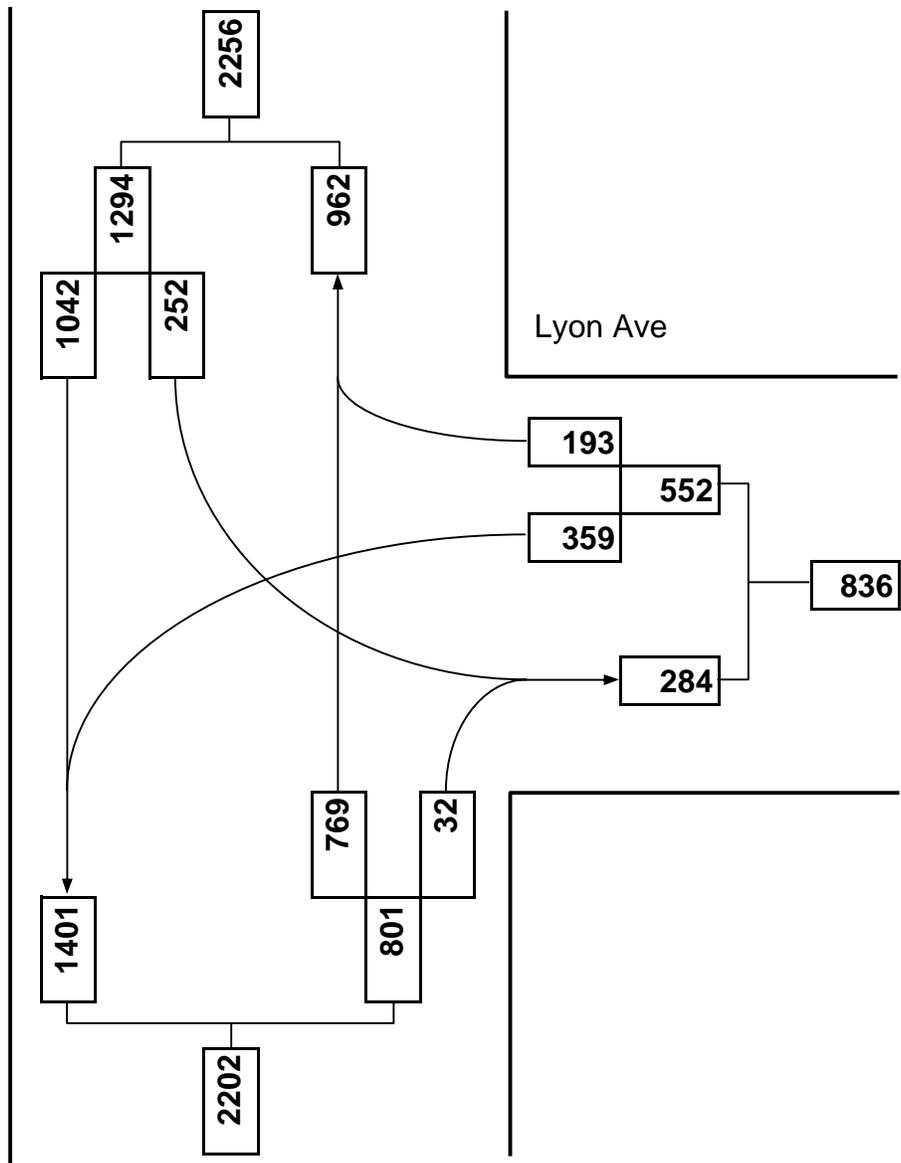
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

Minor Street:	Lyon Ave
Day of Week:	Weekday
Peak Period:	PM Peak
Future:	Build



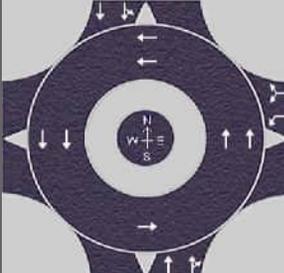
Veterans Memorial Parkway



HCS7 Roundabouts Report

General Information

Site Information

Analyst	Traffic Section		Intersection	Vets Parkway at Lyon Ave
Agency or Co.	Crossman		E/W Street Name	Lyon Ave
Date Performed	12/08/2023		N/S Street Name	Vets Parkway
Analysis Year	2025		Analysis Time Period (hrs)	0.25
Time Analyzed	PM Peak		Peak Hour Factor	0.92
Project Description	The MET		Jurisdiction	East Providence

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	0	0	0	1	1	0	0	0	2	0	0	0	2	0
Lane Assignment					L		LR		T		TR		LT		T	
Volume (V), veh/h					0	359		193	0		769	32	0	252	1042	
Percent Heavy Vehicles, %					0	0		0	0		0	0	0	0	0	
Flow Rate (V _{PCE}), pc/h					0	390		210	0		836	35	0	274	1133	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					2				1				2			
Pedestrians Crossing, p/h					0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.6453	4.3276		4.5436	4.5436		4.6453	4.3276	
Follow-Up Headway (s)				2.6667	2.5352		2.5352	2.5352		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass									
Entry Flow (v _e), pc/h				318	282		409	462		661	746	
Entry Volume, veh/h				318	282		409	462		661	746	
Circulating Flow (v _c), pc/h	1797			836			274			390		
Exiting Flow (v _{ex}), pc/h	309			0			1046			1523		
Capacity (C _{PCE}), pc/h				626	698		1107	1107		943	1019	
Capacity (c), veh/h				626	698		1107	1107		943	1019	
v/c Ratio (x)				0.51	0.40		0.37	0.42		0.70	0.73	

Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass									
Lane Control Delay (d), s/veh				14.1	10.6		7.0	7.6		15.8	16.1	
Lane LOS				B	B		A	A		C	C	
95% Queue, veh				2.9	2.0		1.7	2.1		6.0	6.8	
Approach Delay, s/veh				12.5			7.3			16.0		
Approach LOS				B			A			C		
Intersection Delay, s/veh LOS	12.6						B					



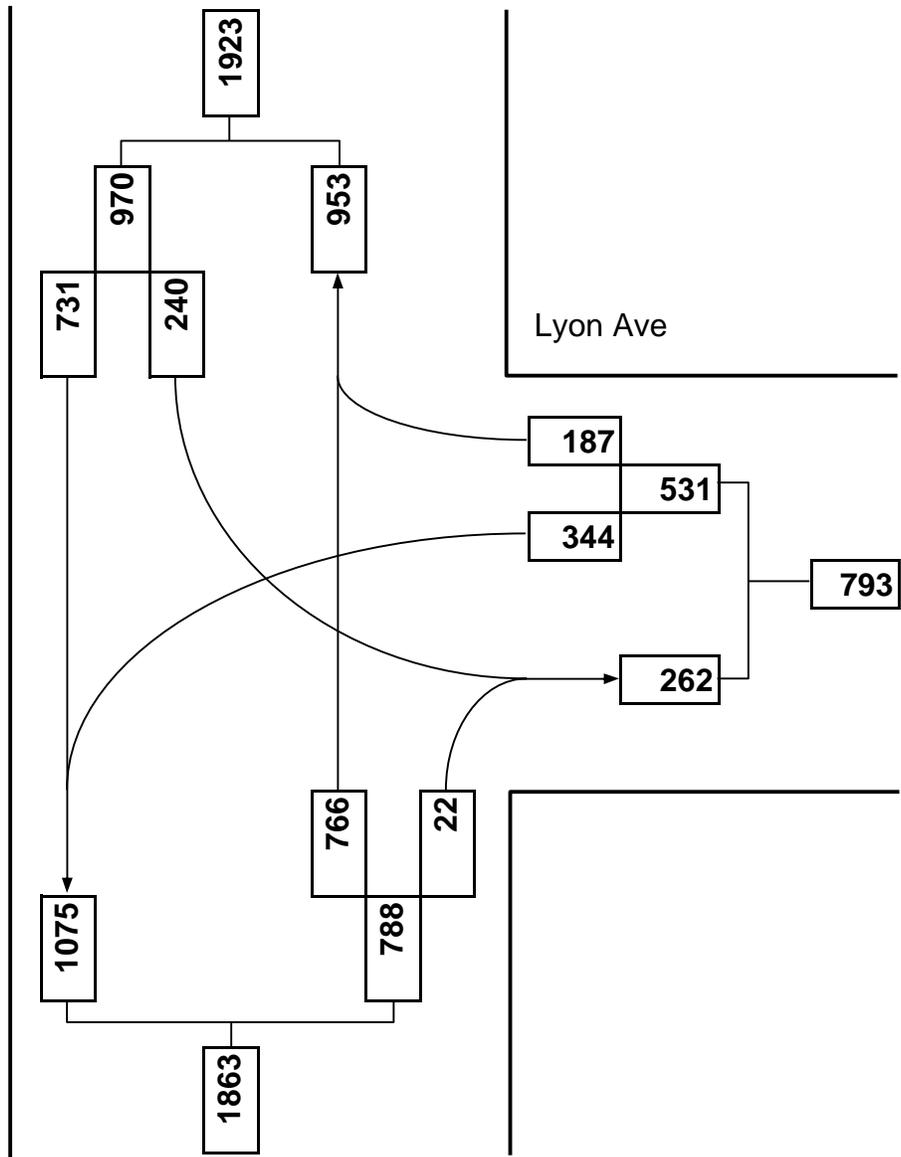
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

Minor Street:	Lyon Ave
Day of Week:	Saturday
Peak Period:	Mid-Day
Future:	Build



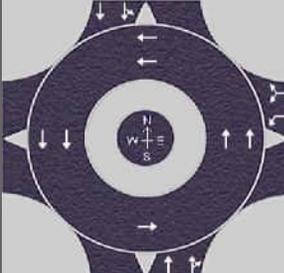
Veterans Memorial Parkway



HCS7 Roundabouts Report

General Information

Site Information

Analyst	Traffic Section		Intersection	Vets Parkway at Lyon Ave
Agency or Co.	Crossman		E/W Street Name	Lyon Ave
Date Performed	12/08/2023		N/S Street Name	Vets Parkway
Analysis Year	2025		Analysis Time Period (hrs)	0.25
Time Analyzed	Saturday MD Peak		Peak Hour Factor	0.92
Project Description	The MET		Jurisdiction	East Providence

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	0	0	0	1	1	0	0	0	2	0	0	0	2	0
Lane Assignment					L		LR		T		TR		LT		T	
Volume (V), veh/h					0	344		187	0		766	22	0	240	731	
Percent Heavy Vehicles, %					0	0		0	0		0	0	0	0	0	
Flow Rate (V _{PCE}), pc/h					0	374		203	0		833	24	0	261	795	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					2				1				2			
Pedestrians Crossing, p/h					0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.6453	4.3276		4.5436	4.5436		4.6453	4.3276	
Follow-Up Headway (s)				2.6667	2.5352		2.5352	2.5352		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass									
Entry Flow (v _e), pc/h				306	271		403	454		496	560	
Entry Volume, veh/h				306	271		403	454		496	560	
Circulating Flow (v _c), pc/h	1430			833			261			374		
Exiting Flow (v _{ex}), pc/h	285			0			1036			1169		
Capacity (C _{PCE}), pc/h				627	700		1120	1120		957	1033	
Capacity (c), veh/h				627	700		1120	1120		957	1033	
v/c Ratio (x)				0.49	0.39		0.36	0.41		0.52	0.54	

Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass									
Lane Control Delay (d), s/veh				13.5	10.3		6.8	7.4		10.3	10.2	
Lane LOS				B	B		A	A		B	B	
95% Queue, veh				2.7	1.8		1.7	2.0		3.1	3.4	
Approach Delay, s/veh				12.0			7.1			10.3		
Approach LOS				B			A			B		
Intersection Delay, s/veh LOS	9.6						A					

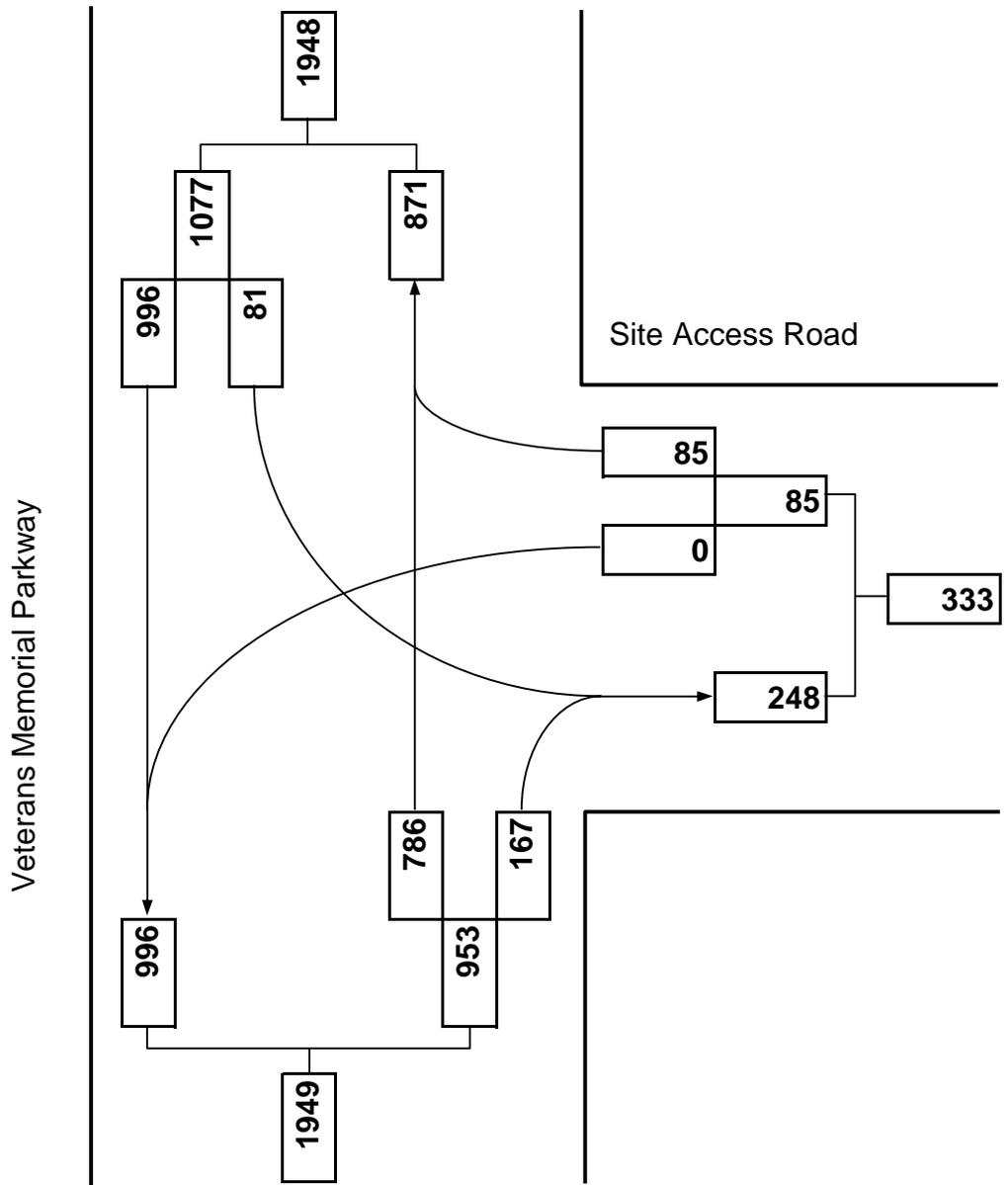
Veterans Memorial Parkway at Site Access Road



Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

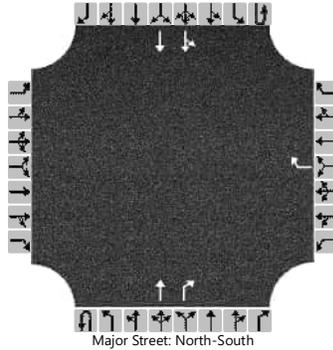
Minor Street:	Site Access Road
Day of Week:	Weekday
Peak Period:	AM Peak
Future:	Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at Site Rd		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Site Access Road		
Analysis Year	2028			North/South Street	Vets Parkway		
Time Analyzed	Future Build AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	1	1	0	0	2	0
Configuration								R			T	R		LT	T	
Volume (veh/h)								85			786	167		81	996	
Percent Heavy Vehicles (%)								0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No				Yes							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)								6.2								4.1	
Critical Headway (sec)								6.20								4.10	
Base Follow-Up Headway (sec)								3.3								2.2	
Follow-Up Headway (sec)								3.30								2.20	

Delay, Queue Length, and Level of Service

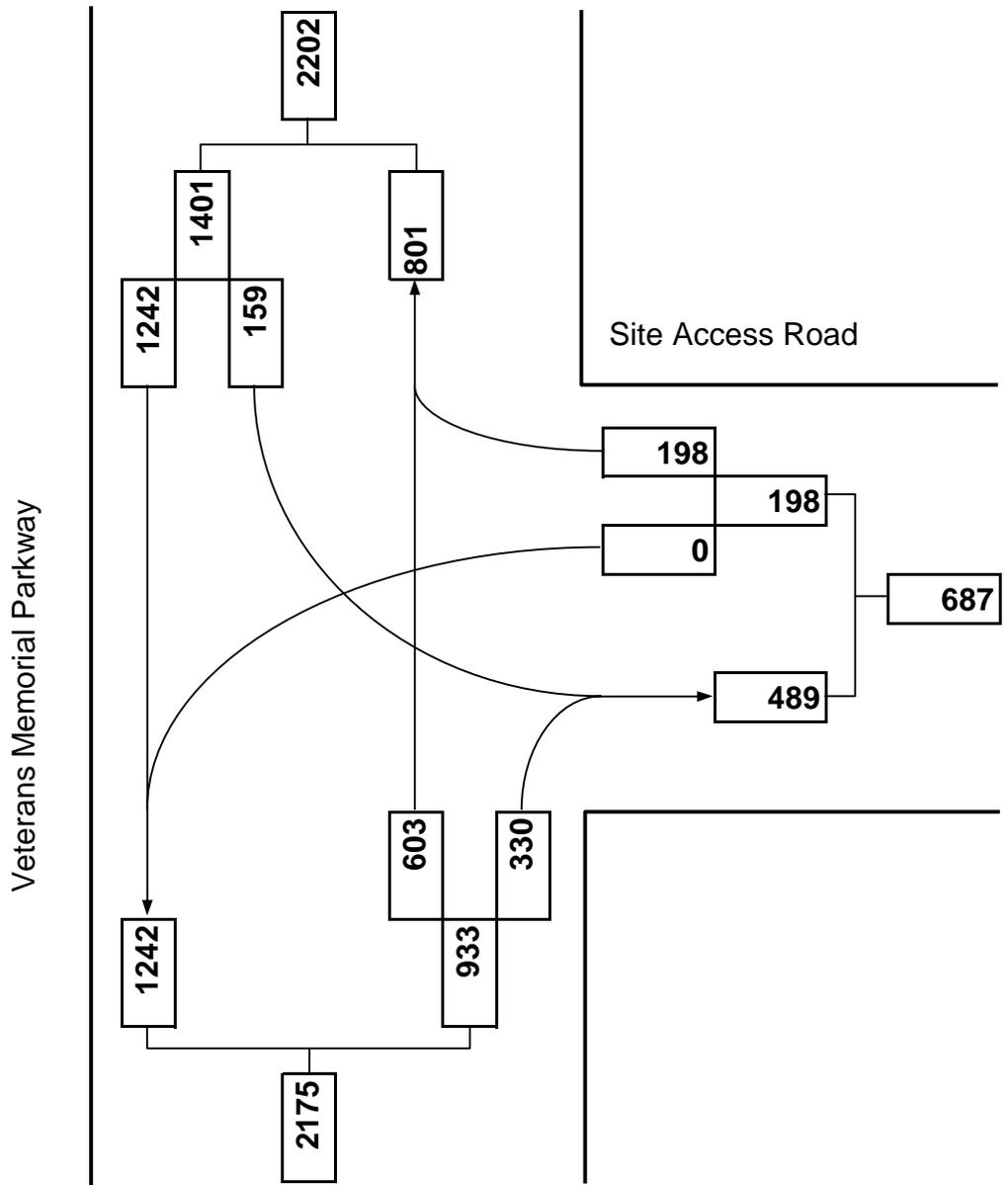
Flow Rate, v (veh/h)								92								88	
Capacity, c (veh/h)								361								794	
v/c Ratio								0.26								0.11	
95% Queue Length, Q ₉₅ (veh)								1.0								0.4	
Control Delay (s/veh)								18.4								10.1	
Level of Service (LOS)								C								B	
Approach Delay (s/veh)					18.4								1.9				
Approach LOS					C												



Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

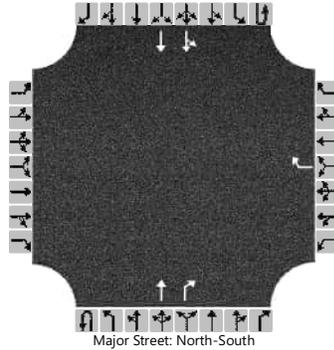
Minor Street:	Site Access Road
Day of Week:	Weekday
Peak Period:	PM Peak
Future:	Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Site Driveway		
Analysis Year	2028			North/South Street	Vets Parkway		
Time Analyzed	Future Build PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	1	1	0	0	2	0
Configuration								R			T	R		LT	T	
Volume (veh/h)								198			603	330		159	1242	
Percent Heavy Vehicles (%)								0						0		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized							No				Yes					
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)								6.2							4.1	
Critical Headway (sec)								6.20							4.10	
Base Follow-Up Headway (sec)								3.3							2.2	
Follow-Up Headway (sec)								3.30							2.20	

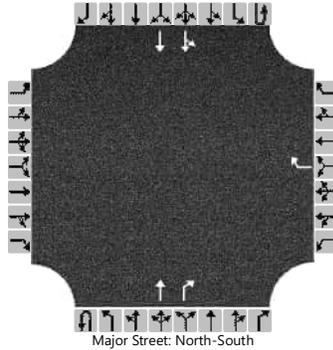
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								215							173	
Capacity, c (veh/h)								469							941	
v/c Ratio								0.46							0.18	
95% Queue Length, Q ₉₅ (veh)								2.4							0.7	
Control Delay (s/veh)								19.0							9.7	
Level of Service (LOS)								C							A	
Approach Delay (s/veh)								19.0							3.6	
Approach LOS								C								

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Site Driveway		
Analysis Year	2028			North/South Street	Vets Parkway		
Time Analyzed	Future Build Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	1	1	0	0	2	0
Configuration								R			T	R		LT	T	
Volume (veh/h)								195			593	340		165	910	
Percent Heavy Vehicles (%)								0						0		
Proportion Time Blocked																
Percent Grade (%)								0								
Right Turn Channelized								No			Yes					
Median Type Storage								Undivided								

Critical and Follow-up Headways

Base Critical Headway (sec)								6.2								4.1	
Critical Headway (sec)								6.20								4.10	
Base Follow-Up Headway (sec)								3.3								2.2	
Follow-Up Headway (sec)								3.30								2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								212								179	
Capacity, c (veh/h)								476								950	
v/c Ratio								0.45								0.19	
95% Queue Length, Q ₉₅ (veh)								2.3								0.7	
Control Delay (s/veh)								18.5								9.7	
Level of Service (LOS)								C								A	
Approach Delay (s/veh)								18.5								2.7	
Approach LOS								C									

Veterans Memorial Parkway at South Broadway



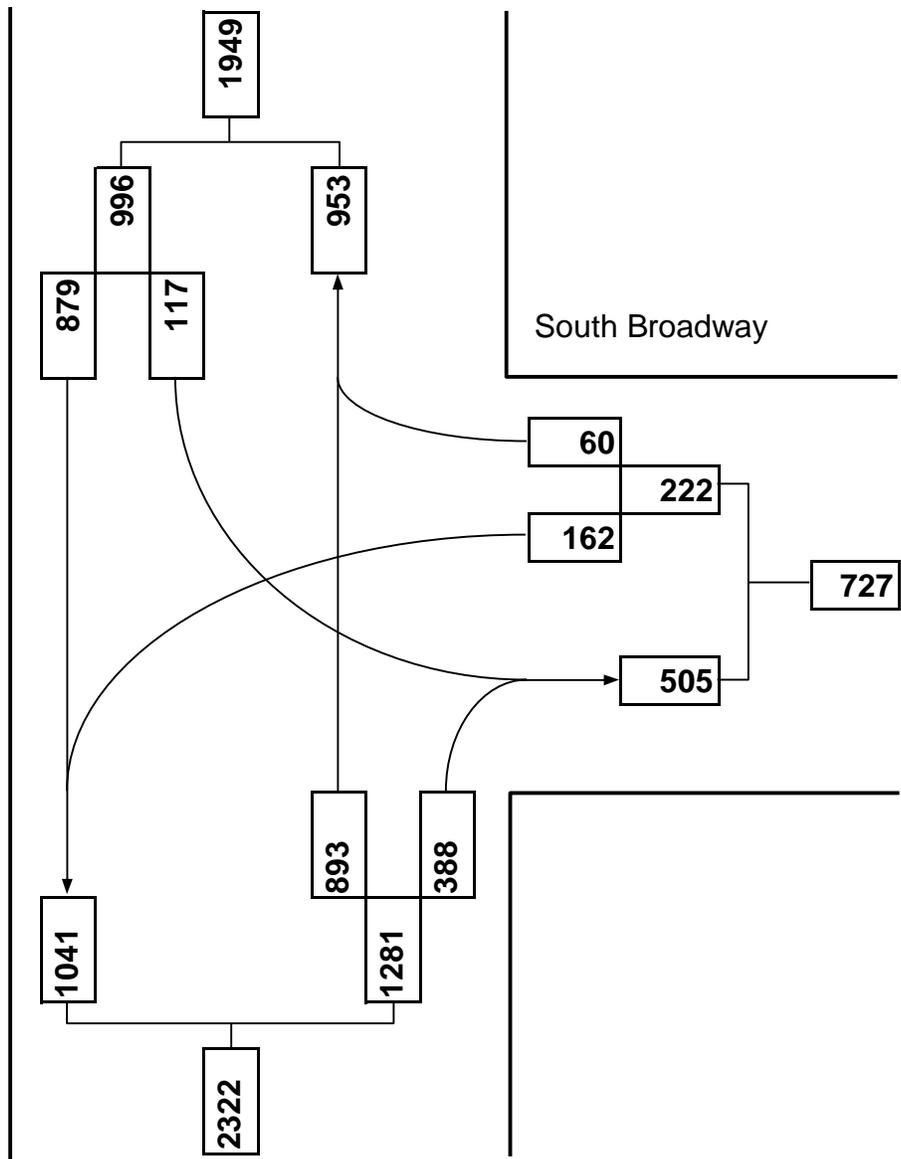
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

Minor Street:	South Broadway
Day of Week:	Weekday
Peak Period:	AM Peak
Future:	Build



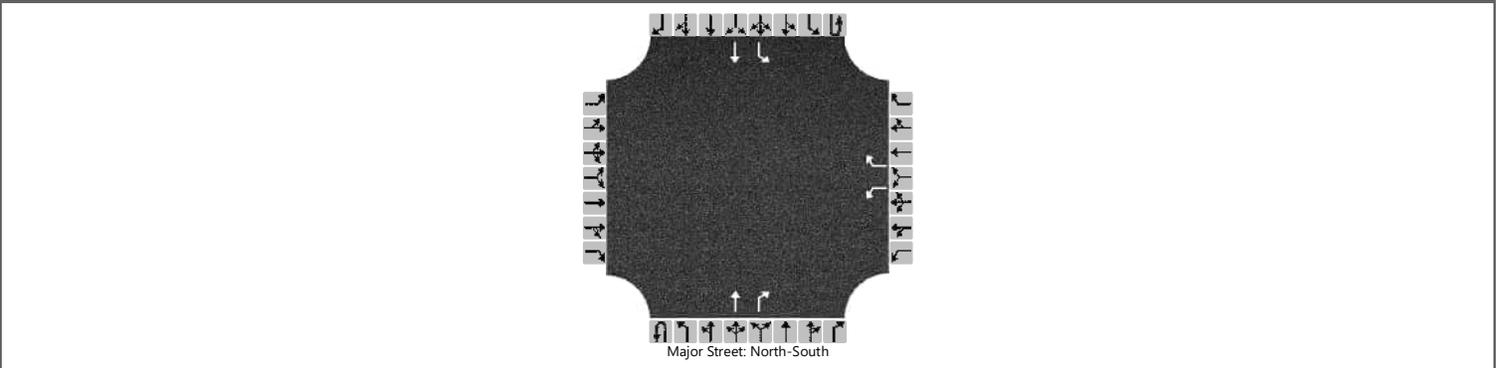
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at SBroadway		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	South Broadway		
Analysis Year	2028			North/South Street	Vets Parkway		
Time Analyzed	Future Build AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	1	0	1	1	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						162		60			893	388		117	879	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No					Yes					
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						4.50		4.50							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						176		65							127	
Capacity, c (veh/h)						134		490							718	
v/c Ratio						1.32		0.13							0.18	
95% Queue Length, Q ₉₅ (veh)						11.2		0.5							0.6	
Control Delay (s/veh)						248.8		13.5							11.1	
Level of Service (LOS)						F		B							B	
Approach Delay (s/veh)					185.2								1.3			
Approach LOS					F											



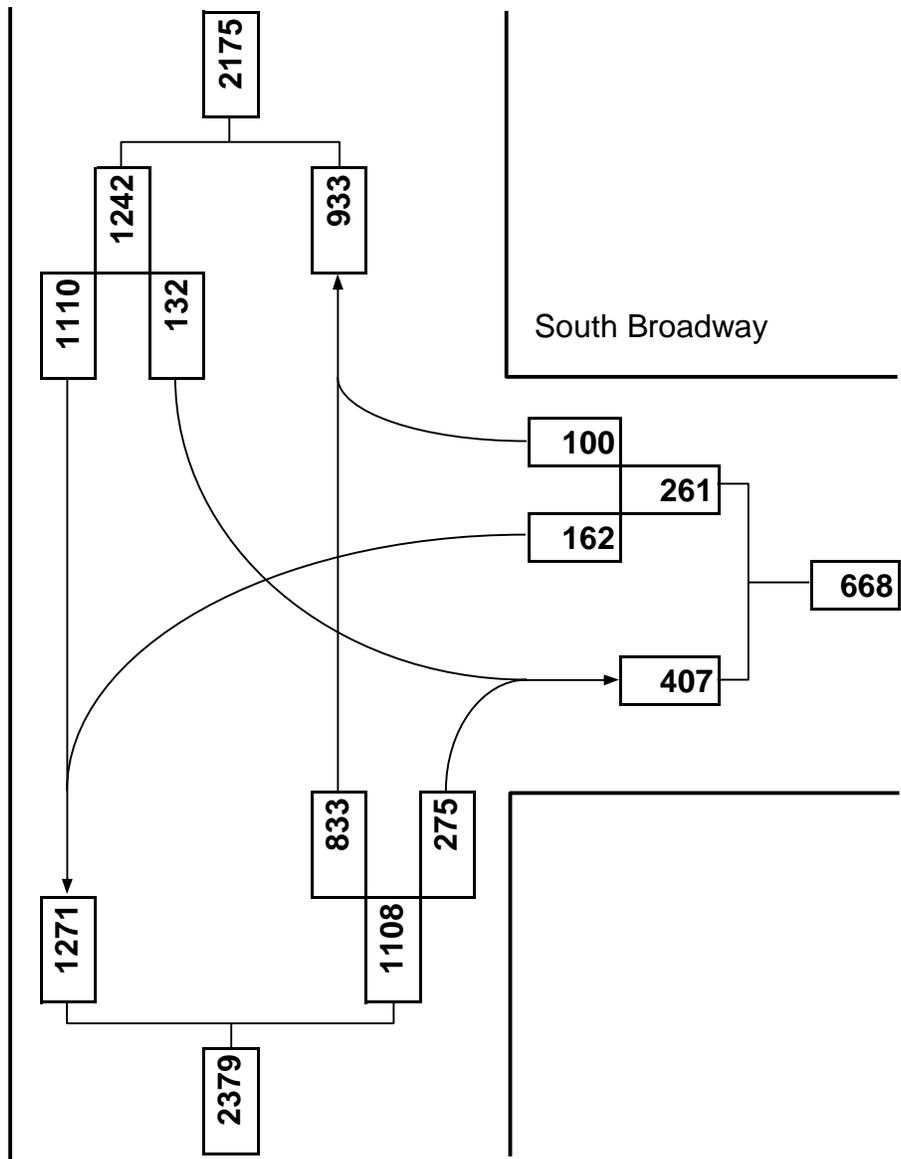
Turning Movement Diagram

Major Street:	Veterans Parkway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

Minor Street:	South Broadway
Day of Week:	Weekday
Peak Period:	PM Peak
Future:	Build



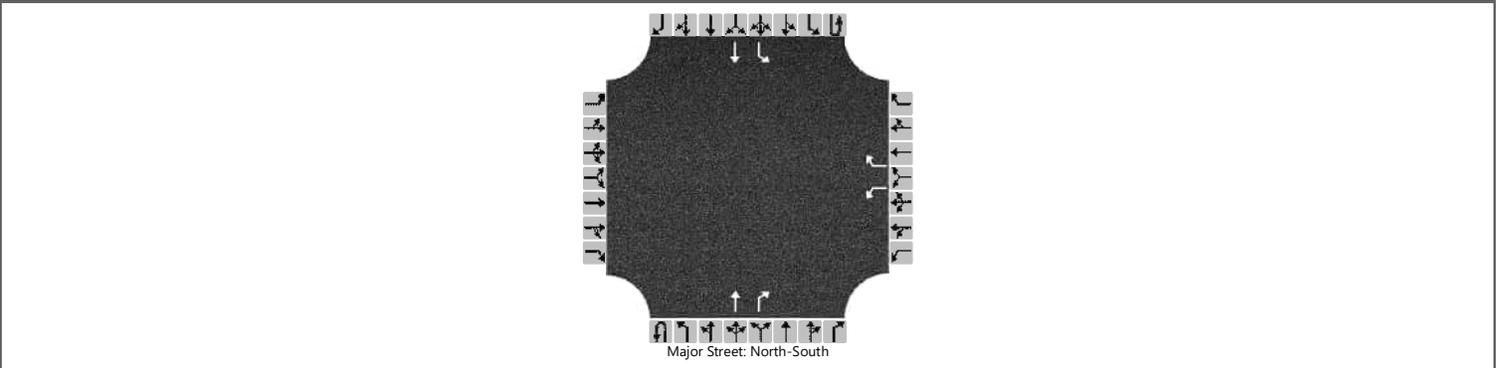
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at SBroadway		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	South Broadway		
Analysis Year	2028			North/South Street	Vets Parkway		
Time Analyzed	Future Build PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	1	0	1	1	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						162		100			833	275		132	1110	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No					Yes					
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						4.50		4.50							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						176		109							143			
Capacity, c (veh/h)						107		518							760			
v/c Ratio						1.64		0.21							0.19			
95% Queue Length, Q ₉₅ (veh)						13.5		0.8							0.7			
Control Delay (s/veh)						395.3		13.8							10.8			
Level of Service (LOS)						F		B							B			
Approach Delay (s/veh)		249.7													1.2			
Approach LOS		F																



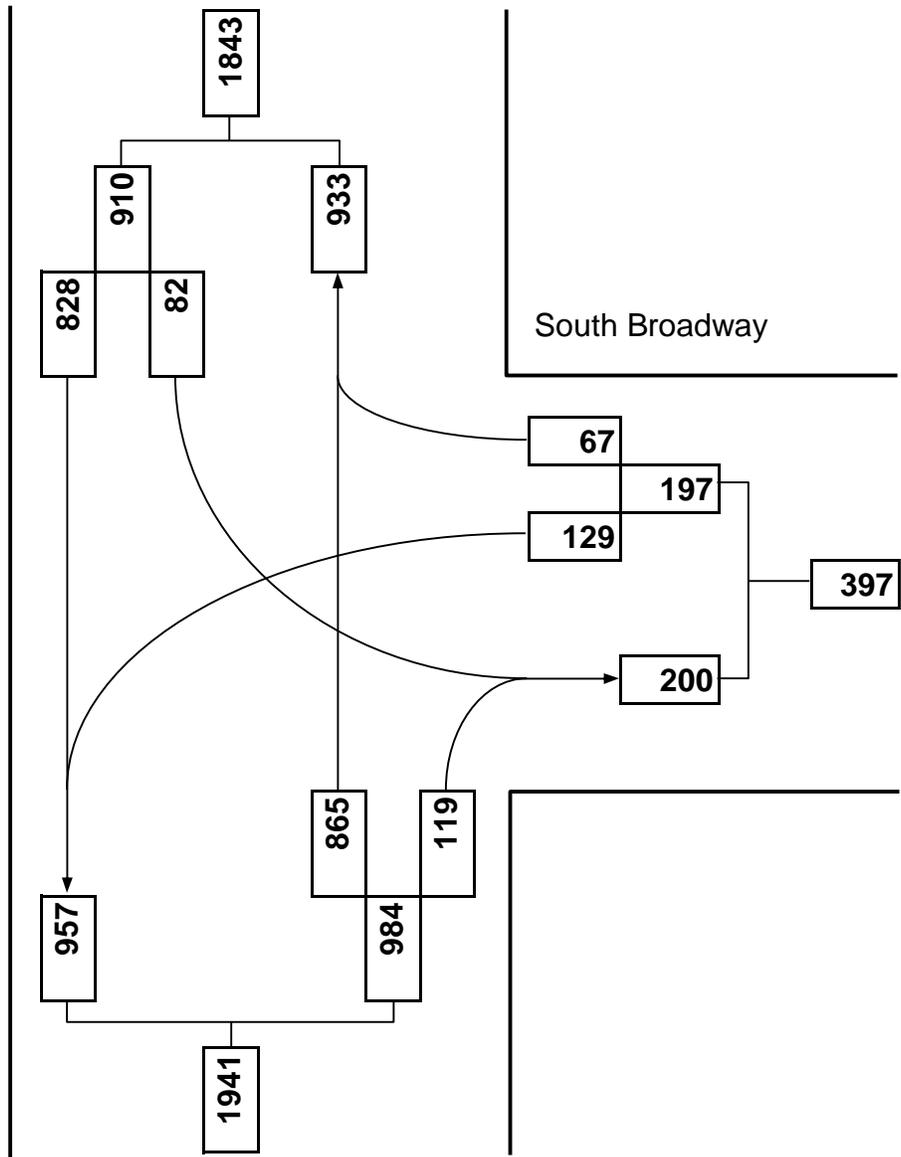
Turning Movement Diagram

Major Street: Veterans Parkway
City/Town: East Providence
Reference No.: 2814
Existing: n/a

Minor Street: South Broadway
Day of Week: Saturday
Peak Period: Mid-Day
Future: Build



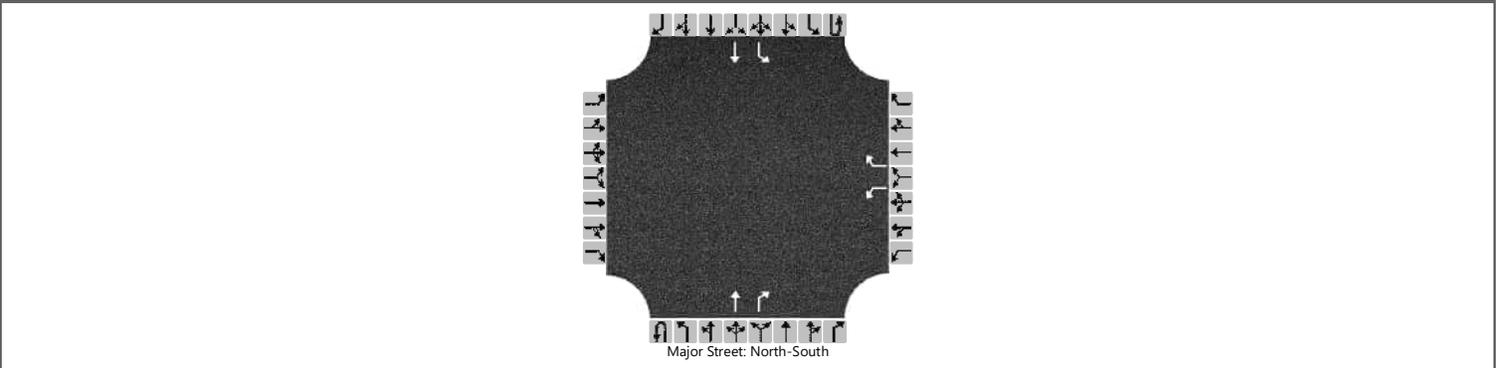
Veterans Memorial Parkway



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Vets Parkway at SBroadway		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	South Broadway		
Analysis Year	2028			North/South Street	Vets Parkway		
Time Analyzed	Future Build Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	0	0		1	0	1	0	0	1	1	0	1	1	0		
Configuration						L		R			T	R		L	T			
Volume (veh/h)						129		67			865	119		82	828			
Percent Heavy Vehicles (%)						0		0						0				
Proportion Time Blocked																		
Percent Grade (%)						0												
Right Turn Channelized						No					Yes							
Median Type Storage		Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						4.50		4.50							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						140		73							89			
Capacity, c (veh/h)						166		503							737			
v/c Ratio						0.85		0.14							0.12			
95% Queue Length, Q ₉₅ (veh)						5.8		0.5							0.4			
Control Delay (s/veh)						89.6		13.4							10.6			
Level of Service (LOS)						F		B							B			
Approach Delay (s/veh)		63.5									1.0							
Approach LOS		F																

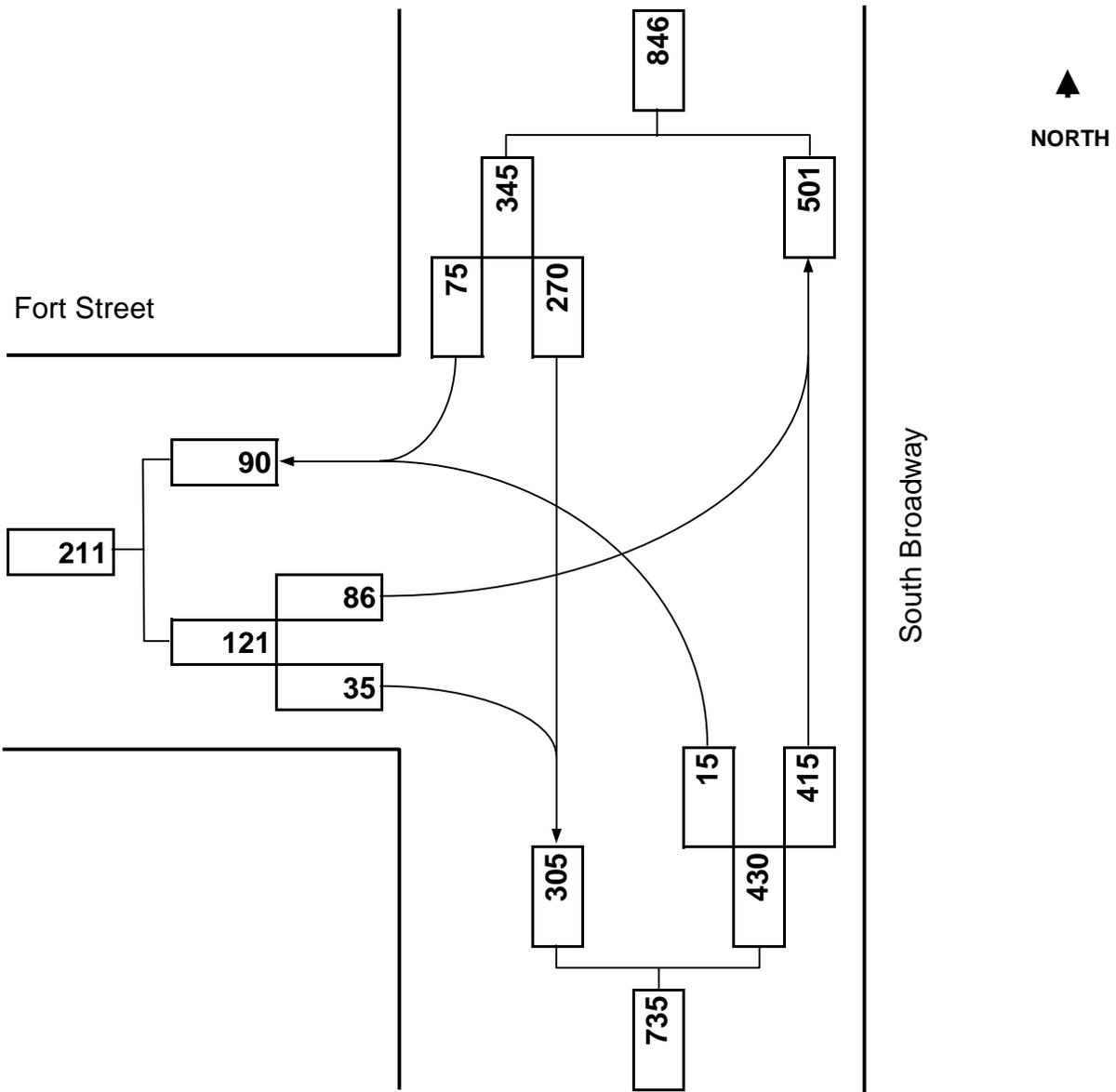
South Broadway at Fort Street



Turning Movement Diagram

Major Street:	South Broadway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

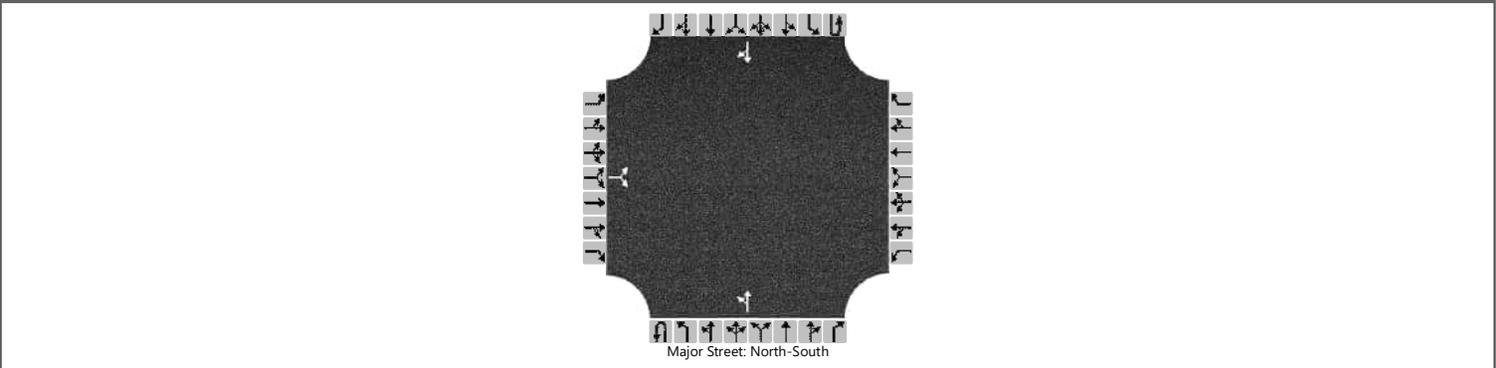
Minor Street:	Fort Street
Day of Week:	Weekday
Peak Period:	AM Peak
Future:	Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	SBroadway at Fort		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Fort Street		
Analysis Year	2028			North/South Street	South Broadway		
Time Analyzed	Future Build AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		86		35						15	415				270	75
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

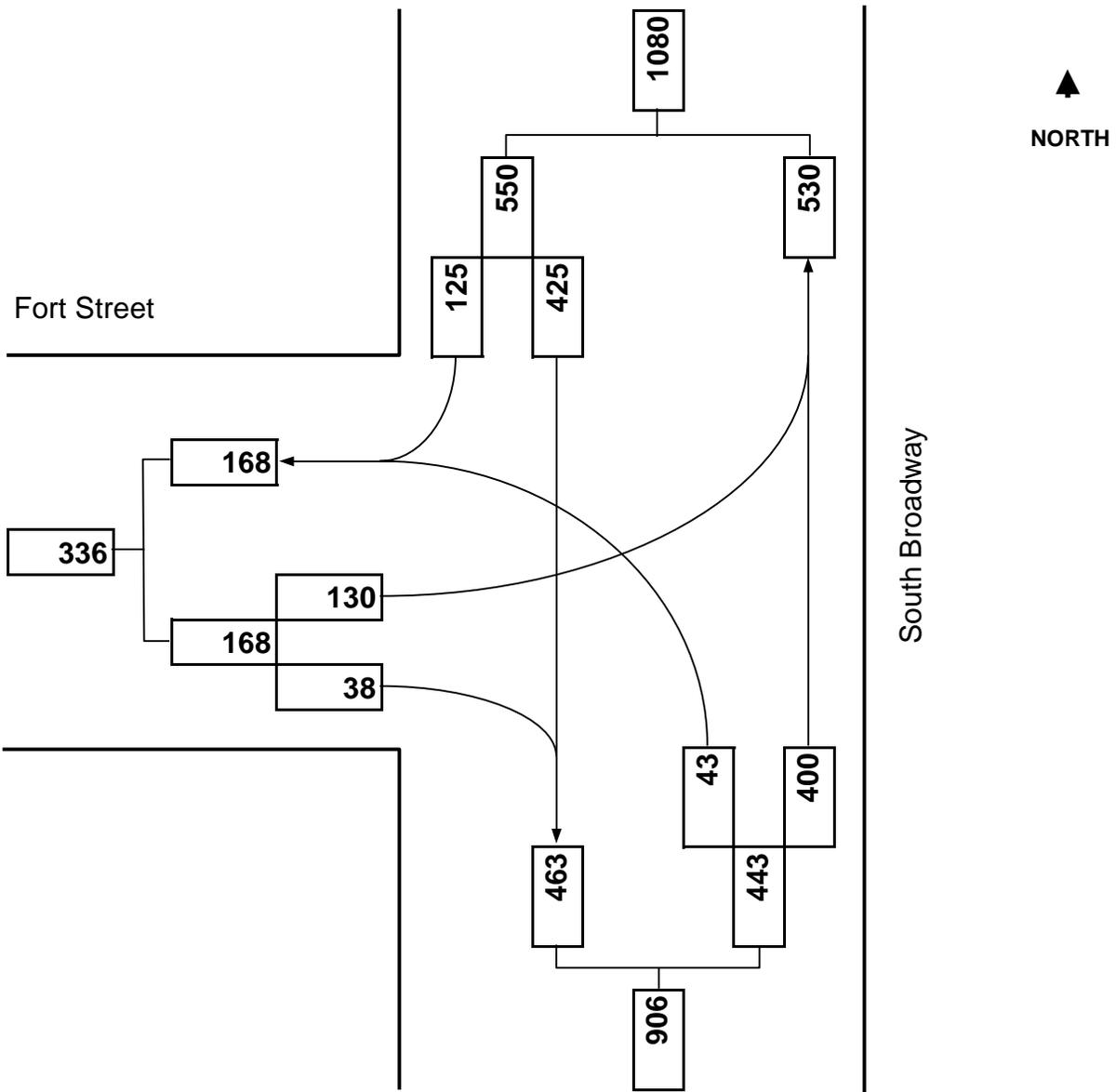
Flow Rate, v (veh/h)			132							16						
Capacity, c (veh/h)			403							1195						
v/c Ratio			0.33							0.01						
95% Queue Length, Q ₉₅ (veh)			1.4							0.0						
Control Delay (s/veh)			18.2							8.1						
Level of Service (LOS)			C							A						
Approach Delay (s/veh)		18.2								0.4						
Approach LOS		C														



Turning Movement Diagram

Major Street:	South Broadway
City/Town:	East Providence
Reference No.:	2814
Existing:	n/a

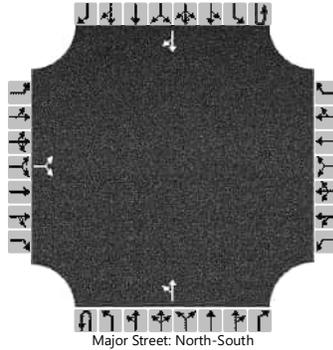
Minor Street:	Fort Street
Day of Week:	Weekday
Peak Period:	PM Peak
Future:	Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	SBroadway at Fort		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Fort Street		
Analysis Year	2028			North/South Street	South Broadway		
Time Analyzed	Future Build PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		130		38						43	400				425	125
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

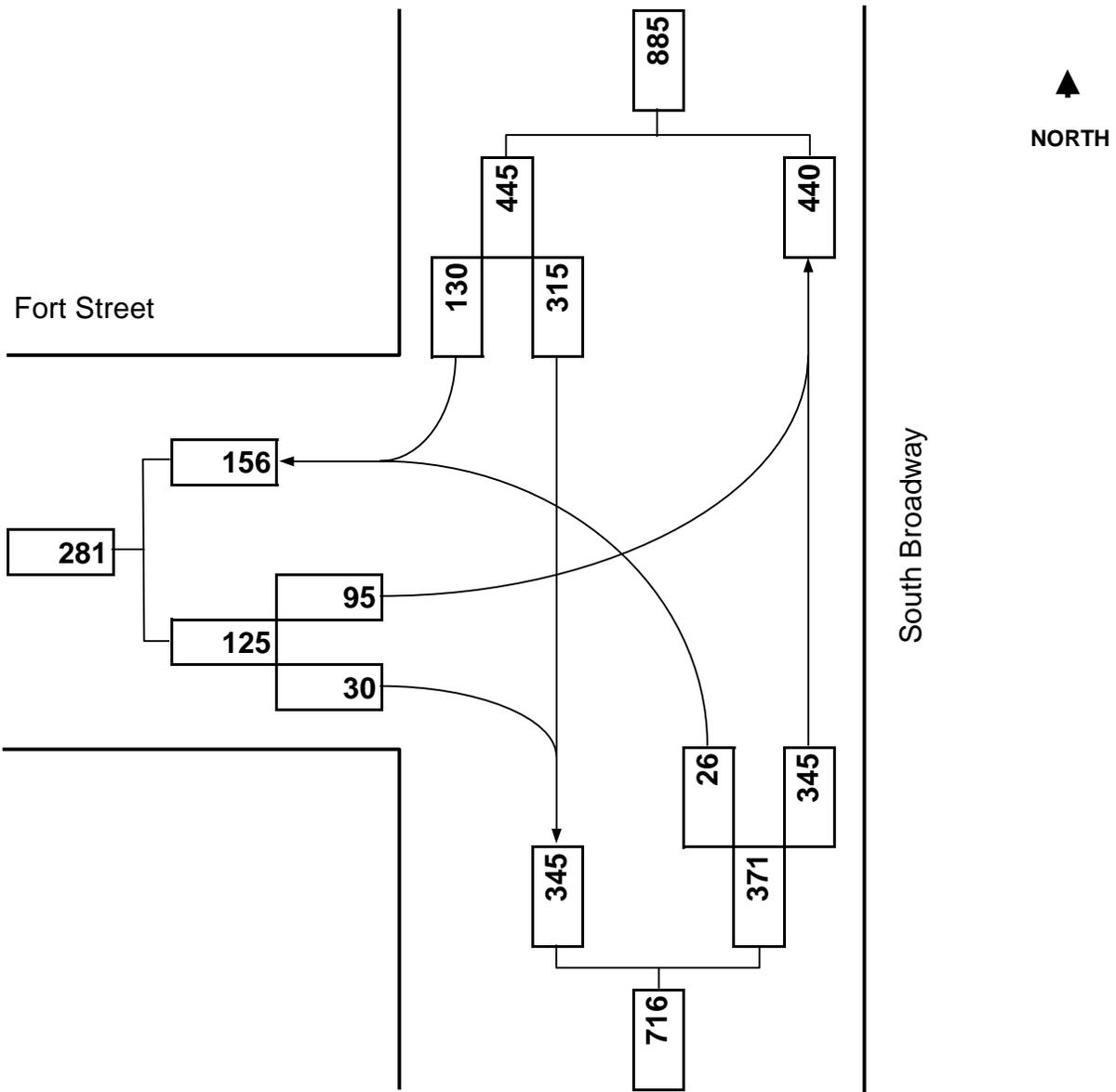
Flow Rate, v (veh/h)			183							47							
Capacity, c (veh/h)			270							989							
v/c Ratio			0.68							0.05							
95% Queue Length, Q ₉₅ (veh)			4.4							0.1							
Control Delay (s/veh)			42.1							8.8							
Level of Service (LOS)			E							A							
Approach Delay (s/veh)		42.1								1.4							
Approach LOS		E								A							



Turning Movement Diagram

Major Street: South Broadway
City/Town: East Providence
Reference No.: 2814
Existing: n/a

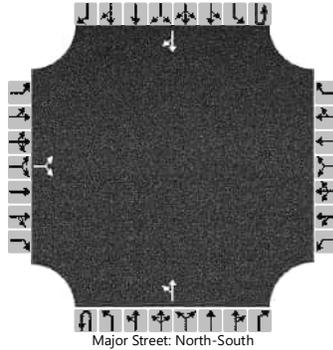
Minor Street: Fort Street
Day of Week: Saturday
Peak Period: Mid-Day
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	SBroadway at Fort		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Fort Street		
Analysis Year	2028			North/South Street	South Broadway		
Time Analyzed	Future Build Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		95		30						26	345				315	130
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			136							28						
Capacity, c (veh/h)			369							1090						
v/c Ratio			0.37							0.03						
95% Queue Length, Q ₉₅ (veh)			1.7							0.1						
Control Delay (s/veh)			20.3							8.4						
Level of Service (LOS)			C							A						
Approach Delay (s/veh)		20.3								0.8						
Approach LOS		C														

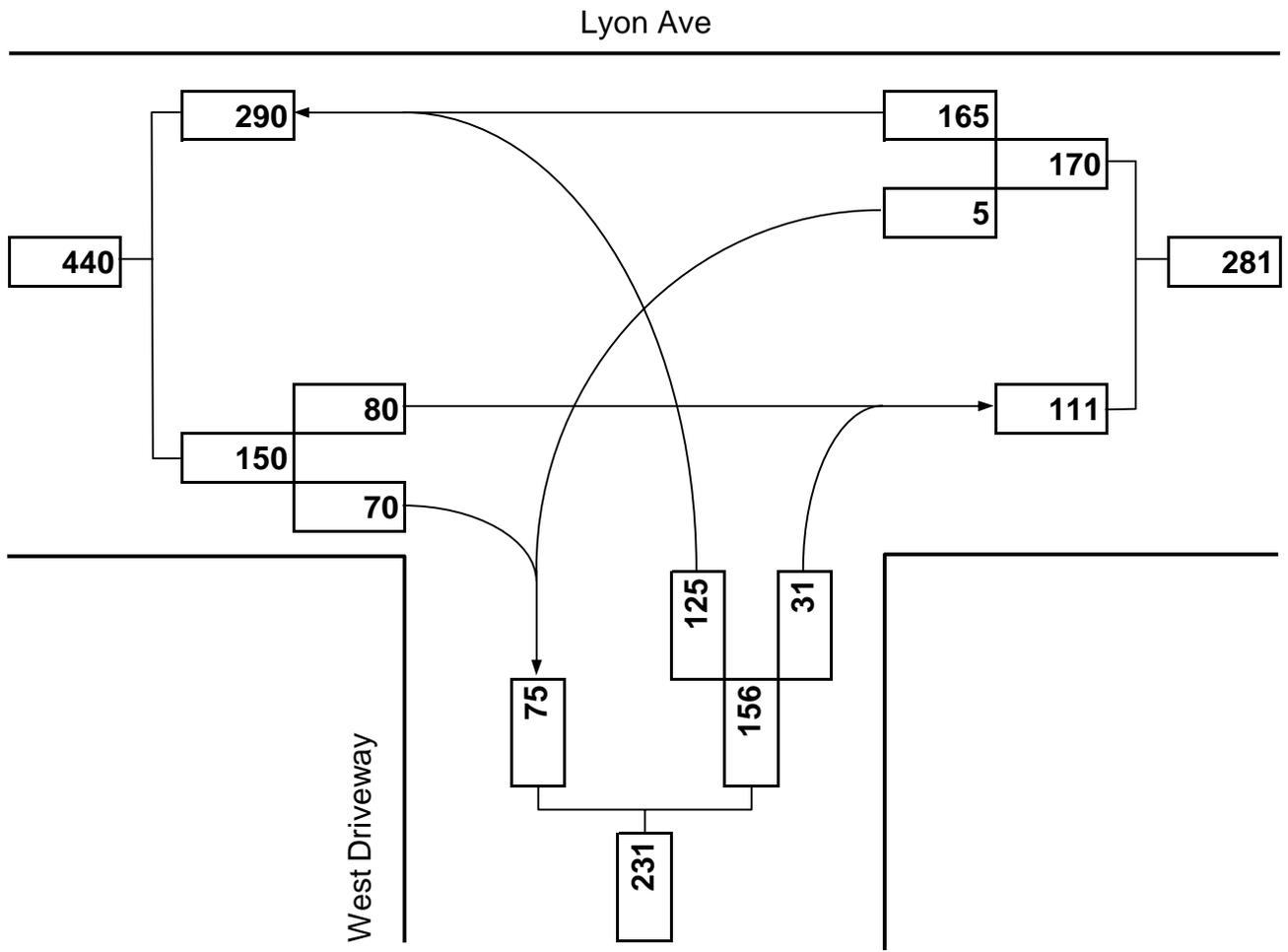
Lyon Avenue at West Site Driveway



Turning Movement Diagram

Major Street: Lyon Ave
City/Town: East Providence
Reference No.: 2814
Existing: n/a

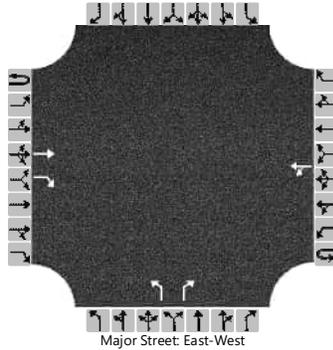
Minor Street: West Driveway
Day of Week: Weekday
Peak Period: AM Peak
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Lyon at West Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2028			North/South Street	West Site Driveway		
Time Analyzed	Future Build AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	1	0	0	1	0		1	0	1		0	0	0
Configuration			T	R		LT				L		R				
Volume (veh/h)			80	70		5	165			125		31				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.50				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

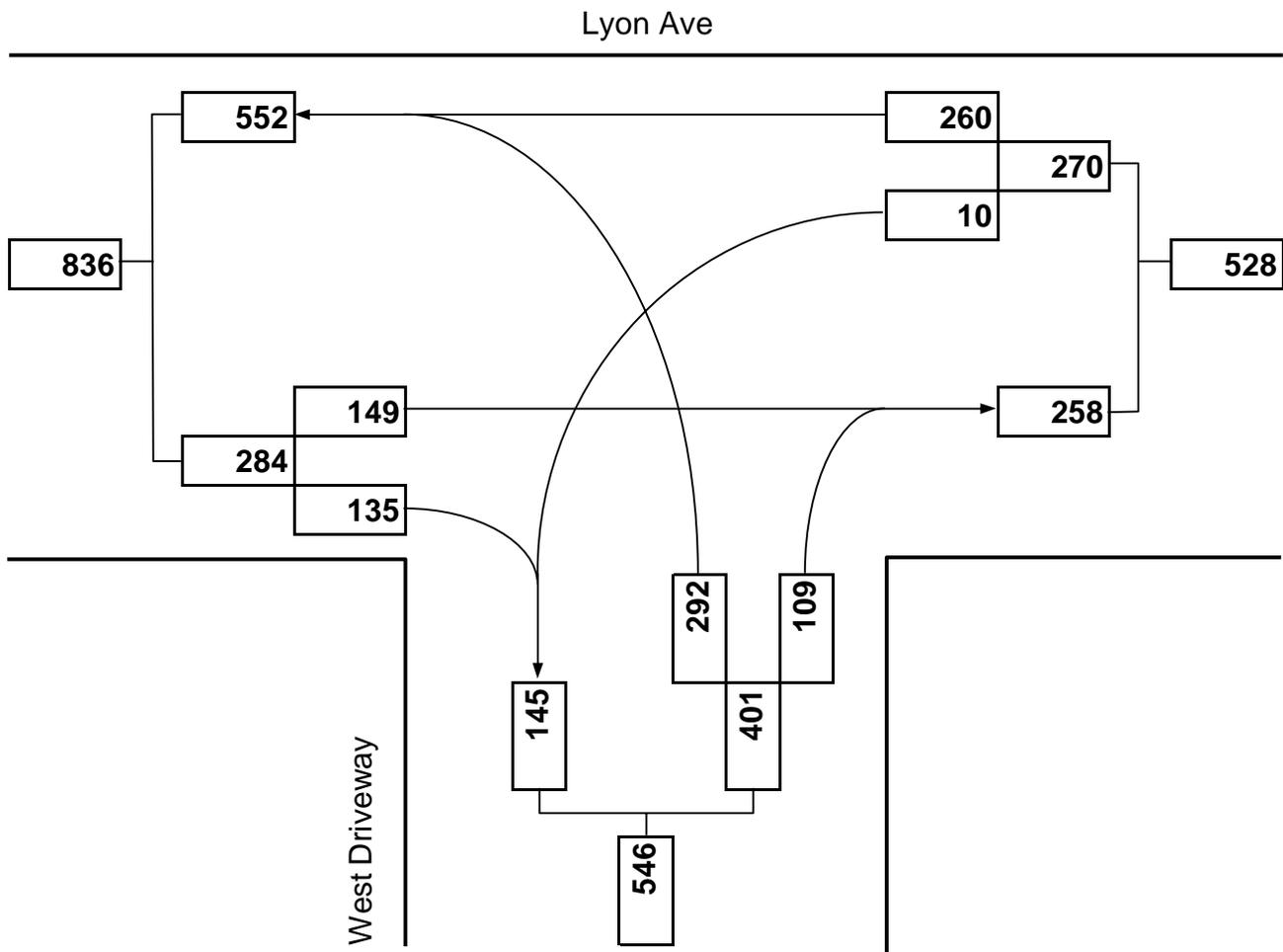
Flow Rate, v (veh/h)						5				136		34				
Capacity, c (veh/h)						1402				714		977				
v/c Ratio						0.00				0.19		0.03				
95% Queue Length, Q ₉₅ (veh)						0.0				0.7		0.1				
Control Delay (s/veh)						7.6				11.2		8.8				
Level of Service (LOS)						A				B		A				
Approach Delay (s/veh)					0.3				10.7							
Approach LOS									B							



Turning Movement Diagram

Major Street: Lyon Ave
City/Town: East Providence
Reference No.: 2814
Existing: n/a

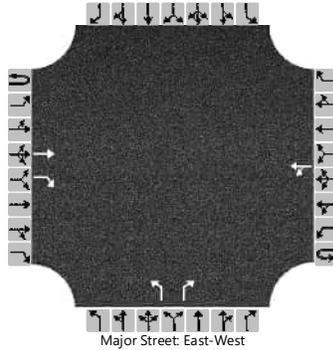
Minor Street: West Driveway
Day of Week: Weekday
Peak Period: PM Peak
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Lyon at West Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2028			North/South Street	West Site Driveway		
Time Analyzed	Future Build PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	1	0	0	1	0		1	0	1		0	0	0
Configuration			T	R		LT				L		R				
Volume (veh/h)			149	135		10	229			323		109				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.50					6.40		6.20			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

Delay, Queue Length, and Level of Service

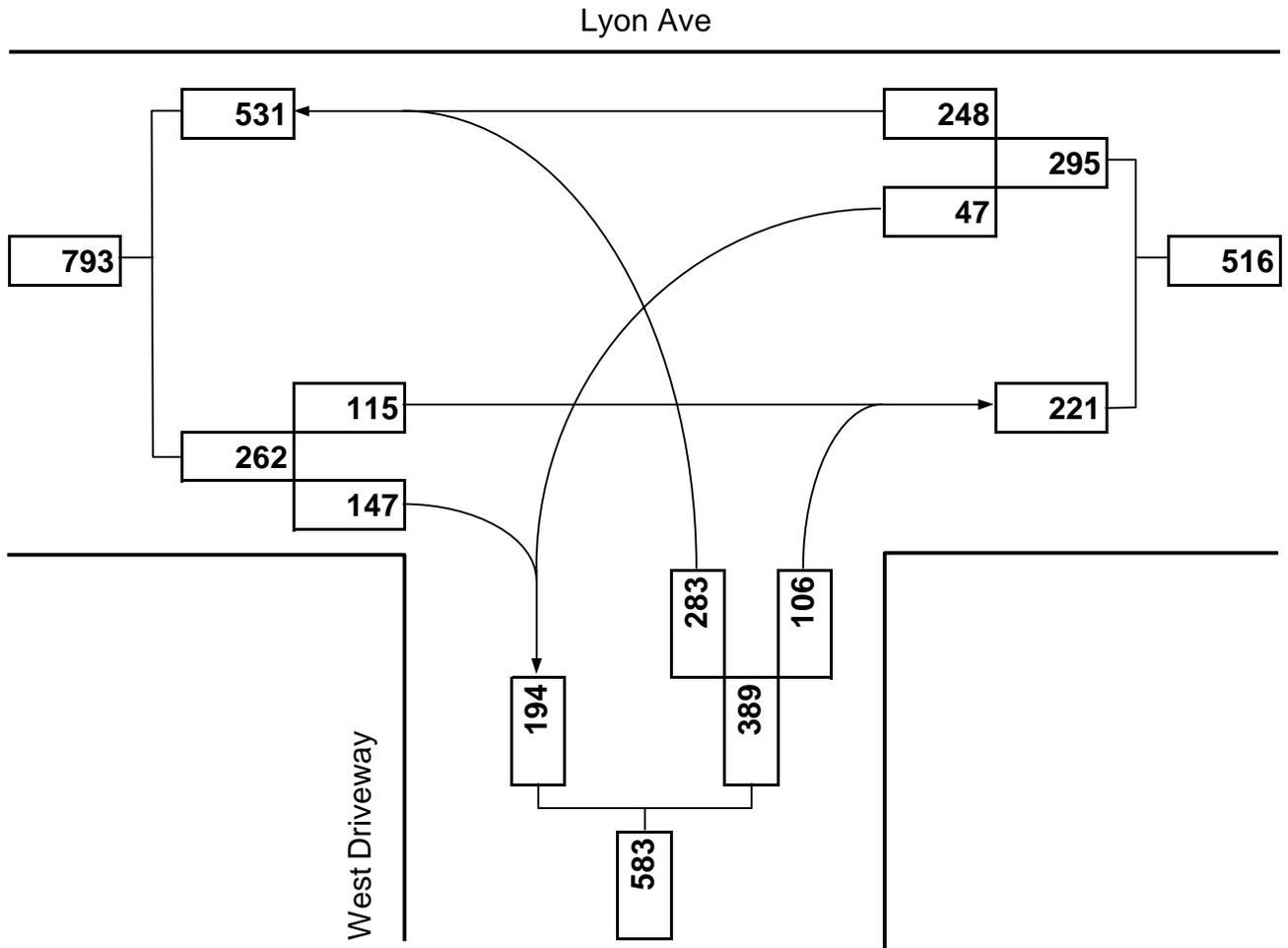
Flow Rate, v (veh/h)						11					351		118			
Capacity, c (veh/h)						1221					578		888			
v/c Ratio						0.01					0.61		0.13			
95% Queue Length, Q ₉₅ (veh)						0.0					4.1		0.5			
Control Delay (s/veh)						8.0					20.4		9.7			
Level of Service (LOS)						A					C		A			
Approach Delay (s/veh)					0.4				17.7							
Approach LOS									C							



Turning Movement Diagram

Major Street: Lyon Ave
City/Town: East Providence
Reference No.: 2814
Existing: n/a

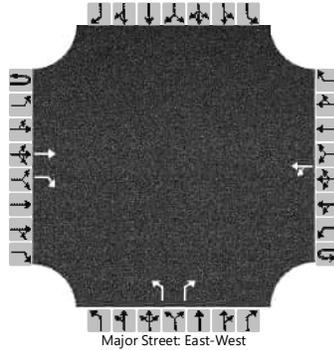
Minor Street: West Driveway
Day of Week: Saturday
Peak Period: Mid-day
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Lyon at West Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2028			North/South Street	West Site Driveway		
Time Analyzed	Future Build Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	1	0	0	1	0		1	0	1		0	0	0
Configuration			T	R		LT				L		R				
Volume (veh/h)			115	147		47	248			283		106				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.50					6.40		6.20			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						51					308		115			
Capacity, c (veh/h)						1249					510		931			
v/c Ratio						0.04					0.60		0.12			
95% Queue Length, Q ₉₅ (veh)						0.1					3.9		0.4			
Control Delay (s/veh)						8.0					22.2		9.4			
Level of Service (LOS)						A					C		A			
Approach Delay (s/veh)					1.6				18.7							
Approach LOS									C							

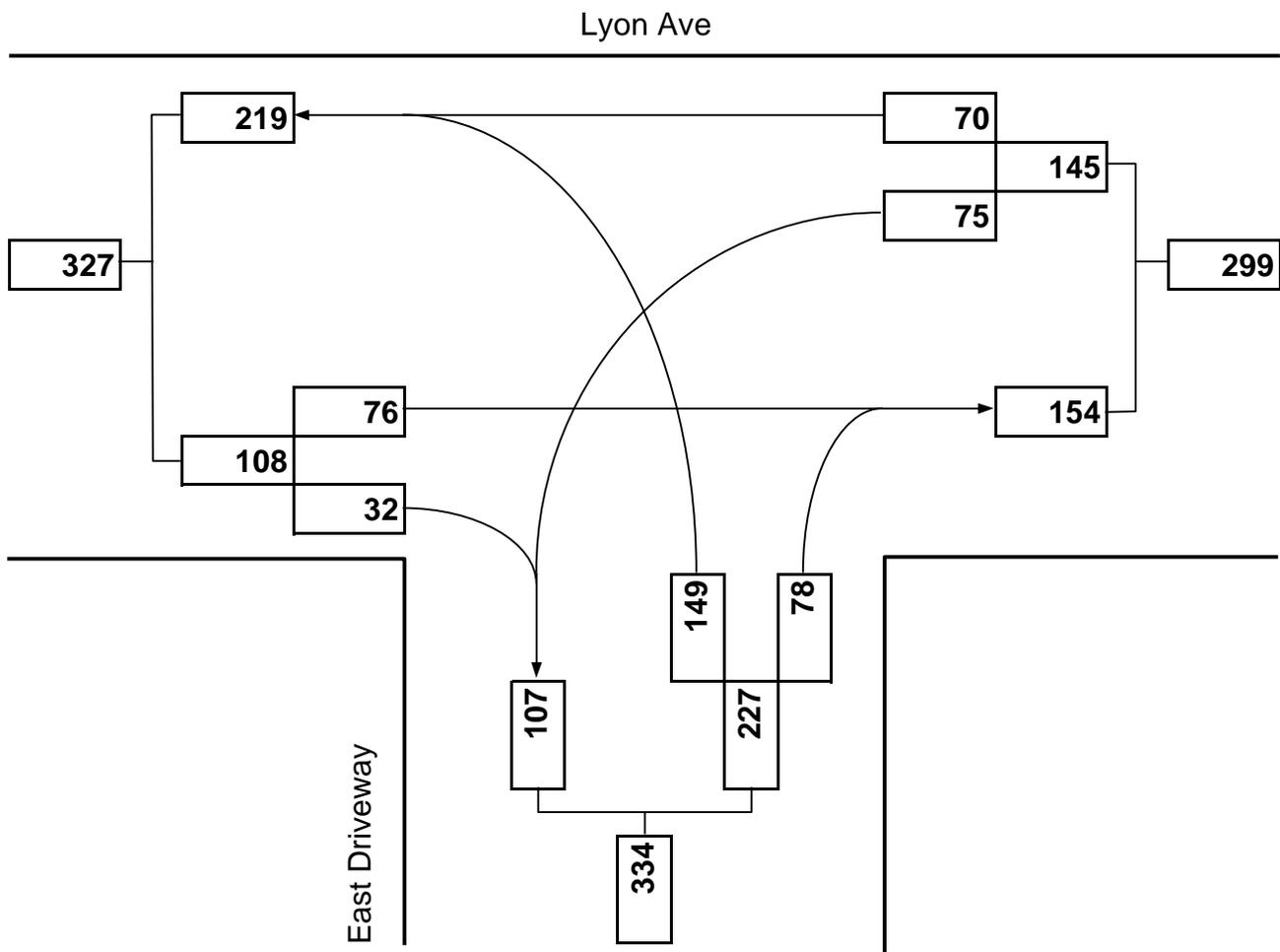
Lyon Avenue at East Site Driveway



Turning Movement Diagram

Major Street: Lyon Ave
City/Town: East Providence
Reference No.: 2814
Existing: n/a

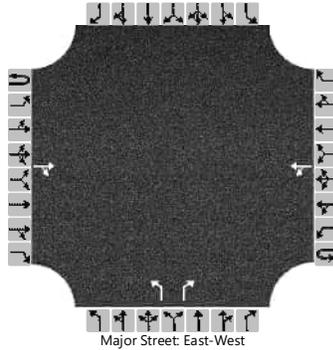
Minor Street: East Driveway
Day of Week: Weekday
Peak Period: AM Peak
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Lyon at East Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2028			North/South Street	East Site Driveway		
Time Analyzed	Future Build AM Peak			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			76	32		75	70			149		78				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.50				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

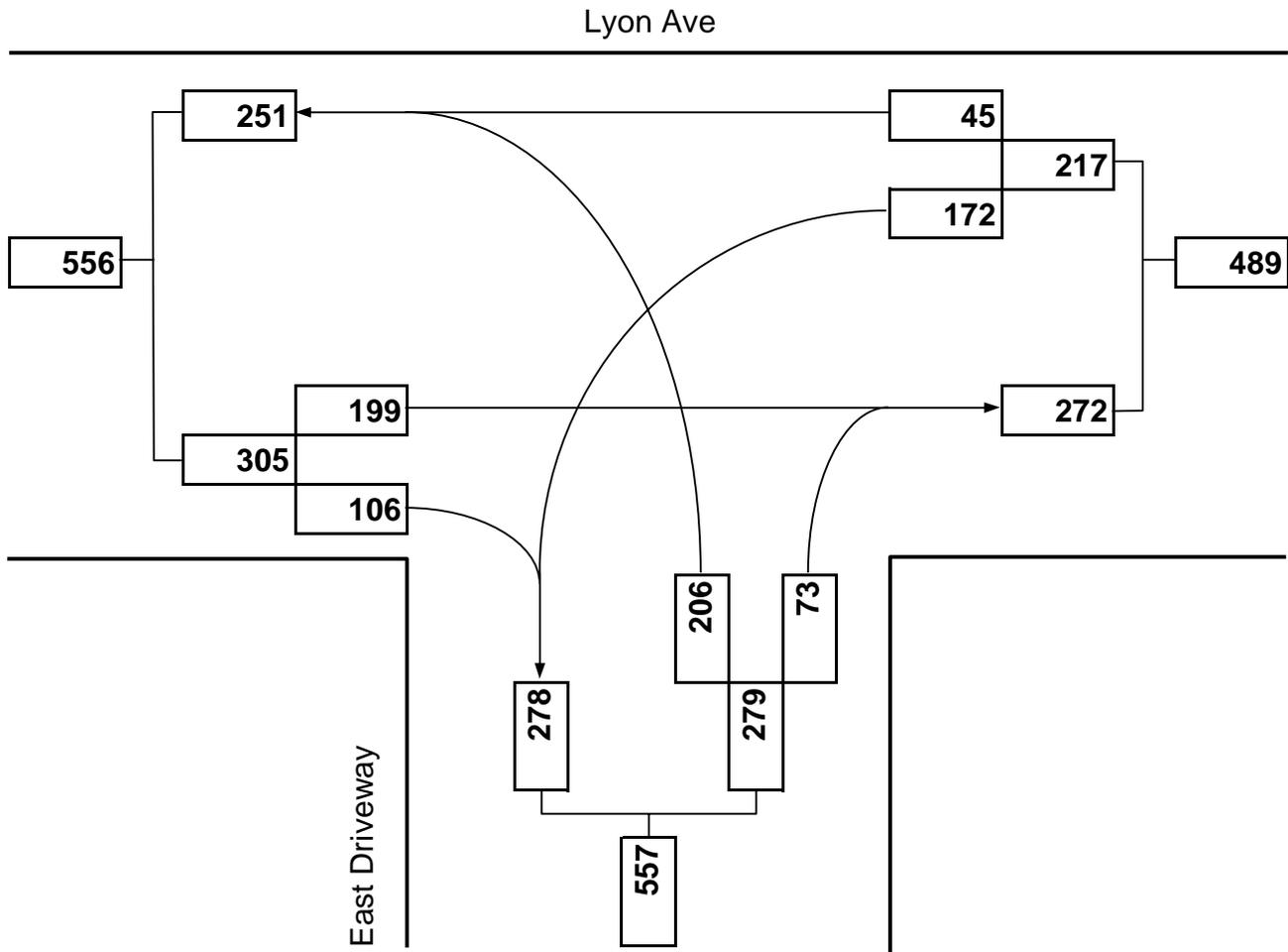
Flow Rate, v (veh/h)						82				162		85				
Capacity, c (veh/h)						1464				622		961				
v/c Ratio						0.06				0.26		0.09				
95% Queue Length, Q ₉₅ (veh)						0.2				1.0		0.3				
Control Delay (s/veh)						7.6				12.8		9.1				
Level of Service (LOS)						A				B		A				
Approach Delay (s/veh)					4.1				11.5							
Approach LOS									B							



Turning Movement Diagram

Major Street: Lyon Ave
City/Town: East Providence
Reference No.: 2814
Existing: n/a

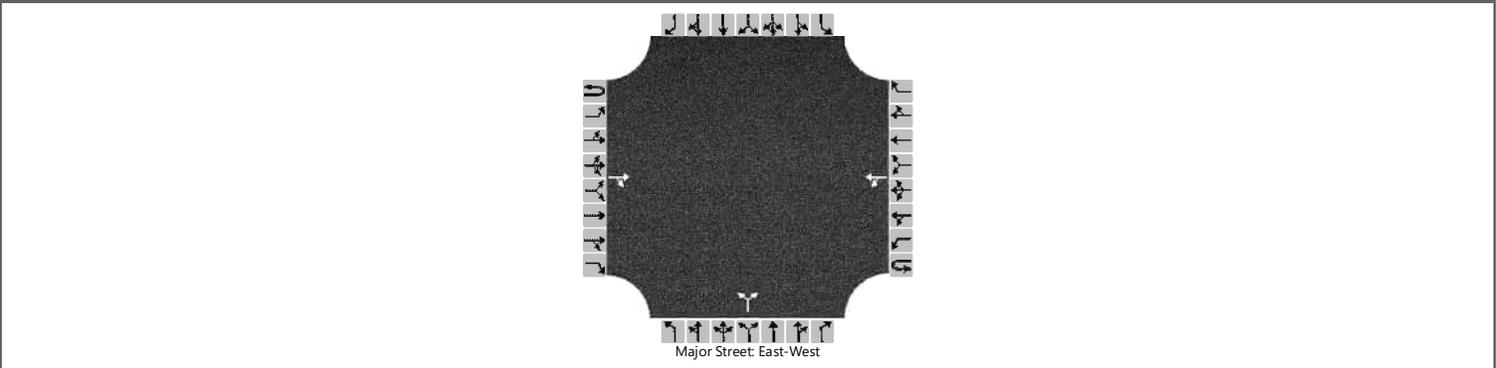
Minor Street: East Driveway
Day of Week: Weekday
Peak Period: PM Peak
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Lyon at East Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2028			North/South Street	East Site Driveway		
Time Analyzed	Future Build PM Peak			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			199	106		172	45			206		73				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.50				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

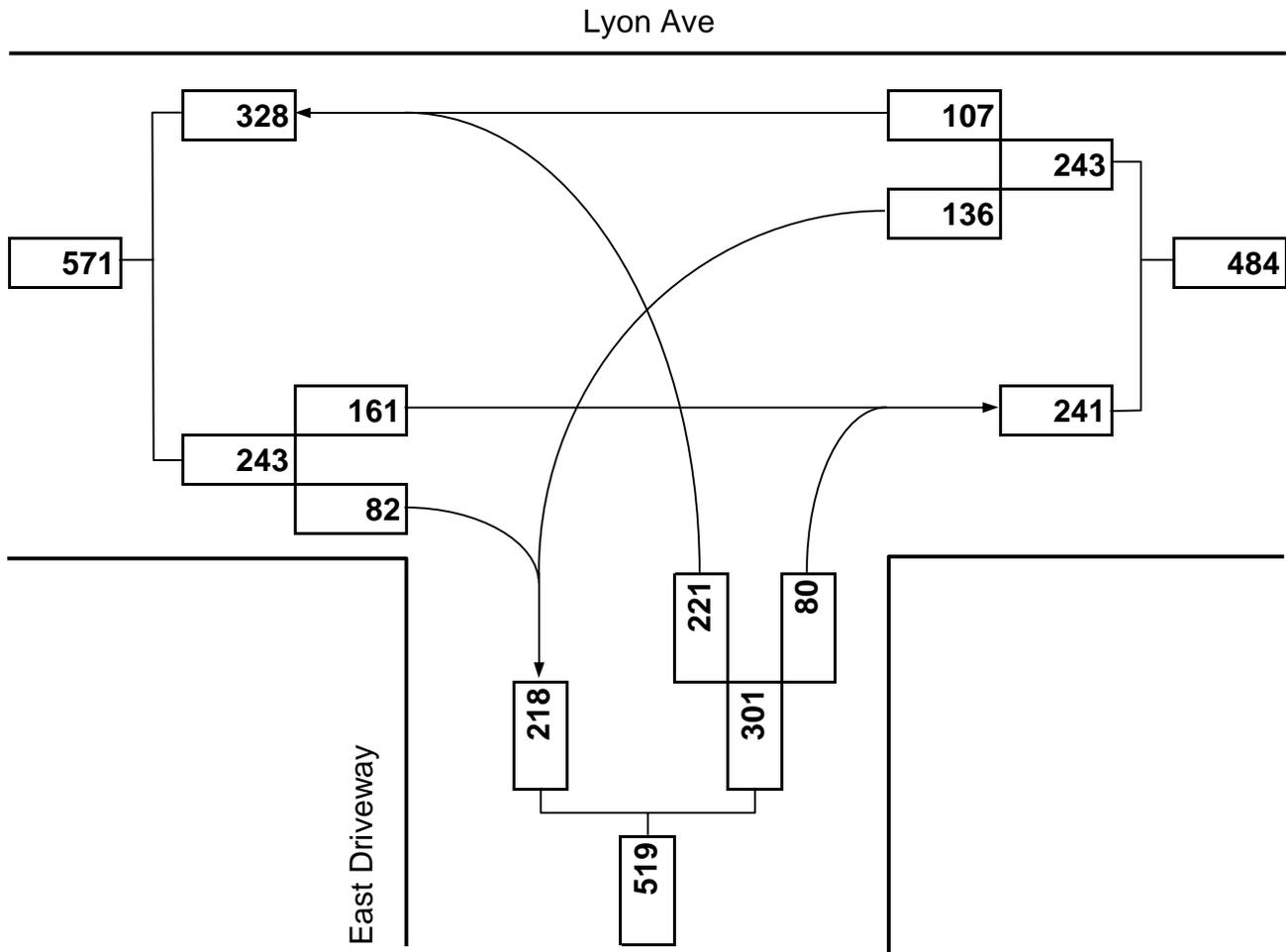
Flow Rate, v (veh/h)						187				303						
Capacity, c (veh/h)						1194				402						
v/c Ratio						0.16				0.75						
95% Queue Length, Q ₉₅ (veh)						0.6				6.1						
Control Delay (s/veh)						8.6				36.6						
Level of Service (LOS)						A				E						
Approach Delay (s/veh)					7.1				36.6							
Approach LOS									E							



Turning Movement Diagram

Major Street: Lyon Ave
City/Town: East Providence
Reference No.: 2814
Existing: n/a

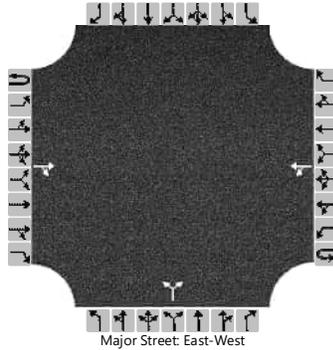
Minor Street: East Driveway
Day of Week: Saturday
Peak Period: Mid-day
Future: Build



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Traffic Section			Intersection	Lyon at East Site Dr		
Agency/Co.	Crossman			Jurisdiction	East Providence		
Date Performed	12/08/2023			East/West Street	Lyon Ave		
Analysis Year	2028			North/South Street	East Site Driveway		
Time Analyzed	Future Build Sat MD Peak			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	The MET						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			161	82		136	107			221		80				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.50					6.40		6.20			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

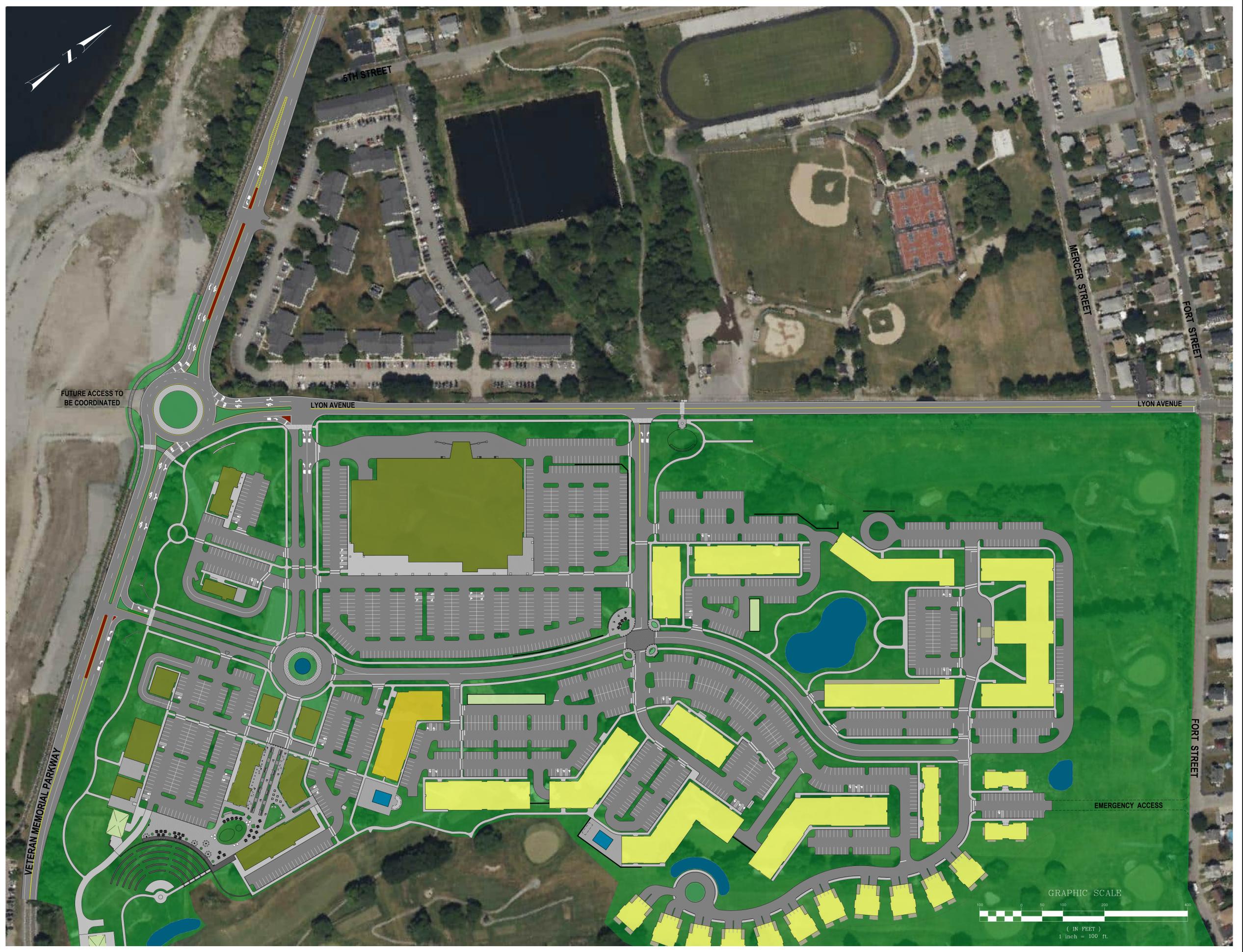
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						148						327				
Capacity, c (veh/h)						1274						456				
v/c Ratio						0.12						0.72				
95% Queue Length, Q ₉₅ (veh)						0.4						5.6				
Control Delay (s/veh)						8.2						30.5				
Level of Service (LOS)						A						D				
Approach Delay (s/veh)					5.0				30.5							
Approach LOS									D							

APPENDIX D – Off-Site Mitigation Plan

Veterans Memorial Parkway

Preferred Alternative



Crossman Engineering
 Rhode Island: 151 Centerville Road, Warwick, RI 02886, Phone (401) 738-5660
 Massachusetts: 1 George Leven Drive, Suite 200, North Attleboro, MA 02760, Phone: (508) 695-1700
 Email: cel@crossmaneng.com

THESE DRAWINGS ARE THE PROPERTY OF CROSSMAN ENGINEERING AND HAVE BEEN PREPARED FOR THEIR CLIENT FOR A SPECIFIC SITE AND PROJECT. THESE DRAWINGS ARE NOT TO BE COPIED OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN CONSENT OF CROSSMAN ENGINEERING.

DRAFT

PROJECT TITLE:
PROPOSED MIXED-USE DEVELOPMENT
PLAT MAP 107
BLOCK 15, LOT 1
500 VETERANS PARKWAY
EAST PROVIDENCE, RI

PREPARED FOR:
MARSHALL PROPERTIES
700 NARRAGANSETT PARK DRIVE
PAWTUCKET, RI

DRAWING TITLE:
ROADWAY IMPROVEMENT PLAN No. 1

DATE: DECEMBER 2023 SCALE: 1"=100'
 DWG. NAME: 2814-P-ROADWAY IMPROVEMENTS.dwg

REVISIONS		
NUMBER	REMARKS	DATE

DRAWING NUMBER
C1
 SHEET: 1 OF 2




- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

Crossman Engineering

Rhode Island: 151 Centerville Road, Warwick, RI 02886, Phone (401) 738-5660
 Massachusetts: 103 Commonwealth Avenue, North Attleboro, MA 02763, Phone (508) 695-1700

Email: cel@crossmaneng.com

THESE DRAWINGS ARE THE PROPERTY OF CROSSMAN ENGINEERING AND HAVE BEEN PREPARED FOR THEIR CLIENT FOR A SPECIFIC SITE AND PROJECT. THESE DRAWINGS ARE NOT TO BE COPIED OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN CONSENT OF CROSSMAN ENGINEERING.

DRAFT

PROJECT TITLE:
PROPOSED MIXED-USE DEVELOPMENT

PLAT MAP 107
 BLOCK 15, LOT 1

500 VETERANS PARKWAY
 EAST PROVIDENCE, RI

PREPARED FOR:
MARSHALL PROPERTIES

700 NARRAGANSETT PARK DRIVE
 PAWTUCKET, RI

DRAWING TITLE:
ROADWAY IMPROVEMENT PLAN No. 2

DATE: DECEMBER 2023 SCALE: 1"=40'

DWG. NAME:
 2814-P-ROADWAY IMPROVEMENTS-SOUTH BROADWAY.dwg

REVISIONS	NUMBER	REMARKS	DATE
△	--	--	--

DRAWING NUMBER
C2

SHEET: 2 OF 2

