

# **Traffic Impact and Access Study**

Proposed Mixed-Use Development

1381 Cranston Street

Cranston, Rhode Island

*Prepared for:*

CPW True Storage, LLC

Manchester, New Hampshire

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## **EXECUTIVE SUMMARY**

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### **DESCRIPTION OF PROJECT**

Vanasse & Associates, Inc. (VAI) has prepared this Traffic Impact and Access Study (TIAS) to identify traffic impacts associated with a proposed mixed-use development to be located at 1381 Cranston Street in Cranston, Rhode Island (the "Project"). The purpose of this TIAS is to review existing and future traffic conditions in the vicinity of the site, determine the traffic impact of the proposed Project at key intersections expected to experience increased traffic levels from the Project, and review the need for improvements to mitigate the Project's traffic impact.

### **PROPOSED PROJECT**

The site is bounded by commercial properties and areas of open space to the north, Cranston Street to the south, residential properties and Dyer Avenue to the east, and industrial properties to the west. Currently, the site contains a number of vacant buildings with various commercial uses. The site currently has one curb cut onto Cranston Street. The Project entails renovating the existing structures on-site to accommodate 99,920 square feet (sf) of self-storage and 129 multifamily residential units and entails a new construction of 57,000 sf of cold storage. The site will provide 270 parking spaces. Site access will be provided via three curb cuts, the existing curb cut onto Cranston Street and two new curb cuts onto Dyer Avenue.

### **EXISTING CONDITIONS**

A comprehensive field inventory was conducted to collect existing roadway geometrics, traffic volumes, operating characteristics, speed limits, and sight distances, as well as land use information. Traffic volumes were collected in January 2023 at the intersections expected to receive the traffic impact from the Project. These are listed below:

- Dyer Avenue at Puritan Avenue
- Dyer Avenue at Governor Street
- Dyer Avenue at Cranston Street
- Cranston Street at the Project site driveway
- Cranston Street at Haven Avenue

## **FUTURE CONDITIONS**

Traffic volumes within the study area were projected to 2028, which reflects a five-year planning horizon consistent with industry traffic study guidelines as well as the Cranston City Plan Commission Policy for Traffic. These conditions incorporate traffic growth due to general background traffic increases as well as development projects currently being proposed/permitted or under construction and expected to generate traffic in the future. This condition is referred to as the No-Build condition.

## **PROJECT-GENERATED TRAFFIC**

The Project is expected to generate 838 vehicle trips on an average weekday (two-way, 24-hour volume), with 63 vehicle trips expected during the weekday morning peak hour and 73 vehicle trips expected during the weekday evening peak hour. This is a reduction from the previous use on-site, which was estimated to generate approximately 304, 110, and 80 vehicle trips during the same respective time periods.

Project-related traffic-volume increases external to the study area relative to 2028 No-Build conditions are anticipated to range from 5 to 28 vehicles or 0.5 to 2.9 percent during the peak periods.

## **TRAFFIC OPERATIONS ANALYSIS**

In future conditions, operations are generally preserved with minor increases to delay and vehicle queue lengths on the various approaches.

## **RECOMMENDATIONS**

Access to the Project site will be provided via the one existing driveway onto Cranston Street and the two new driveways onto Dyer Avenue. The following recommendations are offered with respect to the promotion of alternative transportation and also to the design and operation of the Project site driveways:

- Public transit facilities and schedules for the transit services in the area should be posted in central gathering areas to encourage the use of transit by the project residents.
- The driveways should be placed under STOP-sign (*Manual on Uniform Traffic Control Devices* (MUTCD)<sup>1</sup> R1-1) control, with a painted STOP-bar included.
- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.
- Signs and landscaping adjacent to the Project site driveways should be designed and maintained so as not to restrict lines of sight.

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<sup>1</sup>*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sightlines.

## **CONCLUSIONS**

As documented in this study, Project-related traffic increases will not result in significant increases on overall traffic volumes or traffic delays within the study area. The site driveways will provide efficient access to and from the development. In general, the Project represents a decrease in traffic generation associated with the site as compared with the previous use. However, Project-related traffic can be adequately accommodated within the existing infrastructure with minimal impact on the traffic operations within the study area.

## **INTRODUCTION**

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Vanasse & Associates, Inc. (VAI) has prepared this Traffic Impact and Access Study (TIAS) in order to identify the traffic impacts associated with the proposed mixed-use development to be located at 1381 Cranston Street, in Cranston, Rhode Island. This report identifies and analyzes existing and future traffic conditions both with and without the Project and reviews access requirements, potential offsite improvements, and safety considerations.

### **STUDY METHODOLOGY**

This study was prepared in accordance with the State guidelines for TIASs as well as the Cranston City Plan Commission Policy for Traffic and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometry, observations of traffic flow, and collection of peak-period traffic counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A five-year time horizon was selected for these analyses consistent with industry guidelines for the preparation of this TIAS as well as the Cranston City Plan Commission Policy for Traffic. The traffic analysis conducted in stage two identifies projected future roadway capacity, traffic safety, and site access issues.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any are necessary, based on the results from stage two of the study.

## **EXISTING CONDITIONS**

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A comprehensive field inventory of existing conditions within the study area was conducted in January 2023. The field investigation consisted of an inventory of existing roadway geometrics; traffic volumes; and operating characteristics; as well as posted speed limits, sight distance, and land use information within the study area. The study area for the Project contains the major roadways which provide access to the Project, as well as the intersections which are expected to accommodate the majority of Project-related traffic. The study area is listed below and graphically depicted in Figure 1.

- Dyer Avenue at Puritan Avenue
- Dyer Avenue at Governor Street
- Dyer Avenue at Cranston Street
- Cranston Street at the Project site driveway
- Cranston Street at Haven Avenue

The following describes the study area roadways which provide access/egress to the Project.

### **GEOMETRY**

#### **Roadways**

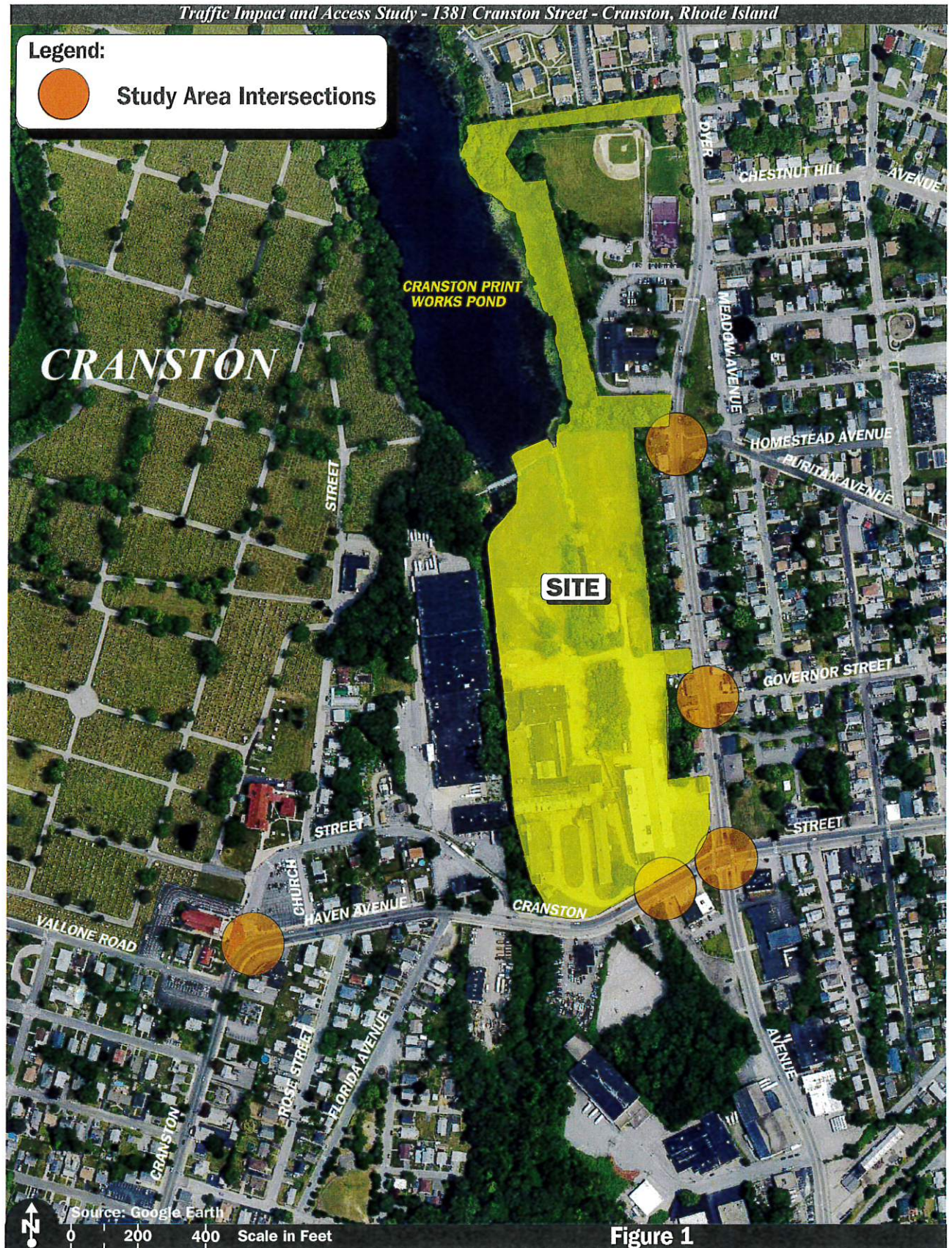
##### **Dyer Avenue**

Dyer Avenue is classified as an urban minor arterial roadway under City jurisdiction. Dyer Avenue runs in a general north-to-south alignment throughout the study area. Dyer Avenue provides one general-purpose travel lane in each direction separated by a double-yellow centerline with exclusive turn lanes provided at some intersections. Land uses along Dyer Avenue, throughout the study area, generally consist of commercial and residential uses.

##### **Cranston Street**

Cranston Street is classified as an urban minor arterial roadway under City jurisdiction. Cranston Street runs in a general east-to-west alignment throughout the study area. Cranston Street provides one general-purpose travel lane in each direction separated by a double-yellow centerline.





**Figure 1**  
Site Location and  
Study Area Map



Land uses along Cranston Street, throughout the study area, generally consist of commercial, industrial, and residential uses.

### **Intersections**

Figure 2 summarizes existing lane use, travel lane widths, and sidewalk and crosswalk locations at the study area intersections.

### **EXISTING TRAFFIC VOLUMES**

In order to establish base traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) were completed in January 2023. The TMCs were conducted during the weekday morning (7:00 to 9:00 AM) and weekday evening (3:00 to 6:00 PM) peak periods. Bicycles and pedestrians were also counted. In addition, an automatic traffic recorder count (ATR) was conducted in January 2023 on Cranston Street west of Dyer Avenue for 48 hours.

### **Traffic-Volume Adjustments**

In order to develop 2023 Existing traffic-volume conditions, adjustments were made to account for seasonal fluctuations in traffic. The Rhode Island Department of Transportation (RIDOT) has permanent count stations that are used to find the adjustments needed for traffic volumes to account for seasonal fluctuations. Based on the data provided by RIDOT for a Tuesday in January, it was determined that the traffic volumes on a roadway classified as “other highways urban” are approximately 8 percent lower than average-month conditions for the nearest count station. Therefore, traffic volumes were adjusted upwards by 8 percent to average-month conditions. The 2023 Existing traffic volumes on Cranston Street are summarized in Table 1.

As can be seen in Table 1, Cranston Street was found to accommodate approximately 11,516 vehicles per day (vpd) with 964 vehicles per hour (vph) during the weekday morning peak hour and 899 vph during the weekday evening peak hour. During the weekday morning peak hour, 54 percent of the traffic is traveling westbound. During the weekday evening peak hour, 56 percent of the traffic is traveling westbound. The Existing weekday morning and weekday evening peak-hour traffic volumes for the study area intersections are graphically depicted in Figure 3 and Figure 4, respectively.

**Table 1**  
**2023 EXISTING ROADWAY TRAFFIC-VOLUME SUMMARY**

Location	Weekday	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Daily Volume (vpd) <sup>a</sup>	Volume (vph) <sup>b</sup>	Percent of Daily Traffic <sup>c</sup>	Predominant Flow	Volume (vph)	Percent of Daily Traffic	Predominant Flow
Cranston Street, west of Dyer Avenue	11,516	964	8.5	54% WB	899	7.9	56% WB

Note: Includes seasonal correction factors applied to ATR and TMCs that were conducted in January 2023.

<sup>a</sup>Two-way daily traffic expressed in vehicles per day.

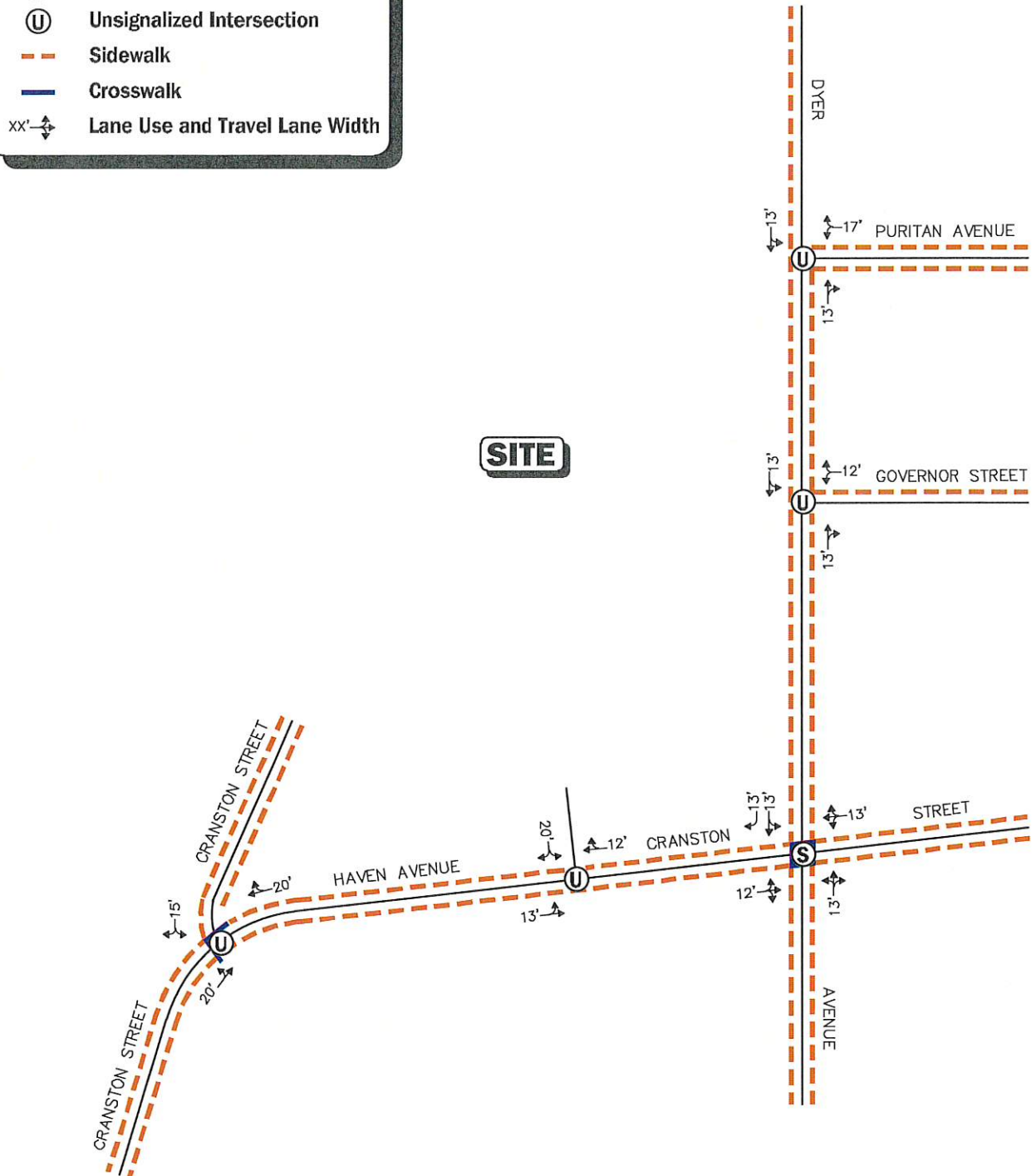
<sup>b</sup>Two-way peak-hour volume expressed in vehicles per hour.

<sup>c</sup>The percent of daily traffic that occurs during the peak hour.

WB = westbound.

**Legend:**

- Ⓢ Signalized Intersection
- Ⓤ Unsignalized Intersection
- - - Sidewalk
- Crosswalk
- xx' Lane Use and Travel Lane Width



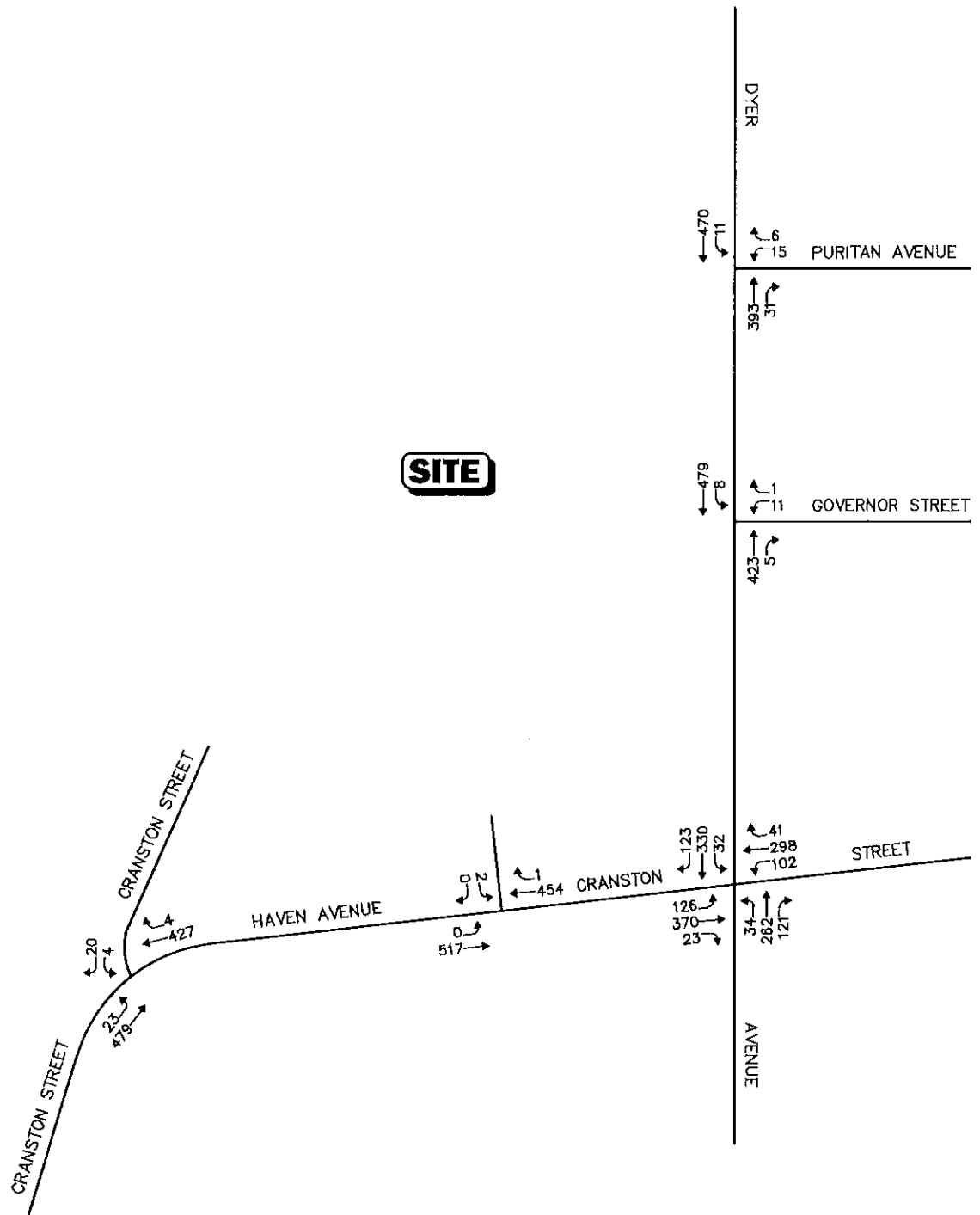
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**Figure 2**

**Existing Intersection Lane Use, Travel Lane Width, and Pedestrian Facilities**

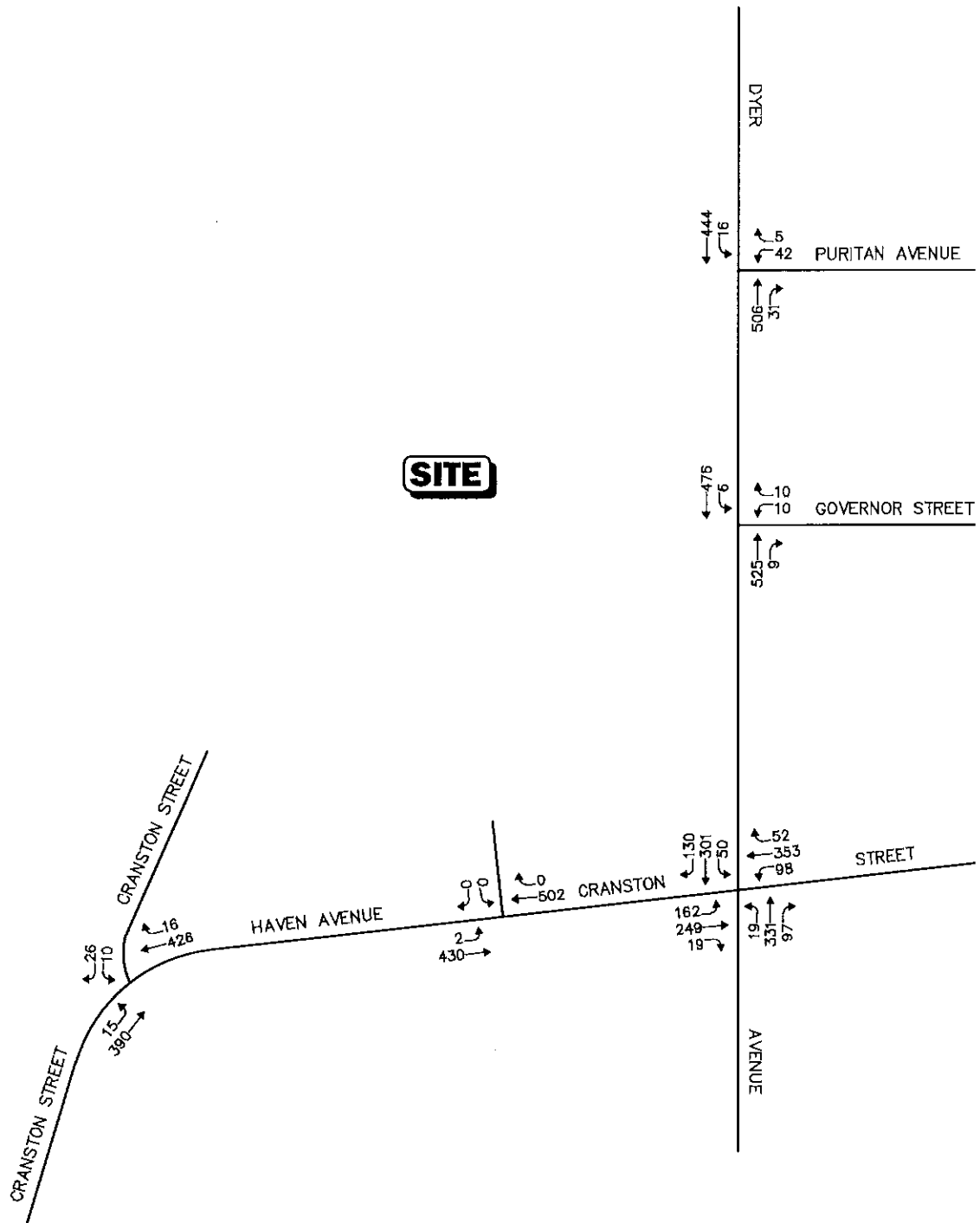




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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Figure 3



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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Figure 4

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**2023 Existing  
Weekday Evening  
Peak-Hour Traffic Volumes**

## **PEDESTRIAN AND BICYCLE FACILITIES**

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in January 2023. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study area roadways and at the study area intersections, as well as the location of bicycle facilities. Sidewalks are provided along both sides of Cranston Street, both sides of Haven Avenue, both sides of Puritan Avenue, both sides of Dyer Avenue south of Puritan Avenue, on the west side of Dyer Avenue north of Puritan Avenue, and on the north side of Governor Street. Crosswalks are provided across all legs of the intersection of Cranston Street at Dyer Street and across both Cranston Street legs to the intersection of Cranston Street with Haven Avenue.

## **PUBLIC TRANSPORTATION**

Public transportation services are provided within the study area by the Rhode Island Public Transit Authority (RIPTA) for shuttle services. Table 2 summarizes the characteristics of this service. Schedule and fare information for the shuttle service is provided in the Appendix.

**Table 2**  
**PUBLIC TRANSPORTATION SERVICES**

Service	Stop Closest to Site	Distance from Site	Weekday	
			Hours of Operation	Headway (minutes)
Dyer/Pocasset Bus Line	Cranston at Dyer	~ 60 feet west	5:55 AM – 10:29 PM	30-40
Arlington/Oaklawn Bus Line	Cranston Before Dyer	~ 180 feet west	5:03 AM – 9:58 PM	40-50

## **MOTOR VEHICLE CRASH DATA**

Motor vehicle crash information for the study area intersections was provided by the Cranston Police Department for the most recent three-year period available (2020 through 2022) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized in Table 3 by intersection, type, weather condition, lighting condition, pavement condition, and severity.

As can be seen in Table 3, most of the study area intersections were found to have experienced 5 or fewer reported motor vehicle crashes over the three-year review period, averaging 1.67 crashes per year or less. The majority of the accidents were angle or rear-end collisions, occurred on dry pavement, during the daylight, in clear weather, and caused property damage only. The intersection of Dyer Avenue at Cranston Street experienced 33 accidents over the three-year review period, averaging 11 accidents per year. The majority of the accidents were angle collisions (18 out of 33), occurred on dry pavement (30 out of 33), during daylight (25 out of 33), in clear weather (26 out of 33), and caused property damage only (31 out of 33). No fatalities were reported over the three-year period reviewed.

**Table 3**  
**MOTOR VEHICLE CRASH DATA SUMMARY**

Scenario	Dyer Ave. at Puritan Ave.	Dyer Ave. at Governor St.	Dyer Ave. at Cranston St.	Cranston St. at Project Site Driveway	Cranston St. at Haven Ave.
<i>Year:</i>					
2020	0	0	15	0	0
2021	5	0	9	0	1
2022	0	0	9	0	0
Total	5	0	33	0	1
Average <sup>a</sup>	1.67	0.00	11.0	0.00	0.33
<i>Type:</i>					
Angle	2	0	18	0	0
Rear-End	2	0	7	0	1
Head-On	0	0	4	0	0
Sideswipe	0	0	3	0	0
Fixed Object	1	0	0	0	0
Pedestrian	0	0	0	0	0
Bicyclist	0	0	0	0	0
Unknown/Other	0	0	1	0	0
Total	5	0	33	0	1
<i>Weather Conditions:</i>					
Clear	5	0	26	0	1
Cloudy/Rain	0	0	6	0	0
Snow/Ice	0	0	1	0	0
Fog	0	0	0	0	0
Unknown/Other	0	0	0	0	0
Total	5	0	33	0	1
<i>Lighting Conditions:</i>					
Daylight	4	0	25	0	1
Dawn/Dusk	0	0	1	0	0
Dark (lit)	1	0	7	0	0
Dark (unlit)	0	0	0	0	0
Unknown/Other	0	0	0	0	0
Total	5	0	33	0	1
<i>Pavement Conditions :</i>					
Dry	5	0	30	0	1
Wet	0	0	3	0	0
Snow/Ice	0	0	0	0	0
Unknown/Other	0	0	0	0	0
Total	5	0	33	0	1
<i>Severity:</i>					
Property Damage Only	5	0	31	0	1
Personal Injury	0	0	2	0	0
Fatality	0	0	0	0	0
Unknown/Other	0	0	0	0	0
Total	5	0	33	0	1

<sup>a</sup>Average number of crashes over three-year period.

## **VEHICLE SPEEDS**

Vehicle speeds along Cranston Street west of Dyer Avenue were recorded to determine the average and 85<sup>th</sup> percentile vehicle speeds. The statutory speed limit pursuant to R.I.G.L. c. 31 § 14-2 on Cranston Street is 25 miles per hour (mph)<sup>2</sup> in the vicinity of the site. The results of the speed measurements are shown in Table 4.

As can be seen from Table 4, the average speed recorded eastbound on Cranston Street was 21 mph and the 85<sup>th</sup> percentile speed recorded was 27 mph. The average speed recorded westbound was 27 mph and the 85<sup>th</sup> percentile speed was 31 mph.

**Table 4**  
**OBSERVED VEHICLE SPEEDS – (In Miles Per Hour)**

<u>Location/Direction</u>	<u>Average Speed</u>	<u>85<sup>th</sup> Percentile Speed<sup>a</sup></u>
<i>Cranston Street, west of Dyer Avenue:</i>		
Eastbound	21	27
Westbound	27	31

<sup>a</sup>The 85<sup>th</sup> percentile speed is the speed at which 85 percent of the traffic is traveling at or below. It is commonly used for setting speed limits on roadways.

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<sup>2</sup>The statutory or “prima facie” speed is defined in R.I.G.L. Chapter 31, Section 14-2, as the speed which would be deemed reasonable and proper to operate a motor vehicle.

## **FUTURE CONDITIONS**

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To determine the impact of site-generated traffic volumes on the roadway network under future conditions, Existing traffic volumes in the study area were projected to the year 2028. Traffic volumes on the roadway network at that time, in the absence of the Project (that is, the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific developments by others expected to be completed by 2028. Inclusion of these factors resulted in the development of 2028 No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop the 2028 Build traffic-volume conditions.

### **FUTURE TRAFFIC GROWTH**

Traffic growth on area roadways is a function of the expected land developments impacting the study area. Several methods are used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all existing traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

In addition, we identified the location and type of planned development affecting the study area, estimated the traffic to be generated by that development, and assigned it to the area roadway network. This produces a more realistic estimate of growth for local traffic. However, the drawback of this procedure is that the potential growth in population and development external to the study area would not be accounted for in the traffic projections.

To provide a conservative analysis framework, both procedures were used in this TIAS.

#### **General Background Growth**

Based on a review of data from RIDOT and other area traffic studies, it was determined that the traffic volumes are increasing in the area by approximately 0.76 percent per year on average. Therefore, a 1.0 percent per year compounded annual background traffic growth rate was used to account for future traffic growth including presently unforeseen development within the study area.

### **Specific Development by Others**

The City of Cranston was contacted in order to determine if there are any planned or approved development projects that are expected to influence future traffic volumes within the study area. Based on these discussions, the following project was identified for possible inclusion in this assessment:

***Knights Corner*** – This project entails construction of a mixed-use development including residential and restaurant uses. A detailed traffic analysis has not yet been submitted for this development, but based on the number of residential units and the size of the restaurant and existing trip distributions, the trips generated for this background development were included in the future conditions analysis. Knights Corner will be located at 1388 and 1390 Cranston Street, south of the Project.

### **Planned Roadway Improvements**

The City of Cranston was contacted in order to determine if there are any planned roadway improvement projects expected to be completed within the study area in the five-year planning horizon. Based on these discussions, no roadway improvement projects are planned within the study area beyond general maintenance.

### **Previous Site Trip Generation**

The site was previously occupied by the Cranston PrintWorks facility with a substantial employee base on site. The site could be re-occupied by an industrial operation; therefore, trips for this use were calculated for inclusion in the No Build condition. Trips for the previous use on-site were calculated based on the Institute of Transportation Engineers (ITE) Trip Generation Manual<sup>3</sup> using Land Use Code (LUC) 110, *General Light Industrial*. Table 5 provides a summary of the previous site trip generation.

**Table 5  
PREVIOUS SITE TRIP-GENERATION SUMMARY**

Time Period	Industrial Trips <sup>a</sup>
Weekday Daily	1,142
<i>Weekday Morning Peak Hour:</i>	
Entering	152
Exiting	21
Total	173
<i>Weekday Evening Peak Hour:</i>	
Entering	21
Exiting	131
Total	152

<sup>a</sup>Based on ITE LUC 110, *General Light Industrial*; 234,352 sf.

<sup>3</sup>*Trip Generation*, 11<sup>th</sup> Edition; Institute of Transportation Engineers; Washington, DC; 2021.

As can be seen in Table 5, the previous site would be expected to generate 1,142 vehicle trips on an average weekday (two-way, 24-hour volume), with 173 vehicle trips (152 entering and 21 exiting) expected during the weekday morning peak hour and 152 vehicle trips (21 entering and 131 exiting) expected during the weekday evening peak hour.

Since the site could not be reoccupied with a similar industrial type use, the trips shown in Table 5 were assigned to the No-Build traffic-volume condition.

### **No-Build Traffic Volumes**

The 2028 No-Build peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2023 Existing peak-hour traffic volumes and incorporating traffic projections from the Knights Corner and the previous site were it to be reoccupied. The resulting 2028 No-Build weekday morning and evening peak-hour traffic-volume networks are shown on Figure 5 and Figure 6, respectively.

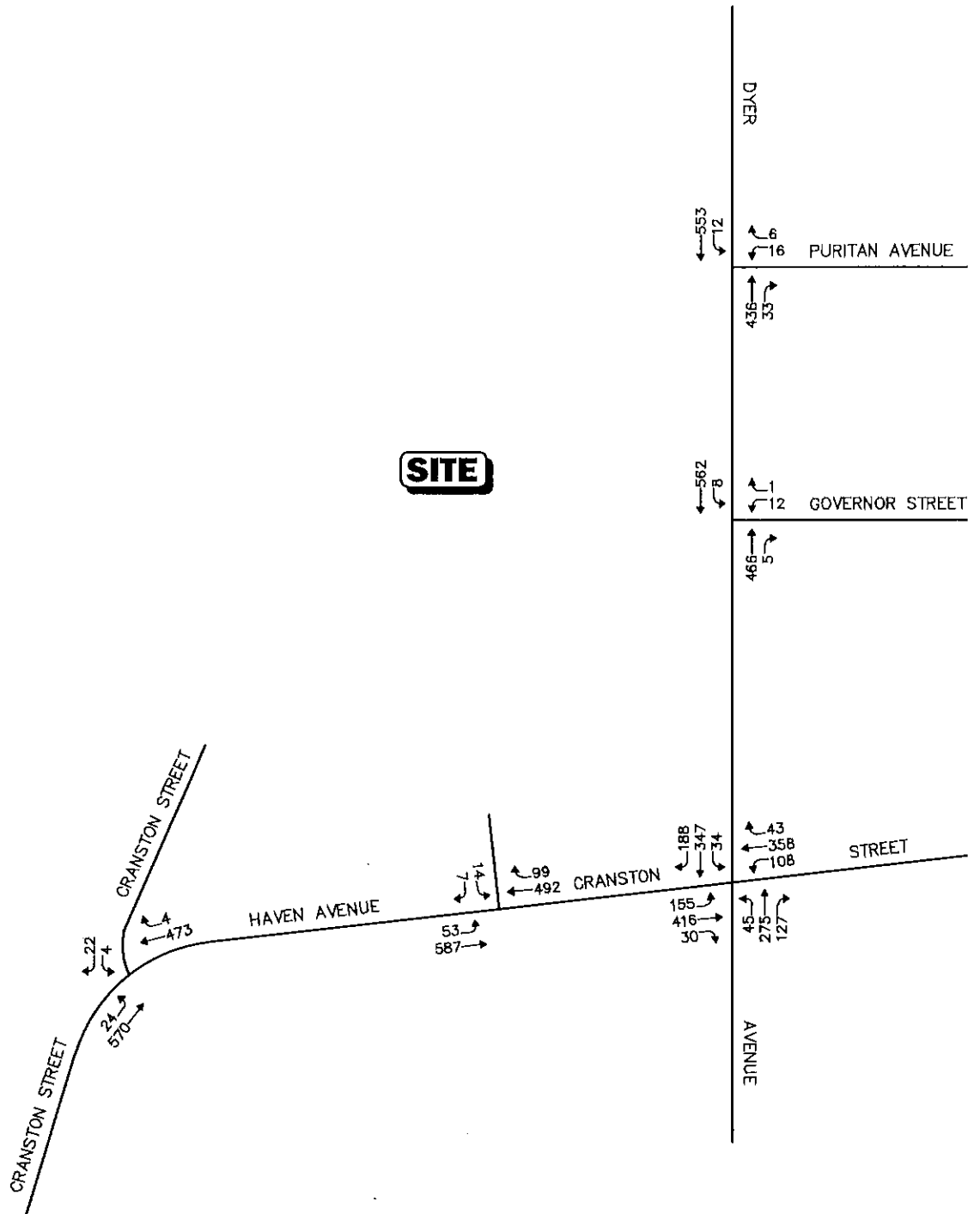
## **PROJECT-GENERATED TRAFFIC**

Vehicle trips from the Project were developed using trip-generation estimates with distribution onto the study area locations. The trip generation was prepared using data from the ITE *Trip Generation* manual, which is the standard source for trip-generation estimates and is required by the Cranston City Plan Commission Policy for Traffic.

### **Proposed Site Trips**

The Project entails renovating the existing structures on-site to accommodate 99,920 sf of self-storage, 129 multifamily residential units, and entails a new construction of 57,000 sf of cold storage. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published by the ITE for LUC 151, *Mini-Warehouse*, LUC 157, *High-Cub Cold Storage Warehouse*, and LUC 221, *Multifamily Housing (Mid-Rise)* were used. Table 6 provides a summary of the proposed Project trip generation.





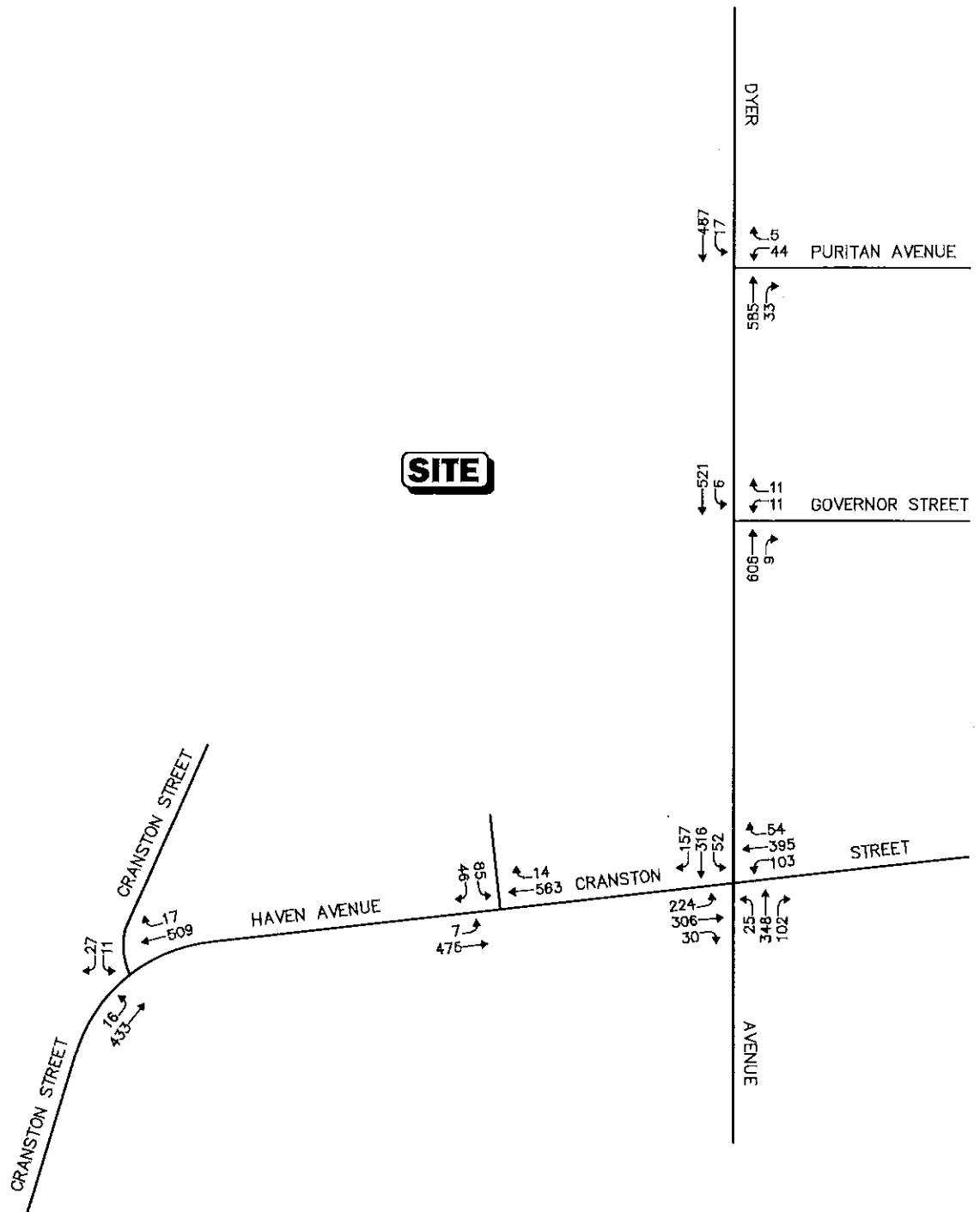
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 5



2028 No-Build  
Weekday Morning  
Peak-Hour Traffic Volumes



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 6

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**2028 No-Build  
Weekday Evening  
Peak-Hour Traffic Volumes**

**Table 6**  
**PROPOSED SITE TRIP-GENERATION SUMMARY**

Time Period/ Directional Distribution	Self-Storage Trips <sup>a</sup>	Cold-Storage Trips <sup>b</sup>	Multifamily Residential Trips <sup>c</sup>	Total Trips
Weekday Daily	156	96	586	838
<i>Weekday Morning Peak-Hour:</i>				
Entering	6	3	11	20
<u>Exiting</u>	<u>4</u>	<u>2</u>	<u>37</u>	<u>43</u>
Total	10	5	48	63
<i>Weekday Evening Peak-Hour:</i>				
Entering	8	2	31	41
<u>Exiting</u>	<u>8</u>	<u>3</u>	<u>20</u>	<u>31</u>
Total	16	5	51	72

<sup>a</sup>Based on ITE LUC 151, *Mini-Warehouse*; 106,920 sf.

<sup>b</sup>Based on ITE LUC 157, *High-Cube Cold Storage Warehouse*; 45,200 sf.

<sup>c</sup>Based on ITE LUC 221, *Multifamily Housing (Mid-Rise)*; 129 units.

As can be seen in Table 6, the Project is expected to generate 838 vehicle trips on an average weekday (two-way, 24-hour volume), with 63 vehicle trips (20 entering and 43 exiting) expected during the weekday morning peak hour and 72 vehicle trips (41 entering and 31 exiting) expected during the weekday evening peak hour.

#### **Previous To Proposed Use Comparison**

A comparison of the previous site trip generation and the proposed site trips was conducted using the ITE data. Table 7 summarizes the net change in trip generation associated with the proposed Project.

As shown in Table 7, the Project is anticipated to generate 304 less daily trips (24-hour total, entering and exiting) on an average weekday than the previous site use. During the weekday morning peak hour, the Project is expected to generate 110 less trips (132 less entering and 22 more exiting) than the previous site use and during the weekday evening peak hour, the Project is expected to generate 80 less trips (20 more entering and 100 less exiting) than the previous site use. These previous site trips were removed from the No Build traffic volume conditions and replaced with the Project traffic generation for the Build analysis.

**Table 7**  
**ITE TRIP-GENERATION COMPARISON**

Time Period	Proposed Site Trips <sup>a</sup>	Previous Site Trips <sup>b</sup>	Change
Weekday Daily	838	1,142	-304
<i>Weekday Morning Peak Hour:</i>			
Entering	20	152	-132
Exiting	<u>43</u>	<u>21</u>	<u>22</u>
Total	63	173	-110
<i>Weekday Evening Peak Hour:</i>			
Entering	41	21	20
Exiting	<u>31</u>	<u>131</u>	<u>-100</u>
Total	72	152	-80

<sup>a</sup>From Table 6.

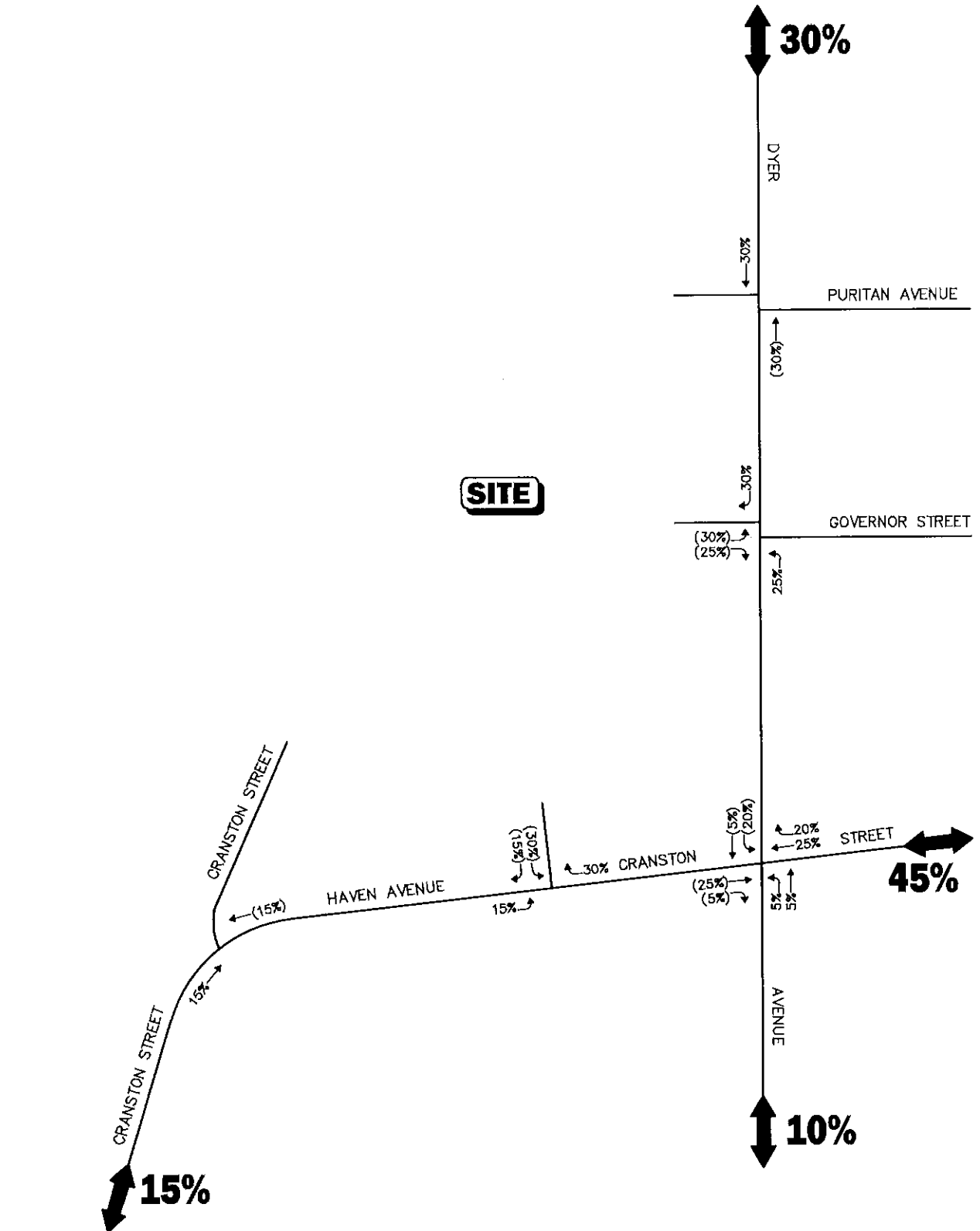
<sup>b</sup>From Table 5.

### **TRIP DISTRIBUTION AND ASSIGNMENT**

The directional distribution of the residential site-generated trips to and from the Project was determined based on a review of existing travel patterns and journey-to-work census data at the study area intersections. The directional distribution of the warehouse site-generated trips to and from the Project was determined based on a review of existing travel patterns at the study area intersections. The trip distributions for the residential and warehouse components of the Project are summarized in Table 8 and graphically depicted on Figures 7 and 8, respectively. The weekday morning and weekday evening peak-hour traffic volumes expected to be generated by the residential and warehouse components of the Project were assigned on the study area roadway network as shown on Figures 9, 10, 11, and 12.

**Table 8**  
**TRIP-DISTRIBUTION SUMMARY**

Roadway	Direction (To/From)	Residential Percent (To/From)	Warehouse Percent (To/From)
Dyer Avenue	North	30	35
Dyer Avenue	South	10	5
Cranston Street	East	15	35
Cranston Street	West	<u>45</u>	<u>25</u>
TOTAL		100	100



Not To Scale



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Figure 7

Trip Distribution  
Residential Component

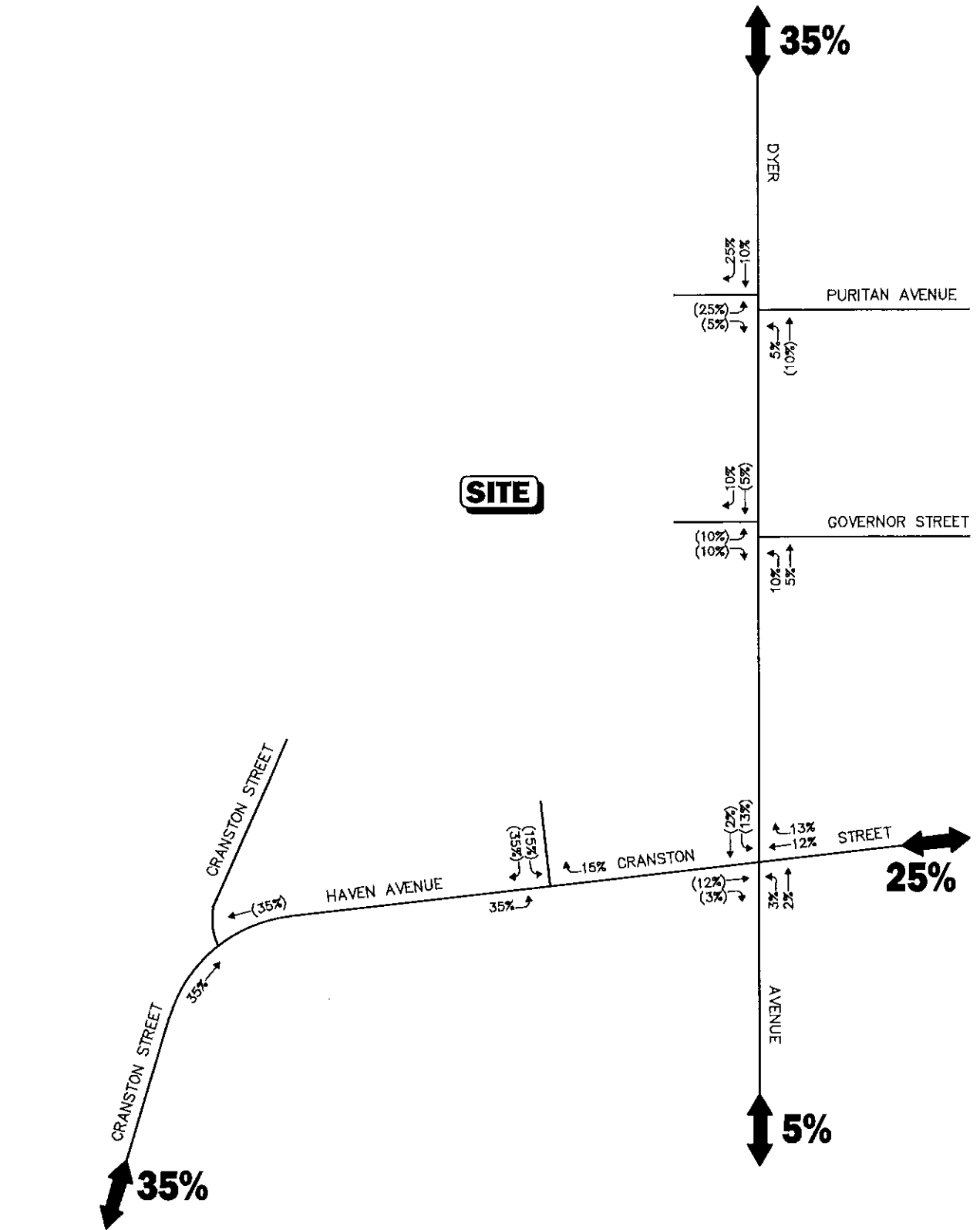
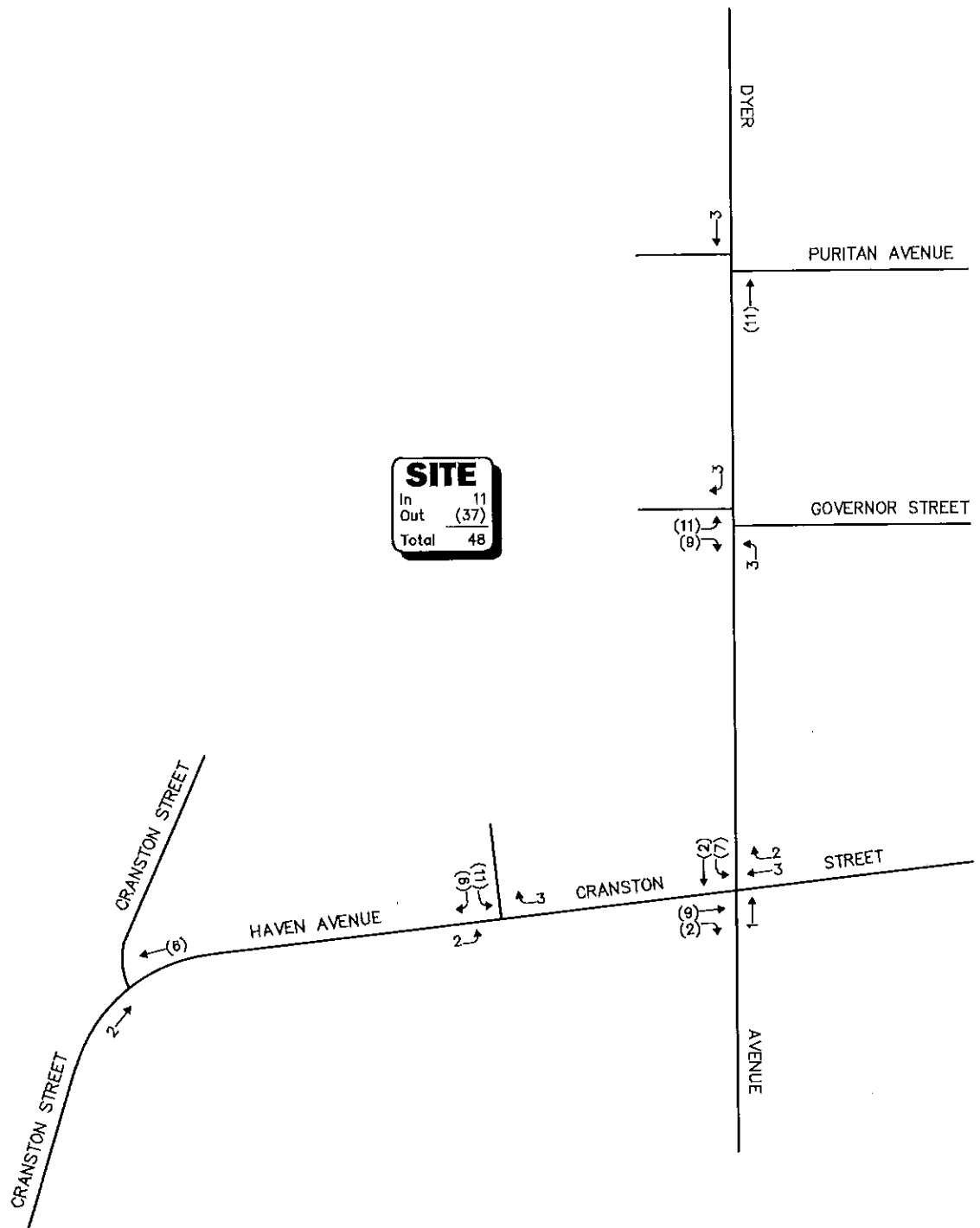


Figure 8  
Trip Distribution  
Cold Storage/Mini-Warehouse  
Component

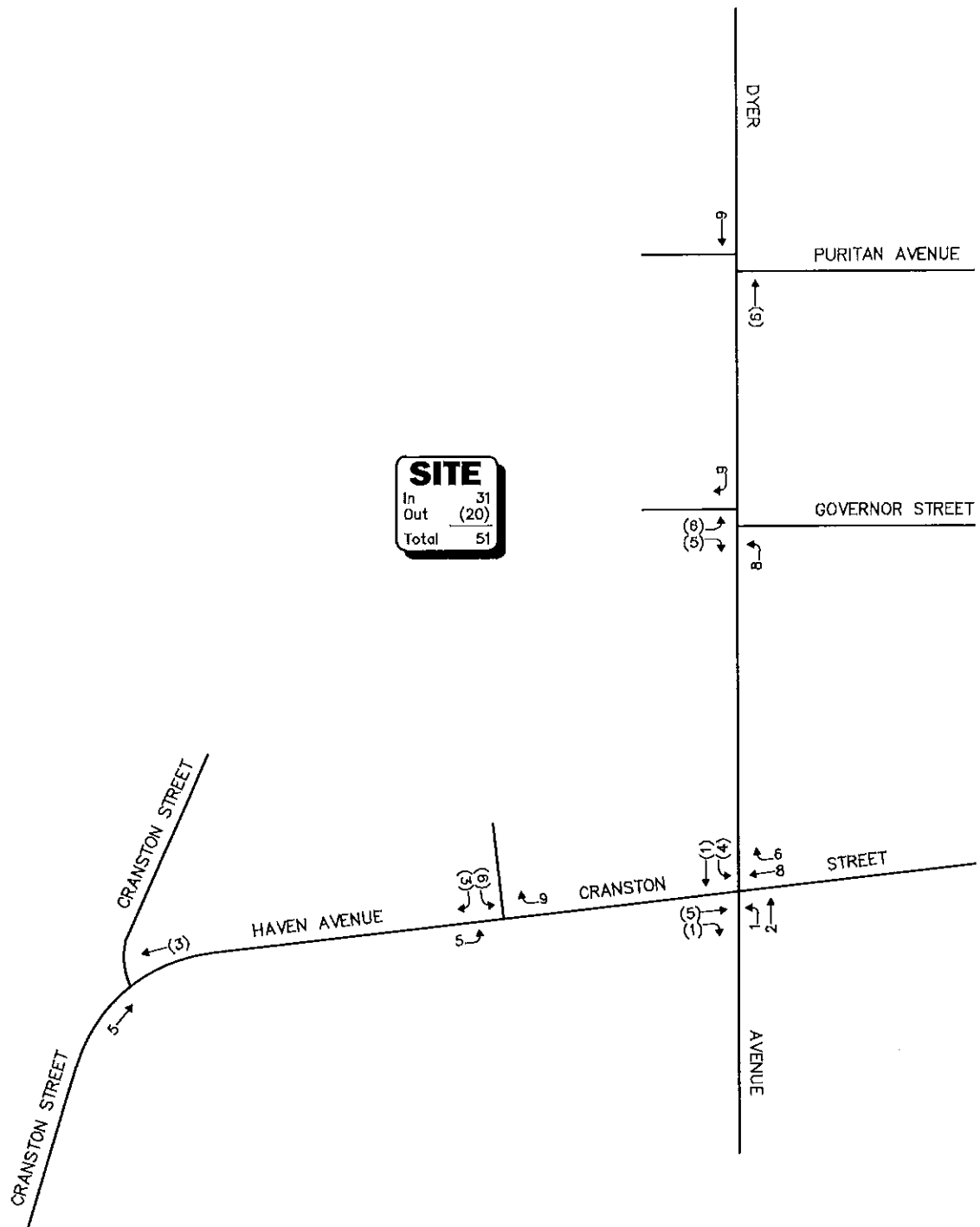


Not To Scale

**VA** Vanasse & Associates inc

**Figure 9**

**Project-Generated  
Weekday Morning  
Peak-Hour Traffic Volumes  
Residential**



Not To Scale



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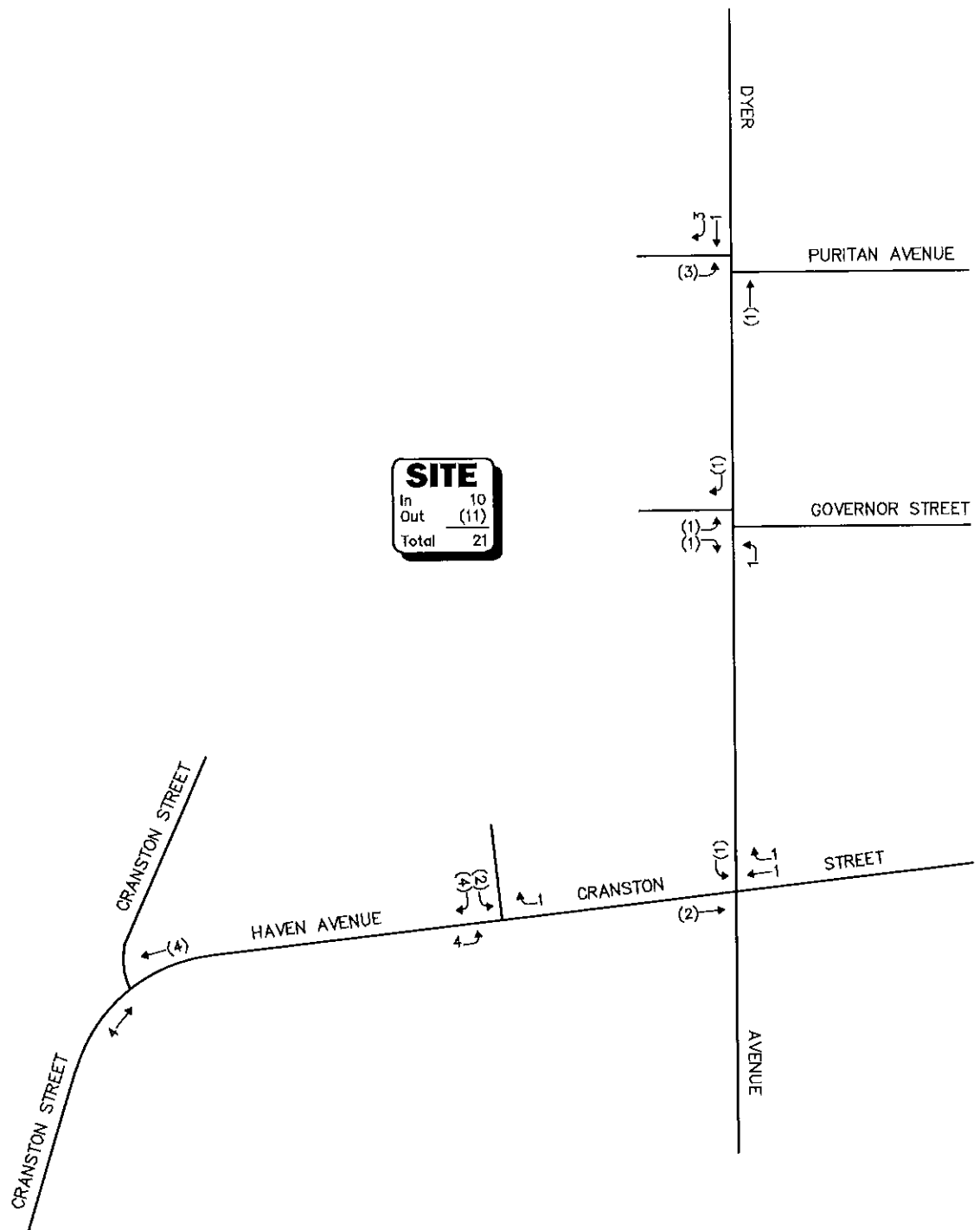
**Figure 10**

**Project-Generated  
Weekday Evening  
Peak-Hour Traffic Volumes  
Residential**





**Project-Generated  
Weekday Morning  
Peak-Hour Traffic Volumes  
Cold Storage/Mini-Warehouse**



Not To Scale

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**Figure 12**

**Project-Generated  
Weekday Evening  
Peak-Hour Traffic Volumes  
Cold Storage/Mini-Warehouse**

## **FUTURE TRAFFIC VOLUMES – BUILD CONDITION**

The 2028 Build condition networks consist of the 2028 No-Build traffic volumes with the anticipated Project-generated traffic added to them. The 2028 Build weekday morning and evening peak-hour traffic-volume networks are graphically depicted on Figure 13 and Figure 14, respectively.

A summary of peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 9. These volumes are based on the expected increases from the Project.

**Table 9**  
**PEAK-HOUR TRAFFIC-VOLUME CHANGES**

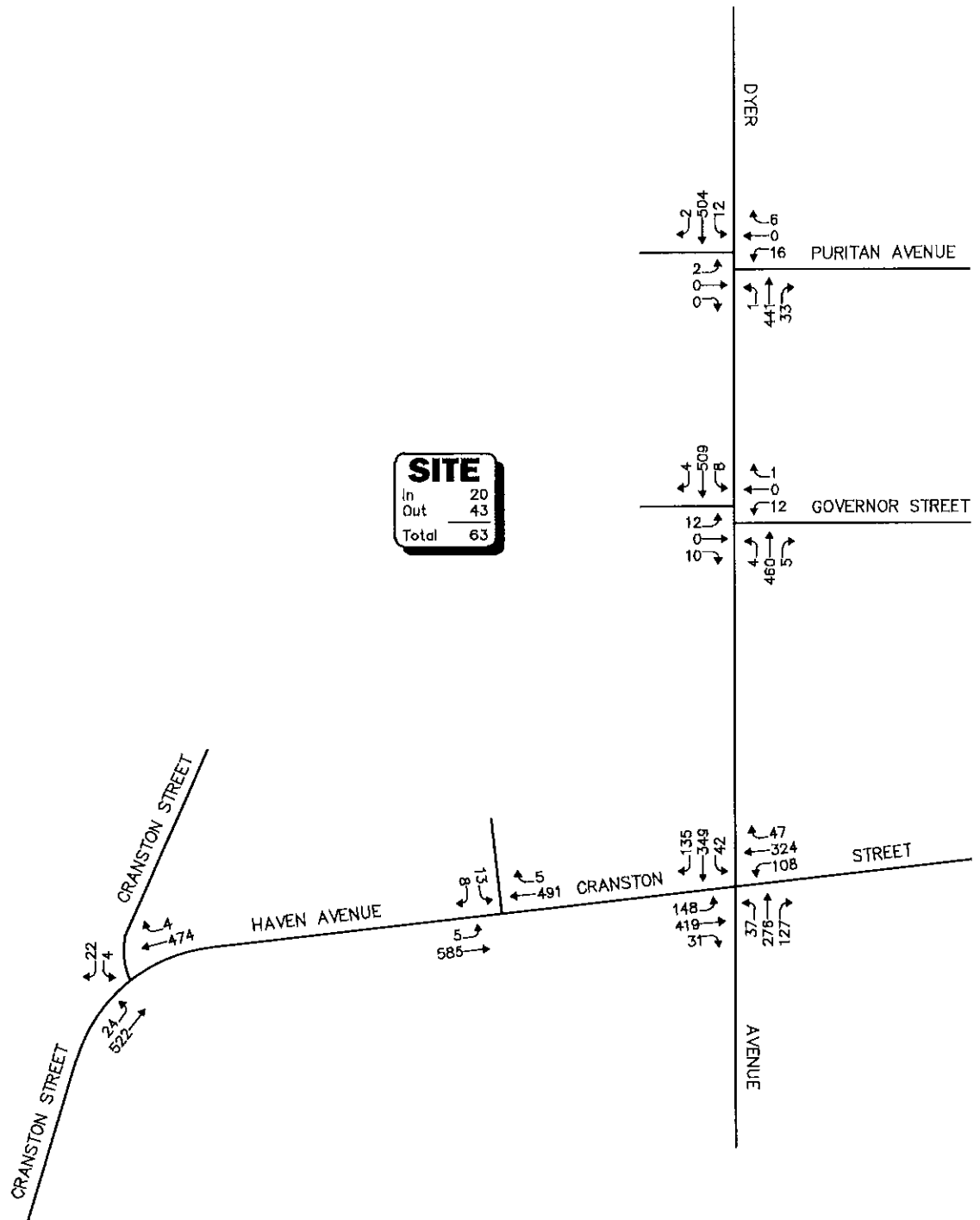
Location/Peak Hour	2028 No-Build	2028 Build	Traffic-Volume Increase/ Decrease Over No-Build	Percent Increase/ Decrease Over No-Build
<i>Dyer Avenue, north of Puritan Avenue:</i>				
Weekday Morning	1,007	967	-40	-4.0
Weekday Evening	1,094	1,064	-30	-2.7
<i>Dyer Avenue, south of Cranston Street:</i>				
Weekday Morning	932	928	-4	-0.4
Weekday Evening	924	920	-4	-0.4
<i>Cranston Street, east of Dyer Avenue:</i>				
Weekday Morning	1,086	1,067	-19	-1.7
Weekday Evening	1,012	1,001	-11	-1.1
<i>Cranston Street, south of Haven Avenue:</i>				
Weekday Morning	1,089	1,042	-47	-4.3
Weekday Evening	985	948	-37	-3.8

As shown in Table 9, Project-related traffic-volume decreases external to the study area relative to 2028 No-Build conditions are anticipated to range from 4 to 47 vehicles or 0.4 to 4.3 percent during the peak periods.

## **PARKING GENERATION**

A review of potential parking demand for the Project was conducted using industry sources. Parking demand was determined by using the ITE *Parking Generation* publication<sup>4</sup> LUC 151, *Mini-Warehouse*, LUC 150, *Warehousing*, and LUC 221, *Multifamily Housing (Mid-Rise)*. Estimates of parking demand for the Project were calculated and are summarized in Table 8.

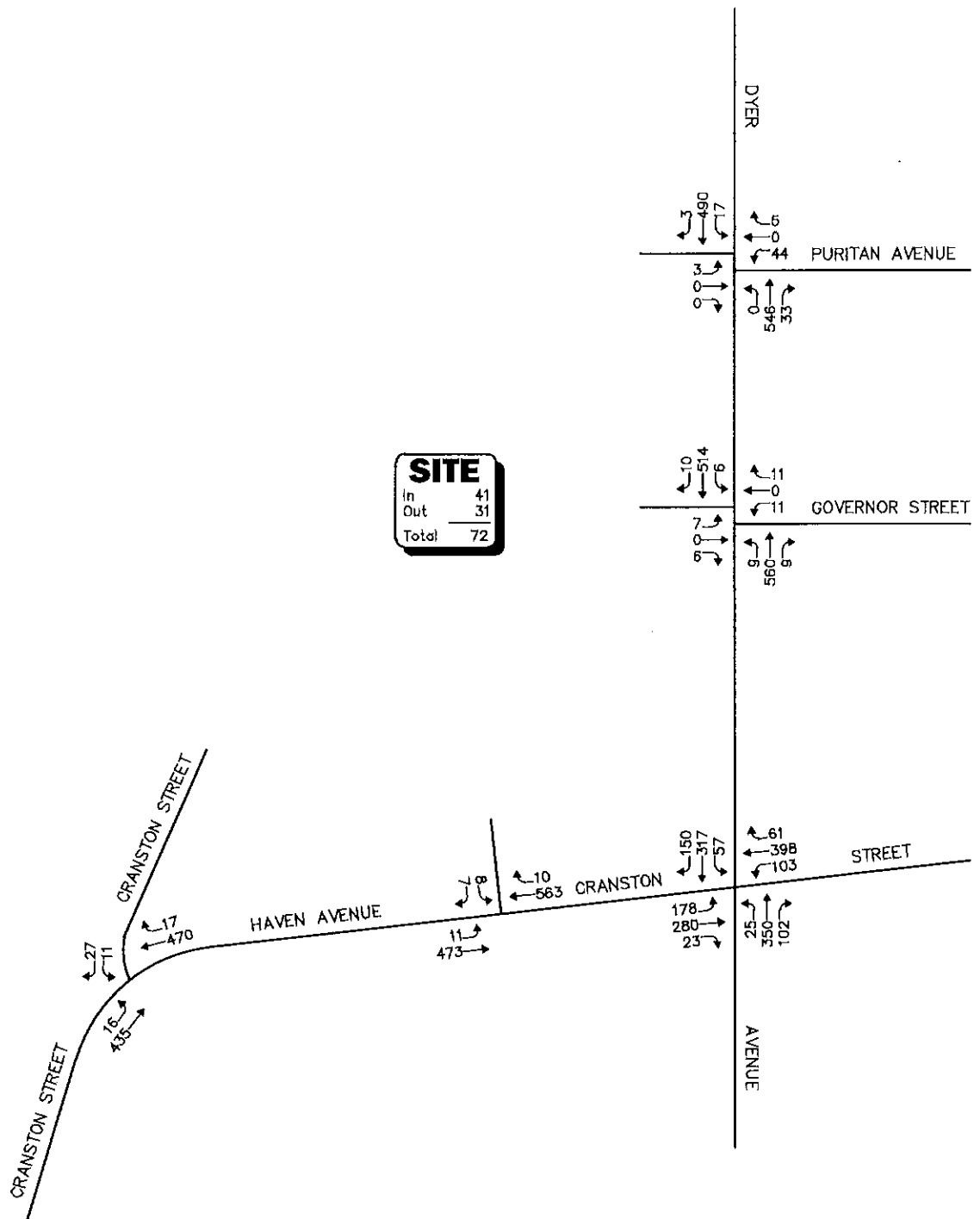
<sup>4</sup>*Parking Generation*, 5th; Institution of Transportation Engineers; Washington, DC; 2020.



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 13**



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 14

**Vanasse & Associates inc**

**2028 Build  
Weekday Evening  
Peak-Hour Traffic Volumes**

**Table 10**  
**PROJECT PARKING DEMAND**

Time Period	Uses	Parking Rates		Parking Spaces	
		Average	85 <sup>th</sup> Percentile	Average	85 <sup>th</sup> Percentile
Weekday	Self-Storage <sup>a</sup>	0.10 spaces/sf	0.25 spaces/sf	11	27
	Cold-Storage <sup>b</sup>	0.39 spaces/sf	1.11 spaces/sf	18	50
	Residential <sup>c</sup>	0.75 spaces/bcd	0.87 spaces/bcd	97	113
<b>Total</b>	--	--	--	<b>126</b>	<b>190</b>

<sup>a</sup>Based on ITE LUC 151, *Mini-Warehouse*; 106,920 sf.

<sup>b</sup>Based on ITE LUC 150, *Warehousing*; 45,200 sf.

<sup>c</sup>Based on ITE LUC 221, *Multifamily Housing (Mid-Rise)*; 129 units.

As can be seen in Table 10, the 85<sup>th</sup> percentile rate indicates that the site would require 190 spaces to satisfy the expected demand. The Project is proposing 244 parking spaces, which is 54 spaces more than the 85<sup>th</sup> percentile rate indicated would be required. Therefore, the proposed parking supply is sufficient and will accommodate the peak-parking demand of the proposed development with additional spaces to accommodate visitor parking demand.

## SIGHT DISTANCE EVALUATION

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Sight distance measurements were performed at the site driveways intersections with Cranston Street and Dyer Avenue in accordance with American Association of State Highway and Transportation Officials (AASHTO)<sup>5</sup> recommendations. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance recommended to be provided by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD is the sight distance recommended to be provided by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. ***In accordance with AASHTO standards, if the measured ISD is at least equal to the recommended SSD value for the appropriate design speed, the intersection can operate in a safe manner.*** Table 10 presents the measured SSD and ISD at the subject intersection.

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<sup>5</sup>*A Policy on Geometric Design of Highway and Streets*, 7<sup>th</sup> Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2018.

**Table 11**  
**SIGHT DISTANCE MEASUREMENTS<sup>a</sup>**

Intersection/Sight Distance Measurement	Recommended Distances (Feet)	Field Measured Distances (Feet)
<b><i>Cranston Street at Project Site Driveway</i></b>		
<i>Stopping Sight Distance:</i>		
Cranston Street approaching from the east	250	500+
Cranston Street approaching from the west	250	344
<i>Intersection Sight Distance:<sup>b</sup></i>		
Left turn from Site Driveway (looking east)	335	500+
Left turn from Site Driveway (looking west)	390	339
<b><i>Dyer Avenue at North Site Driveway</i></b>		
<i>Stopping Sight Distance:</i>		
Dyer Avenue approaching from the north	155	500+
Dyer Avenue approaching from the south	155	500+
<i>Intersection Sight Distance:<sup>b</sup></i>		
Left turn from Site Driveway (looking north)	240	500+
Left turn from Site Driveway (looking south)	280	500+
<b><i>Dyer Avenue at South Site Driveway</i></b>		
<i>Stopping Sight Distance:</i>		
Dyer Avenue approaching from the north	155	500+
Dyer Avenue approaching from the south	155	500+
<i>Intersection Sight Distance:<sup>b</sup></i>		
Left turn from Site Driveway (looking north)	240	500+
Left turn from Site Driveway (looking south)	280	500+

<sup>a</sup>Recommended values obtained from *A Policy on Geometric Design of Highways and Streets*, 7<sup>th</sup> Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.

<sup>b</sup>Values shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.

As can be seen in Table 11, the sight distance at the intersection of the site driveway with Cranston Street was found to exceed the recommended values for SSD based on a speed of 35 mph, and the site driveways with Dyer Avenue were found to exceed the recommended values for both the SSD and ISD based on a speed of 25 mph.



## **TRAFFIC OPERATIONS ANALYSIS**

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Measuring existing and future traffic volumes quantify traffic flow within the study area. To assess quality of flow, roadway capacity, and vehicle queue analyses were conducted under Existing, No-Build, and Build traffic-volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

### **METHODOLOGY**

#### **Levels of Service**

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.<sup>6</sup> The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best-operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

#### **Signalized Intersections**

The six levels of service for signalized intersections may be described as follows:

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<sup>6</sup>The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6<sup>th</sup> Edition*; Transportation Research Board; Washington, DC; 2016.

- *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- *LOS B* describes operations with relatively low control delay. However, more vehicles stop than *LOS A*.
- *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop, and individual cycle failures are noticeable.
- *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- *LOS F* describes operations with high control delay values that often occur with oversaturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections were calculated using the Percentile Delay Method implemented as a part of the Synchro™ 11 software as required by MassDOT. The Percentile Delay Method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on “percentile” delay. Level-of-service designations are based on the criterion of percentile delay per vehicle and are a measure of: i) driver discomfort; ii) motorist frustration; and iii) fuel consumption; and include a uniform delay based on percentile volumes using a Poisson arrival pattern, an initial queue move-up time, and a queue interaction delay that accounts for delays resulting from queues extending from adjacent intersections. Table 12 summarizes the relationship between level-of-service and percentile delay and uses the same numerical delay thresholds as the *Highway Capacity Manual*<sup>7</sup> method. The tabulated percentile delay criterion may be applied in assigning level-of-service designations to individual lane groups, individual intersection approaches, or to entire intersections.

**Table 12**  
**LEVEL-OF-SERVICE CRITERIA**  
**FOR SIGNALIZED INTERSECTIONS**

Level of Service	Percentile Delay Per Vehicle (Seconds)
A	≤10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

<sup>7</sup>*Highway Capacity Manual 6<sup>th</sup> Edition*; Transportation Research Board; Washington, DC; 2016.

### Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 6<sup>th</sup> Edition*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 6<sup>th</sup> Edition*. Table 13 summarizes the relationship between level of service and average control delay for two-way STOP-controlled and all-way STOP-controlled intersections.

**Table 13**  
**LEVEL-OF-SERVICE CRITERIA**  
**FOR UNSIGNALIZED INTERSECTIONS<sup>a</sup>**

Level-of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
$v/c \leq 1.0$	$v/c > 1.0$	
A	F	$\leq 10.0$
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	$> 50.0$

<sup>a</sup>Source: *Highway Capacity Manual 6<sup>th</sup> Edition*; Transportation Research Board; Washington, DC; 2016; page 20-6.

## **ANALYSIS RESULTS**

Level-of-service analyses were conducted for 2023 Existing, 2028 No-Build, and 2028 Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Table 14 and Table 15.

### **Signalized Intersection**

#### **Cranston Street at Dyer Avenue**

Under 2023 Existing conditions, this intersection operates at an overall LOS C during the weekday morning and weekday evening peak hours. Under 2028 No-Build conditions, this intersection operates at an overall LOS E during the weekday morning and weekday evening peak hours. Under 2028 Build conditions, there is no change in the level of service during the weekday morning peak hour but the intersection operates at an overall LOS D during the weekday evening peak hour. The vehicle queue lengths increase up to 1 vehicle.

**Table 14**  
**SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY**

Signalized Intersection/ Peak Hour/Movement	2023 Existing				2028 No-Build				2028 Build			
	V/C <sup>a</sup>	Delay <sup>b</sup>	LOS <sup>c</sup>	Queue <sup>d</sup> Avg/95 <sup>th</sup>	V/C	Delay	LOS	Queue Avg/95 <sup>th</sup>	V/C	Delay	LOS	Queue Avg/95 <sup>th</sup>
<b>Cranston St at Dyer Ave</b>												
<i>Weekday Morning:</i>												
Cranston St EB LT/TH/RT	1.00	59.7	E	12/19	1.28	163.1	F	18/25	1.22	136.0	F	17/24
Cranston St WB LT/TH/RT	0.85	30.4	C	9/16	0.99	57.0	B	11/18	0.96	47.9	D	10/17
Dyer Ave NB LT/TH/RT	0.70	22.2	C	8/10	0.86	32.7	C	10/12	0.81	28.1	C	9/11
Dyer Ave SB LT/TH	0.62	19.4	B	8/8	0.66	20.4	C	8/9	0.70	21.6	C	9/9
Dyer Ave SB RT	0.18	13.4	B	1/2	0.28	14.5	B	2/3	0.20	13.6	B	1/2
<b>Overall</b>	—	<b>32.2</b>	<b>C</b>	—	—	<b>67.2</b>	<b>E</b>	—	—	<b>58.7</b>	<b>E</b>	—
<i>Weekday Evening:</i>												
Cranston St EB LT/TH/RT	0.97	54.3	D	9/16	1.38	205.4	F	16/24	1.15	112.1	F	12/20
Cranston St WB LT/TH/RT	0.81	26.2	C	9/16	0.90	36.0	D	11/19	0.90	35.8	D	11/20
Dyer Ave NB LT/TH/RT	0.56	17.7	B	7/10	0.61	19.0	B	7/11	0.61	19.0	B	7/11
Dyer Ave SB LT/TH	0.46	16.1	B	5/8	0.49	16.8	B	5/8	0.51	17.2	B	6/9
Dyer Ave SB RT	0.12	12.6	B	1/2	0.14	13.1	B	1/2	0.14	13.0	B	1/2
<b>Overall</b>	—	<b>27.7</b>	<b>C</b>	—	—	<b>71.1</b>	<b>E</b>	—	—	<b>44.4</b>	<b>D</b>	—

<sup>a</sup>Volume-to-capacity ratio.

<sup>b</sup>Control (signal) delay per vehicle in seconds.

<sup>c</sup>Level of service.

<sup>d</sup>Queue length in vehicles.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

## **Unsignalized Intersections**

### **Dyer Avenue at Puritan Avenue/North Project Site Driveway**

It should be noted that no traffic volume was counted on the North Site Driveway. Under 2023 Existing conditions, the critical movement at this intersection operates at LOS C during the weekday morning and weekday evening peak hours. Under 2028 No-Build conditions, the critical movement at this intersection operates at LOS D during the weekday morning and weekday evening peak hours. Under 2028 Build conditions, the critical movements at this intersection operate at LOS E and LOS D during the weekday morning peak hour and at LOS D and LOS E during the weekday evening peak hour with no change in the queue length. Although LOS changes from D to E for the Puritan Avenue approach during the weekday evening peak hours, the average vehicle delay is expected to increase by less than 8 seconds, with no changes in the queue length, compared to the 2028 No-Build conditions.

### **Dyer Avenue at Governor Street/South Project Site Driveway**

Under 2023 Existing conditions, the critical movement at this intersection operates at LOS C during the weekday morning and weekday evening peak hours. Under 2028 No-Build conditions, the critical movement at this intersection operates at LOS D during the weekday morning and LOS C during the weekday evening peak hours. Under 2028 Build conditions, the critical movements at this intersection operate at LOS D and LOS E during the weekday morning peak hour. There is no change in the level of service during the weekday evening peak hour with no change in the queue length. Although LOS changes from D to E for the Governor Street approach during the weekday morning peak hour, the average vehicle delay is expected to increase by less than 7 seconds, with no changes in the queue length, compared to the 2028 No-Build conditions.

### **Cranston Street at Project Site Driveway**

Under 2023 Existing conditions, the critical movements at this intersection operate at LOS C or better during the weekday morning and the weekday evening peak hours. Under 2028 No-Build conditions, the critical movements at this intersection operate at LOS F during the weekday morning and at LOS E during the weekday evening peak hour. Under 2028 Build conditions, the critical movements at this intersection operate at LOS C during the weekday morning and the weekday evening peak hours.

### **Cranston Street at Haven Avenue**

Under 2023 Existing conditions, the critical movement at this intersection operates at LOS B during the weekday morning and weekday evening peak hours. Under 2028 No-Build conditions, the critical movement at this intersection operates at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour. No changes to the critical movement's level of service occur as a result of the addition of Project volumes under 2028 Build conditions.

**Table 15**  
**UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY**

Unsignalized Intersection/ Critical Movement/Peak Hour	2023 Existing				2028 No-Build				2028 Build			
	Demand <sup>a</sup>	Delay <sup>b</sup>	LOS <sup>c</sup>	Queue <sup>d</sup>	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
<b>Dyer Avenue at Puritan Avenue and North Site Driveway:</b>												
<i>Weekday Morning:</i>	--	--	--	--	--	--	--	--	2	35.0	B	0
North Site Driveway EB LT/TH/RT	--	--	C	1	22	29.6	D	1	22	34.9	D	1
Puritan Avenue WB LT/TH/RT	21	23.1	--	--	--	--	--	--	3	28.3	D	0
<i>Weekday Evening:</i>	--	--	--	--	--	--	--	--	49	38.1	E	2
North Site Driveway EB LT/TH/RT	47	24.5	C	1	49	31.0	D	2	--	--	--	--
Puritan Avenue WB LT/TH/RT	--	--	--	--	--	--	--	--	--	--	--	--
<b>Dyer Avenue at Governor Street and South Site Driveway:</b>												
<i>Weekday Morning:</i>	--	--	--	--	--	--	--	--	22	27.9	D	1
South Site Driveway EB LT/TH/RT	--	--	C	1	13	31.8	D	1	13	38.5	E	1
Governor Street WB LT/TH/RT	12	25.1	--	--	--	--	--	--	13	21.8	C	0
<i>Weekday Evening:</i>	--	--	--	--	--	--	--	--	22	22.5	C	1
South Site Driveway EB LT/TH/RT	20	17.2	C	1	22	19.9	C	1	--	--	--	--
Governor Street WB LT/TH/RT	--	--	--	--	--	--	--	--	--	--	--	--
<b>Cranston Street at Cranston Print Works Driveway:</b>												
<i>Weekday Morning:</i>	2	22.2	C	0	21	35.1	B	1	21	24.1	C	1
Cranston Print Works Driveway SB LT/RT	--	--	--	--	--	--	--	--	15	22.3	C	1
<i>Weekday Evening:</i>	0	0.0	A	0	151	546.5	F	40	--	--	--	--
Cranston Print Works Driveway SB LT/RT	--	--	--	--	--	--	--	--	--	--	--	--
<b>Cranston Street at Haven Avenue:</b>												
<i>Weekday Morning:</i>	25	13.5	B	1	26	14.4	B	1	26	14.2	B	1
Cranston Street SB LT/RT	--	--	--	--	--	--	--	--	38	15.2	C	1
<i>Weekday Evening:</i>	36	14.1	B	1	38	15.9	C	1	--	--	--	--
Cranston Street SB LT/RT	--	--	--	--	--	--	--	--	--	--	--	--

<sup>a</sup>Demand in vehicles per hour.

<sup>b</sup>Delay in seconds per vehicle.

<sup>c</sup>Level of service.

<sup>d</sup>95th percentile queue length in feet.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; NBB = northeastbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

## **RECOMMENDATIONS AND CONCLUSIONS**

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VAI has prepared this TIAS in order to evaluate potential traffic impacts associated with the proposed mixed-use development to be located at 1381 Cranston Street in Cranston, Rhode Island. This study was prepared in accordance with industry guidelines for *Traffic Impact and Access Studies* as well as the Cranston City Plan Commission Policy for Traffic and was conducted pursuant to the standards of the traffic engineering and transportation planning professions for the preparation of such reports. Based on the results of this study, the following can be concluded:

- The Project is expected to generate 838 vehicle trips on an average weekday (two-way, 24-hour volume), with 63 vehicle trips (19 entering and 44 exiting) expected during the weekday morning peak hour and 73 vehicle trips (41 entering and 32 exiting) expected during the weekday evening peak hour. This is a reduction from the previous use on-site, which was estimated to generate approximately 304, 110, and 80 vehicle trips during the same respective time periods.
- The sight distance at the intersection of the site driveways with Cranston Street was found to exceed the recommended values for SSD based on a speed of 35 mph. The sight distance at the intersection of the site driveways with Dyer Avenue was found to exceed the recommended values for both SSD and ISD based on a speed of 25 mph.
- The analysis has indicated that the Project will generally result in decreased impacts on motorist delays and vehicle queue lengths at the study intersections compared with the previous use at the site.



## **RECOMMENDATIONS**

Access to the Project site will be provided via the one existing driveway onto Cranston Street and the two new driveways onto Dyer Avenue. The following recommendations are offered with respect to the promotion of alternative transportation and also to the design and operation of the Project site driveways:

- Public transit facilities and schedules for the transit services in the area should be posted in central gathering areas to encourage the use of transit by the project residents.
- The driveways should be placed under STOP-sign (*Manual on Uniform Traffic Control Devices* (MUTCD)<sup>8</sup> R1-1) control, with a painted STOP-bar included.
- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.
- Signs and landscaping adjacent to the Project site driveways should be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sightlines.

## **CONCLUSIONS**

As documented in this study, Project-related traffic increases will not result in significant increases on overall traffic volumes or traffic delays within the study area. The site driveways will provide efficient access to and from the development. In general, the Project represents a decrease in traffic generation associated with the site as compared with the previous one. However, Project-related traffic can be adequately accommodated within the existing infrastructure with minimal impact on the traffic operations within the study area.

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<sup>8</sup>Ibid 1.

## APPENDIX

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TRAFFIC COUNT DATA  
SEASONAL ADJUSTMENT DATA  
PUBLIC TRANSPORTATION SCHEDULES  
VEHICLE SPEED DATA  
GROWTH RATE DATA  
TRIP GENERATION DATA  
JOURNEY TO WORK  
CAPACITY ANALYSIS

## TRAFFIC COUNT DATA

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File Name : 05662A  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

[illegible][illegible]

**Transportation Data Corporation**  
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 tel (781) 587-0086 cell (781) 439-4999

N/S: Dyer Avenue  
 E/W: Cranston Street  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662A  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

	Dyer Avenue From North				Cranston Street From East				Dyer Avenue From South				Cranston Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	24	47	5	0	7	44	11	0	23	20	1	0	0	60	13	0	255
07:15 AM	20	60	8	0	7	59	13	0	18	32	3	0	4	76	21	0	321
07:30 AM	24	69	10	1	9	60	18	1	21	60	9	1	7	78	28	0	396
07:45 AM	49	102	5	0	8	80	31	0	30	49	9	0	5	81	36	0	485
Total	117	278	28	1	31	243	73	1	92	161	22	1	16	295	98	0	1457
08:00 AM	20	73	5	0	14	72	22	0	39	79	9	0	5	101	30	0	469
08:15 AM	18	58	9	0	7	60	20	0	19	50	5	1	3	79	23	0	352
08:30 AM	21	54	11	0	9	80	26	0	14	39	2	0	6	69	37	0	368
08:45 AM	26	65	13	1	15	67	19	0	28	47	3	0	5	66	16	0	371
Total	85	250	38	1	45	279	87	0	100	215	19	1	19	315	106	0	1560
Grand Total	202	528	66	2	76	522	160	1	192	376	41	2	35	610	204	0	3017
Apprch %	25.3	66.2	8.3	0.3	10	68.8	21.1	0.1	31.4	61.5	6.7	0.3	4.1	71.8	24	0	
Total %	6.7	17.5	2.2	0.1	2.5	17.3	5.3	0	6.4	12.5	1.4	0.1	1.2	20.2	6.8	0	

	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street From West					Int. Total
Start Time	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 07:30 AM																					
07:30 AM	24	69	10	1	104	9	60	18	1	88	21	60	9	1	91	7	78	28	0	113	396
07:45 AM	49	102	5	0	156	8	80	31	0	119	30	49	9	0	88	5	81	36	0	122	485
08:00 AM	20	73	5	0	98	14	72	22	0	108	39	79	9	0	127	5	101	30	0	136	469
08:15 AM	18	58	9	0	85	7	60	20	0	87	19	50	5	1	75	3	79	23	0	105	352
Total Volume	111	302	29	1	443	38	272	91	1	402	109	238	32	2	381	20	339	117	0	476	1702
% App. Total	25.1	68.2	6.5	0.2		9.5	67.7	22.6	0.2		28.6	62.5	8.4	0.5		4.2	71.2	24.6	0		
PHF	.566	.740	.725	.250	.710	.679	.850	.734	.250	.845	.699	.753	.889	.500	.750	.714	.839	.813	.000	.875	.877

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N/S: Dyer Avenue  
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City, State: Cranston, RI  
Client: VAI/D. Roach

File Name : 05662A  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

Groups Printed- Trucks & Buses

	Dyer Avenue From North				Cranston Street From East				Dyer Avenue From South				Cranston Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	4	0	0	1	1	0	0	0	3	0	0	0	2	0	0	11
07:15 AM	2	2	0	0	0	4	0	0	1	0	0	0	0	1	1	0	11
07:30 AM	1	0	0	0	0	1	1	0	0	1	0	0	0	2	0	0	6
07:45 AM	1	3	1	0	0	1	0	0	3	1	0	0	0	1	0	0	11
Total	4	9	1	0	1	7	1	0	4	5	0	0	0	6	1	0	39
08:00 AM	1	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	4
08:15 AM	0	1	0	0	0	2	3	0	0	2	0	0	0	0	0	0	8
08:30 AM	1	1	0	0	0	2	1	0	0	0	0	0	0	1	1	0	7
08:45 AM	1	1	0	0	0	2	1	0	1	2	0	0	0	0	1	0	9
Total	3	3	0	0	0	6	5	0	1	5	0	0	1	2	2	0	28
Grand Total	7	12	1	0	1	13	6	0	5	10	0	0	1	8	3	0	67
Appreh %	35	60	5	0	5	65	30	0	33.3	66.7	0	0	8.3	66.7	25	0	
Total %	10.4	17.9	1.5	0	1.5	19.4	9	0	7.5	14.9	0	0	1.5	11.9	4.5	0	

	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street From West					Int. Total
Start Time	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	4	0	0	4	1	1	0	0	2	0	3	0	0	3	0	2	0	0	2	11
07:15 AM	2	2	0	0	4	0	4	0	0	4	1	0	0	0	1	0	1	1	0	2	11
07:30 AM	1	0	0	0	1	0	1	1	0	2	0	1	0	0	1	0	2	0	0	2	6
07:45 AM	1	3	1	0	5	0	1	0	0	1	3	1	0	0	4	0	1	0	0	1	11
Total Volume	4	9	1	0	14	1	7	1	0	9	4	5	0	0	9	0	6	1	0	7	39
% App. Total	28.6	64.3	7.1	0		11.1	77.8	11.1	0		44.4	55.6	0	0		0	85.7	14.3	0		
PHF	.500	.563	.250	.000	.700	.250	.438	.250	.000	.563	.333	.417	.000	.000	.563	.000	.750	.250	.000	.875	.886

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File Name : 05662A  
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Groups Printed- Bikes by Direction

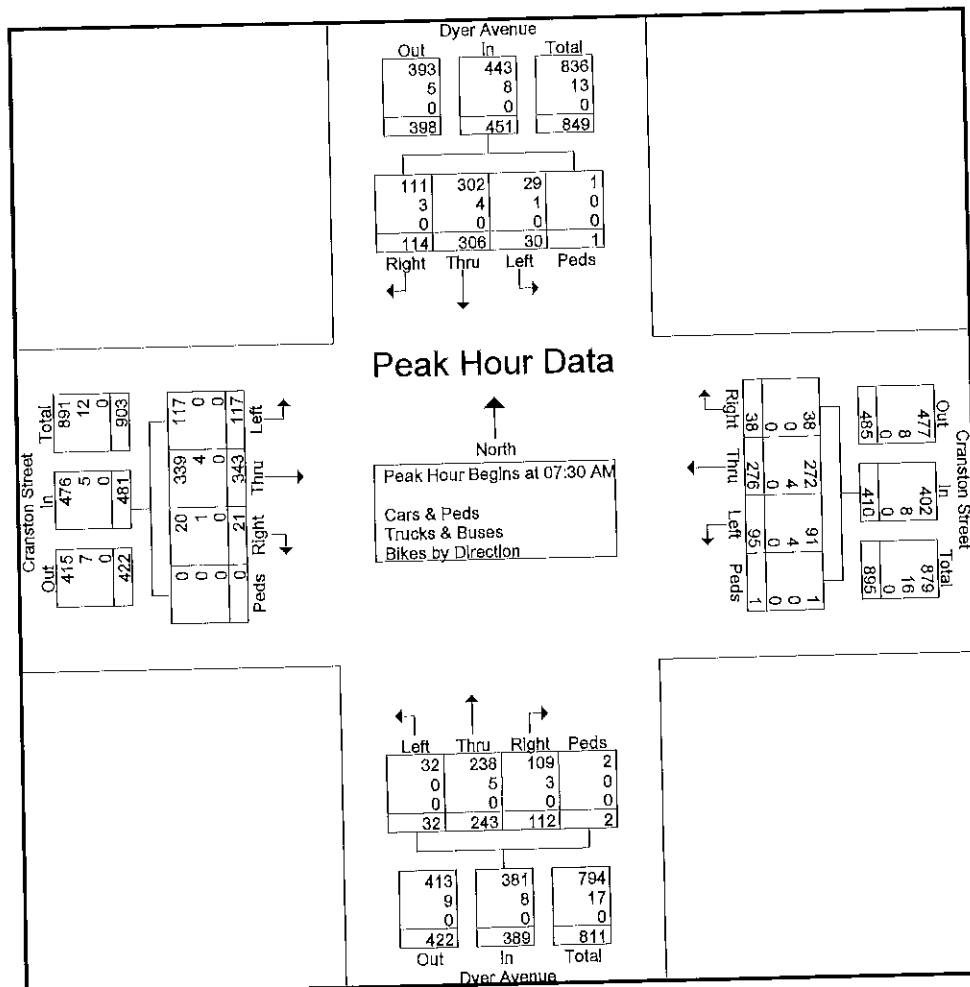
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 Client: VAI/D. Roach

File Name : 05662A  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. 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	25	69	10	1	105	9	61	19	1	90	21	61	9	1	92	7	80	28	0	115	402
07:45 AM	50	105	6	0	161	8	81	31	0	120	33	50	9	0	92	5	82	36	0	123	496
08:00 AM	21	73	5	0	99	14	72	22	0	108	39	80	9	0	128	6	102	30	0	138	473
08:15 AM	18	59	9	0	86	7	62	23	0	92	19	52	5	1	77	3	79	23	0	105	360
Total Volume	114	306	30	1	451	38	276	95	1	410	112	243	32	2	389	21	343	117	0	481	1731
% App. Total	25.3	67.8	6.7	0.2		9.3	67.3	23.2	0.2		28.8	62.5	8.2	0.5		4.4	71.3	24.3	0		
PIIF	.570	.729	.750	.250	.700	.679	.852	.766	.250	.854	.718	.759	.889	.500	.760	.750	.841	.813	.000	.871	.872
Cars & Peds	111	302	29	1	443	38	272	91	1	402	109	238	32	2	381	20	339	117	0	476	1702
% Cars & Peds	97.4	98.7	96.7	100	98.2	100	98.6	95.8	100	98.0	97.3	97.9	100	100	97.9	95.2	98.8	100	0	99.0	98.3
Trucks & Buses	3	4	1	0	8	0	4	4	0	8	3	5	0	0	8	1	4	0	0	5	29
% Trucks & Buses	2.6	1.3	3.3	0	1.8	0	1.4	4.2	0	2.0	2.7	2.1	0	0	2.1	4.8	1.2	0	0	1.0	1.7
Bikes by Direction	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





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Page No : 1

N/S: Dyer Avenue  
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City, State: Cranston, RI  
Client: VAI/D. Roach

Start Time	Dyer Avenue From North				Cranston Street From East				Dyer Avenue From South				Cranston Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
03:00 PM	34	67	11	1	12	85	18	0	24	74	1	0	7	61	30	0	425
03:15 PM	32	61	9	0	11	73	22	0	21	76	0	0	6	67	38	2	418
03:30 PM	32	69	12	0	11	73	16	0	19	77	2	1	4	62	39	0	417
03:45 PM	31	79	15	0	13	68	17	0	25	59	4	0	6	71	31	3	422
Total	129	276	47	1	47	299	73	0	89	286	7	1	23	261	138	5	1682
04:00 PM	39	63	11	0	12	85	27	0	21	89	4	2	5	64	35	0	457
04:15 PM	25	65	10	0	12	69	20	1	26	78	4	0	6	51	37	1	405
04:30 PM	27	71	16	0	11	96	23	0	20	75	8	0	0	55	39	0	441
04:45 PM	30	80	9	0	13	77	21	0	23	65	2	0	7	61	39	0	427
Total	121	279	46	0	48	327	91	1	90	307	18	2	18	231	150	1	1730
05:00 PM	26	52	12	1	12	72	18	0	26	71	3	0	5	50	30	0	378
05:15 PM	32	56	15	0	17	81	23	0	23	73	7	0	2	43	25	0	397
05:30 PM	30	50	13	0	6	54	26	0	10	55	7	1	2	51	22	0	327
05:45 PM	17	63	14	0	11	48	25	0	26	54	2	0	7	47	20	0	334
Total	105	221	54	1	46	255	92	0	85	253	19	1	16	191	97	0	1436
Grand Total	355	776	147	2	141	881	256	1	264	846	44	4	57	683	385	6	4848
Appreh %	27.7	60.6	11.5	0.2	11	68.9	20	0.1	22.8	73.1	3.8	0.3	5	60.4	34	0.5	
Total %	7.3	16	3	0	2.9	18.2	5.3	0	5.4	17.5	0.9	0.1	1.2	14.1	7.9	0.1	
Cars & Peds	354	761	143	2	140	871	251	1	263	837	44	4	56	669	383	6	4785
% Cars & Peds	99.7	98.1	97.3	100	99.3	98.9	98	100	99.6	98.9	100	100	98.2	98	99.5	100	98.7
Trucks & Buses	1	14	4	0	1	10	5	0	1	9	0	0	1	13	2	0	61
% Trucks & Buses	0.3	1.8	2.7	0	0.7	1.1	2	0	0.4	1.1	0	0	1.8	1.9	0.5	0	1.3
Bikes by Direction	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
% Bikes by Direction	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0

[illegible]

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N/S: Dyer Avenue  
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 Client: VAI/D. Roach

File Name : 05662AA  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Dyer Avenue From North				Cranston Street From East				Dyer Avenue From South				Cranston Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
03:00 PM	34	66	11	1	12	84	18	0	24	73	1	0	6	60	30	0	420
03:15 PM	32	60	9	0	11	72	20	0	21	76	0	0	6	65	38	2	412
03:30 PM	32	67	11	0	11	73	15	0	19	75	2	1	4	62	39	0	411
03:45 PM	31	76	14	0	13	65	17	0	25	59	4	0	6	70	31	3	414
Total	129	269	45	1	47	294	70	0	89	283	7	1	22	257	138	5	1657
04:00 PM	39	63	9	0	12	85	27	0	21	89	4	2	5	61	34	0	451
04:15 PM	25	64	10	0	11	68	19	1	26	77	4	0	6	51	37	1	400
04:30 PM	27	70	16	0	11	94	23	0	20	75	8	0	0	54	38	0	436
04:45 PM	30	80	9	0	13	76	21	0	23	63	2	0	7	61	39	0	424
Total	121	277	44	0	47	323	90	1	90	304	18	2	18	227	148	1	1711
05:00 PM	25	51	12	1	12	72	18	0	26	71	3	0	5	47	30	0	373
05:15 PM	32	54	15	0	17	81	22	0	22	71	7	0	2	43	25	0	391
05:30 PM	30	48	13	0	6	53	26	0	10	55	7	1	2	50	22	0	323
05:45 PM	17	62	14	0	11	48	25	0	26	53	2	0	7	45	20	0	330
Total	104	215	54	1	46	254	91	0	84	250	19	1	16	185	97	0	1417
Grand Total	354	761	143	2	140	871	251	1	263	837	44	4	56	669	383	6	4785
Apprch %	28.1	60.4	11.3	0.2	11.1	69	19.9	0.1	22.9	72.9	3.8	0.3	5	60.1	34.4	0.5	
Total %	7.4	15.9	3	0	2.9	18.2	5.2	0	5.5	17.5	0.9	0.1	1.2	14	8	0.1	

Start Time	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street 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 04:00 PM																					
04:00 PM	39	63	9	0	111	12	85	27	0	124	21	89	4	2	116	5	61	34	0	100	451
04:15 PM	25	64	10	0	99	11	68	19	1	99	26	77	4	0	107	6	51	37	1	95	400
04:30 PM	27	70	16	0	113	11	94	23	0	128	20	75	8	0	103	0	54	38	0	92	436
04:45 PM	30	80	9	0	119	13	76	21	0	110	23	63	2	0	88	7	61	39	0	107	424
Total Volume	121	277	44	0	442	47	323	90	1	461	90	304	18	2	414	18	227	148	1	394	1711
% App. Total	27.4	62.7	10	0		10.2	70.1	19.5	0.2		21.7	73.4	4.3	0.5		4.6	57.6	37.6	0.3		
PHF	.776	.866	.688	.000	.929	.904	.859	.833	.250	.900	.865	.854	.563	.250	.892	.643	.930	.949	.250	.921	.948

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Groups Printed- Trucks & Buses																	
	Dyer Avenue From North				Cranston Street From East				Dyer Avenue From South				Cranston Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
Start Time																	
03:00 PM	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	5
03:15 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	4
03:30 PM	0	2	1	0	0	0	1	0	0	2	0	0	0	0	0	0	6
03:45 PM	0	3	1	0	0	3	0	0	0	0	0	0	0	1	0	0	8
Total	0	6	2	0	0	5	3	0	0	3	0	0	1	3	0	0	23
04:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	3	1	0	6
04:15 PM	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	0	5
04:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	1	1	0	5
04:45 PM	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	3
Total	0	2	2	0	1	4	1	0	0	3	0	0	0	4	2	0	19
05:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	5
05:15 PM	0	2	0	0	0	0	1	0	1	2	0	0	0	0	0	0	6
05:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4
05:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4
Total	1	6	0	0	0	1	1	0	1	3	0	0	0	6	0	0	19
Grand Total	1	14	4	0	1	10	5	0	1	9	0	0	1	13	2	0	61
Approch %	5.3	73.7	21.1	0	6.2	62.5	31.2	0	10	90	0	0	6.2	81.2	12.5	0	
Total %	1.6	23	6.6	0	1.6	16.4	8.2	0	1.6	14.8	0	0	1.6	21.3	3.3	0	

Start Time	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street 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 03:30 PM																					
03:30 PM	0	2	1	0	3	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	6
03:45 PM	0	3	1	0	4	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	8
04:00 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	6
04:15 PM	0	1	0	0	1	1	1	1	0	3	0	1	0	0	1	0	0	0	0	0	5
Total Volume	0	6	4	0	10	1	4	2	0	7	0	3	0	0	3	0	4	1	0	5	25
% App. Total	0	60	40	0		14.3	57.1	28.6	0		0	100	0	0		0	80	20	0		781
PHF	.000	.500	.500	.000	.625	.250	.333	.500	.000	.583	.000	.375	.000	.000	.375	.000	.333	.250	.000	.313	

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 Client: VAI/D. Roach

File Name : 05662AA  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Dyer Avenue From North				Cranston Street From East				Dyer Avenue From South				Cranston Street 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	0	0	0	0
03:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
03:30 PM	0	0	0	0	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	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
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	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
Approach %	0	100	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	0	50	0	0	0	0	0	0	0	0	0	0	0	50	0	0	

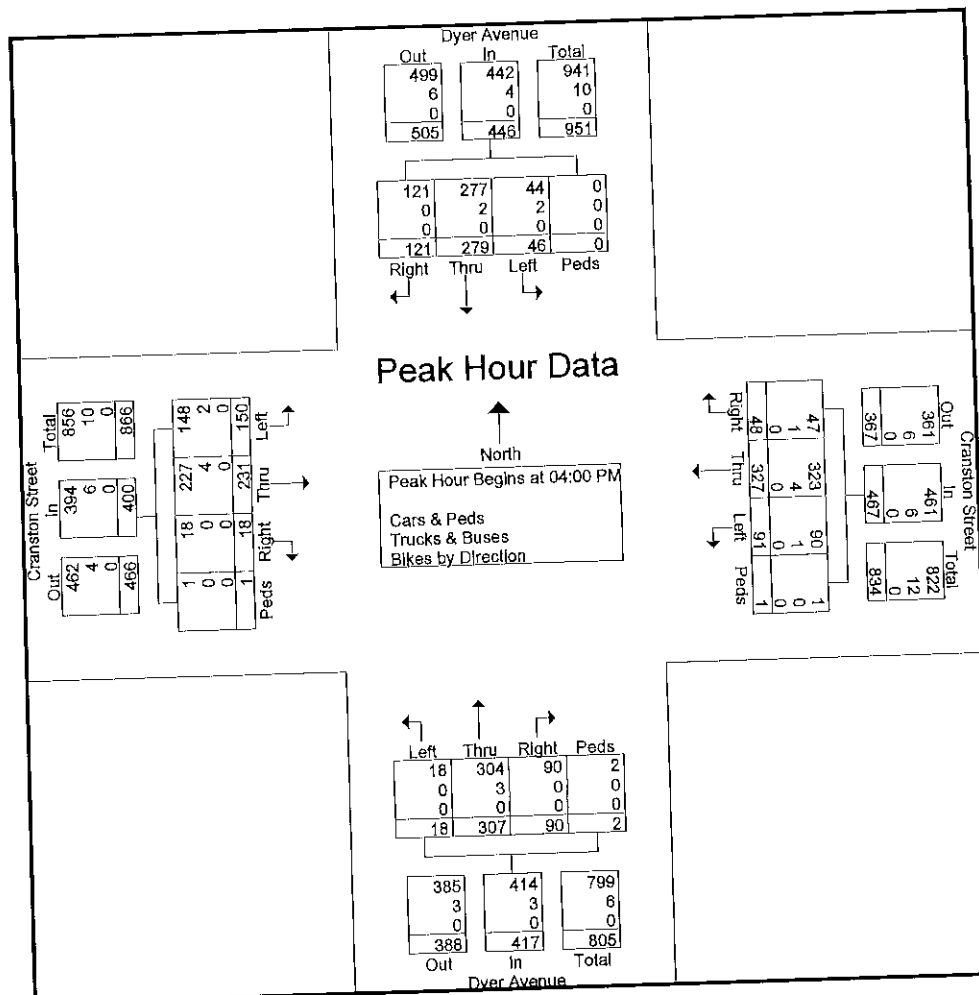
	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - 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	0	0	0	0	0
03:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
03:30 PM	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
% App. Total	0	100	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

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N/S: Dyer Avenue  
 E/W: Cranston Street  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662AA  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Start Time	Dyer Avenue From North					Cranston Street From East					Dyer Avenue From South					Cranston Street 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 04:00 PM																					
04:00 PM	39	63	11	0	113	12	85	27	0	124	21	89	4	2	116	5	64	35	0	104	457
04:15 PM	25	65	10	0	100	12	69	20	1	102	26	78	4	0	108	6	51	37	1	95	405
04:30 PM	27	71	16	0	114	11	96	23	0	130	20	75	8	0	103	0	55	39	0	94	441
04:45 PM	30	80	9	0	119	13	77	21	0	111	23	65	2	0	90	7	61	39	0	107	427
Total Volume	121	279	46	0	446	48	327	91	1	467	90	307	18	2	417	18	231	150	1	400	1730
% App. Total	27.1	62.6	10.3	0		10.3	70	19.5	0.2		21.6	73.6	4.3	0.5		4.5	57.8	37.5	0.2		
PHF	.776	.872	.719	.000	.937	.923	.852	.843	.250	.898	.865	.862	.563	.250	.899	.643	.902	.962	.250	.935	.946
Cars & Peds	121	277	44	0	442	47	323	90	1	461	90	304	18	2	414	18	227	148	1	394	1711
% Cars & Peds	100	99.3	95.7	0	99.1	97.9	98.8	98.9	100	98.7	100	99.0	100	100	99.3	100	98.3	98.7	100	98.5	98.9
Trucks & Buses	0	2	2	0	4	1	4	1	0	6	0	3	0	0	3	0	4	2	0	6	19
% Trucks & Buses	0	0.7	4.3	0	0.9	2.1	1.2	1.1	0	1.3	0	1.0	0	0	0.7	0	1.7	1.3	0	1.5	1.1
Bikes by Direction	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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N: Cranston Street (Westerly Loop)  
E/W: Haven Avenue/Cranston Street  
City, State: Cranston, MA  
Client: VAI/D. Roach

File Name : 05662B  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

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 Client: VAI/D. Roach

File Name : 05662B  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds										
Start Time	Cranston Street (West) From North			Haven Avenue From East			Cranston Street From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
07:00 AM	1	0	0	3	54	0	52	1	0	111
07:15 AM	0	1	0	3	71	0	89	9	0	173
07:30 AM	5	1	1	1	92	0	100	8	1	209
07:45 AM	5	1	0	1	112	0	119	6	0	244
Total	11	3	1	8	329	0	360	24	1	737
08:00 AM	2	0	1	2	107	0	121	4	0	237
08:15 AM	4	2	0	0	79	0	99	3	2	189
08:30 AM	5	0	0	2	88	0	101	2	1	199
08:45 AM	11	2	0	1	88	0	82	3	1	188
Total	22	4	1	5	362	0	403	12	4	813
Grand Total	33	7	2	13	691	0	763	36	5	1550
Apprch %	78.6	16.7	4.8	1.8	98.2	0	94.9	4.5	0.6	
Total %	2.1	0.5	0.1	0.8	44.6	0	49.2	2.3	0.3	

Start Time	Cranston Street (West) From North				Haven Avenue From East				Cranston Street 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	5	1	1	7	1	92	0	93	100	8	1	109	209	
07:45 AM	5	1	0	6	1	112	0	113	119	6	0	125	244	
08:00 AM	2	0	1	3	2	107	0	109	121	4	0	125	237	
08:15 AM	4	2	0	6	0	79	0	79	99	3	2	104	189	
Total Volume	16	4	2	22	4	390	0	394	439	21	3	463	879	
% App. Total	72.7	18.2	9.1		1	99	0		94.8	4.5	0.6			
PHF	.800	.500	.500	.786	.500	.871	.000	.872	.907	.656	.375	.926	.901	

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 E/W: Haven Avenue/Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662B  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Cranston Street (West) From North			Haven Avenue From East			Cranston Street From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
07:00 AM	1	0	0	0	1	0	2	0	0	4
07:15 AM	0	0	0	0	4	0	1	0	0	5
07:30 AM	0	0	0	0	2	0	2	0	0	4
07:45 AM	1	0	0	0	1	0	2	0	0	4
Total	2	0	0	0	8	0	7	0	0	17
08:00 AM	1	0	0	0	1	0	1	0	0	3
08:15 AM	1	0	0	0	2	0	0	0	0	3
08:30 AM	1	0	0	0	3	0	1	0	0	5
08:45 AM	0	0	0	0	2	0	0	0	0	2
Total	3	0	0	0	8	0	2	0	0	13
Grand Total	5	0	0	0	16	0	9	0	0	30
Apprch %	100	0	0	0	100	0	100	0	0	
Total %	16.7	0	0	0	53.3	0	30	0	0	

Start Time	Cranston Street (West) From North				Haven Avenue From East				Cranston Street 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 07:00 AM													
07:00 AM	1	0	0	1	0	1	0	1	2	0	0	2	4
07:15 AM	0	0	0	0	0	4	0	4	1	0	0	1	5
07:30 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
07:45 AM	1	0	0	1	0	1	0	1	2	0	0	2	4
Total Volume	2	0	0	2	0	8	0	8	7	0	0	7	17
% App. Total	100	0	0		0	100	0		100	0	0		
PHF	.500	.000	.000	.500	.000	.500	.000	.500	.875	.000	.000	.875	.850



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City, State: Cranston, MA  
Client: VAI/D. Roach

File Name : 05662B  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

	<b>Groups Printed- Bikes by Direction</b>						<b>Cranston Street From West</b>			<b>Int. Total</b>
	<b>Cranston Street (West) From North</b>			<b>Haven Avenue From East</b>			<b>Thru</b>	<b>Left</b>	<b>Peds</b>	
<b>Start Time</b>	<b>Right</b>	<b>Left</b>	<b>Peds</b>	<b>Right</b>	<b>Thru</b>	<b>Peds</b>				
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	0	1
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	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	0	0	0	0	0	0	1
Apprch %	100	0	0	0	0	0	0	0	0	
Total %	100	0	0	0	0	0				

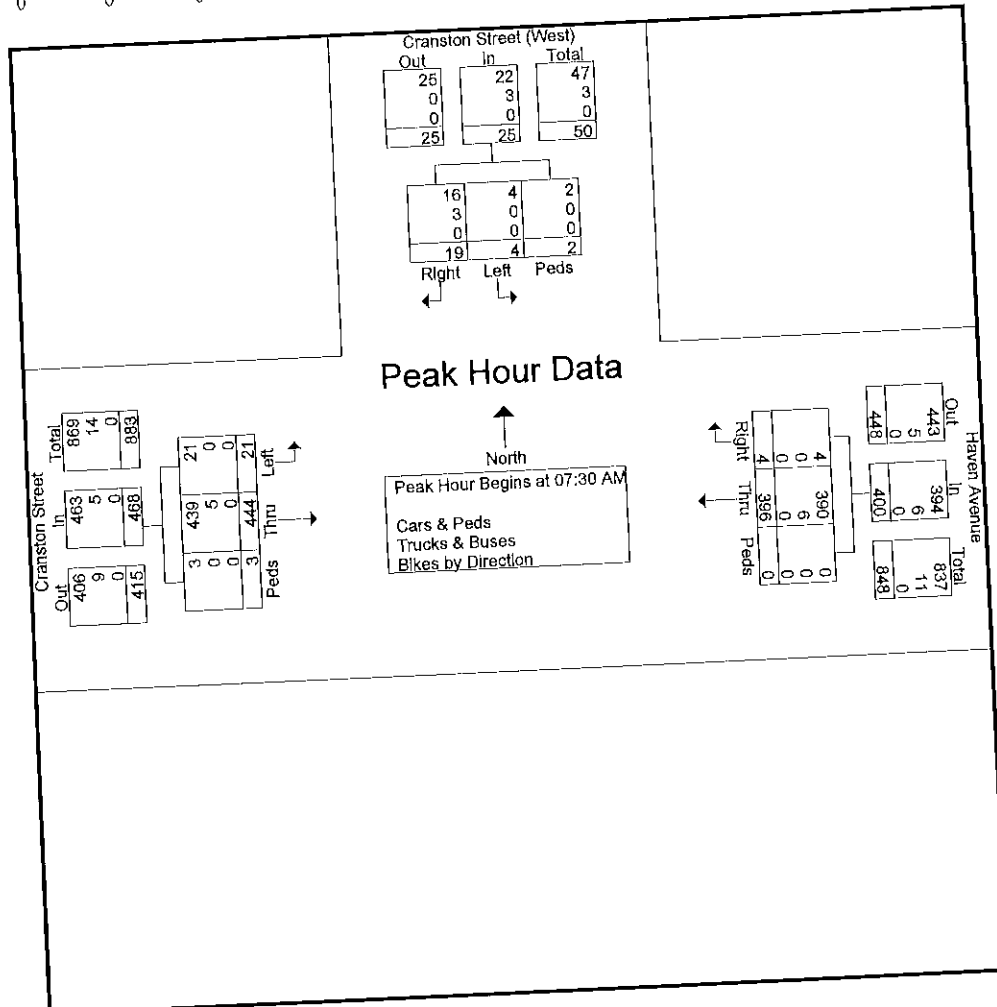
[illegible]

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N: Cranston Street (Westerly Loop)  
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 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662B  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Start Time	Cranston Street (West) From North				Haven Avenue From East				Cranston Street 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	5	1	1	7	1	94	0	95	102	8	1	111	213	
07:45 AM	6	1	0	7	1	113	0	114	121	6	0	127	248	
08:00 AM	3	0	1	4	2	108	0	110	122	4	0	126	240	
08:15 AM	5	2	0	7	0	81	0	81	99	3	2	104	192	
Total Volume	19	4	2	25	4	396	0	400	444	21	3	468	893	
% App. Total	76	16	8		1	99	0		94.9	4.5	0.6			
PHF	.792	.500	.500	.893	.500	.876	.000	.877	.910	.656	.375	.921	.900	
Cars & Peds	16	4	2	22	4	390	0	394	439	21	3	463	879	
% Cars & Peds	84.2	100	100	88.0	100	98.5	0	98.5	98.9	100	100	98.9	98.4	
Trucks & Buses	3	0	0	3	0	6	0	6	5	0	0	5	14	
% Trucks & Buses	15.8	0	0	12.0	0	1.5	0	1.5	1.1	0	0	1.1	1.6	
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	



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 E/W: Haven Avenue/Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662BB  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction										
	Cranston Street (West)			Haven Avenue			Cranston Street			Int. Total
	From North			From East			From West			
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
Start Time										
03:00 PM	4	1	0	0	96	0	107	10	0	218
03:15 PM	1	4	0	3	96	0	94	4	0	202
03:30 PM	11	1	1	5	93	0	85	4	1	201
03:45 PM	9	1	3	5	98	0	88	4	2	210
Total	25	7	4	13	383	0	374	22	3	831
04:00 PM	3	3	0	2	117	0	95	2	0	222
04:15 PM	4	2	0	4	87	0	81	10	0	188
04:30 PM	1	2	1	1	100	0	78	6	0	189
04:45 PM	4	1	1	1	95	0	95	0	0	197
Total	12	8	2	8	399	0	349	18	0	796
05:00 PM	2	2	0	0	102	0	74	0	0	180
05:15 PM	0	0	1	0	101	0	63	2	0	167
05:30 PM	1	0	0	1	82	0	76	1	1	162
05:45 PM	1	0	1	0	73	0	75	1	0	151
Total	4	2	2	1	358	0	288	4	1	660
Grand Total	41	17	8	22	1140	0	1011	44	4	2287
Apprch %	62.1	25.8	12.1	1.9	98.1	0	95.5	4.2	0.4	
Total %	1.8	0.7	0.3	1	49.8	0	44.2	1.9	0.2	
Cars & Peds	37	16	8	22	1130	0	997	44	4	2258
% Cars & Peds	90.2	94.1	100	100	99.1	0	98.6	100	100	98.7
Trucks & Buses	3	1	0	0	10	0	13	0	0	27
% Trucks & Buses	7.3	5.9	0	0	0.9	0	1.3	0	0	1.2
Bikes by Direction	1	0	0	0	0	0	1	0	0	2
% Bikes by Direction	2.4	0	0	0	0	0	0.1	0	0	0.1

Start Time	Cranston Street (West)				Haven Avenue				Cranston Street				Int. Total	
	From North				From East				From West					
	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 03:15 PM														
03:15 PM	1	4	0	5	3	96	0	99	94	4	0	98	202	
03:30 PM	11	1	1	13	5	93	0	98	85	4	1	90	201	
03:45 PM	9	1	3	13	5	98	0	103	88	4	2	94	210	
04:00 PM	3	3	0	6	2	117	0	119	95	2	0	97	222	
Total Volume	24	9	4	37	15	404	0	419	362	14	3	379	835	
% App. Total	64.9	24.3	10.8	71.2	3.6	96.4	0	88.0	95.5	3.7	0.8	96.7	94.0	
PHF	.545	.563	.333	.712	.750	.863	.000	.880	.953	.875	.375	.967		
Cars & Peds	23	9	4	36	15	400	0	415	356	14	3	373	824	
% Cars & Peds	95.8	100	100	97.3	100	99.0	0	99.0	98.3	100	100	98.4	98.7	
Trucks & Buses	1	0	0	1	0	4	0	4	5	0	0	5	10	
% Trucks & Buses	4.2	0	0	2.7	0	1.0	0	1.0	1.4	0	0	1.3	1.2	
Bikes by Direction	0	0	0	0	0	0	0	0	1	0	0	1	1	
% Bikes by Direction	0	0	0	0	0	0	0	0	0.3	0	0	0.3	0.1	

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 E/W: Haven Avenue/Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662BB  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Cranston Street (West) From North			Haven Avenue From East			Cranston Street From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
03:00 PM	2	1	0	0	94	0	106	10	0	213
03:15 PM	1	4	0	3	95	0	92	4	0	199
03:30 PM	11	1	1	5	93	0	85	4	1	201
03:45 PM	8	1	3	5	95	0	87	4	2	205
Total	22	7	4	13	377	0	370	22	3	818
04:00 PM	3	3	0	2	117	0	92	2	0	219
04:15 PM	4	2	0	4	87	0	81	10	0	188
04:30 PM	1	2	1	1	99	0	77	6	0	187
04:45 PM	4	1	1	1	94	0	95	0	0	196
Total	12	8	2	8	397	0	345	18	0	790
05:00 PM	2	1	0	0	102	0	71	0	0	176
05:15 PM	0	0	1	0	101	0	63	2	0	167
05:30 PM	0	0	0	1	81	0	75	1	1	159
05:45 PM	1	0	1	0	72	0	73	1	0	148
Total	3	1	2	1	356	0	282	4	1	650
Grand Total	37	16	8	22	1130	0	997	44	4	2258
Apprch %	60.7	26.2	13.1	1.9	98.1	0	95.4	4.2	0.4	
Total %	1.6	0.7	0.4	1	50	0	44.2	1.9	0.2	

Start Time	Cranston Street (West) From North				Haven Avenue From East				Cranston Street 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 03:15 PM														
03:15 PM	1	4	0	5	3	95	0	98	92	4	0	96	199	
03:30 PM	11	1	1	13	5	93	0	98	85	4	1	90	201	
03:45 PM	8	1	3	12	5	95	0	100	87	4	2	93	205	
04:00 PM	3	3	0	6	2	117	0	119	92	2	0	94	219	
Total Volume	23	9	4	36	15	400	0	415	356	14	3	373	824	
% App. Total	63.9	25	11.1		3.6	96.4	0		95.4	3.8	0.8			
PHF	.523	.563	.333	.692	.750	.855	.000	.872	.967	.875	.375	.971	.941	

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N: Cranston Street (Westerly Loop)  
 E/W: Haven Avenue/Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662BB  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Cranston Street (West) From North			Haven Avenue From East			Cranston Street From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
03:00 PM	2	0	0	0	2	0	1	0	0	5
03:15 PM	0	0	0	0	1	0	1	0	0	2
03:30 PM	0	0	0	0	0	0	0	0	0	0
03:45 PM	1	0	0	0	3	0	1	0	0	5
Total	3	0	0	0	6	0	3	0	0	12
04:00 PM	0	0	0	0	0	0	3	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	1	0	0	2
04:45 PM	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	2	0	4	0	0	6
05:00 PM	0	1	0	0	0	0	3	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	1	0	1	0	0	2
05:45 PM	0	0	0	0	1	0	2	0	0	3
Total	0	1	0	0	2	0	6	0	0	9
Grand Total	3	1	0	0	10	0	13	0	0	27
Apprch %	75	25	0	0	100	0	100	0	0	
Total %	11.1	3.7	0	0	37	0	48.1	0	0	

Start Time	Cranston Street (West) From North				Haven Avenue From East				Cranston Street 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	2	0	0	2	0	2	0	2	1	0	0	1	5	
03:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	2	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
03:45 PM	1	0	0	1	0	3	0	3	1	0	0	1	5	
Total Volume	3	0	0	3	0	6	0	6	3	0	0	3	12	
% App. Total	100	0	0		0	100	0		100	0	0			
PHF	.375	.000	.000	.375	.000	.500	.000	.500	.750	.000	.000	.750	.600	

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N: Cranston Street (Westerly Loop)  
 E/W: Haven Avenue/Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662BB  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Bikes by Direction

	Cranston Street (West) From North			Haven Avenue From East			Cranston Street From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
Start Time										
03:00 PM	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	1	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	0	0	1	0	0	1
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	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	0	0	0	1	0	0	2
Approch %	100	0	0	0	0	0	100	0	0	
Total %	50	0	0	0	0	0	50	0	0	

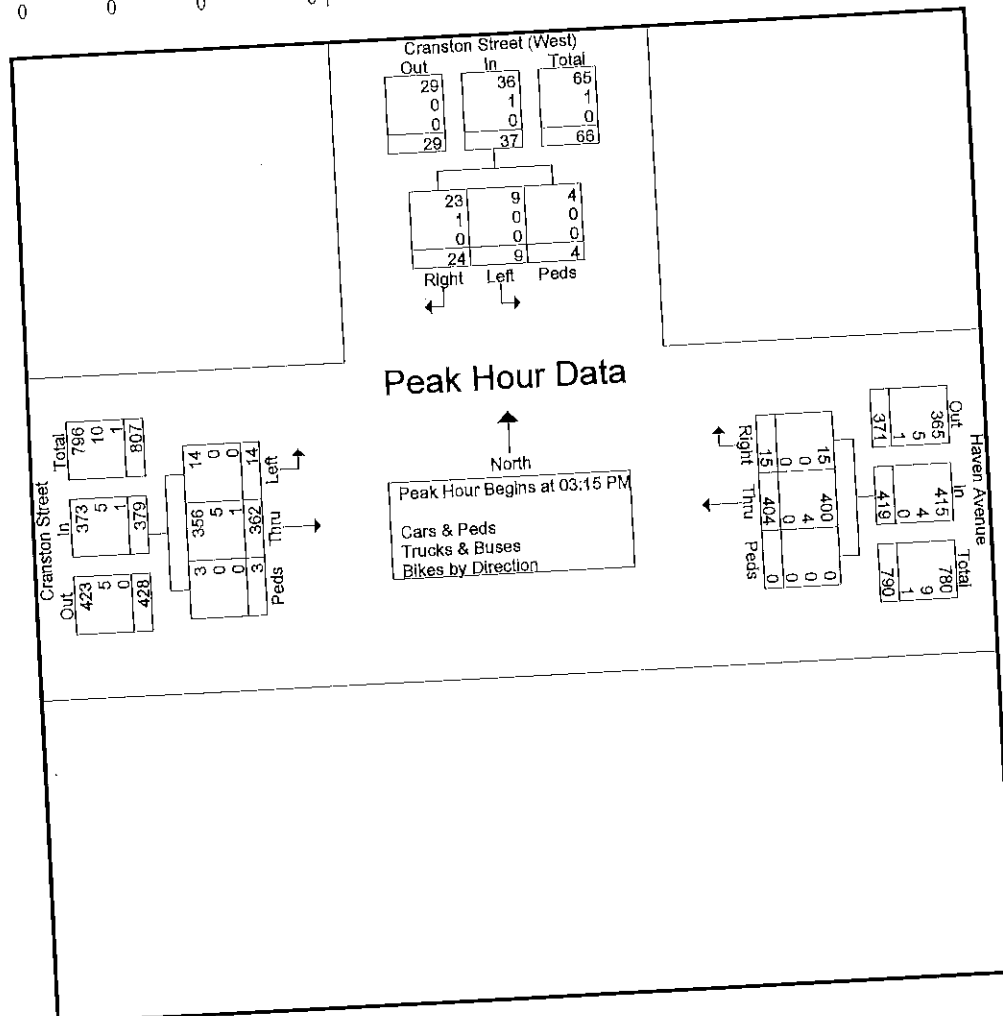
	Cranston Street (West) From North				Haven Avenue From East				Cranston Street From West				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
Start Time													
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	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	0	0	0	1	0	0	1	1
% App. Total	0	0	0	0	0	0	0	0	100	0	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

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N: Cranston Street (Westerly Loop)  
 E/W: Haven Avenue/Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662BB  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Start Time	Cranston Street (West)				Haven Avenue				Cranston Street				Int. Total	
	From North				From East				From West					
	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 03:15 PM														
03:15 PM	1	4	0	5	3	96	0	99	94	4	0	98	202	
03:30 PM	11	1	1	13	5	93	0	98	85	4	1	90	201	
03:45 PM	9	1	3	13	5	98	0	103	88	4	2	94	210	
04:00 PM	3	3	0	6	2	117	0	119	95	2	0	97	222	
Total Volume	24	9	4	37	15	404	0	419	362	14	3	379	835	
% App. Total	64.9	24.3	10.8	712	3.6	96.4	0	880	95.3	8.75	3.75	967	940	
PHF	.545	.563	.333	.36	.15	.400	0	.415	.356	.14	.100	.373	.824	
Cars & Peds	23	9	4	36	100	99.0	0	99.0	98.3	100	0	98.4	98.7	
% Cars & Peds	95.8	100	100	97.3	0	4	0	4	5	0	0	5	10	
Trucks & Buses	1	0	0	1	0	0	0	1.0	1.4	0	0	1.3	1.2	
% Trucks & Buses	4.2	0	0	2.7	0	0	0	0	1	0	0	1	1	
Bikes by Direction	0	0	0	0	0	0	0	0	0.3	0	0	0.3	0.1	
% Bikes by Direction	0	0	0	0	0	0	0	0	0.3	0	0	0.3	0.1	



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N: #1381 Gated Driveway  
 E/W: Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662C  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

	1381 Cranston Print Works Site Drive From North			Cranston Street From East			Cranston Street From West			Int. Total
Start Time	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	1	0	0	0	0	0	1
07:45 AM	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	2
08:00 AM	0	1	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	0	1	0	0	0	0	0	2
Total	0	2	0	1	0	0	0	0	0	3
Grand Total	0	3	0	2	0	0	0	0	0	5
Apprch %	0	100	0	100	0	0	0	0	0	
Total %	0	60	0	40	0	0	0	0	0	

	1381 Cranston Print Works Site Drive From North				Cranston Street From East				Cranston Street From West				Int. Total
Start Time	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 07:15 AM													
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	1	0	0	1	0	0	0	0	3
% App. Total	0	100	0		100	0	0		0	0	0		
PHF	.000	.500	.000	.500	.250	.000	.000	.250	.000	.000	.000	.000	.750

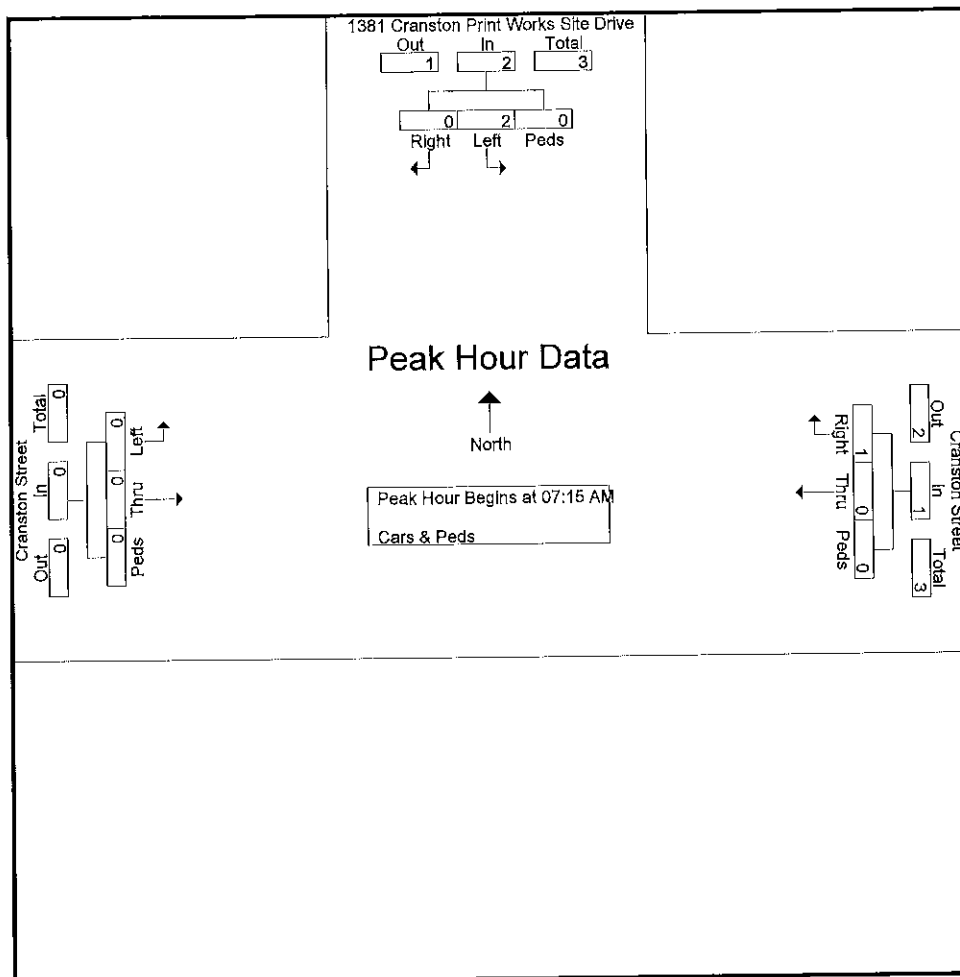


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N: #1381 Gated Driveway  
 E/W: Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662C  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

	1381 Cranston Print Works Site Drive From North				Cranston Street From East				Cranston Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. 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	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	1	0	0	1	0	0	0	0	3
% App. Total	0	100	0		100	0	0		0	0	0		
PHF	.000	.500	.000	.500	.250	.000	.000	.250	.000	.000	.000	.000	.750



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N: #1381 Gated Driveway  
 R/W: Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662CC  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

	1381 Cranston Print Works Site Drive From North			Cranston Street From East			Cranston Street From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
03:00 PM	0	1	0	0	0	0	0	0	0	1
03:15 PM	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	0	0	0	0	1
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	1	0	1
Total	0	0	0	0	0	0	0	1	0	1
05:00 PM	0	0	0	0	0	0	0	1	0	1
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	1	0	1
Grand Total	0	1	0	0	0	0	0	2	0	3
Apprch %	0	100	0	0	0	0	0	100	0	
Total %	0	33.3	0	0	0	0	0	66.7	0	

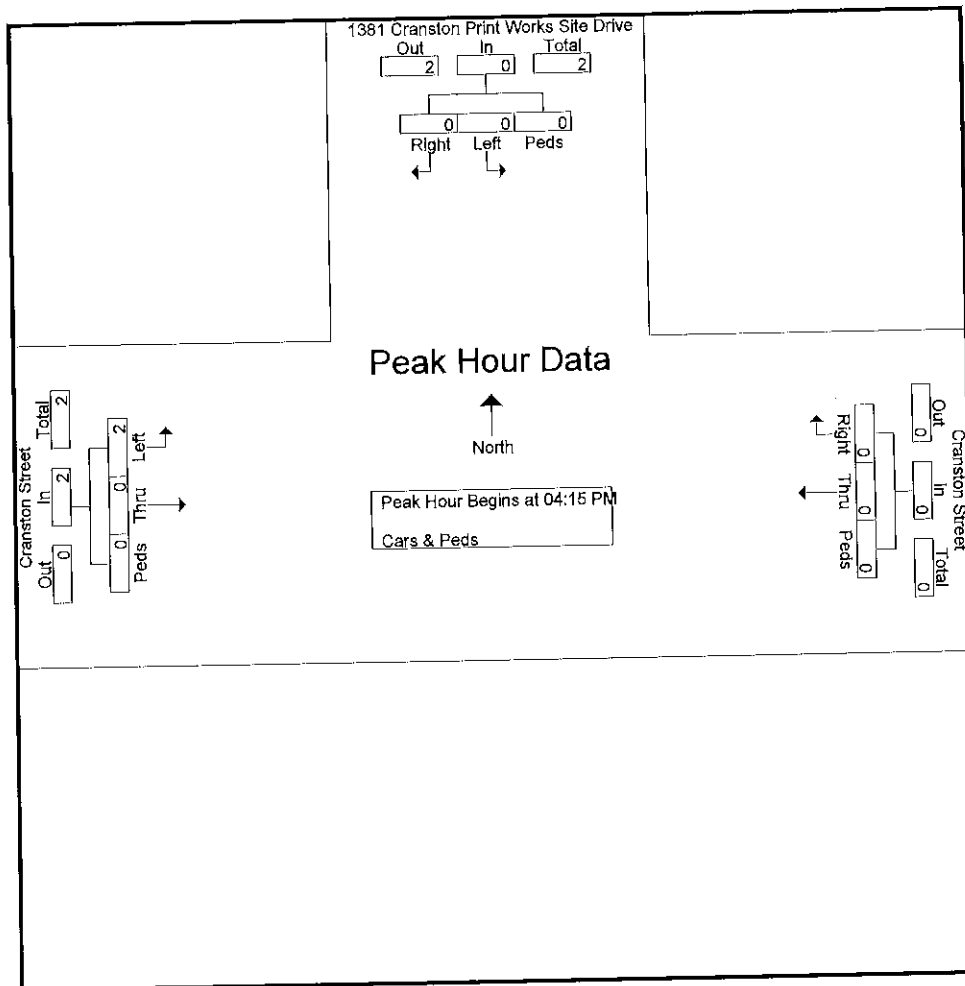
	1381 Cranston Print Works Site Drive From North				Cranston Street From East				Cranston Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	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
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

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N: #1381 Gated Driveway  
 E/W: Cranston Street  
 City, State: Cranston, MA  
 Client: VAI/D. Roach

File Name : 05662CC  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

	1381 Cranston Print Works Site Drive From North				Cranston Street From East				Cranston Street From West					
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:15 PM														
04:15 PM	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	
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
05:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	2	
Total Volume	0	0	0	0	0	0	0	0	0	100	0	100	100	
% App. Total	0	0	0	0	0	0	0	0	0	100	0	100	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500	



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File Name : 05662D  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

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N/S: Dyer Avenue  
 E: Governor Street  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662D  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Dyer Avenue From North			Governor Street From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
07:00 AM	74	1	0	0	0	1	2	33	0	111
07:15 AM	86	0	0	1	1	1	0	61	0	150
07:30 AM	104	2	0	1	2	0	3	91	0	203
07:45 AM	155	3	0	0	4	0	0	94	0	256
Total	419	6	0	2	7	2	5	279	0	720
08:00 AM	94	2	0	0	2	0	2	125	0	225
08:15 AM	83	0	0	0	2	0	0	76	0	161
08:30 AM	87	1	0	1	2	0	0	88	0	179
08:45 AM	101	2	0	1	2	0	2	76	0	184
Total	365	5	0	2	8	0	4	365	0	749
Grand Total	784	11	0	4	15	2	9	644	0	1469
Appreh %	98.6	1.4	0	19	71.4	9.5	1.4	98.6	0	
Total %	53.4	0.7	0	0.3	1	0.1	0.6	43.8	0	

	Dyer Avenue From North				Governor Street From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. 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	104	2	0	106	1	2	0	3	3	91	0	94	203
07:45 AM	155	3	0	158	0	4	0	4	0	94	0	94	256
08:00 AM	94	2	0	96	0	2	0	2	2	125	0	127	225
08:15 AM	83	0	0	83	0	2	0	2	0	76	0	76	161
Total Volume	436	7	0	443	1	10	0	11	5	386	0	391	845
% App. Total	98.4	1.6	0		9.1	90.9	0		1.3	98.7	0		
PHF	.703	.583	.000	.701	.250	.625	.000	.688	.417	.772	.000	.770	.825

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N/S: Dyer Avenue  
 E: Governor Street  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662D  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Dyer Avenue From North			Governor Street From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
07:00 AM	4	0	0	2	0	0	0	4	0	10
07:15 AM	4	0	0	0	0	0	0	1	0	5
07:30 AM	1	0	0	0	0	0	0	2	0	3
07:45 AM	5	0	0	0	0	0	0	1	0	6
Total	14	0	0	2	0	0	0	8	0	24
08:00 AM	1	0	0	0	0	0	0	1	0	2
08:15 AM	1	0	0	0	0	0	0	2	0	3
08:30 AM	2	0	0	0	0	0	0	1	0	3
08:45 AM	2	0	0	0	0	0	0	3	0	5
Total	6	0	0	0	0	0	0	7	0	13
Grand Total	20	0	0	2	0	0	0	15	0	37
Apprch %	100	0	0	100	0	0	0	100	0	
Total %	54.1	0	0	5.4	0	0	0	40.5	0	

Start Time	Dyer Avenue From North				Governor Street From East				Dyer Avenue From South				Int. Total	
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	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	4	0	0	4	2	0	0	2	0	4	0	4	10	
07:15 AM	4	0	0	4	0	0	0	0	0	1	0	1	5	
07:30 AM	1	0	0	1	0	0	0	0	0	2	0	2	3	
07:45 AM	5	0	0	5	0	0	0	0	0	1	0	1	6	
Total Volume	14	0	0	14	2	0	0	2	0	8	0	8	24	
% App. Total	100	0	0		100	0	0		0	100	0			
PHF	.700	.000	.000	.700	.250	.000	.000	.250	.000	.500	.000	.500	.600	

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File Name : 05662D  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

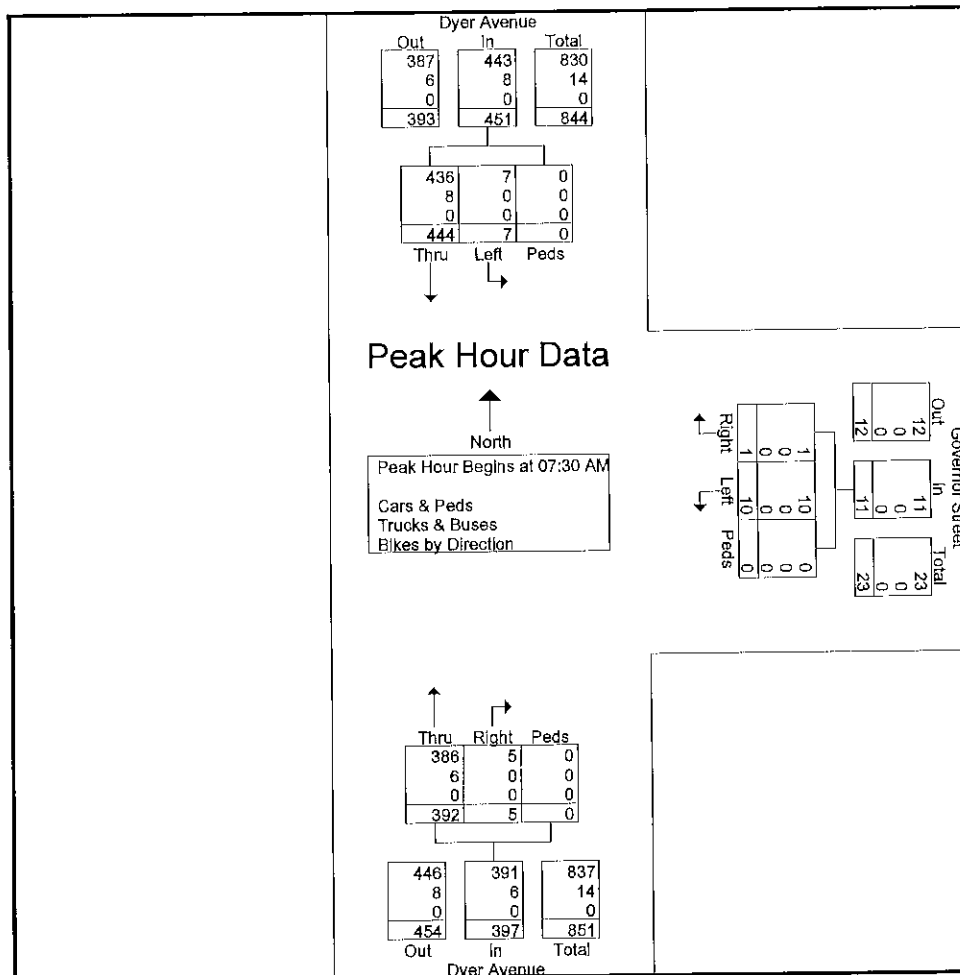
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N/S: Dyer Avenue  
 E: Governor Street  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662D  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

	Dyer Avenue From North				Governor Street From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. 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	105	2	0	107	1	2	0	3	3	93	0	96	206
07:45 AM	160	3	0	163	0	4	0	4	0	95	0	95	262
08:00 AM	95	2	0	97	0	2	0	2	2	126	0	128	227
08:15 AM	84	0	0	84	0	2	0	2	0	78	0	78	164
Total Volume	444	7	0	451	1	10	0	11	5	392	0	397	859
% App. Total	98.4	1.6	0		9.1	90.9	0		1.3	98.7	0		
PHF	.694	.583	.000	.692	.250	.625	.000	.688	.417	.778	.000	.775	.820
Cars & Peds	436	7	0	443	1	10	0	11	5	386	0	391	845
% Cars & Peds	98.2	100	0	98.2	100	100	0	100	100	98.5	0	98.5	98.4
Trucks & Buses	8	0	0	8	0	0	0	0	0	6	0	6	14
% Trucks & Buses	1.8	0	0	1.8	0	0	0	0	0	1.5	0	1.5	1.6
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





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N/S: Dyer Avenue  
E: Governor Street  
City, State: Cranston, RI  
Client: VAI/D. Roach

File Name : 05662DD  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

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

[illegible][illegible]

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N/S: Dyer Avenue  
 E: Governor Street  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662DD  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Dyer Avenue From North			Governor Street From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
03:00 PM	110	1	0	1	1	0	1	112	0	226
03:15 PM	102	2	0	4	0	0	2	123	0	233
03:30 PM	107	2	0	3	3	0	1	129	0	245
03:45 PM	116	1	0	0	2	0	1	103	0	223
Total	435	6	0	8	6	0	5	467	0	927
04:00 PM	108	1	0	2	4	2	4	128	0	249
04:15 PM	98	0	0	2	0	1	2	123	1	227
04:30 PM	114	1	1	0	0	0	1	125	1	243
04:45 PM	116	1	1	1	2	0	2	111	0	234
Total	436	3	2	5	6	3	9	487	2	953
05:00 PM	83	2	0	3	3	0	5	108	0	204
05:15 PM	101	0	0	1	2	0	0	117	0	221
05:30 PM	92	0	0	1	1	0	2	83	0	179
05:45 PM	89	1	0	1	3	0	2	82	0	178
Total	365	3	0	6	9	0	9	390	0	782
Grand Total	1236	12	2	19	21	3	23	1344	2	2662
Apprch %	98.9	1	0.2	44.2	48.8	7	1.7	98.2	0.1	
Total %	46.4	0.5	0.1	0.7	0.8	0.1	0.9	50.5	0.1	

	Dyer Avenue From North				Governor Street From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	108	1	0	109	2	4	2	8	4	128	0	132	249
04:15 PM	98	0	0	98	2	0	1	3	2	123	1	126	227
04:30 PM	114	1	1	116	0	0	0	0	1	125	1	127	243
04:45 PM	116	1	1	118	1	2	0	3	2	111	0	113	234
Total Volume	436	3	2	441	5	6	3	14	9	487	2	498	953
% App. Total	98.9	0.7	0.5		35.7	42.9	21.4		1.8	97.8	0.4		
PHF	.940	.750	.500	.934	.625	.375	.375	.438	.563	.951	.500	.943	.957

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N/S: Dyer Avenue  
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 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662DD  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Dyer Avenue From North			Governor Street From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
03:00 PM	1	0	0	0	0	0	0	2	0	3
03:15 PM	0	0	0	0	0	0	0	0	0	0
03:30 PM	2	0	0	0	0	0	0	3	0	5
03:45 PM	4	0	0	0	0	0	0	0	0	4
Total	7	0	0	0	0	0	0	5	0	12
04:00 PM	2	0	0	0	0	0	0	1	0	3
04:15 PM	1	0	0	0	0	0	0	2	0	3
04:30 PM	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	3	0	3
Total	4	0	0	0	0	0	0	6	0	10
05:00 PM	2	0	0	0	0	0	0	0	0	2
05:15 PM	2	0	0	0	0	0	0	2	0	4
05:30 PM	2	0	0	0	0	0	0	0	0	2
05:45 PM	1	0	0	0	0	0	0	0	0	1
Total	7	0	0	0	0	0	0	2	0	9
Grand Total	18	0	0	0	0	0	0	13	0	31
Apprch %	100	0	0	0	0	0	0	100	0	
Total %	58.1	0	0	0	0	0	0	41.9	0	

	Dyer Avenue From North				Governor Street From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	2	0	0	2	0	0	0	0	0	3	0	3	5
03:45 PM	4	0	0	4	0	0	0	0	0	0	0	0	4
04:00 PM	2	0	0	2	0	0	0	0	0	1	0	1	3
04:15 PM	1	0	0	1	0	0	0	0	0	2	0	2	3
Total Volume	9	0	0	9	0	0	0	0	0	6	0	6	15
% App. Total	100	0	0		0	0	0		0	100	0		
PHF	.563	.000	.000	.563	.000	.000	.000	.000	.000	.500	.000	.500	.750

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Client: VAI/D. Roach

File Name : 05662IDD  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

Groups Printed- Bikes by Direction

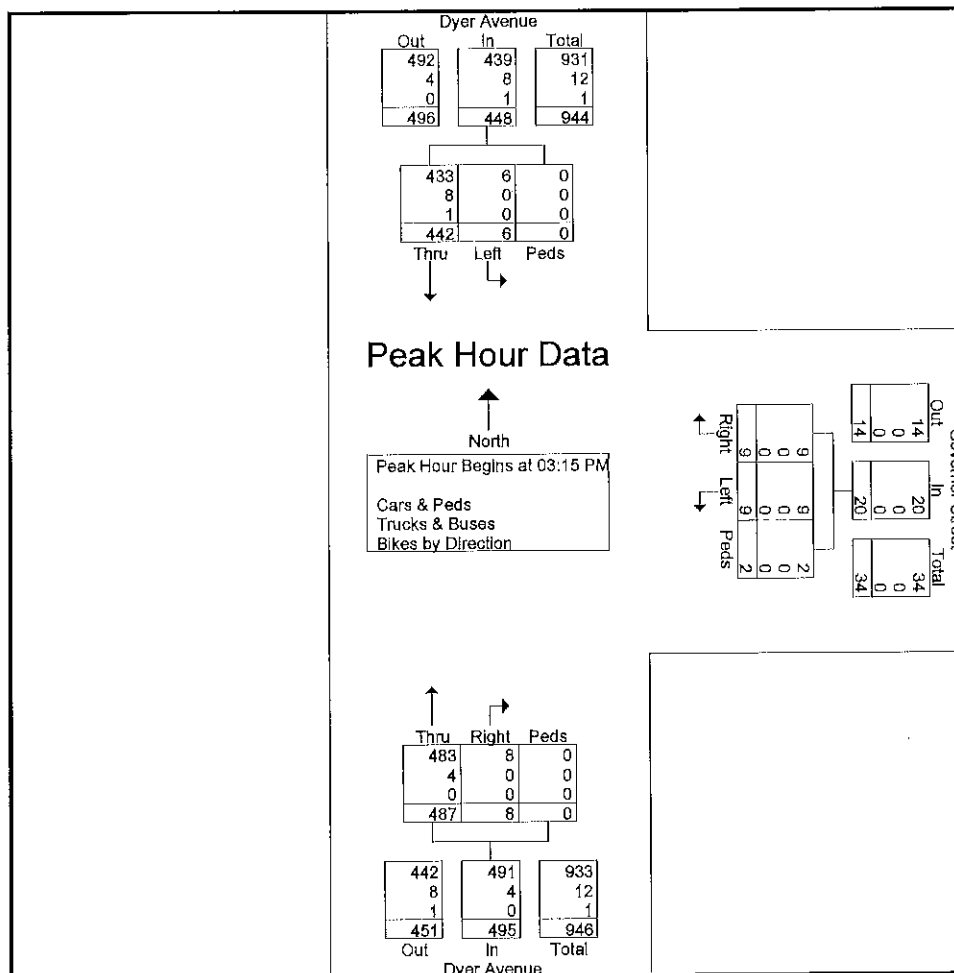
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 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662DD  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

	Dyer Avenue From North				Governor Street From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:15 PM													
03:15 PM	103	2	0	105	4	0	0	4	2	123	0	125	234
03:30 PM	109	2	0	111	3	3	0	6	1	132	0	133	250
03:45 PM	120	1	0	121	0	2	0	2	1	103	0	104	227
04:00 PM	110	1	0	111	2	4	2	8	4	129	0	133	252
Total Volume	442	6	0	448	9	9	2	20	8	487	0	495	963
% App. Total	98.7	1.3	0		45	45	10		1.6	98.4	0		
PHF	.921	.750	.000	.926	.563	.563	.250	.625	.500	.922	.000	.930	.955
Cars & Peds	433	6	0	439	9	9	2	20	8	483	0	491	950
% Cars & Peds	98.0	100	0	98.0	100	100	100	100	100	99.2	0	99.2	98.7
Trucks & Buses	8	0	0	8	0	0	0	0	0	4	0	4	12
% Trucks & Buses	1.8	0	0	1.8	0	0	0	0	0	0.8	0	0.8	1.2
Bikes by Direction	1	0	0	1	0	0	0	0	0	0	0	0	1
% Bikes by Direction	0.2	0	0	0.2	0	0	0	0	0	0	0	0	0.1



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File Name : 05662F  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

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 E: Puritan Avenue  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662F  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Dyer Avenue From North			Puritan Avenue From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
07:00 AM	72	1	0	1	3	0	3	31	0	111
07:15 AM	83	0	0	0	3	0	6	58	0	150
07:30 AM	104	0	0	3	2	0	3	90	0	202
07:45 AM	152	4	0	2	7	0	10	86	0	261
Total	411	5	0	6	15	0	22	265	0	724
08:00 AM	94	3	0	1	2	0	4	119	0	223
08:15 AM	80	0	0	0	3	0	11	65	0	159
08:30 AM	88	6	0	0	1	1	13	75	0	184
08:45 AM	95	2	0	1	8	0	14	66	0	186
Total	357	11	0	2	14	1	42	325	0	752
Grand Total	768	16	0	8	29	1	64	590	0	1476
Apprch %	98	2	0	21.1	76.3	2.6	9.8	90.2	0	
Total %	52	1.1	0	0.5	2	0.1	4.3	40	0	

Start Time	Dyer Avenue From North				Puritan Avenue From East				Dyer Avenue From South				Int. Total
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	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	104	0	0	104	3	2	0	5	3	90	0	93	202
07:45 AM	152	4	0	156	2	7	0	9	10	86	0	96	261
08:00 AM	94	3	0	97	1	2	0	3	4	119	0	123	223
08:15 AM	80	0	0	80	0	3	0	3	11	65	0	76	159
Total Volume	430	7	0	437	6	14	0	20	28	360	0	388	845
% App. Total	98.4	1.6	0		30	70	0		7.2	92.8	0		
PHF	.707	.438	.000	.700	.500	.500	.000	.556	.636	.756	.000	.789	.809

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 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662E  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Dyer Avenue From North			Puritan Avenue From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
07:00 AM	3	0	0	0	1	0	2	4	0	10
07:15 AM	1	1	0	0	0	0	0	1	0	3
07:30 AM	0	0	0	0	0	0	0	2	0	2
07:45 AM	4	1	0	0	0	0	0	1	0	6
Total	8	2	0	0	1	0	2	8	0	21
08:00 AM	1	1	0	0	0	0	0	1	0	3
08:15 AM	1	1	0	0	0	0	1	1	0	4
08:30 AM	1	1	0	0	0	0	0	1	0	3
08:45 AM	1	1	0	0	0	0	0	2	0	4
Total	4	4	0	0	0	0	1	5	0	14
Grand Total	12	6	0	0	1	0	3	13	0	35
Apprch %	66.7	33.3	0	0	100	0	18.8	81.2	0	
Total %	34.3	17.1	0	0	2.9	0	8.6	37.1	0	

	Dyer Avenue From North				Puritan Avenue From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. 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	3	0	0	3	0	1	0	1	2	4	0	6	10
07:15 AM	1	1	0	2	0	0	0	0	0	1	0	1	3
07:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
07:45 AM	4	1	0	5	0	0	0	0	0	1	0	1	6
Total Volume	8	2	0	10	0	1	0	1	2	8	0	10	21
% App. Total	80	20	0		0	100	0		20	80	0		
PHF	.500	.500	.000	.500	.000	.250	.000	.250	.250	.500	.000	.417	.525



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File Name : 05662E  
Site Code : 9575  
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Page No : 1

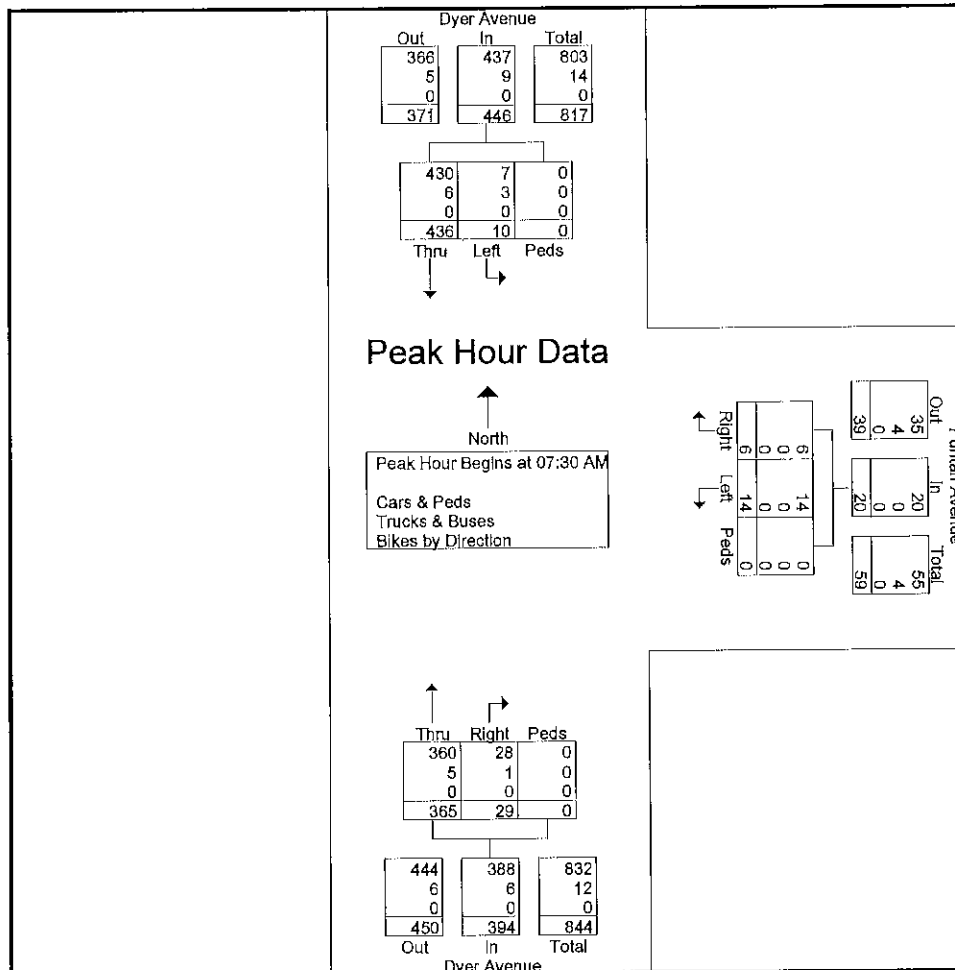
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 E: Puritan Avenue  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662E  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

	Dyer Avenue From North				Puritan Avenue From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. 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	104	0	0	104	3	2	0	5	3	92	0	95	204
07:45 AM	156	5	0	161	2	7	0	9	10	87	0	97	267
08:00 AM	95	4	0	99	1	2	0	3	4	120	0	124	226
08:15 AM	81	1	0	82	0	3	0	3	12	66	0	78	163
Total Volume	436	10	0	446	6	14	0	20	29	365	0	394	860
% App. Total	97.8	2.2	0		30	70	0		7.4	92.6	0		
PHF	.699	.500	.000	.693	.500	.500	.000	.556	.604	.760	.000	.794	.805
Cars & Peds	430	7	0	437	6	14	0	20	28	360	0	388	845
% Cars & Peds	98.6	70.0	0	98.0	100	100	0	100	96.6	98.6	0	98.5	98.3
Trucks & Buses	6	3	0	9	0	0	0	0	1	5	0	6	15
% Trucks & Buses	1.4	30.0	0	2.0	0	0	0	0	3.4	1.4	0	1.5	1.7
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



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Client: VAI/D. Roach

Page No : 1

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

[illegible][illegible]

Peak Hour for Entire Intersection Begins at 03:15 PM

03:15 PM	91	4	1
03:30 PM	102	2	0

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N/S: Dyer Avenue  
E: Puritan Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

File Name : 05662RF  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

## Groups Printed: Cars & Peds

Start Time	Dyer Avenue From North			Puritan Avenue From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
03:00 PM	97	2	0	0	12	0	6	107	0	224
03:15 PM	90	4	1	0	14	1	9	116	0	235
03:30 PM	100	1	0	1	11	0	8	126	0	247
03:45 PM	108	6	0	2	6	0	5	99	0	226
Total	395	13	1	3	43	1	28	448	0	932
04:00 PM	106	1	0	2	7	2	7	124	0	249
04:15 PM	94	1	0	0	3	0	4	122	0	224
04:30 PM	113	0	0	1	5	0	8	120	0	247
04:45 PM	113	1	0	2	7	0	11	102	0	236
Total	426	3	0	5	22	2	30	468	0	956
05:00 PM	81	2	0	1	1	0	4	107	0	196
05:15 PM	98	1	0	3	4	0	1	116	0	223
05:30 PM	91	0	0	1	6	0	3	81	0	182
05:45 PM	86	6	0	1	4	1	8	75	0	181
Total	356	9	0	6	15	1	16	379	0	782
Grand Total	1177	25	1	14	80	4	74	1295	0	2670
Apprch %	97.8	2.1	0.1	14.3	81.6	4.1	5.4	94.6	0	
Total %	44.1	0.9	0	0.5	3	0.1	2.8	48.5	0	

	Dyer Avenue From North				Puritan Avenue From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:15 PM													
03:15 PM	90	4	1	95	0	14	1	15	9	116	0	125	235
03:30 PM	100	1	0	101	1	11	0	12	8	126	0	134	247
03:45 PM	108	6	0	114	2	6	0	8	5	99	0	104	226
04:00 PM	106	1	0	107	2	7	2	11	7	124	0	131	249
Total Volume	404	12	1	417	5	38	3	46	29	465	0	494	957
% App. Total	96.9	2.9	0.2		10.9	82.6	6.5		5.9	94.1	0		
PIIF	.935	.500	.250	.914	.625	.679	.375	.767	.806	.923	.000	.922	.961

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 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662EP  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Dyer Avenue From North			Puritan Avenue From East			Dyer Avenue From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
03:00 PM	1	0	0	0	0	0	0	2	0	3
03:15 PM	0	0	0	0	0	0	0	0	0	0
03:30 PM	2	1	0	0	0	0	0	3	0	6
03:45 PM	3	1	0	0	1	0	0	0	0	5
Total	6	2	0	0	1	0	0	5	0	14
04:00 PM	2	1	0	0	0	0	0	1	0	4
04:15 PM	1	1	0	0	0	0	1	2	0	5
04:30 PM	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	0	0	0	2	0	3
Total	4	3	0	0	0	0	1	5	0	13
05:00 PM	2	0	0	0	0	0	0	0	0	2
05:15 PM	2	1	0	0	0	0	0	2	0	5
05:30 PM	1	0	0	0	0	0	0	0	0	1
05:45 PM	1	0	0	0	0	0	0	0	0	1
Total	6	1	0	0	0	0	0	2	0	9
Grand Total	16	6	0	0	1	0	1	12	0	36
Apprch %	72.7	27.3	0	0	100	0	7.7	92.3	0	
Total %	44.4	16.7	0	0	2.8	0	2.8	33.3	0	

	Dyer Avenue From North				Puritan Avenue From East				Dyer Avenue From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	2	1	0	3	0	0	0	0	0	3	0	3	6
03:45 PM	3	1	0	4	0	1	0	1	0	0	0	0	5
04:00 PM	2	1	0	3	0	0	0	0	0	1	0	1	4
04:15 PM	1	1	0	2	0	0	0	0	1	2	0	3	5
Total Volume	8	4	0	12	0	1	0	1	1	6	0	7	20
% App. Total	66.7	33.3	0		0	100	0		14.3	85.7	0		
PHF	.667	1.00	.000	.750	.000	.250	.000	.250	.250	.500	.000	.583	.833

N/S: Dyer Avenue  
E: Puritan Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

File Name : 05662EE  
Site Code : 9575  
Start Date : 1/10/2023  
Page No : 1

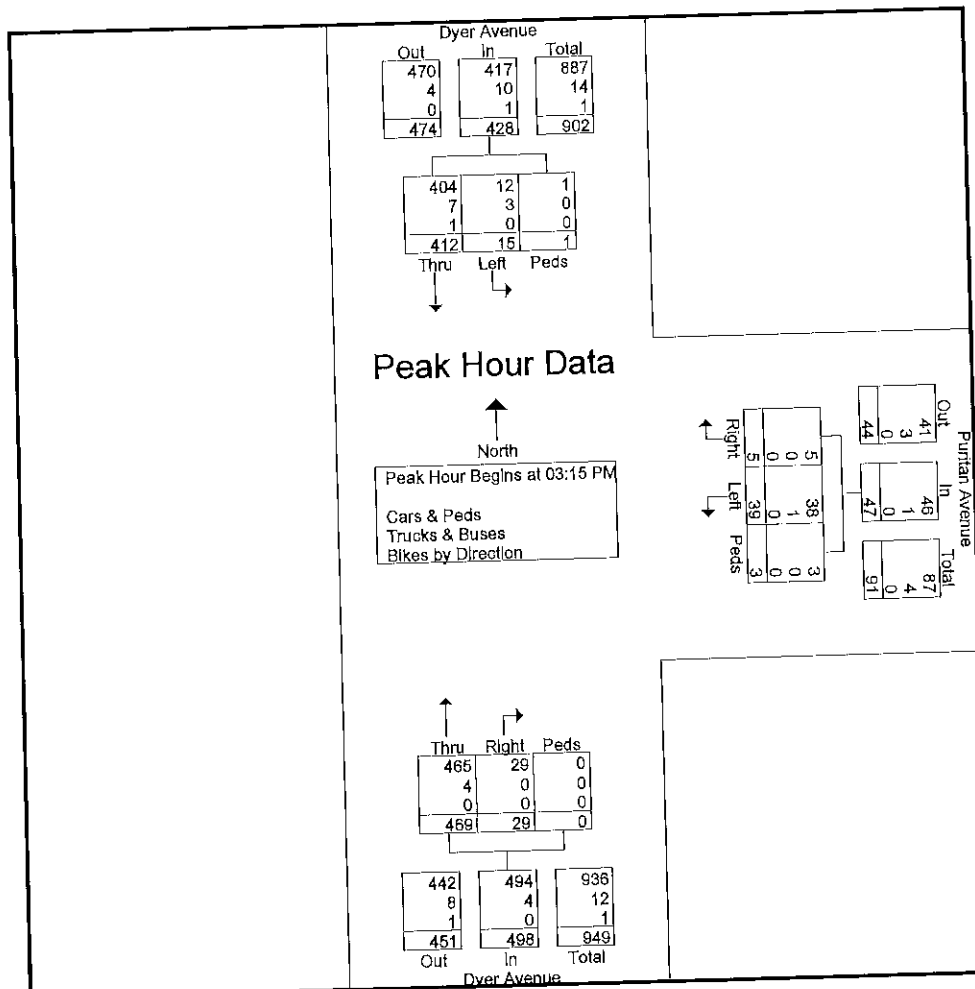
[illegible][illegible]

**Transportation Data Corporation**  
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N/S: Dyer Avenue  
 E: Puritan Avenue  
 City, State: Cranston, RI  
 Client: VAI/D. Roach

File Name : 05662HE  
 Site Code : 9575  
 Start Date : 1/10/2023  
 Page No : 1

Start Time	Dyer Avenue From North				Puritan Avenue From East				Dyer Avenue From South				Int. Total	
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	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 03:15 PM														
03:15 PM	91	4	1	96	0	14	1	15	9	116	0	125	236	
03:30 PM	102	2	0	104	1	11	0	12	8	129	0	137	253	
03:45 PM	111	7	0	118	2	7	0	9	5	99	0	104	231	
04:00 PM	108	2	0	110	2	7	2	11	7	125	0	132	253	
Total Volume	412	15	1	428	5	39	3	47	29	469	0	498	973	
% App. Total	96.3	3.5	0.2		10.6	8.3	6.4		5.8	94.2	0			
PHF	.928	.536	.250	.907	.625	.696	.375	.783	.806	.909	.000	.909	.961	
Cars & Peds	404	12	1	417	5	38	3	46	29	465	0	494	957	
% Cars & Peds	98.1	80.0	100	97.4	100	97.4	100	97.9	100	99.1	0	99.2	98.4	
Trucks & Buses	7	3	0	10	0	1	0	1	0	4	0	4	15	
% Trucks & Buses	1.7	20.0	0	2.3	0	2.6	0	2.1	0	0.9	0	0.8	1.5	
Bikes by Direction	1	0	0	1	0	0	0	0	0	0	0	0	1	
% Bikes by Direction	0.2	0	0	0.2	0	0	0	0	0	0	0	0	0.1	



*Transportation Data Corporation*

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05662A volume  
Site Code: 9575

Cranston Street  
west of Dyer Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

[illegible]



**Transportation Data Corporation**

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05662Avolume  
Site Code: 9575

Cranston Street  
west of Dyer Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

Start Time	11-Jan-23 Wed	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		6	86			11	138				
12:15		4	77			6	125				
12:30		1	80			4	115				
12:45		1	97	12	340	3	119	24	497	36	837
01:00		3	90			3	127				
01:15		4	72			7	106				
01:30		2	80			4	135				
01:45		4	90	13	332	3	110	17	478	30	810
02:00		1	92			2	126				
02:15		1	101			5	116				
02:30		0	120			4	80				
02:45		3	102	5	415	2	122	13	444	18	859
03:00		0	102			2	110				
03:15		2	100			1	105				
03:30		3	130			0	123				
03:45		4	106	9	438	6	84	9	422	18	860
04:00		4	104			4	96				
04:15		4	104			3	117				
04:30		9	113			2	113				
04:45		12	76	29	397	5	113	14	439	43	836
05:00		8	96			4	91				
05:15		17	70			13	112				
05:30		18	75			12	90				
05:45		35	66	78	307	17	73	46	366	124	673
06:00		26	73			12	67				
06:15		44	63			30	62				
06:30		52	56			39	55				
06:45		70	38	192	230	62	67	143	251	335	481
07:00		95	62			60	48				
07:15		87	40			87	58				
07:30		123	39			82	50				
07:45		133	35	438	176	94	59	323	215	761	391
08:00		126	32			95	48				
08:15		89	31			74	44				
08:30		96	37			91	37				
08:45		89	40	400	140	121	44	381	173	781	313
09:00		97	38			78	32				
09:15		81	34			86	30				
09:30		59	20			98	20				
09:45		93	27	330	119	93	35	355	117	685	236
10:00		71	22			94	26				
10:15		85	13			83	26				
10:30		77	15			80	12				
10:45		73	11	306	61	96	14	353	78	659	139
11:00		76	11			94	8				
11:15		66	11			100	18				
11:30		87	3			122	7				
11:45		96	13	325	38	123	13	439	46	764	84
Total		2137	2993			2117	3526			4254	6519
Combined Total			5130			5643				10773	
Percentage		0.0%									
Total Percent			4190	5882		4295	6958			8485	12840
			41.6%	58.4%		38.2%	61.8%			39.8%	60.2%
ADT			ADT 10,662	AADT 10,662							

SEASONAL ADJUSTMENT DATA

Seasonal Factors								
Group	Month	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
OU	Jan	1.642	1.144	1.078	1.101	1.072	1.117	1.296
	Feb	1.726	1.306	1.171	1.024	1.056	1.029	1.198
	Mar	1.481	1.038	0.982	0.962	0.978	0.926	1.098
	Apr	1.506	0.978	0.929	0.93	0.944	0.895	1.055
	May	1.351	0.996	0.892	0.887	0.862	0.839	1.059
	Jun	1.296	0.938	0.886	0.858	0.847	0.829	1.037
	Jul	1.407	1.012	0.901	0.882	0.874	0.883	1.102
	Aug	1.465	0.962	0.887	0.888	0.906	0.848	1.068
	Sep	1.353	0.98	0.881	0.873	0.881	0.829	1.041
	Oct	1.326	0.993	0.912	0.881	0.852	0.811	1.039
	Nov	1.426	0.925	0.881	0.871	1.03	0.921	1.074
	Dec	1.458	0.969	0.932	0.929	0.914	0.956	1.283

PUBLIC TRANSPORTATION SCHEDULES

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Route 17 schedule - Effective 10/22/2022 ([https://www.ripta.com/wp-content/uploads/2022/10/Route-17-10\\_22-v3.pdf](https://www.ripta.com/wp-content/uploads/2022/10/Route-17-10_22-v3.pdf))  
 Bus Stop C in Kennedy Plaza ([wp-content/uploads/2020/05/ripta\\_kp\\_map\\_eng\\_4c\\_003\\_.pdf](https://www.ripta.com/wp-content/uploads/2020/05/ripta_kp_map_eng_4c_003_.pdf))

Receive Updates for This Schedule

VIEW OUTBOUND

Hide Route Map



### Current Bus Location INBOUND

Stop & Shop (Phenix - Atwood)	2:59	3:33	4:07
Dyer & Chestnut Hill	3:06	3:40	4:14
Plainfield & Pocasset	3:13	3:47	4:21
Olneyville Square	3:14	3:16	3:48
Cranston & Westminster	3:22	3:56	4:30
Kennedy Plaza (Providence)	2:57	3:31	4:05

### Select Schedule Category

Weekday

Saturday

Sunday/Holiday

### Weekday INBOUND

Stop & Shop (Phenix - Atwood)	Dyer & Chestnut Hill	Plainfield & Pocasset	Olneyville Square	Cranston & Westminster	Kennedy Plaza (Providence)
5:55	6:01	6:08	6:10	6:15	6:22
6:34	6:40	6:47	6:49	6:54	7:01
7:04	7:10	7:18	7:19	7:27	7:35
7:38	7:44	7:52	7:55	8:01	8:09
-	8:18	8:25	8:27	-	-
8:14	8:20	8:27	8:29	8:35	8:43
8:48	8:54	9:01	9:02	9:09	9:17
9:22	9:28	9:35	9:37	9:43	9:51
9:56	10:02	10:09	10:11	10:17	10:25
10:30	10:36	10:43	10:44	10:51	10:59
11:04	11:10	11:17	11:19	11:25	11:33

2/13/23, 5:13 PM

## 17 | Dyer/Pocasset - RIPTA

Maps & Schedules Service Alerts Riders Fares Stop & Shop (Phenix-Alwood) Services Dyer Planning Chestnut Hill Pocasset Oak Grove Square Cabotville about Westminster Providence Business with RIPTA Privacy Incident Careers Contact Us

Stop & Shop (Phenix-Alwood) Services	Dyer Planning Chestnut Hill	Pocasset	Oak Grove Square	Cabotville Westminster	Providence	Business with RIPTA	Privacy Incident	Careers	Contact Us
11:38	11:44	11:51	11:53	11:59	12:07				
12:12	12:18	12:25	12:27	12:33	12:41				
12:45	12:51	12:58	1:00	1:06	1:15				
1:19	1:25	1:32	1:34	1:40	1:49				
1:53	1:59	2:06	2:07	2:14	2:23				
-	-	-	-	-	2:26				
-	-	-	-	-	2:39				
-	-	-	-	2:48	2:57				
2:27	2:33	2:40	2:42	2:48	2:57				
2:59	3:06	3:13	3:16	3:22	3:31				
3:33	3:40	3:47	3:48	3:56	4:05				
4:07	4:14	4:21	4:24	4:30	4:39				
4:41	4:48	4:55	4:58	5:04	5:13				
5:15	5:22	5:29	5:32	5:38	5:47				
5:54	6:01	6:07	6:08	6:14	6:21				
6:51	6:57	7:03	7:05	7:10	7:17				
7:26	7:32	7:38	7:40	7:45	7:52				
8:23	8:29	8:35	8:37	8:42	8:49				
9:13	9:19	9:25	9:27	9:32	9:39				
10:05	10:11	10:16	10:17	10:22	10:29				

^



705 Elmwood Ave.  
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Bus Advertising (/bus-advertising/)

Bus Shelter Advertising (/bus-shelter-advertising/)

Employee Login (https://intranet.ripta.com/employee-login)

### Related Links

Office of the Secretary of State (https://rules.sos.ri.gov/organizations?KEYWORD=&Agency=)

Secretary of State Quarterly Report (/secretary-of-state-quarterly-report/)

Transit Partners (/transit-partners/)

US Department of Transportation (https://www.transitdot.gov/)

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(https://www.tiktok.com/@RIPTA)

(https://twitter.com/RIPTA)

https://www.ripta.com/routes/17/



Route 30 schedule - Effective 1/15/22 ([https://www.ripta.com/wp-content/uploads/2021/12/Route-30-12\\_21-v3.pdf](https://www.ripta.com/wp-content/uploads/2021/12/Route-30-12_21-v3.pdf))

Bus Stop C in Kennedy Plaza ([/wp-content/uploads/2020/05/ripta\\_kp\\_map\\_eng\\_4c\\_003\\_.pdf](/wp-content/uploads/2020/05/ripta_kp_map_eng_4c_003_.pdf))

📧 Receive Updates for This Schedule

VIEW OUTBOUND

Show Route Map

Current Bus Location INBOUND

CCRI Warwick	🕒 5:29	6:18	7:03
Warwick Mall (Villa Del Rio Apartments)	🕒 5:35	6:24	7:09
Oaklawn & New London	🕒 5:42	6:30	7:15
Oaklawn & Dean	🕒 5:47	6:35	7:20
Cranston & Gansett	🕒 5:54	6:41	7:26
Cranston & Webster	🕒 5:58	6:44	7:29
Kennedy Plaza (Providence)	🕒 5:18	6:08	6:53

Select Schedule Category

Weekday

Saturday

Sunday/Holiday

Weekday INBOUND

CCRI Warwick	Warwick Mall (Villa Del Rio Apartments)	Oaklawn & New London	Oaklawn & Dean	Cranston & Gansett	Cranston & Webster	Kennedy Plaza (Providence)
5:03	5:09	5:15	5:20	5:26	5:29	5:38
5:53	5:59	6:05	6:10	6:16	6:19	6:28
6:41	6:47	6:53	6:58	7:04	7:08	7:18
7:29	7:35	7:42	7:47	7:54	7:58	8:08
8:19	8:25	8:32	8:37	8:44	8:48	8:58
9:09	9:15	9:22	9:27	9:34	9:38	9:48
9:59	10:05	10:12	10:17	10:24	10:28	10:38
10:49	10:55	11:02	11:07	11:14	11:18	11:28
11:39	11:45	11:52	11:57	12:04	12:08	12:18
12:29	12:35	12:42	12:47	12:54	12:58	1:08
1:19	1:25	1:32	1:37	1:44	1:48	1:58
2:09	2:15	2:22	2:27	2:34	2:38	2:48
2:59	3:05	3:12	3:17	3:24	3:28	3:38
3:49	3:55	4:02	4:07	4:14	4:18	4:28
4:39	4:45	4:52	4:57	5:04	5:08	5:18
5:29	5:35	5:42	5:47	5:54	5:58	6:08
6:18	6:24	6:30	6:35	6:41	6:44	6:53
7:03	7:09	7:15	7:20	7:26	7:29	7:38
7:48	7:54	8:00	8:05	8:11	8:14	8:23
8:33	8:39	8:45	8:50	8:56	8:59	9:08
9:23	9:29	9:35	9:40	9:46	9:49	9:58

## VEHICLE SPEED DATA



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Page 1

05662Aspced  
Site Code: 9575

Cranston Street  
west of Dyer Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

Eastbound	1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th Percent	95th Percent
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75			
01/10/23	1	1	6	8	1	0	0	0	0	0	0	0	0	17	29	30
01:00	0	1	6	5	4	0	0	0	0	0	0	0	0	16	32	33
02:00	0	0	0	4	1	0	0	0	0	0	0	0	0	5	31	33
03:00	0	0	8	6	2	1	0	0	0	0	0	0	0	17	31	35
04:00	0	3	12	7	3	0	0	0	0	0	0	0	0	25	29	32
05:00	0	2	23	34	11	2	0	0	0	0	0	0	0	72	31	34
06:00	22	22	88	61	6	0	0	0	0	0	0	0	0	199	28	29
07:00	126	82	101	81	11	0	0	0	0	0	0	0	0	401	26	29
08:00	126	96	141	50	16	1	0	0	0	0	0	0	0	430	25	29
09:00	46	54	113	84	13	0	1	0	0	0	0	0	0	311	28	29
10:00	22	49	119	76	7	0	0	0	0	0	0	0	0	273	27	29
11:00	83	48	77	69	9	0	0	1	0	0	0	0	0	287	27	29
12 PM	79	60	136	80	11	0	0	0	0	0	0	0	0	366	27	29
13:00	56	53	131	79	8	0	0	0	0	0	0	0	0	327	27	29
14:00	100	65	123	87	8	2	0	0	0	0	0	0	0	385	27	29
15:00	109	72	139	85	12	0	0	0	0	0	0	0	0	417	27	29
16:00	99	85	136	55	2	0	0	0	0	0	0	0	0	377	25	28
17:00	48	62	116	64	5	0	0	0	0	0	0	0	0	295	26	29
18:00	27	40	113	55	5	0	0	0	0	0	1	0	0	241	27	29
19:00	2	15	96	43	5	0	0	0	0	0	0	0	0	161	27	29
20:00	4	12	47	42	5	0	0	0	0	0	0	0	0	110	28	31
21:00	0	9	53	25	6	0	0	0	0	0	0	0	0	93	28	33
22:00	0	12	33	26	5	2	0	0	0	0	0	0	0	78	29	33
23:00	0	2	21	14	2	0	0	0	0	0	1	0	0	39	28	30
Total	950	845	1838	1140	158	8	1	1	0	0	1	0	0	4942		
Percent	19.2%	17.1%	37.2%	23.1%	3.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	08:00		
AM Peak	07:00	08:00	08:00	09:00	08:00	05:00	09:00	11:00						430		
Vol.	126	96	141	84	16	2	1	1						15:00		
PM Peak	15:00	16:00	15:00	14:00	15:00	14:00					18:00			417		
Vol.	109	85	139	87	12	2					1					

# Transportation Data Corporation

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05662Aspeed  
Site Code: 9575

Cranston Street  
west of Dyer Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

Eastbound	1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th Percent	95th Percent
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75			
01/11/23	0	0	6	6	1	0	0	0	0	0	0	0	0	12	29	31
01:00	0	2	0	7	4	0	0	0	0	0	0	0	0	13	32	34
02:00	0	0	1	4	0	0	0	0	0	0	0	0	0	5	29	29
03:00	0	0	4	2	3	0	0	0	0	0	0	0	0	9	32	34
04:00	0	3	9	13	4	0	0	0	0	0	0	0	0	29	29	33
05:00	0	2	37	27	9	3	0	0	0	0	0	0	0	78	30	34
06:00	16	33	75	56	11	1	0	0	0	0	0	0	0	192	28	31
07:00	158	86	123	67	5	0	0	0	0	0	0	0	0	438	25	28
08:00	135	82	105	66	10	1	0	0	0	0	0	0	0	400	26	29
09:00	41	55	133	86	14	1	0	0	0	0	0	0	0	330	27	29
10:00	38	51	134	69	13	0	0	0	0	0	0	0	0	306	27	29
11:00	60	53	110	88	13	1	0	0	0	0	0	0	0	325	28	29
12 PM	74	60	127	69	10	0	0	0	0	0	0	0	0	340	27	29
13:00	76	58	111	80	7	0	0	0	0	0	0	0	0	332	27	29
14:00	102	100	135	71	6	0	0	0	0	0	0	0	0	415	26	29
15:00	115	89	166	63	4	1	0	0	0	0	0	0	0	438	25	28
16:00	122	90	135	45	5	0	0	0	0	0	0	0	0	397	24	28
17:00	43	66	149	47	1	0	0	0	0	0	0	0	0	307	25	28
18:00	18	47	99	61	4	1	0	0	0	0	0	0	0	230	27	29
19:00	8	18	84	59	5	2	0	0	0	0	0	0	0	176	28	29
20:00	8	24	62	41	5	0	0	0	0	0	0	0	0	140	28	29
21:00	7	11	56	39	5	1	0	0	0	0	0	0	0	119	28	30
22:00	1	7	29	18	3	2	1	0	0	0	0	0	0	61	29	34
23:00	1	2	14	14	7	0	0	0	0	0	0	0	0	38	30	33
Total	1023	938	1904	1097	149	14	1	1	1	0	1	1	0	5130		
Percent	19.9%	18.3%	37.1%	21.4%	2.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	07:00		
AM Peak	07:00	07:00	10:00	11:00	09:00	05:00		08:00			10:00			438		
Vol.	158	85	134	88	14	3		1			1			15:00		
PM Peak	16:00	14:00	15:00	13:00	12:00	19:00	22:00	14:00			17:00			438		
Vol.	122	100	166	80	10	2	1	1			1					
Grand Total	1973	1783	3742	2237	307	22	2	2	1	0	2	1	0	10072		
Percent	19.6%	17.7%	37.2%	22.2%	3.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
15th Percentile :																
50th Percentile :																
85th Percentile :																
95th Percentile :																

Stats 10 MPH Pace Speed : 21-30 MPH

Number of Vehicles > 30 MPH : 337  
Percent of Vehicles > 30 MPH : 3.3%  
Mean Speed(Average) : 21 MPH

# **Transportation Data Corporation**

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Page 3

Cranston Street  
west of Dyer Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

05662Aspeed  
Site Code: 9575

Westbound	1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th Percent	95th Percent
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75			
01/10/23	0	0	3	12	6	0	0	0	0	0	0	0	0	21	32	34
01:00	1	0	3	6	5	1	0	0	0	0	0	0	0	16	33	35
02:00	0	1	2	7	4	2	0	0	0	0	0	0	0	16	34	37
03:00	0	0	6	5	1	0	0	0	0	0	0	0	0	12	29	31
04:00	0	0	0	4	5	0	0	0	0	0	0	0	0	9	33	34
05:00	1	0	8	27	8	1	0	0	0	0	0	0	0	45	31	34
06:00	4	3	32	81	30	1	1	0	0	0	0	0	0	152	31	34
07:00	12	2	78	183	72	9	1	0	0	0	0	0	0	357	31	34
08:00	17	7	79	201	70	4	0	0	0	0	0	0	0	378	31	33
09:00	16	3	84	167	60	5	1	0	0	0	0	0	0	336	31	34
10:00	8	12	79	217	61	2	0	0	0	0	0	0	0	379	30	33
11:00	44	26	109	203	70	4	1	0	0	0	0	0	0	457	30	33
12 PM	14	5	100	276	91	7	1	0	0	0	0	0	0	494	31	34
13:00	19	7	104	257	81	4	0	0	0	0	0	0	0	472	30	33
14:00	24	4	76	247	82	11	1	0	0	0	0	0	0	445	31	34
15:00	19	7	67	231	77	7	0	0	0	0	0	0	0	408	31	34
16:00	18	6	88	239	79	3	0	0	0	0	0	0	0	432	31	33
17:00	12	2	78	219	61	5	0	0	0	0	0	0	0	377	30	33
18:00	7	4	40	155	53	2	0	0	0	0	0	0	0	261	31	33
19:00	5	0	36	97	36	5	0	0	0	0	0	0	0	179	31	34
20:00	0	2	21	87	32	3	0	0	0	0	0	0	0	145	32	34
21:00	2	1	22	68	22	2	0	0	0	0	0	0	0	107	31	34
22:00	0	0	3	39	17	0	0	1	0	0	0	0	0	60	32	34
23:00	0	0	8	37	6	1	0	0	0	0	0	0	0	52	29	33
Total	223	91	1126	3065	1029	79	6	1	0	0	0	0	0	5610		
Percent	4.0%	1.6%	20.1%	54.5%	18.3%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11:00		
AM Peak	11:00	11:00	11:00	10:00	07:00	07:00	06:00							457		
Vol.	44	26	109	217	72	9	1							12:00		
PM Peak	14:00	13:00	13:00	12:00	12:00	14:00	12:00	22:00						494		
Vol.	24	7	104	276	91	11	1	1								

# Transportation Data Corporation

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Page 4

Cranston Street  
west of Dyer Avenue  
City, State: Cranston, RI  
Client: VAI/D. Roach

05662Aspeed  
Site Code: 9575

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th Percent	95th Percent
Time	15	20	25	30	35	40	45	50	55	60	65	70	75			
01/11/23	0	0	4	14	5	1	0	0	0	0	0	0	0	24	32	34
01:00	0	0	3	4	6	4	0	0	0	0	0	0	0	17	36	38
02:00	0	0	3	5	4	1	0	0	0	0	0	0	0	13	33	36
03:00	0	1	1	3	4	0	0	0	0	0	0	0	0	9	33	34
04:00	0	0	3	8	2	1	0	0	0	0	0	0	0	14	32	36
05:00	1	0	8	29	8	0	0	0	0	0	0	0	0	46	30	33
06:00	3	1	39	71	27	2	0	0	0	0	0	0	0	143	31	34
07:00	14	3	64	177	60	5	0	0	0	0	0	0	0	323	31	34
08:00	23	5	79	192	71	11	0	0	0	0	0	0	0	381	31	34
09:00	6	3	85	197	58	6	0	0	0	0	0	0	0	355	30	33
10:00	11	7	90	174	64	6	1	0	0	0	0	0	0	353	31	34
11:00	15	4	63	260	94	3	0	0	0	0	0	0	0	439	31	33
12 PM	14	3	102	270	102	5	1	0	0	0	0	0	0	497	31	34
13:00	15	7	106	253	91	6	0	0	0	0	0	0	0	478	31	34
14:00	21	2	106	232	74	8	1	0	0	0	0	0	0	444	31	34
15:00	14	5	66	227	101	9	0	0	0	0	0	0	0	422	32	34
16:00	16	10	93	238	74	8	0	0	0	0	0	0	0	439	31	34
17:00	11	2	78	205	66	3	0	0	1	0	0	0	0	366	31	33
18:00	7	1	38	147	53	5	0	0	0	0	0	0	0	251	31	34
19:00	5	2	38	130	37	3	0	0	0	0	0	0	0	215	31	33
20:00	1	1	41	93	36	0	1	0	0	0	0	0	0	173	31	33
21:00	2	4	24	68	17	2	0	0	0	0	0	0	0	117	30	33
22:00	0	0	12	45	19	2	0	0	0	0	0	0	0	78	32	34
23:00	0	0	3	23	17	1	1	1	0	0	0	0	0	46	33	38
Total	179	61	1149	3065	1090	92	5	1	1	0	0	0	0	5643		
Percent	3.2%	1.1%	20.4%	54.3%	19.3%	1.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	10:00	10:00	11:00	11:00	08:00	10:00								11:00	
Vol.	23	7	90	260	94	11	1							439		
PM Peak	14:00	16:00	13:00	12:00	12:00	15:00	12:00	23:00	17:00					12:00		
Vol.	21	10	106	270	102	9	1	1	1					497		
Grand Total	402	152	2275	6120	2119	171	11	2	1	0	0	0	0	11253		
Percent	3.6%	1.4%	20.2%	54.4%	18.8%	1.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 22 MPH  
50th Percentile : 27 MPH  
85th Percentile : 31 MPH  
95th Percentile : 34 MPH

Stats 10 MPH Pace Speed : 21-30 MPH

Number of Vehicles > 30 MPH : 2304  
Percent of Vehicles > 30 MPH : 20.5%  
Mean Speed(Average) : 27 MPH

GROWTH RATE DATA

## Growth in VMT by Functional Class and County (2000 to 2020)

**2020 Vehicle Miles Traveled by Functional Class by County**

Functional System	County Code					Sum
	1 Bristol	3 Kent	5 Newport	7 Providence	9 Washington	
1 Rural Interstate	0	537	0	0	742	1,279
2 Rural Principal Arterial	0	79	0	190	85	353
6 Rural Minor Arterial	0	28	0	268	161	458
7 Rural Major Collector	0	76	31	204	174	484
8 Rural Minor Collector	0	5	5	21	54	84
9 Rural Local						0
11 Urban Interstate	0	1,539	0	4,913	12	6,465
12 Urban Other Freeway & Expressway	63	402	381	1,705	862	3,412
14 Urban Principal Arterial	335	1,302	657	3,581	552	6,427
16 Urban Minor Arterial	107	425	281	1,901	294	3,009
17 Urban Collector	89	349	179	1,351	264	2,232
19 Urban Local						0
Sum	595	4,741	1,632	14,133	3,201	24,202

**2020 Number of Links by Functional Class by County**

Functional System	County Code					Sum
	1 Bristol	3 Kent	5 Newport	7 Providence	9 Washington	
1 Rural Interstate	0	20	0	0	25	45
2 Rural Principal Arterial	0	15	0	35	23	73
6 Rural Minor Arterial	0	10	0	40	47	97
7 Rural Major Collector	0	20	19	52	107	198
8 Rural Minor Collector	0	4	8	35	63	110
9 Rural Local						
11 Urban Interstate	0	155	0	428	40	623
12 Urban Other Freeway & Expressway	9	72	48	227	151	507
14 Urban Principal Arterial	105	301	187	1,290	214	2,097
16 Urban Minor Arterial	56	160	140	1,126	146	1,628
17 Urban Collector	105	213	182	1,093	201	1,794
19 Urban Local						
Sum	275	970	584	4,326	1,017	7,172

**Total Growth (2000 to 2020) by Functional Class by County**

Functional System	County Code					Sum
	1 Bristol	3 Kent	5 Newport	7 Providence	9 Washington	
1 Rural Interstate		1.16			1.15	1.15
2 Rural Principal Arterial		1.48		1.26	1.28	1.31
6 Rural Minor Arterial		1.35		1.25	1.19	1.23
7 Rural Major Collector		1.33	1.19	1.18	1.26	1.23
8 Rural Minor Collector		2.79	1.18	1.25	1.30	1.32
9 Rural Local						
11 Urban Interstate		1.18		1.19	1.25	1.18
12 Urban Other Freeway & Expressway	1.08	1.14	1.14	1.12	1.30	1.17
14 Urban Principal Arterial	1.11	1.16	1.13	1.13	1.23	1.14
16 Urban Minor Arterial	1.18	1.17	1.14	1.16	1.13	1.15
17 Urban Collector	1.20	1.22	1.10	1.19	1.21	1.19
19 Urban Local						
Sum	1.13	1.18	1.13	1.16	1.22	1.17

**Bold - Indicates insignificant number of links to make growth reliable (less than 45 links)**

**Bold values should not be used. The total statewide growth by functional class should be used instead.**

## RIDOT Annual Growth Rate

Location ID:  
County:  
Functional Class      Minro Arterial  
Location:

Seasonal Factor Group:  
Daily Factor Group:  
Axle Factor Group:  
Growth Factor Group:

Year	AADT
2020	9860
2000	8500

A = 2020/2000	1.1600
B = A^(1/20)	1.0074

<b>Average Annual Growth Rate</b>	<b>0.74</b>
---------------------------------------	-------------

RIDOT Growth Rates for Minor Arterials in  
Providence County = 1.16 percent

Increase from 2000 to 2020

## TRIP GENERATION DATA



## Mini-Warehouse (151)

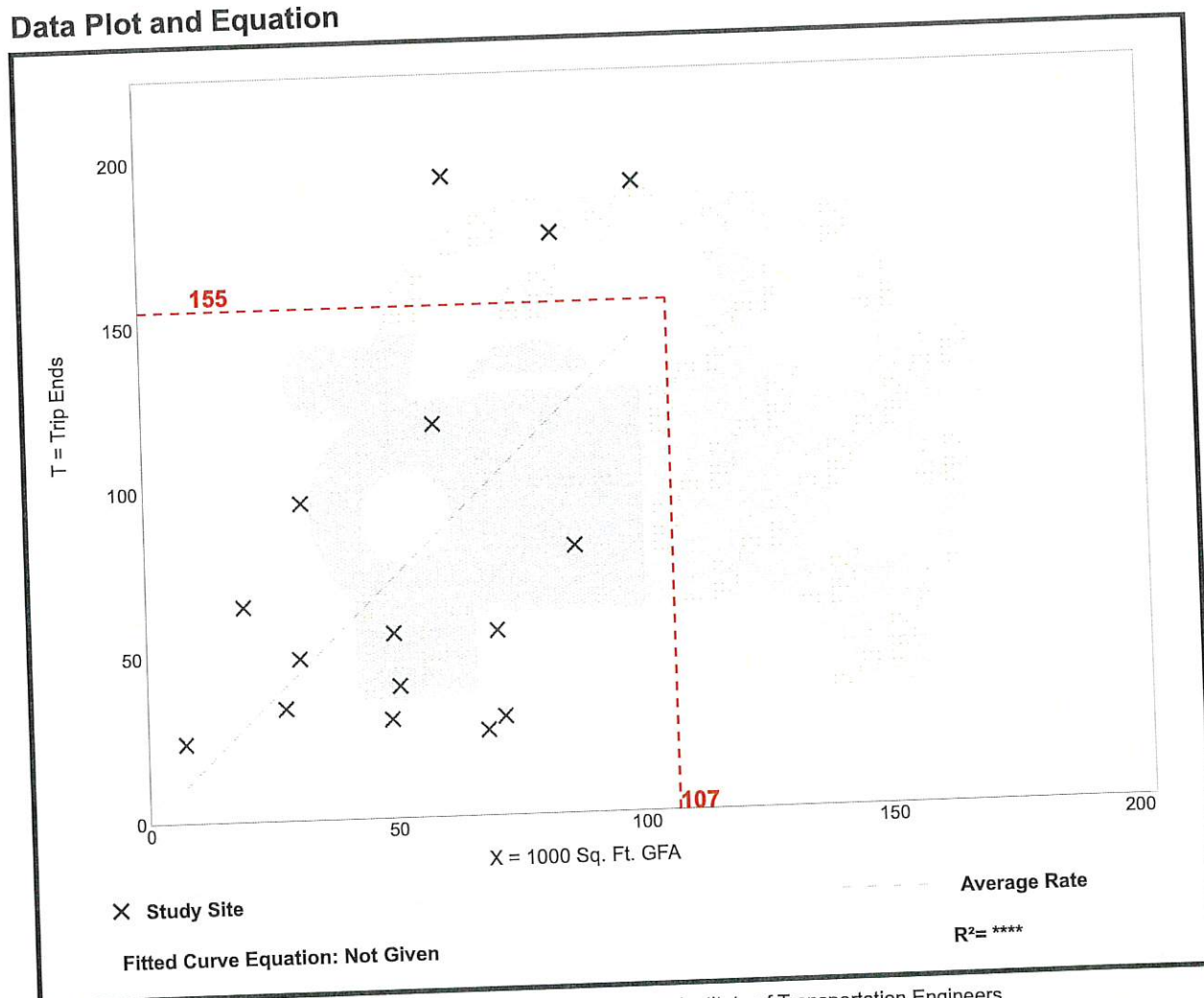
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 16  
Avg. 1000 Sq. Ft. GFA: 55  
Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.45	0.38 - 3.25	0.92

### Data Plot and Equation



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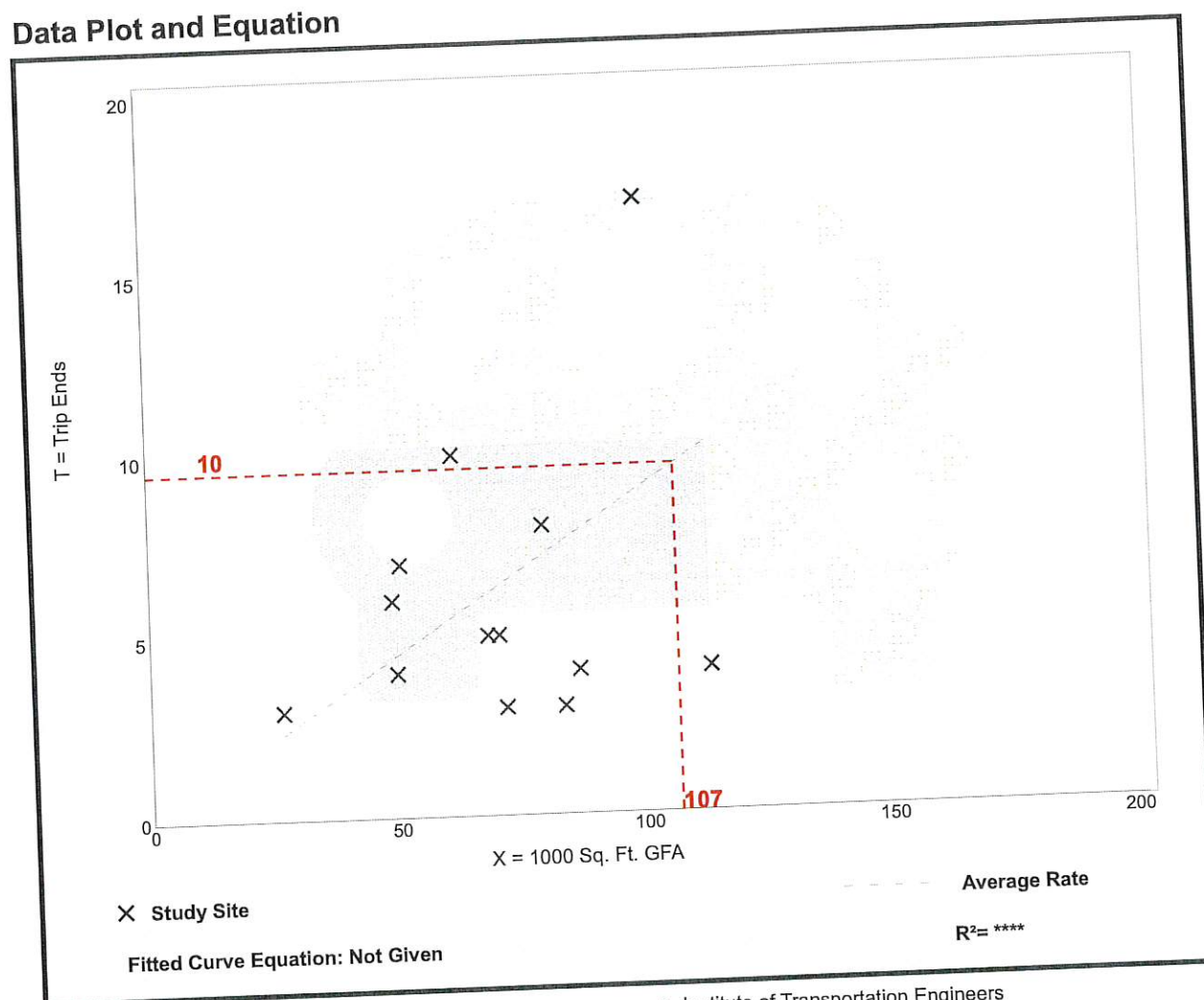
## Mini-Warehouse (151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 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: 13  
 Avg. 1000 Sq. Ft. GFA: 70  
 Directional Distribution: 59% entering, 41% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.04 - 0.17	0.05

### Data Plot and Equation



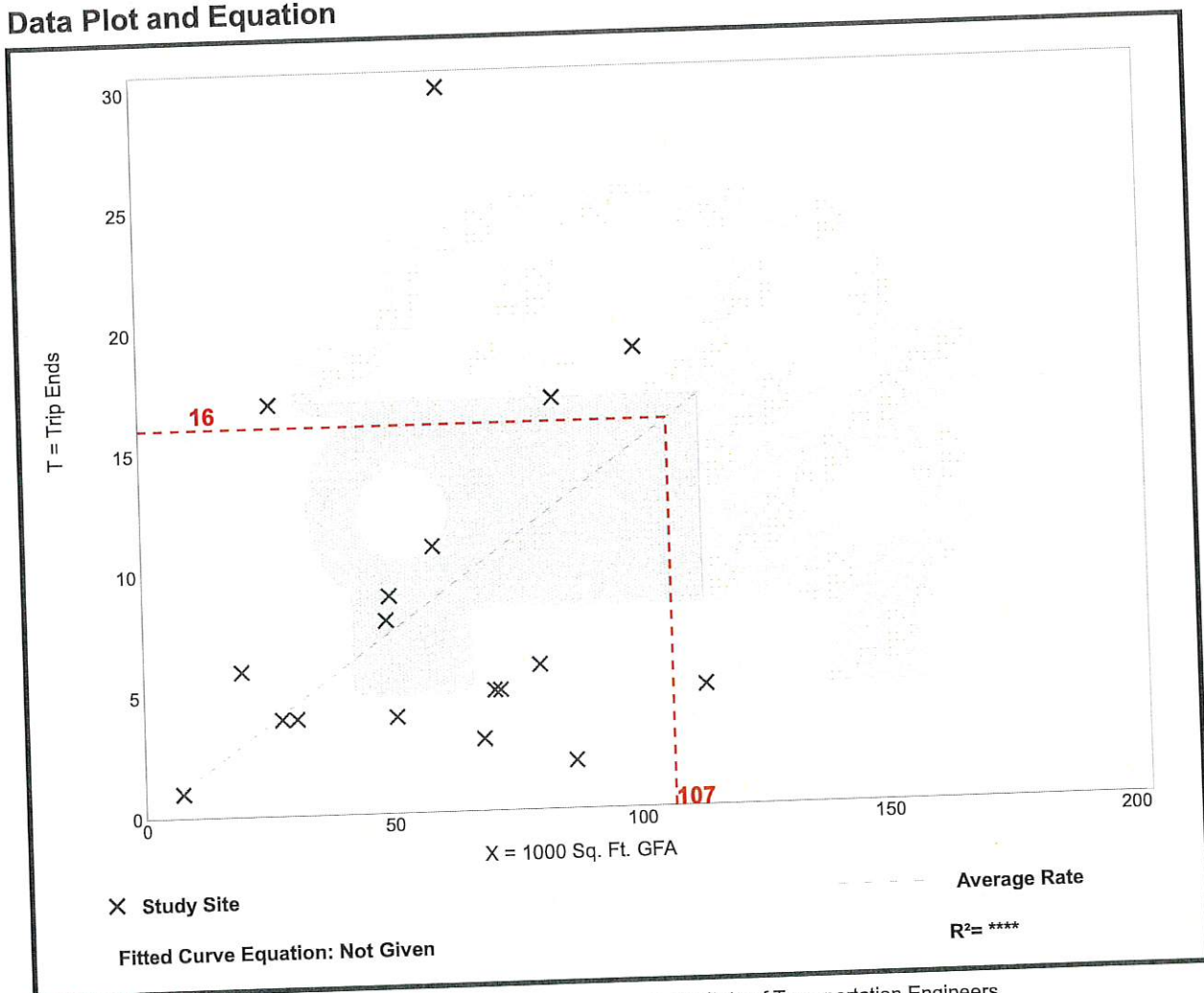
## Mini-Warehouse (151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 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: 18  
 Avg. 1000 Sq. Ft. GFA: 59  
 Directional Distribution: 47% entering, 53% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.15	0.02 - 0.64	0.14

### Data Plot and Equation



## High-Cube Cold Storage Warehouse (157)

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

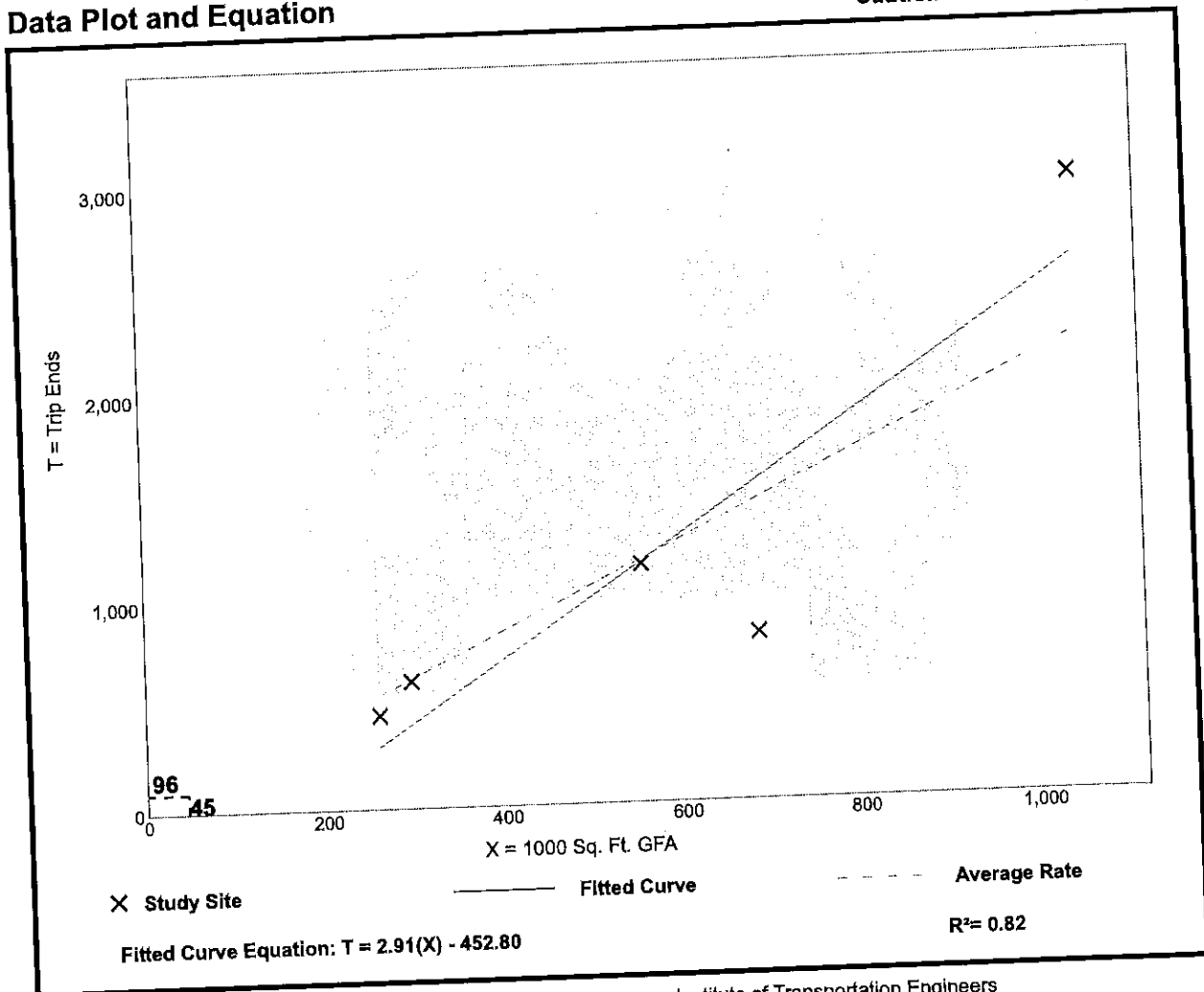
Setting/Location: General Urban/Suburban  
Number of Studies: 5  
Avg. 1000 Sq. Ft. GFA: 569  
Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.12	1.18 - 2.85	0.73

### Data Plot and Equation

Caution – Small Sample Size



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## High-Cube Cold Storage Warehouse (157)

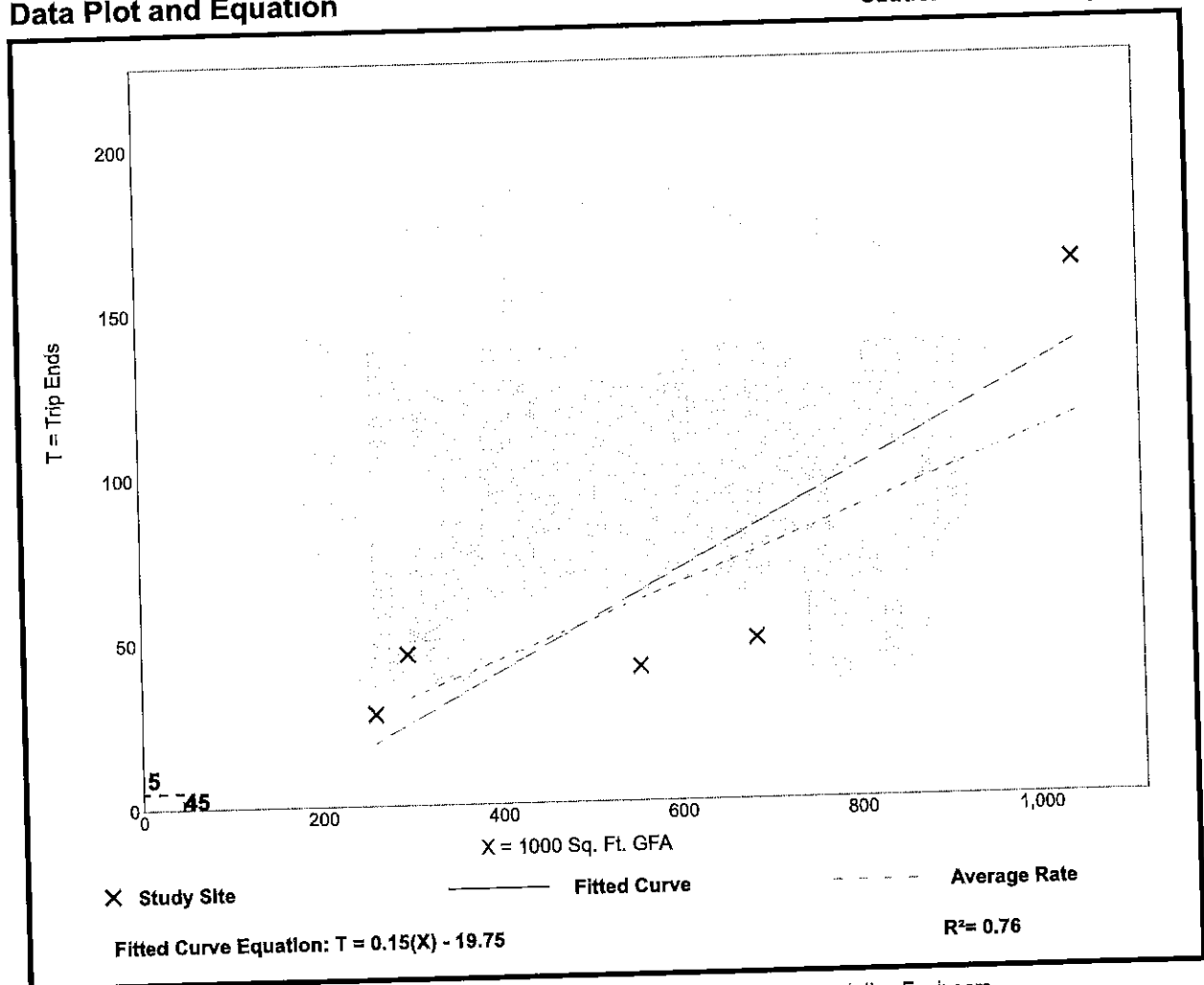
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 5  
 Avg. 1000 Sq. Ft. GFA: 569  
 Directional Distribution: Not Available

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.11	0.07 - 0.15	0.04

### Data Plot and Equation

Caution – Small Sample Size



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## High-Cube Cold Storage Warehouse (157)

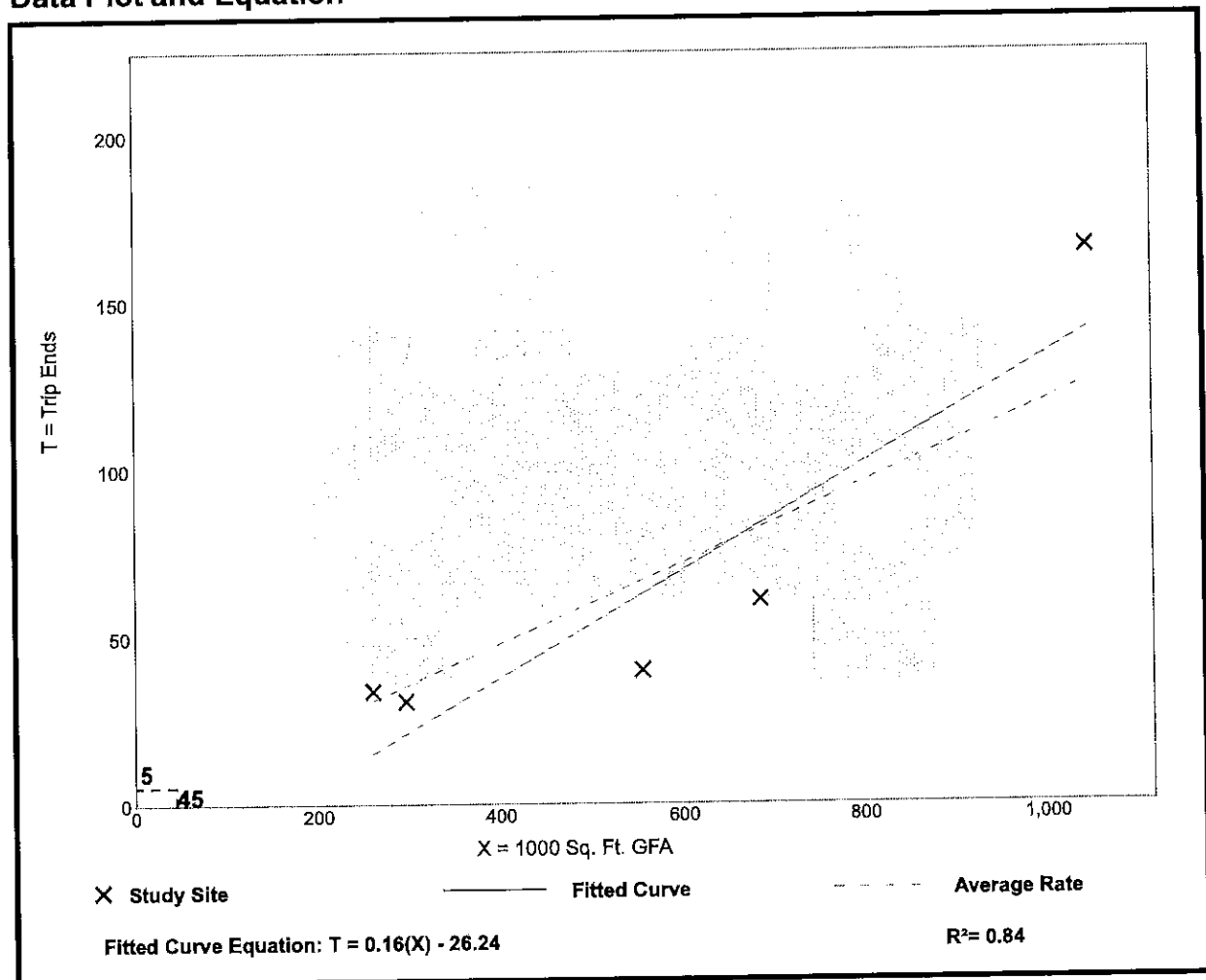
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 5  
 Avg. 1000 Sq. Ft. GFA: 569  
 Directional Distribution: Not Available

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.12	0.07 - 0.16	0.04

### Data Plot and Equation

Caution – Small Sample Size



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

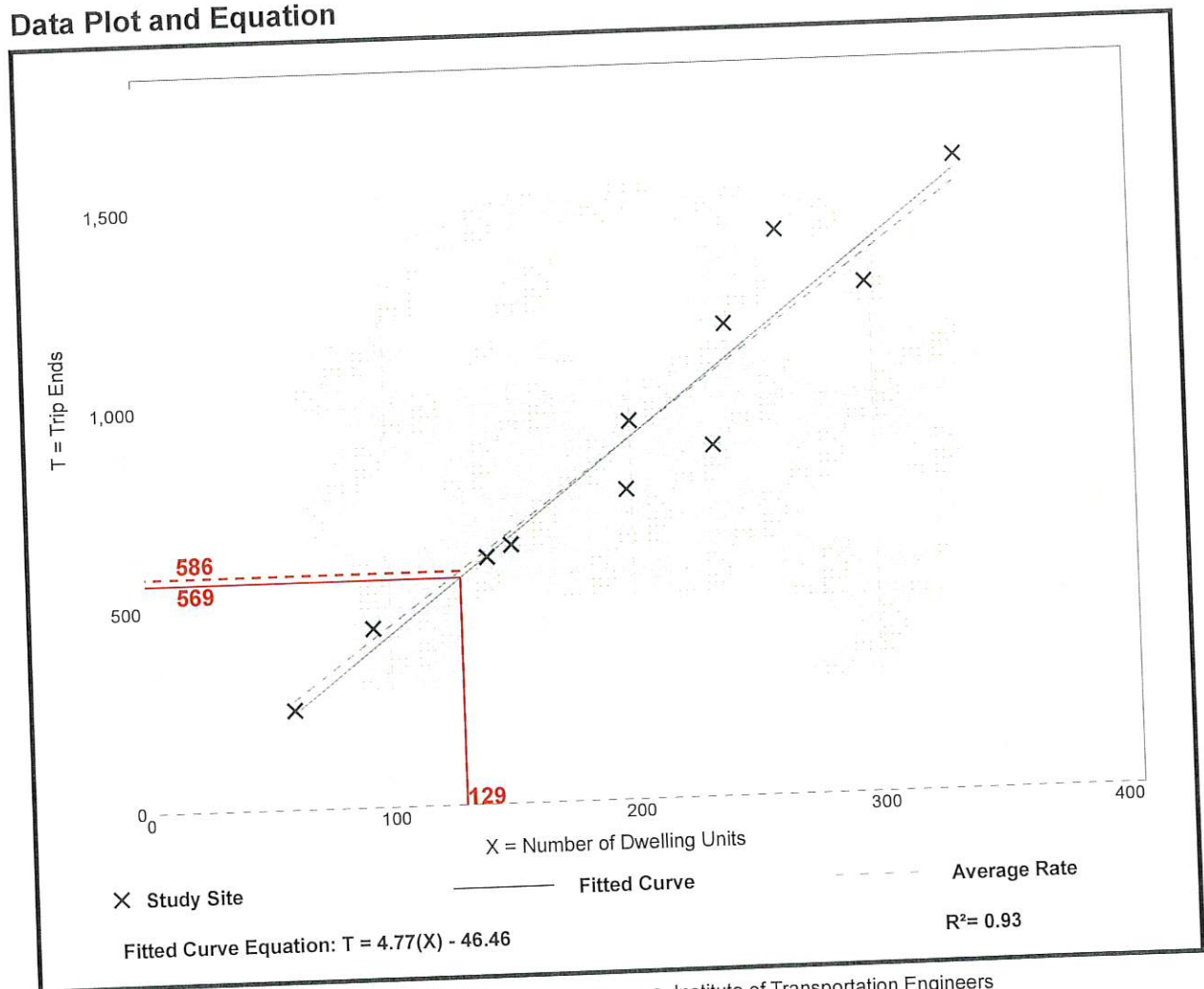
Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

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



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## 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

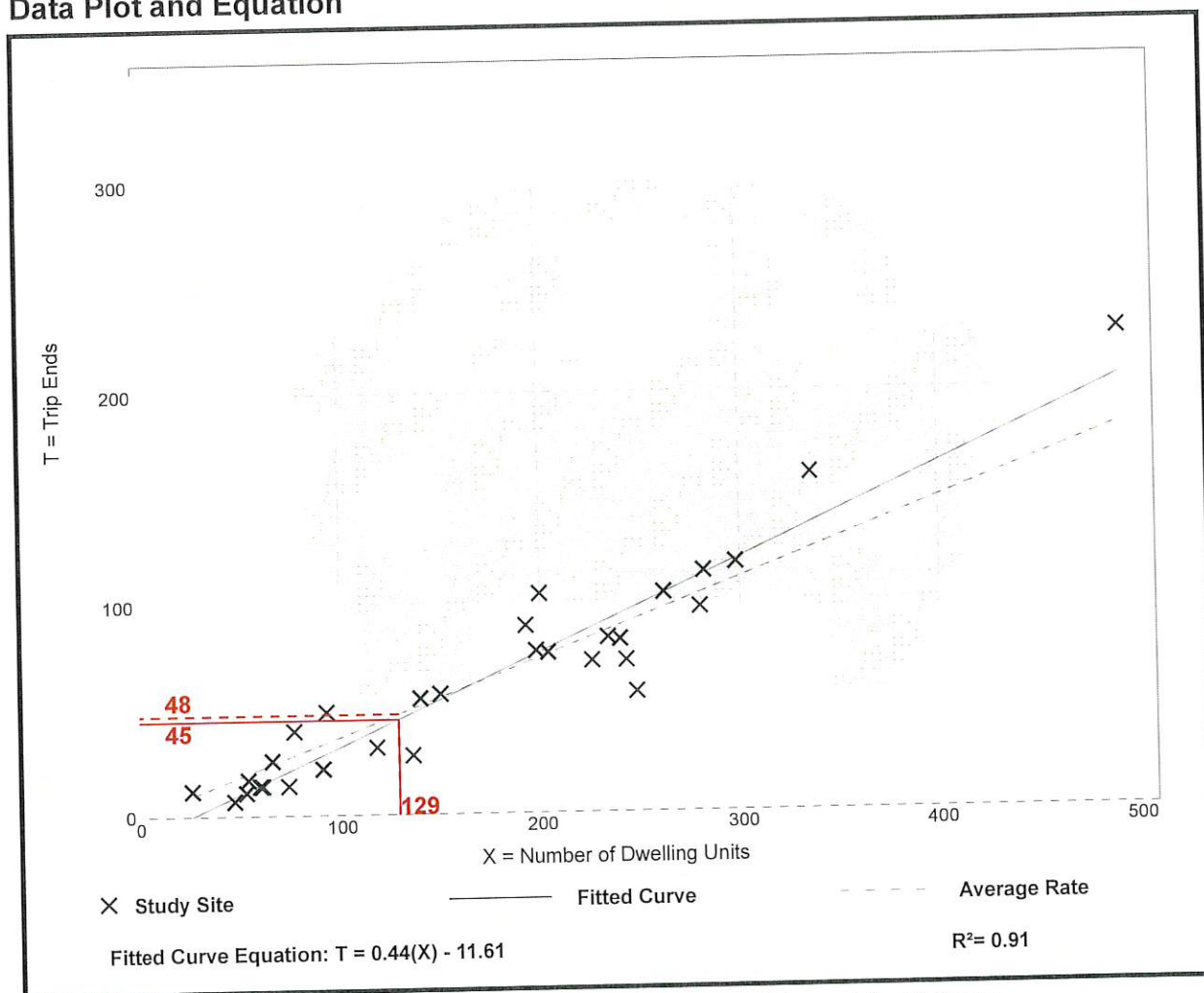
Avg. Num. of Dwelling Units: 173

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



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## 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

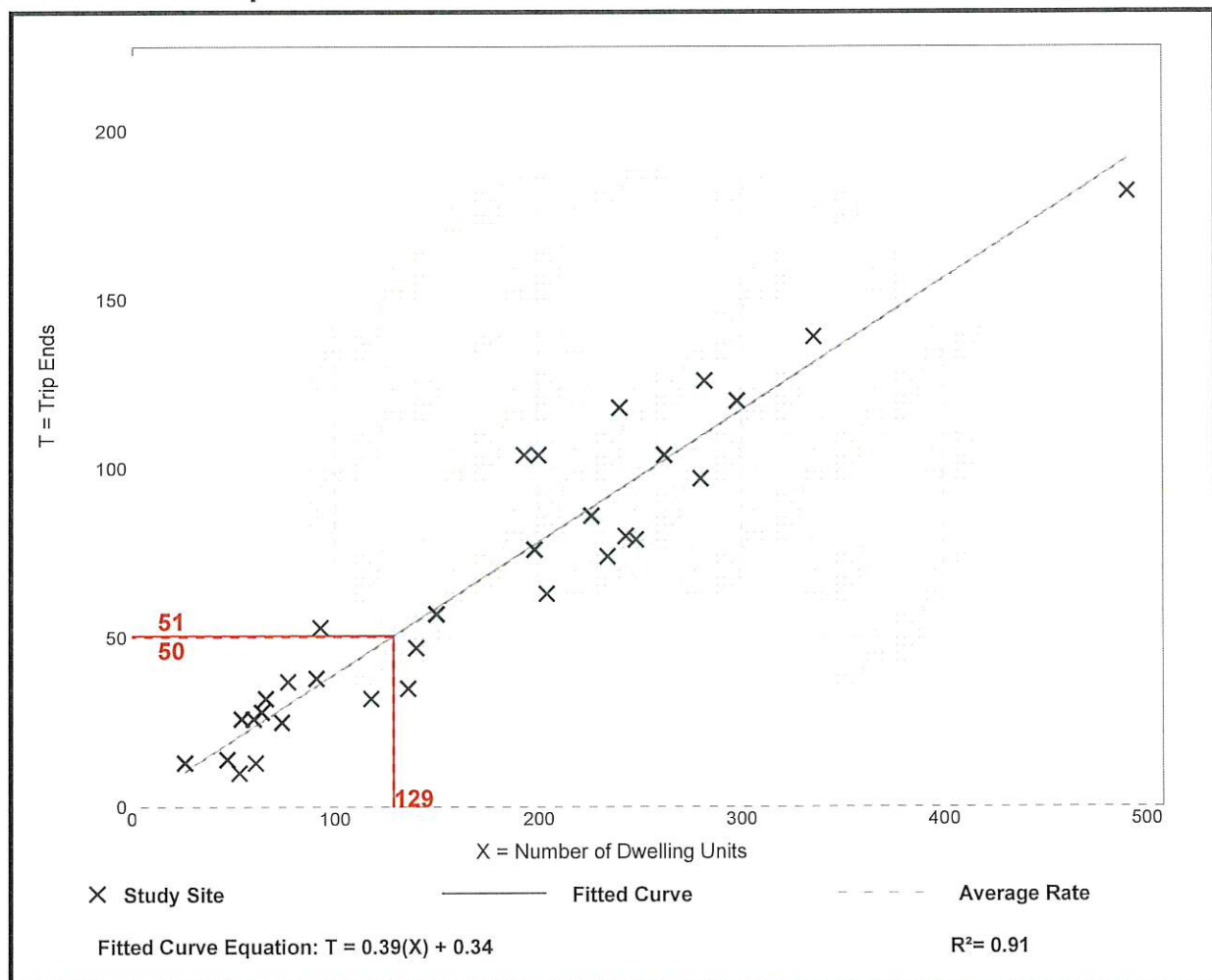
Avg. Num. of Dwelling Units: 169

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



JOURNEY TO WORK

---

Cranston, Rhode Island

[illegible]

2/22/2023

S:\Jobs\9575\Trip Distribution\Journey-to-Work

## CAPACITY ANALYSIS

---

2023 Baseline Weekday Morning Peak Hour  
2023 Baseline Weekday Evening Peak Hour  
2028 No-Build Weekday Morning Peak Hour  
2028 No-Build Weekday Evening Peak Hour  
2028 Build Weekday Morning Peak Hour  
2028 Build Weekday Evening Peak Hour

2023 Baseline Weekday Morning Peak Hour

---

2023 Existing Weekday Morning  
1: Dyer Avenue & Puritan Avenue

02/16/2023

Intersection

Int Delay, s/veh 0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	15	6	393	31	11	470
Future Vol, veh/h	15	6	393	31	11	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	79	79	69	69
Heavy Vehicles, %	0	0	1	3	30	1
Mvmt Flow	27	11	497	39	16	681

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1230	517	0
Stage 1	517	-	-
Stage 2	713	-	-
Critical Hdwy	6.4	6.2	4.4
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.47
Pot Cap-1 Maneuver	198	562	905
Stage 1	603	-	-
Stage 2	489	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	192	562	905
Mov Cap-2 Maneuver	192	-	-
Stage 1	603	-	-
Stage 2	475	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.1	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	236	905
HCM Lane V/C Ratio	-	-	0.159	0.018
HCM Control Delay (s)	-	-	23.1	9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1



2023 Existing Weekday Morning  
2: Dyer Avenue & Governor Street

02/16/2023

Intersection

Int Delay, s/veh 0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	T	T
Traffic Vol, veh/h	11	1	423	5	8	479
Future Vol, veh/h	11	1	423	5	8	479
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	69	69	78	78	69	69
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	16	1	542	6	12	694

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1263	545	0
Stage 1	545	-	-
Stage 2	718	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	189	542	1032
Stage 1	585	-	-
Stage 2	487	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	185	542	1032
Mov Cap-2 Maneuver	185	-	-
Stage 1	585	-	-
Stage 2	478	-	-


















Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	196	1032
HCM Lane V/C Ratio	-	-	0.089	0.011
HCM Control Delay (s)	-	-	25.1	8.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.3	0



2023 Existing Weekday Morning  
3: Dyer Avenue & Cranston Street

02/16/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	370	23	102	298	41	34	262	121	32	330	123
Future Volume (vph)	126	370	23	102	298	41	34	262	121	32	330	123
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.988			0.961				0.850
Flt Protected		0.988			0.989			0.996			0.996	
Satd. Flow (prot)	0	1849	0	0	1888	0	0	1840	0	0	1933	1620
Flt Permitted		0.726			0.729			0.884			0.928	
Satd. Flow (perm)	0	1358	0	0	1392	0	0	1633	0	0	1801	1620
Satd. Flow (RTOR)		4			8			35				86
Adj. Flow (vph)	145	425	26	120	351	48	45	345	159	46	471	176
Lane Group Flow (vph)	0	596	0	0	519	0	0	549	0	0	517	176
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.00			0.85			0.71			0.62	0.23
Control Delay		62.4			35.1			21.9			20.0	7.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		62.4			35.1			21.9			20.0	7.8
Queue Length 50th (ft)		~281			214			192			182	24
Queue Length 95th (ft)		#475			#361			231			193	40
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		594			611			772			831	774
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.00			0.85			0.71			0.62	0.23
Intersection Summary												
Cycle Length: 78												



2023 Existing Weekday Morning  
3: Dyer Avenue & Cranston Street

02/16/2023

Actuated Cycle Length: 78

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

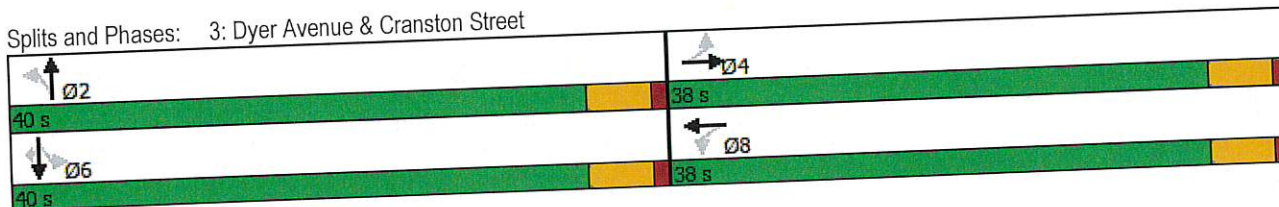
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2023 Existing Weekday Morning  
3: Dyer Avenue & Cranston Street

02/16/2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	↔
Traffic Volume (vph)	126	370	23	102	298	41	34	262	121	32	330	123
Future Volume (vph)	126	370	23	102	298	41	34	262	121	32	330	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.96			1.00	0.85
Flt Protected		0.99			0.99			1.00			1.00	1.00
Satd. Flow (prot)		1849			1886			1840			1932	1620
Flt Permitted		0.73			0.73			0.88			0.93	1.00
Satd. Flow (perm)		1359			1391			1632			1801	1620
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	145	425	26	120	351	48	45	345	159	46	471	176
RTOR Reduction (vph)	0	2	0	0	5	0	0	19	0	0	0	47
Lane Group Flow (vph)	0	594	0	0	514	0	0	530	0	0	517	129
Heavy Vehicles (%)	0%	1%	5%	4%	1%	0%	0%	2%	3%	3%	1%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		592			606			753			831	726
v/s Ratio Prot					0.37			0.32			0.29	0.08
v/s Ratio Perm		0.44			0.85			0.70			0.62	0.18
v/c Ratio		1.00			19.7			16.8			15.9	12.9
Uniform Delay, d1		22.0			1.00			1.00			1.00	1.00
Progression Factor		1.00			10.7			5.5			3.5	0.5
Incremental Delay, d2		37.7			30.4			22.2			19.4	13.4
Delay (s)		59.7			30.4			22.2			17.8	17.8
Level of Service		E			C			C			B	B
Approach Delay (s)		59.7			30.4			22.2			17.8	17.8
Approach LOS		E			C			C			B	B
Intersection Summary												
HCM 2000 Control Delay			32.2								C	
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			78.0							8.0		
Intersection Capacity Utilization			90.0%							E		
Analysis Period (min)			15									
c Critical Lane Group												



2023 Existing Weekday Morning  
4: Cranston Street & Cranston Print Works

02/16/2023

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	517	454	1	2	0
Future Vol, veh/h	0	517	454	1	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	78	78	50	50
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	594	582	1	4	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	583	0	0 1177 583
Stage 1	-	-	- 583 -
Stage 2	-	-	- 594 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1001	-	- 213 516
Stage 1	-	-	- 562 -
Stage 2	-	-	- 555 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1001	-	- 213 516
Mov Cap-2 Maneuver	-	-	- 213 -
Stage 1	-	-	- 562 -
Stage 2	-	-	- 555 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1001	-	-	-	213
HCM Lane V/C Ratio	-	-	-	-	0.019
HCM Control Delay (s)	0	-	-	-	22.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1



2023 Existing Weekday Morning  
5: Cranston Street & Haven Avenue

02/16/2023

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	23	488	435	4	4	21
Future Vol, veh/h	23	488	435	4	4	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	88	88	89	89
Heavy Vehicles, %	0	1	2	0	0	16
Mvmt Flow	25	530	494	5	4	24

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	499	0	0 1077 497
Stage 1	-	-	- 497 -
Stage 2	-	-	- 580 -
Critical Hdwy	4.1	-	- 6.4 6.36
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.444
Pot Cap-1 Maneuver	1075	-	- 245 546
Stage 1	-	-	- 615 -
Stage 2	-	-	- 564 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1075	-	- 237 546
Mov Cap-2 Maneuver	-	-	- 237 -
Stage 1	-	-	- 595 -
Stage 2	-	-	- 564 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1075	-	-	-	452
HCM Lane V/C Ratio	0.023	-	-	-	0.062
HCM Control Delay (s)	8.4	0	-	-	13.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

2023 Baseline Weekday Evening Peak Hour



2023 Existing Weekday Evening  
1: Dyer Avenue & Puritan Avenue

02/16/2023

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	42	5	506	31	16	444
Future Vol, veh/h	42	5	506	31	16	444
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	91	91	91	91
Heavy Vehicles, %	3	0	1	3	20	2
Mvmt Flow	54	6	556	34	18	488

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1097	573	0
Stage 1	573	-	-
Stage 2	524	-	-
Critical Hdwy	6.43	6.2	4.3
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.43	-	-
Follow-up Hdwy	3.527	3.3	2.38
Pot Cap-1 Maneuver	235	523	903
Stage 1	562	-	-
Stage 2	592	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	229	523	903
Mov Cap-2 Maneuver	229	-	-
Stage 1	562	-	-
Stage 2	576	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.5	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	244	903
HCM Lane V/C Ratio	-	-	0.247	0.019
HCM Control Delay (s)	-	-	24.5	9.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1



2023 Existing Weekday Evening  
2: Dyer Avenue & Governor Street

02/16/2023

Intersection

Int Delay, s/veh 0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	10	10	525	9	6	476
Future Vol, veh/h	10	10	525	9	6	476
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	16	16	565	10	6	512

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1094	570	0
Stage 1	570	-	-
Stage 2	524	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	239	525	1008
Stage 1	570	-	-
Stage 2	598	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	237	525	1008
Mov Cap-2 Maneuver	237	-	-
Stage 1	570	-	-
Stage 2	593	-	-


















Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	327	1008
HCM Lane V/C Ratio	-	-	0.097	0.006
HCM Control Delay (s)	-	-	17.2	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0



2023 Existing Weekday Evening  
3: Dyer Avenue & Cranston Street

02/16/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	249	19	98	353	52	19	331	97	50	301	130
Future Volume (vph)	162	249	19	98	353	52	19	331	97	50	301	130
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.986			0.971				0.850
Flt Protected		0.982			0.990			0.998			0.993	
Satd. Flow (prot)	0	1827	0	0	1896	0	0	1889	0	0	1922	1669
Flt Permitted		0.585			0.828			0.978			0.895	
Satd. Flow (perm)	0	1088	0	0	1585	0	0	1851	0	0	1732	1669
Satd. Flow (RTOR)		4			9			24				93
Adj. Flow (vph)	172	265	20	109	392	58	21	368	108	53	320	138
Lane Group Flow (vph)	0	457	0	0	559	0	0	497	0	0	373	138
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		0.97			0.81			0.57			0.46	0.17
Control Delay		58.4			30.3			17.6			16.7	5.7
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		58.4			30.3			17.6			16.7	5.7
Queue Length 50th (ft)		206			224			160			119	12
Queue Length 95th (ft)		#402			#403			252			191	42
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		479			699			872			804	804
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.95			0.80			0.57			0.46	0.17
Intersection Summary												
Cycle Length: 78												



2023 Existing Weekday Evening  
3: Dyer Avenue & Cranston Street

02/16/2023

Actuated Cycle Length: 77.5

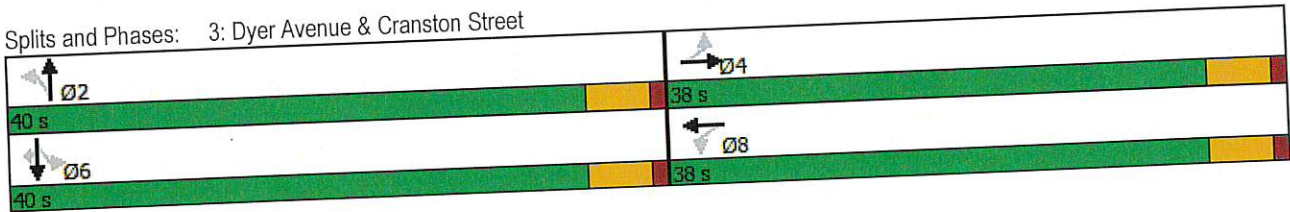
Natural Cycle: 50

Control Type: Actuated-Uncoordinated

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2023 Existing Weekday Evening  
3: Dyer Avenue & Cranston Street

02/16/2023

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↕
Traffic Volume (vph)	162	249	19	98	353	52	19	331	97	50	301	130
Future Volume (vph)	162	249	19	98	353	52	19	331	97	50	301	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.97			0.99	0.85
Flt Protected		0.98			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1826			1896			1888			1922	1669
Flt Permitted		0.59			0.83			0.98			0.90	1.00
Satd. Flow (perm)		1088			1585			1850			1733	1669
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	172	265	20	109	392	58	21	368	108	53	320	138
RTOR Reduction (vph)	0	2	0	0	5	0	0	13	0	0	0	51
Lane Group Flow (vph)	0	455	0	0	554	0	0	484	0	0	373	87
Heavy Vehicles (%)	1%	2%	0%	1%	1%	2%	0%	1%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2		6		6
Permitted Phases	4			8			2				6	
Actuated Green, G (s)		32.5			32.5			35.0			35.0	35.0
Effective Green, g (s)		33.5			33.5			36.0			36.0	35.0
Actuated g/C Ratio		0.43			0.43			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		470			685			859			805	753
v/s Ratio Prot					0.35			0.26			0.22	0.05
v/s Ratio Perm		0.42			0.81			0.56			0.46	0.12
v/c Ratio		0.97			19.2			15.1			14.2	12.3
Uniform Delay, d1		21.5			1.00			1.00			1.00	1.00
Progression Factor		1.00			7.0			2.7			1.9	0.3
Incremental Delay, d2		32.9			26.2			17.7			16.1	12.6
Delay (s)		54.3			26.2			17.7			16.1	12.6
Level of Service		D			C			B			B	B
Approach Delay (s)		54.3			26.2			17.7			15.1	
Approach LOS		D			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			27.7								C	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			77.5							8.0		
Intersection Capacity Utilization			87.9%								E	
Analysis Period (min)			15									
c Critical Lane Group												



2023 Existing Weekday Evening  
4: Cranston Street & Cranston Print Works

02/16/2023

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	2	430	502	0	0	0
Future Vol, veh/h	2	430	502	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	82	82	25	25
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	2	457	612	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	612	0	0 1073 612
Stage 1	-	-	- 612 -
Stage 2	-	-	- 461 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	977	-	- 246 497
Stage 1	-	-	- 545 -
Stage 2	-	-	- 639 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	977	-	- 245 497
Mov Cap-2 Maneuver	-	-	- 245 -
Stage 1	-	-	- 543 -
Stage 2	-	-	- 639 -




Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	977	-	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	8.7	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-



2023 Existing Weekday Evening  
5: Cranston Street & Haven Avenue

02/16/2023

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	398	436	16	10	26
Future Vol, veh/h	15	398	436	16	10	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	88	88	71	71
Heavy Vehicles, %	0	1	1	0	0	4
Mvmt Flow	15	410	495	18	14	37
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	513	0	-	0	944	504
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	440	-
Critical Hdwy	4.1	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	1063	-	-	-	293	564
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	653	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1063	-	-	-	288	564
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	653	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		14.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1063	-	-	-	445	
HCM Lane V/C Ratio	0.015	-	-	-	0.114	
HCM Control Delay (s)	8.4	0	-	-	14.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

2028 No-Build Weekday Morning Peak Hour



2028 Build Weekday Morning  
1: Dyer Avenue & North Project Site Driveway/Puritan Avenue

02/21/2023

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	2	0	0	16	0	6	1	441	33	12	504	2
Future Vol, veh/h	2	0	0	16	0	6	1	441	33	12	504	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	56	92	56	92	79	79	69	69	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	3	30	1	0
Mvmt Flow	2	0	0	29	0	11	1	558	42	17	730	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1352	1367	731	1346	1347	579	732	0	0	600	0	0
Stage 1	765	765	-	581	581	-	-	-	-	-	-	-
Stage 2	587	602	-	765	766	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.4	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.47	-	-
Pot Cap-1 Maneuver	128	148	425	130	152	519	882	-	-	854	-	-
Stage 1	399	415	-	503	503	-	-	-	-	-	-	-
Stage 2	499	492	-	399	415	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	122	143	425	126	147	519	882	-	-	854	-	-
Mov Cap-2 Maneuver	122	143	-	126	147	-	-	-	-	-	-	-
Stage 1	398	401	-	502	502	-	-	-	-	-	-	-
Stage 2	488	491	-	385	401	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35	34.9	0	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	882	-	-	122	159	854	-	-
HCM Lane V/C Ratio	0.001	-	-	0.018	0.247	0.02	-	-
HCM Control Delay (s)	9.1	0	-	35	34.9	9.3	0	-
HCM Lane LOS	A	A	-	E	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.9	0.1	-	-



2028 Build Weekday Morning  
2: Dyer Avenue & South Project Site Driveway/Governor Street

02/21/2023

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	12	0	10	12	0	1	4	460	5	8	509	4
Future Vol, veh/h	12	0	10	12	0	1	4	460	5	8	509	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	69	92	69	92	78	78	69	69	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	13	0	11	17	0	1	4	590	6	12	738	4

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1366	1368	740	1371	1367	593	742	0	0	596	0	0
Stage 1	764	764	-	601	601	-	-	-	-	-	-	-
Stage 2	602	604	-	770	766	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	126	148	420	125	148	509	874	-	-	990	-	-
Stage 1	399	416	-	491	493	-	-	-	-	-	-	-
Stage 2	490	491	-	396	415	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	123	144	420	119	144	509	874	-	-	990	-	-
Mov Cap-2 Maneuver	123	144	-	119	144	-	-	-	-	-	-	-
Stage 1	396	407	-	488	490	-	-	-	-	-	-	-
Stage 2	485	488	-	378	406	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	27.9		38.5		0.1		0.1	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	874	-	-	181 126	990	-	-
HCM Lane V/C Ratio	0.005	-	-	0.132 0.15	0.012	-	-
HCM Control Delay (s)	9.1	0	-	27.9 38.5	8.7	0	-
HCM Lane LOS	A	A	-	D E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.5	0	-	-



2028 Build Weekday Morning  
3: Dyer Avenue & Cranston Street

02/21/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	↔
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.987			0.961				0.850
Flt Protected		0.988			0.989			0.996			0.995	
Satd. Flow (prot)	0	1846	0	0	1887	0	0	1840	0	0	1930	1620
Flt Permitted		0.690			0.702			0.809			0.898	
Satd. Flow (perm)	0	1289	0	0	1339	0	0	1495	0	0	1742	1620
Satd. Flow (RTOR)		5			9			35				87
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
Lane Group Flow (vph)	0	688	0	0	563	0	0	579	0	0	559	193
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.22			0.96			0.82			0.70	0.25
Control Delay		138.4			51.6			28.7			22.3	8.3
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		138.4			51.6			28.7			22.3	8.3
Queue Length 50th (ft)		~419			252			220			206	29
Queue Length 95th (ft)		#593			#422			265			215	45
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		564			588			708			804	774
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.22			0.96			0.82			0.70	0.25
Intersection Summary												
Cycle Length: 78												



2028 Build Weekday Morning  
3: Dyer Avenue & Cranston Street

02/21/2023

Actuated Cycle Length: 78

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

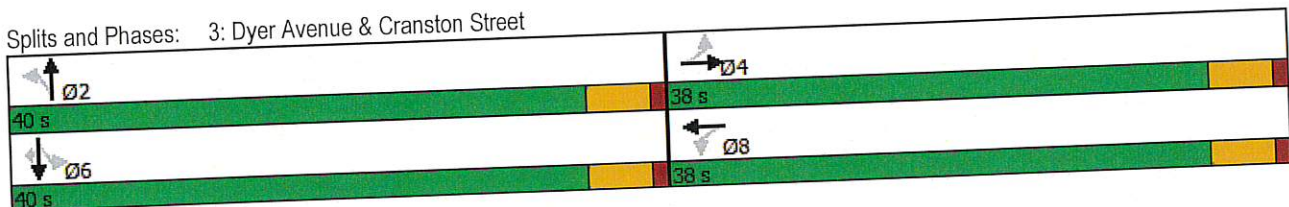
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2028 Build Weekday Morning  
3: Dyer Avenue & Cranston Street

02/21/2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	↔
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.96			0.99	0.85
Flt Protected		0.99			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1846			1886			1840			1929	1620
Flt Permitted		0.69			0.70			0.81			0.90	1.00
Satd. Flow (perm)		1290			1339			1495			1741	1620
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
RTOR Reduction (vph)	0	3	0	0	5	0	0	19	0	0	0	48
Lane Group Flow (vph)	0	685	0	0	558	0	0	560	0	0	559	145
Heavy Vehicles (%)	0%	1%	5%	4%	1%	0%	0%	2%	3%	3%	1%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		562			583			690			803	726
v/s Ratio Prot					0.42			0.37			0.32	0.09
v/s Ratio Perm		0.53			0.96			0.81			0.70	0.20
v/c Ratio		1.22			21.3			18.1			16.7	13.0
Uniform Delay, d1		22.0			1.00			1.00			1.00	1.00
Progression Factor		1.00			26.6			10.1			5.0	0.6
Incremental Delay, d2		114.0			47.9			28.1			21.6	13.6
Delay (s)		136.0										
Level of Service		F			D			C			C	B
Approach Delay (s)		136.0			47.9			28.1			19.6	
Approach LOS		F			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			58.7								E	
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			78.0							8.0		
Intersection Capacity Utilization			99.4%							F		
Analysis Period (min)			15									
c Critical Lane Group												



2028 Build Weekday Morning  
4: Cranston Street & Cranston Print Works

02/21/2023

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	585	491	5	13	8
Future Vol, veh/h	5	585	491	5	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	78	78	50	50
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	6	672	629	6	26	16

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	635	0	0 1316 632
Stage 1	-	-	- 632 -
Stage 2	-	-	- 684 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	958	-	- 176 484
Stage 1	-	-	- 534 -
Stage 2	-	-	- 505 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	958	-	- 174 484
Mov Cap-2 Maneuver	-	-	- 174 -
Stage 1	-	-	- 529 -
Stage 2	-	-	- 505 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	24.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	958	-	-	-	230
HCM Lane V/C Ratio	0.006	-	-	-	0.183
HCM Control Delay (s)	8.8	0	-	-	24.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7



2028 Build Weekday Morning  
5: Cranston Street & Haven Avenue

02/21/2023

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	24	522	474	4	4	22
Future Vol, veh/h	24	522	474	4	4	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	88	88	89	89
Heavy Vehicles, %	0	1	2	0	0	16
Mvmt Flow	26	567	539	5	4	25

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	544	0	0 1161 542
Stage 1	-	-	- 542 -
Stage 2	-	-	- 619 -
Critical Hdwy	4.1	-	- 6.4 6.36
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.444
Pot Cap-1 Maneuver	1035	-	- 218 514
Stage 1	-	-	- 587 -
Stage 2	-	-	- 541 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1035	-	- 210 514
Mov Cap-2 Maneuver	-	-	- 210 -
Stage 1	-	-	- 565 -
Stage 2	-	-	- 541 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1035	-	-	-	420
HCM Lane V/C Ratio	0.025	-	-	-	0.07
HCM Control Delay (s)	8.6	0	-	-	14.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

2028 No-Build Weekday Evening Peak Hour



## 1: Dyer Avenue &amp; North Project Site Driveway/Puritan Avenue

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	3	0	0	44	0	5	0	546	33	17	490	3
Future Vol, veh/h	3	0	0	44	0	5	0	546	33	17	490	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	92	78	92	91	91	91	91	92
Heavy Vehicles, %	0	0	0	3	0	0	0	1	3	20	2	0
Mvmt Flow	3	0	0	56	0	6	0	600	36	19	538	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1199	1214	540	1196	1197	618	541	0	0	636	0	0
Stage 1	578	578	-	618	618	-	-	-	-	-	-	-
Stage 2	621	636	-	578	579	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.5	6.2	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4	3.3	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	164	183	546	162	187	493	1038	-	-	867	-	-
Stage 1	505	504	-	475	484	-	-	-	-	-	-	-
Stage 2	478	475	-	500	504	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	158	177	546	158	181	493	1038	-	-	867	-	-
Mov Cap-2 Maneuver	158	177	-	158	181	-	-	-	-	-	-	-
Stage 1	505	488	-	475	484	-	-	-	-	-	-	-
Stage 2	472	475	-	485	488	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	28.3			38.1			0			0.3		
HCM LOS	D			E								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	158 170	867	-	-
HCM Lane V/C Ratio	-	-	-	0.021 0.37	0.022	-	-
HCM Control Delay (s)	0	-	-	28.3 38.1	9.2	0	-
HCM Lane LOS	A	-	-	D E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 1.6	0.1	-	-



2028 Build Weekday Evening  
2: Dyer Avenue & South Project Site Driveway/Governor Street

02/21/2023

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	6	11	0	11	9	560	9	6	514	10
Future Vol, veh/h	7	0	6	11	0	11	9	560	9	6	514	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	63	92	63	92	93	93	93	93	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	8	0	7	17	0	17	10	602	10	6	553	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1207	1203	559	1201	1203	607	564	0	0	612	0	0
Stage 1	571	571	-	627	627	-	-	-	-	-	-	-
Stage 2	636	632	-	574	576	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	186	532	163	186	500	1018	-	-	977	-	-
Stage 1	509	508	-	475	479	-	-	-	-	-	-	-
Stage 2	469	477	-	507	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-	977	-	-
Mov Cap-1 Maneuver	154	182	532	158	182	500	1018	-	-	-	-	-
Mov Cap-2 Maneuver	154	182	-	158	182	-	-	-	-	-	-	-
Stage 1	501	503	-	468	472	-	-	-	-	-	-	-
Stage 2	446	470	-	496	500	-	-	-	-	-	-	-


















Approach	EB	WB	NB	SB
HCM Control Delay, s	21.8	22.5	0.1	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1018	-	-	229	240	977	-	-
HCM Lane V/C Ratio	0.01	-	-	0.062	0.146	0.007	-	-
HCM Control Delay (s)	8.6	0	-	21.8	22.5	8.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-	-



2028 Build Weekday Evening  
3: Dyer Avenue & Cranston Street

02/21/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985			0.971				0.850
Flt Protected		0.982			0.991			0.997			0.992	
Satd. Flow (prot)	0	1827	0	0	1895	0	0	1887	0	0	1920	1669
Flt Permitted		0.547			0.821			0.968			0.873	
Satd. Flow (perm)	0	1017	0	0	1570	0	0	1832	0	0	1689	1669
Satd. Flow (RTOR)		4			10			23				101
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
Lane Group Flow (vph)	0	511	0	0	624	0	0	530	0	0	398	160
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.15			0.90			0.62			0.51	0.20
Control Delay		114.6			39.8			19.0			17.7	6.1
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		114.6			39.8			19.0			17.7	6.1
Queue Length 50th (ft)		~297			268			177			130	16
Queue Length 95th (ft)		#484			#482			278			209	49
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		445			690			857			779	804
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.15			0.90			0.62			0.51	0.20
Intersection Summary												
Cycle Length: 78												



2028 Build Weekday Evening  
3: Dyer Avenue & Cranston Street

02/21/2023

Actuated Cycle Length: 78

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

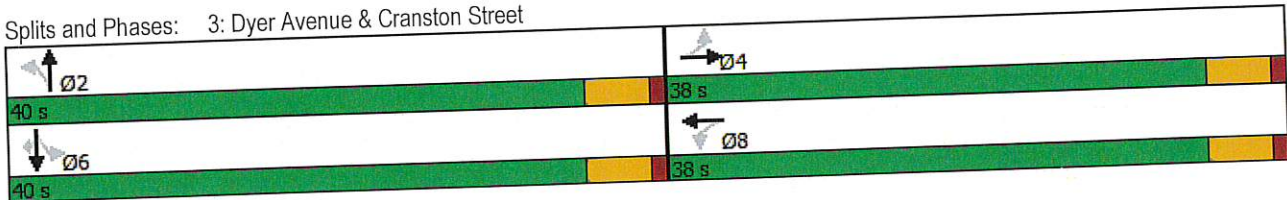
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2028 Build Weekday Evening  
3: Dyer Avenue & Cranston Street

02/21/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Flt		0.99			0.99			0.97			1.00	0.85
Flt Protected		0.98			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1826			1896			1888			1920	1669
Flt Permitted		0.55			0.82			0.97			0.87	1.00
Satd. Flow (perm)		1018			1571			1833			1690	1669
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
RTOR Reduction (vph)	0	2	0	0	6	0	0	12	0	0	0	56
Lane Group Flow (vph)	0	509	0	0	618	0	0	518	0	0	398	104
Heavy Vehicles (%)	1%	2%	0%	1%	1%	2%	0%	1%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		443			684			846			780	748
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.39			c0.28			0.24	0.06
v/c Ratio		1.15			0.90			0.61			0.51	0.14
Uniform Delay, d1		22.0			20.5			15.8			14.8	12.6
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		90.1			15.4			3.3			2.4	0.4
Delay (s)		112.1			35.8			19.0			17.2	13.0
Level of Service		F			D			B			B	B
Approach Delay (s)		112.1			35.8			19.0			16.0	
Approach LOS		F			D			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			44.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			78.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			100.4%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												



2028 Build Weekday Evening  
4: Cranston Street & Cranston Print Works

02/21/2023

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	11	473	563	10	8	7
Future Vol, veh/h	11	473	563	10	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	82	82	25	25
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	12	503	687	12	32	28

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	699	0	0 1220 693
Stage 1	-	-	- 693 -
Stage 2	-	-	- 527 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	907	-	- 201 447
Stage 1	-	-	- 500 -
Stage 2	-	-	- 596 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	907	-	- 197 447
Mov Cap-2 Maneuver	-	-	- 197 -
Stage 1	-	-	- 491 -
Stage 2	-	-	- 596 -





Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	907	-	-	-	267
HCM Lane V/C Ratio	0.013	-	-	-	0.225
HCM Control Delay (s)	9	0	-	-	22.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.8



2028 Build Weekday Evening  
5: Cranston Street & Haven Avenue

02/21/2023

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	435	470	17	11	27
Future Vol, veh/h	16	435	470	17	11	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	88	88	71	71
Heavy Vehicles, %	0	1	1	0	0	4
Mvmt Flow	16	448	534	19	15	38

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	553	0	0	1024	544
Stage 1	-	-	-	544	-
Stage 2	-	-	-	480	-
Critical Hdwy	4.1	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.336
Pot Cap-1 Maneuver	1027	-	-	263	535
Stage 1	-	-	-	586	-
Stage 2	-	-	-	627	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1027	-	-	257	535
Mov Cap-2 Maneuver	-	-	-	257	-
Stage 1	-	-	-	574	-
Stage 2	-	-	-	627	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1027	-	-	-	407
HCM Lane V/C Ratio	0.016	-	-	-	0.132
HCM Control Delay (s)	8.6	0	-	-	15.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.5

2028 Build Weekday Morning Peak Hour



2028 Build Weekday Morning  
1: Dyer Avenue & North Project Site Driveway/Puritan Avenue

02/21/2023

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	0	16	0	6	1	441	33	12	504	2
Future Vol, veh/h	2	0	0	16	0	6	1	441	33	12	504	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	56	92	56	92	79	79	69	69	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	3	30	1	0
Mvmt Flow	2	0	0	29	0	11	1	558	42	17	730	2

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1352	1367	731	1346	1347	579	732	0	0	600	0	0
Stage 1	765	765	-	581	581	-	-	-	-	-	-	-
Stage 2	587	602	-	765	766	-	-	-	-	4.4	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.4	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.47	-	-
Pot Cap-1 Maneuver	128	148	425	130	152	519	882	-	-	854	-	-
Stage 1	399	415	-	503	503	-	-	-	-	-	-	-
Stage 2	499	492	-	399	415	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	122	143	425	126	147	519	882	-	-	854	-	-
Mov Cap-2 Maneuver	122	143	-	126	147	-	-	-	-	-	-	-
Stage 1	398	401	-	502	502	-	-	-	-	-	-	-
Stage 2	488	491	-	385	401	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35	34.9	0	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	882	-	-	122 159	854	-	-
HCM Lane V/C Ratio	0.001	-	-	0.018 0.247	0.02	-	-
HCM Control Delay (s)	9.1	0	-	35 34.9	9.3	0	-
HCM Lane LOS	A	A	-	E D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.9	0.1	-	-



## Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	12	0	10	12	0	1	4	460	5	8	509	4
Future Vol, veh/h	12	0	10	12	0	1	4	460	5	8	509	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	69	92	69	92	78	78	69	69	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	13	0	11	17	0	1	4	590	6	12	738	4

Major/Minor	Minor2		Minor1		Major1		Major2			
Conflicting Flow All	1366	1368	740	1371	1367	593	742	0	0	596
Stage 1	764	764	-	601	601	-	-	-	-	-
Stage 2	602	604	-	770	766	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2
Pot Cap-1 Maneuver	126	148	420	125	148	509	874	-	-	990
Stage 1	399	416	-	491	493	-	-	-	-	-
Stage 2	490	491	-	396	415	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	123	144	420	119	144	509	874	-	-	990
Mov Cap-2 Maneuver	123	144	-	119	144	-	-	-	-	-
Stage 1	396	407	-	488	490	-	-	-	-	-
Stage 2	485	488	-	378	406	-	-	-	-	-


















Approach	EB	WB	NB	SB
HCM Control Delay, s	27.9	38.5	0.1	0.1
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	874	-	-	181	126	990	-	-
HCM Lane V/C Ratio	0.005	-	-	0.132	0.15	0.012	-	-
HCM Control Delay (s)	9.1	0	-	27.9	38.5	8.7	0	-
HCM Lane LOS	A	A	-	D	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0	-	-



2028 Build Weekday Morning  
3: Dyer Avenue & Cranston Street

02/21/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.987			0.961				0.850
Flt Protected		0.988			0.989			0.996			0.995	
Satd. Flow (prot)	0	1846	0	0	1887	0	0	1840	0	0	1930	1620
Flt Permitted		0.690			0.702			0.809			0.898	
Satd. Flow (perm)	0	1289	0	0	1339	0	0	1495	0	0	1742	1620
Satd. Flow (RTOR)		5			9			35				87
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
Lane Group Flow (vph)	0	688	0	0	563	0	0	579	0	0	559	193
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.22			0.96			0.82			0.70	0.25
Control Delay		138.4			51.6			28.7			22.3	8.3
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		138.4			51.6			28.7			22.3	8.3
Queue Length 50th (ft)		~419			252			220			206	29
Queue Length 95th (ft)		#593			#422			265			215	45
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		564			588			708			804	774
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.22			0.96			0.82			0.70	0.25
Intersection Summary												
Cycle Length: 78												

2028 Build Weekday Morning  
3: Dyer Avenue & Cranston Street

02/21/2023

Actuated Cycle Length: 78

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.


















Splits and Phases: 3: Dyer Avenue & Cranston Street





2028 Build Weekday Morning  
3: Dyer Avenue & Cranston Street




02/21/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.96			1.00	0.85
Flt Protected		0.99			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1846			1886			1840			1929	1620
Flt Permitted		0.69			0.70			0.81			0.90	1.00
Satd. Flow (perm)		1290			1339			1495			1741	1620
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
RTOR Reduction (vph)	0	3	0	0	5	0	0	19	0	0	0	48
Lane Group Flow (vph)	0	685	0	0	558	0	0	560	0	0	559	145
Heavy Vehicles (%)	0%	1%	5%	4%	1%	0%	0%	2%	3%	3%	1%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		562			583			690			803	726
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.42			c0.37			0.32	0.09
v/c Ratio		1.22			0.96			0.81			0.70	0.20
Uniform Delay, d1		22.0			21.3			18.1			16.7	13.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		114.0			26.6			10.1			5.0	0.6
Delay (s)		136.0			47.9			28.1			21.6	13.6
Level of Service		F			D			C			C	B
Approach Delay (s)		136.0			47.9			28.1			19.6	
Approach LOS		F			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			58.7			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			78.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			99.4%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												



2028 Build Weekday Morning  
4: Cranston Street & Cranston Print Works

02/21/2023

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	585	491	5	13	8
Future Vol, veh/h	5	585	491	5	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	78	78	50	50
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	6	672	629	6	26	16

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	635	0	-	0	1316	632
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	684	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	958	-	-	-	176	484
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	505	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	958	-	-	-	174	484
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	505	-




Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	24.1
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	958	-	-	-	230
HCM Lane V/C Ratio	0.006	-	-	-	0.183
HCM Control Delay (s)	8.8	0	-	-	24.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7



2028 Build Weekday Morning  
5: Cranston Street & Haven Avenue

02/21/2023

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	522	474	4	4	22
Future Vol, veh/h	24	522	474	4	4	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	88	88	89	89
Heavy Vehicles, %	0	1	2	0	0	16
Mvmt Flow	26	567	539	5	4	25

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	544	0	-	0	1161
Stage 1	-	-	-	-	542
Stage 2	-	-	-	-	619
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1035	-	-	-	218
Stage 1	-	-	-	-	587
Stage 2	-	-	-	-	541
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1035	-	-	-	210
Mov Cap-2 Maneuver	-	-	-	-	210
Stage 1	-	-	-	-	565
Stage 2	-	-	-	-	541

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1035	-	-	-	420
HCM Lane V/C Ratio	0.025	-	-	-	0.07
HCM Control Delay (s)	8.6	0	-	-	14.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

2028 Build Weekday Evening Peak Hour



## 1: Dyer Avenue &amp; North Project Site Driveway/Puritan Avenue

## Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	3	0	0	44	0	5	0	546	33	17	490	3
Future Vol, veh/h	3	0	0	44	0	5	0	546	33	17	490	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	92	78	92	91	91	91	91	92
Heavy Vehicles, %	0	0	0	3	0	0	0	1	3	20	2	0
Mvmt Flow	3	0	0	56	0	6	0	600	36	19	538	3

Major/Minor	Minor2		Minor1		Major1		Major2		Major2	
Conflicting Flow All	1199	1214	540	1196	1197	618	541	0	0	636
Stage 1	578	578	-	618	618	-	-	-	-	-
Stage 2	621	636	-	578	579	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.5	6.2	4.1	-	-	4.3
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4	3.3	2.2	-	-	2.38
Pot Cap-1 Maneuver	164	183	546	162	187	493	1038	-	-	867
Stage 1	505	504	-	475	484	-	-	-	-	-
Stage 2	478	475	-	500	504	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	158	177	546	158	181	493	1038	-	-	867
Mov Cap-2 Maneuver	158	177	-	158	181	-	-	-	-	-
Stage 1	505	488	-	475	484	-	-	-	-	-
Stage 2	472	475	-	485	488	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.3	38.1	0	0.3
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	158	170	867	-	-
HCM Lane V/C Ratio	-	-	-	0.021	0.37	0.022	-	-
HCM Control Delay (s)	0	-	-	28.3	38.1	9.2	0	-
HCM Lane LOS	A	-	-	D	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.6	0.1	-	-



2028 Build Weekday Evening  
2: Dyer Avenue & South Project Site Driveway/Governor Street

02/21/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	7	0	6	11	0	11	9	560	9	6	514	10
Future Vol, veh/h	7	0	6	11	0	11	9	560	9	6	514	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	63	92	63	92	93	93	93	93	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	8	0	7	17	0	17	10	602	10	6	553	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1207	1203	559	1201	1203	607	564	0	0	612	0	0
Stage 1	571	571	-	627	627	-	-	-	-	-	-	-
Stage 2	636	632	-	574	576	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	186	532	163	186	500	1018	-	-	977	-	-
Stage 1	509	508	-	475	479	-	-	-	-	-	-	-
Stage 2	469	477	-	507	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	154	182	532	158	182	500	1018	-	-	977	-	-
Mov Cap-2 Maneuver	154	182	-	158	182	-	-	-	-	-	-	-
Stage 1	501	503	-	468	472	-	-	-	-	-	-	-
Stage 2	446	470	-	496	500	-	-	-	-	-	-	-


















Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.8		22.5		0.1		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1018	-	-	229	240	977	-	-
HCM Lane V/C Ratio	0.01	-	-	0.062	0.146	0.007	-	-
HCM Control Delay (s)	8.6	0	-	21.8	22.5	8.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-	-



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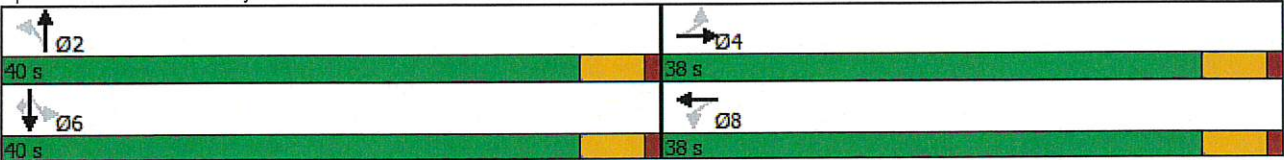
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985			0.971				0.850
Flt Protected		0.982			0.991			0.997			0.992	
Satd. Flow (prot)	0	1827	0	0	1895	0	0	1887	0	0	1920	1669
Flt Permitted		0.547			0.821			0.968			0.873	
Satd. Flow (perm)	0	1017	0	0	1570	0	0	1832	0	0	1689	1669
Satd. Flow (RTOR)		4			10			23				101
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
Lane Group Flow (vph)	0	511	0	0	624	0	0	530	0	0	398	160
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.15			0.90			0.62			0.51	0.20
Control Delay		114.6			39.8			19.0			17.7	6.1
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		114.6			39.8			19.0			17.7	6.1
Queue Length 50th (ft)		~297			268			177			130	16
Queue Length 95th (ft)		#484			#482			278			209	49
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		445			690			857			779	804
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.15			0.90			0.62			0.51	0.20
Intersection Summary												
Cycle Length: 78												

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Actuated Cycle Length: 78  
Natural Cycle: 55  
Control Type: Actuated-Uncoordinated  
~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.  
# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.


Splits and Phases: 3: Dyer Avenue & Cranston Street





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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↗
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.97			1.00	0.85
Flt Protected		0.98			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1826			1896			1888			1920	1669
Flt Permitted		0.55			0.82			0.97			0.87	1.00
Satd. Flow (perm)		1018			1571			1833			1690	1669
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
RTOR Reduction (vph)	0	2	0	0	6	0	0	12	0	0	0	56
Lane Group Flow (vph)	0	509	0	0	618	0	0	518	0	0	398	104
Heavy Vehicles (%)	1%	2%	0%	1%	1%	2%	0%	1%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		443			684			846			780	748
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.39			c0.28			0.24	0.06
v/c Ratio		1.15			0.90			0.61			0.51	0.14
Uniform Delay, d1		22.0			20.5			15.8			14.8	12.6
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		90.1			15.4			3.3			2.4	0.4
Delay (s)		112.1			35.8			19.0			17.2	13.0
Level of Service		F			D			B			B	B
Approach Delay (s)		112.1			35.8			19.0			16.0	
Approach LOS		F			D			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			44.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			78.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			100.4%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												



2028 Build Weekday Evening  
4: Cranston Street & Cranston Print Works

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Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	11	473	563	10	8	7
Future Vol, veh/h	11	473	563	10	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	82	82	25	25
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	12	503	687	12	32	28

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	699	0	-	0	1220	693
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	527	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	907	-	-	-	201	447
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	907	-	-	-	197	447
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	596	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	907	-	-	-	267
HCM Lane V/C Ratio	0.013	-	-	-	0.225
HCM Control Delay (s)	9	0	-	-	22.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.8



2028 Build Weekday Evening  
5: Cranston Street & Haven Avenue

02/21/2023

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	16	435	470	17	11	27
Future Vol, veh/h	16	435	470	17	11	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	88	88	71	71
Heavy Vehicles, %	0	1	1	0	0	4
Mvmt Flow	16	448	534	19	15	38

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	553	0	0 1024 544
Stage 1	-	-	- 544 -
Stage 2	-	-	- 480 -
Critical Hdwy	4.1	-	- 6.4 6.24
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.336
Pot Cap-1 Maneuver	1027	-	- 263 535
Stage 1	-	-	- 586 -
Stage 2	-	-	- 627 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1027	-	- 257 535
Mov Cap-2 Maneuver	-	-	- 257 -
Stage 1	-	-	- 574 -
Stage 2	-	-	- 627 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1027	-	-	-	407
HCM Lane V/C Ratio	0.016	-	-	-	0.132
HCM Control Delay (s)	8.6	0	-	-	15.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.5