

Cranston, Rhode Island

Proposed Industrial Development

September 2021
Revised October 2021

TRAFFIC IMPACT STUDY



BETA

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Proposed Industrial Development Cranston, Rhode Island

TRAFFIC IMPACT STUDY

Prepared by: BETA GROUP, INC.

Prepared for: Mr. John Walsh
Comstock Industrial, LLC
36 Sherwood Place
Greenwich, CT 06830

September 2021
Revised October 2021



September 30, 2021
Revised October 28, 2021

Mr. John Walsh
Comstock Industrial, LLC
36 Sherwood Place
Greenwich, CT 06830

Re: Proposed Land Development
Industrial/Warehouse Facility
Comstock Parkway, Cranston, Rhode Island

Dear Mr. Walsh:

BETA Group, Inc., has updated herein, our original September 2021 Traffic Impact Study in order to address preliminary review comments discussed in meetings with the city as part of the Master Plan review process. The additional information requested is provided in the Appendix to demonstrate that safe and adequate access to the site can be provided under future build conditions.

The project is located on the easterly side of Comstock Parkway in the vicinity of Western Industrial Drive in the City of Cranston, Rhode Island. The parcel is defined by Assessor's Plat 36/4, Lot 46, which contains approximately 17.3 acres of undeveloped, wooded land. Based upon information provided by your office, and a review of the current site plan prepared by *DiPrete Engineering*, it is our understanding that the property will be developed to contain two different size industrial buildings with an office space within the smaller building situated along the roadway frontage. Access/egress to the site is proposed at the unsignalized intersection of Comstock Parkway with Western Industrial Drive that will be modified to create a four-way junction.

The study included herein, was conducted to determine the adequacy of the existing servicing roadways to accommodate anticipated traffic to be generated by the commercial development project. An analysis of potential impacts to the roadway capacity and safety has been completed and is discussed in the following report.

Very truly yours,

BETA Group, Inc.

A handwritten signature in black ink, appearing to read "Paul J. Bannon", is written over a light gray circular graphic element.

Paul J. Bannon
Associate

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1.0 INTRODUCTION

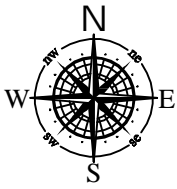
The objective of the following study is to assess the potential traffic impacts associated with a proposed industrial development project in the City of Cranston, Rhode Island. The subject property is situated on a parcel of land on the easterly side of Comstock Parkway between Plainfield Pike (Route 14) to the north and Scituate Avenue (Route 12) to the south. Refer to the Figure 1, Project Vicinity Map, on the following page for the project location within the city.

The development proposal consists of the construction of a 70,000 square foot building for industrial (64,000 SF) and office (6,000 SF) uses along the property frontage and a 199,180 square foot building for industrial use at the rear of the lot. Parking for the industrial/office building (67 employee/visitor parking and 13 loading) and the industrial building (150 employee parking, 56 loading, 42 trailer storage) will be situated adjacent to each building. Access/egress will be provided at the unsignalized intersection of Comstock Parkway with Western Industrial Drive that will be modified to create a four-way junction.

The study summarized herein focused on both traffic flow efficiency and safety along Comstock Parkway in the immediate vicinity of the subject property, and at the proposed driveway. The impacts associated with the site related traffic have been defined and evaluated in accordance with standard traffic engineering guidelines and procedures.

The traffic engineering study completed for this project included the following:

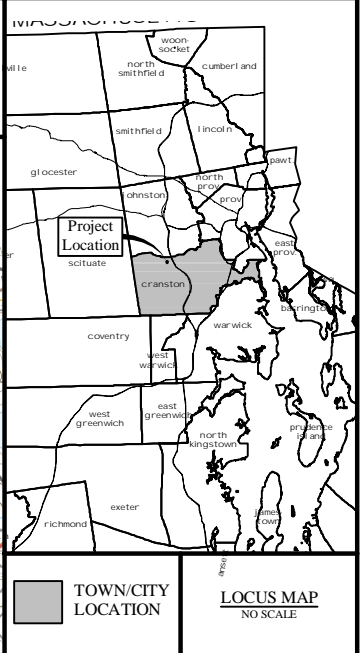
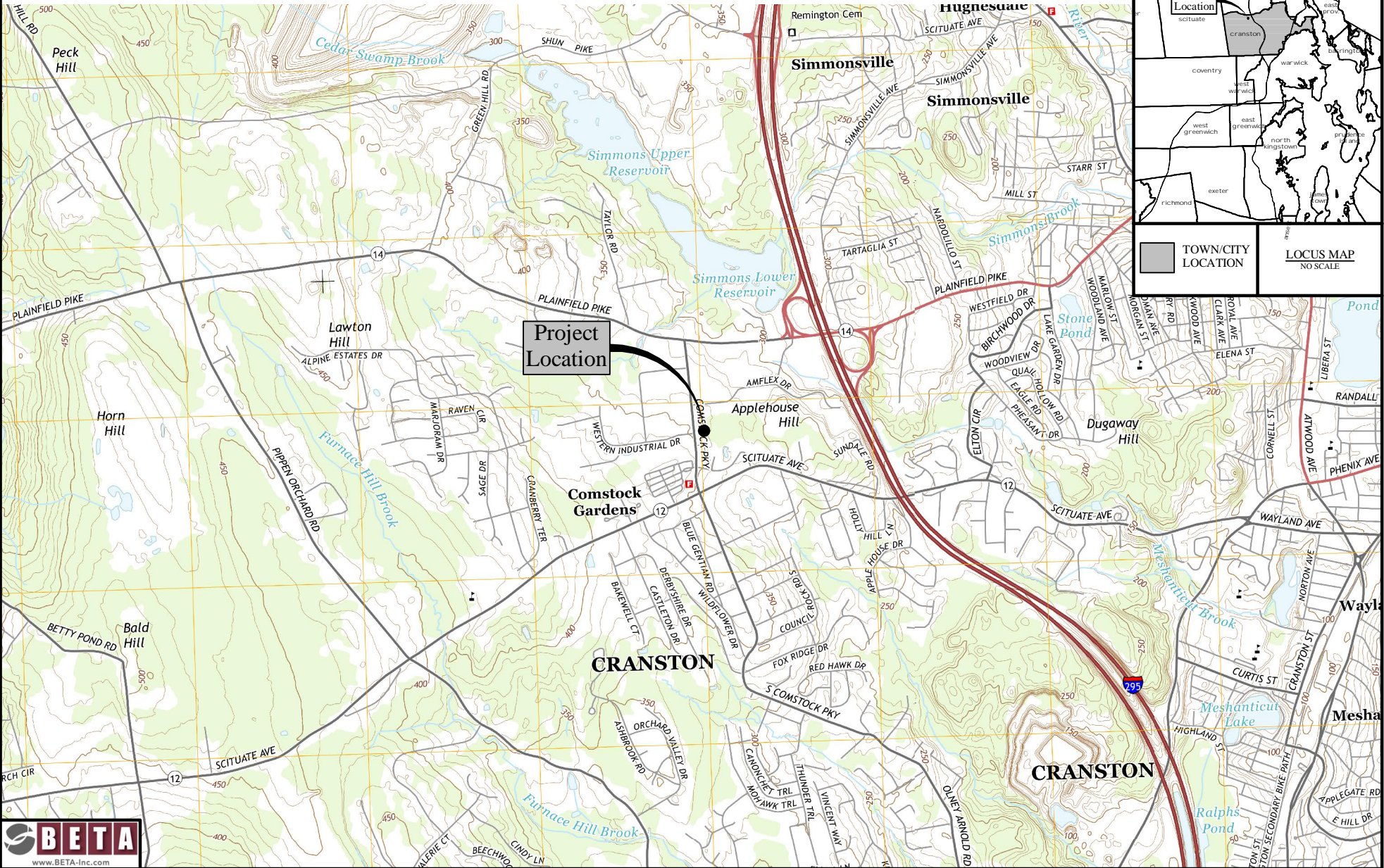
- A traffic counting program to define the existing traffic patterns and operational characteristics along the servicing roadways including Comstock Parkway, Plainfield Pike, and Western Industrial Drive. The data collection included an automatic traffic recorder (ATR) count on Comstock Parkway and manual turning movement counts (TMCs) at the intersections of Comstock Parkway with Western Industrial Drive and with Plainfield Pike.
- An inventory of the physical roadway characteristics of Comstock Parkway in the project area to determine the adequacy of the existing roadway geometric features in reference to safety and operations.
- An analysis of crash records obtained from the Cranston Police Department to determine if there are any safety concerns relative to the frequency, severity, or pattern of crashes in the project area.
- An estimate of future traffic volumes for the proposed commercial development was calculated using data from the "Trip Generation" Manual, an informational report published by the Institute of Transportation Engineers (ITE).
- Evaluation and analysis of the traffic safety and operational issues for existing and future traffic conditions.



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Figure 1 - Project Vicinity Map



- Development of recommendations where necessary, that would be required to maintain safe and efficient traffic flow in the project area.

2.0 PROJECT AREA

As noted in the previous section, the subject property is situated on the easterly side of Comstock Parkway opposite of Western Industrial Drive. The parcel contains approximately 17.3 acres of undeveloped and wooded land zoned for industrial use. Figure 2 on the following page depicts the general project area, and the boundary lines of the subject property.

Land use in the immediate area can be described as predominantly commercial and industrial along Comstock Parkway including off intersecting side streets of West Industrial Drive, Amflex and Stamp Farm Road. Two bank branches including a day care center and the Cranston Fire Department Station 6 is located south of the site along Comstock Parkway where the road transitions to high density residential uses off of intersecting side streets. Immediately abutting the property to the north, east, and west across Comstock Parkway are multiple commercial and industrial businesses. To the south is a bank branch and a residential neighborhood. Further north along Plainfield Pike in the vicinity of the interchange with Interstate 295 (I-295) are a mixture of industrial and commercial properties that includes gas stations, banks, retail stores, restaurants, and a pharmacy that service this area. Further to the south along Scituate Avenue properties are predominantly medium-density residential heading into western Cranston, including subdivisions off intersecting side streets.

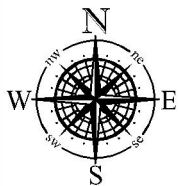
With the use proposed, Interstate 295, Plainfield Pike (Route 14) and Comstock Parkway will serve as the primary access route to the site, with Comstock Parkway providing immediate local access. Based upon the good operating characteristics along these servicing roadways, and the estimated volume and type of traffic associated with the industrial development, a study impact area was defined for the project. The limits of our analysis included Comstock Parkway between Scituate Avenue and Plainfield Pike with focus on the Comstock Parkway intersections with Western Industrial Drive and with Plainfield Pike.

3.0 EXISTING CONDITIONS

3.1 ROADWAYS

Plainfield Pike (Route 14)

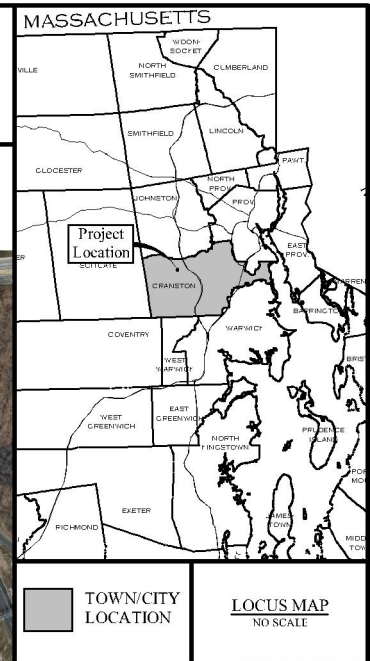
Plainfield Pike (Route 14) is classified as a principal arterial road between East Road (Route 116) in Scituate to the west to Atwood Avenue (Route 5) the east. Plainfield Pike is the community border between the City of Cranston and Town of Johnston, which is centered along the roadway with the City of Cranston to the south and the Town of Johnston on the north. It provides immediate local access to abutting properties but also links to higher order facilities including I-295 to the east. The roadway varies in section but typically provides one lane in each direction.



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Figure 2 - Project Area Map



In the project area, Plainfield Pike is approximately 44 feet wide consisting of a 12-foot travel lane and 10-foot shoulder in each direction. To the east of Comstock Parkway extending to I-295, cement concrete curbing is provided on both sides with sporadic cement concrete sidewalk only on the north side. The adjacent photo depicts these features of Plainfield Pike looking east from Comstock Parkway. To the west where the roadway becomes more rural in nature, there is no curbing or sidewalks



The pavement condition can be classified as being in fair condition with visible crack sealing. Sporadic Cobra-head light fixtures on utility pole are located along the corridor for nighttime illumination. The speed limit is posted at 40 mph in the project area.

Comstock Parkway

Comstock Parkway is a primary north/south urban minor arterial running from its northerly terminus at Plainfield Pike through its junction with Scituate Avenue, extending further south where it transitions to a local roadway. In the project area, Comstock Parkway is approximately 30 feet wide consisting of a 15-foot travel lane in each direction separated by double yellow centerline.



The pavement condition can be classified as being in good condition. Cement concrete curbing is provided on both sides with cement concrete sidewalk on the westerly side only. Sporadic Cobra-head light fixtures on utility pole are located along the corridor for nighttime illumination. The speed limit is posted at 25 mph in the vicinity of the site. The above photograph depicts the typical characteristics of Comstock Parkway looking north along the property frontage.

Western Industrial Drive

Western Industrial Drive is a short local street that extends from Comstock Parkway to the west to a cul-de-sac to the northwest. The roadway runs westerly from Comstock Parkway for approximately 1,500

feet then turns northerly for approximately 1,000 feet to a dead-end. It provides access, as its name suggests, to industrial businesses and links to Stamp Farm Road extending the industrial park to the north where it also intersects Comstock Parkway in a loop configuration.

In the vicinity of the intersection with Comstock Parkway, Western Industrial Driveway is approximately 40 feet wide consisting of a 20-foot travel lane in each direction separated by a faded double yellow centerline. Cement concrete curbing is provided on both sides of the road with no sidewalks within the industrial park limits as defined.



The pavement can be classified as being in good condition though a visible trench patch is present in the center of the roadway as seen in the adjacent photograph looking west. The speed limit is posted at 25 mph within the industrial park.

3.2 INTERSECTIONS

Plainfield Pike at Comstock Parkway

Plainfield Pike (Route 14) intersects Comstock Parkway and a commercial driveway to form a signalized, four-way junction as depicted on the adjacent image. The Plainfield Pike eastbound and westbound approaches each provide a separate left turn lane and a shared thru/right turn lane. The Comstock Parkway northbound approach provides a shared left turn/thru lane and a separate right turn lane. The commercial driveway southbound approach from the CVS Pharmacy provides a single multiuse lane. Marked crosswalks with curb ramps, though not ADA-compliant, are available across the northbound and eastbound approaches to the intersection.



The traffic signal system appears to be in good working condition as some of the older equipment has been upgraded as part of regular maintenance projects. The layout of the equipment consists of mast arm mounted signal heads with in road vehicle loop detectors. In addition, pedestrian signal heads with pushbuttons, which were determined not to be ADA-compliant, are provided for both existing marked crosswalks.

The intersection was determined to operate in a fully actuated mode with three phases. The Plainfield Pike eastbound and westbound movements are serviced in two phases including an advanced protected/permitted left turns with a Comstock Parkway northbound right turn overlap, followed by through/right turn concurrent movements. The Comstock Parkway northbound and commercial driveway southbound approaches are serviced under a single permitted phase.

Comstock Parkway at Western Industrial Drive

Western Industrial Drive intersects Comstock Parkway to form an unsignalized, three-way “T”-type junction with stop control on the minor Western Industrial Drive westbound approach. A *Stop* sign is provided on the Western Industrial Drive eastbound approach to the intersection with no stop line. It is recommended that a *Stop* line should be provided along with an upgrade of the existing *Stop* sign to meet current MUTCD design standards for mounting height and visibility.

The Comstock Parkway northbound and southbound approaches provide a single shared left turn/thru lane and a shared thru/right turn lane, respectively. The Western Industrial Drive westbound approach provides a single lane, though due to the 20-foot wide lane as previously described, was observed to operate as a two-lane approach for left and right turning vehicles, allowing for two eastbound vehicles to stack side by side at the intersection.

Curb ramps are provided on both corners of the eastbound approach, though they are not ADA-compliant and are not linked with a marked crosswalk. Due to the crossing width, along with the recommended *Stop* line, it is also recommended that the city install a



cross-walk to delineate the crossing and potential for pedestrian crossings. A Cobra-head light fixture on a utility pole is provided for nighttime illumination of the intersection. The above photograph depicts the physical characteristics of the intersection looking south along Comstock Parkway with Western Industrial Way to the right.

3.3 TRAFFIC FLOW DATA

Existing traffic flow characteristics for this area were developed from a traffic counting program conducted by BETA and review of historical data available from previous studies completed in the immediate area. The data collection included Manual Turning Movement Counts (TMC) at the Comstock Parkway intersections with Plainfield Pike and Western Industrial Drive and an Automatic Traffic Recorder (ATR) count on Comstock Parkway in September 2021. In addition, record TMC at both study intersections were obtained from a previous study completed in the project area in October 2011.

It is important to note that COVID-19-related restrictions have been lifted in Rhode Island since the end of May 2021 with businesses and schools generally running under normal conditions. Rhode Island, for the most part, specifically along Plainfield Pike and Comstock Parkway, has seen traffic volumes return to typical conditions. Therefore, the traffic data collected in September 2021 specifically for this study was not adjusted for COVID, though it was adjusted seasonally per the RIDOT Season Adjustment Factors and has been utilized as a basis of analysis.

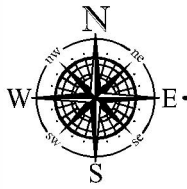
Based upon the ATR data obtained, Comstock Parkway in the project area was found to service an Average Daily Traffic (ADT) volume of approximately 14,900 vehicles per day. On a typical weekday along Comstock Parkway, traffic volumes begin to increase at 4:00 AM with the morning peak hour occurring between 7:00 and 8:00 AM. During this hour, an average of approximately 1,400 vehicles was recorded. After 9:00 AM, volumes decrease and remained consistent between 850 and 1,000 vehicles per hour until the late afternoon peak of approximately 1,500 vehicles serviced between 4:00 and 5:00 PM.

In addition to the ATR, manual turning movement counts were conducted at the Comstock Parkway intersections with Plainfield Pike and Western Industrial Drive. Data was collected during the weekday morning and afternoon peak periods between 7:00 to 9:00 AM and 4:00 to 6:00 PM, respectively. Based upon review of the September 2021 TMC data, which was seasonally adjusted, Comstock Parkway along the property frontage services approximately 1,375 vehicles during the weekday morning peak hour between 7:30 and 8:30 AM with approximately 980 vehicles northbound and 395 vehicles southbound. During this same period, Western Industrial Drive services approximately 195 vehicles with approximately 55 vehicles eastbound and 140 vehicles westbound into the industrial park. During the weekday afternoon peak hour between 4:30 and 5:30 PM, Comstock Parkway was found to service 1,460 vehicles with approximately 750 vehicles northbound and 710 vehicles southbound. During this same period, Western Industrial Drive services approximately 185 vehicles with approximately 150 vehicles eastbound and 35 vehicles westbound. Figure 3 on the following page depicts the daily peak hour turning movement volumes at the study intersections. Complete count information can be found in the Appendix.

4.0 SAFETY ANALYSIS

In order to determine if there are any limiting factors affecting safety relating to access to the proposed industrial project, the physical characteristics of Comstock Parkway in the immediate site vicinity were investigated. These limiting factors would potentially include horizontal or vertical alignment changes or roadside obstructions that limit sight distances for vehicles traveling along the road or entering the road from a side street or driveway location. In this instance, the sight distance standard is necessary to permit turning vehicles to safely enter and exit the site driveway.

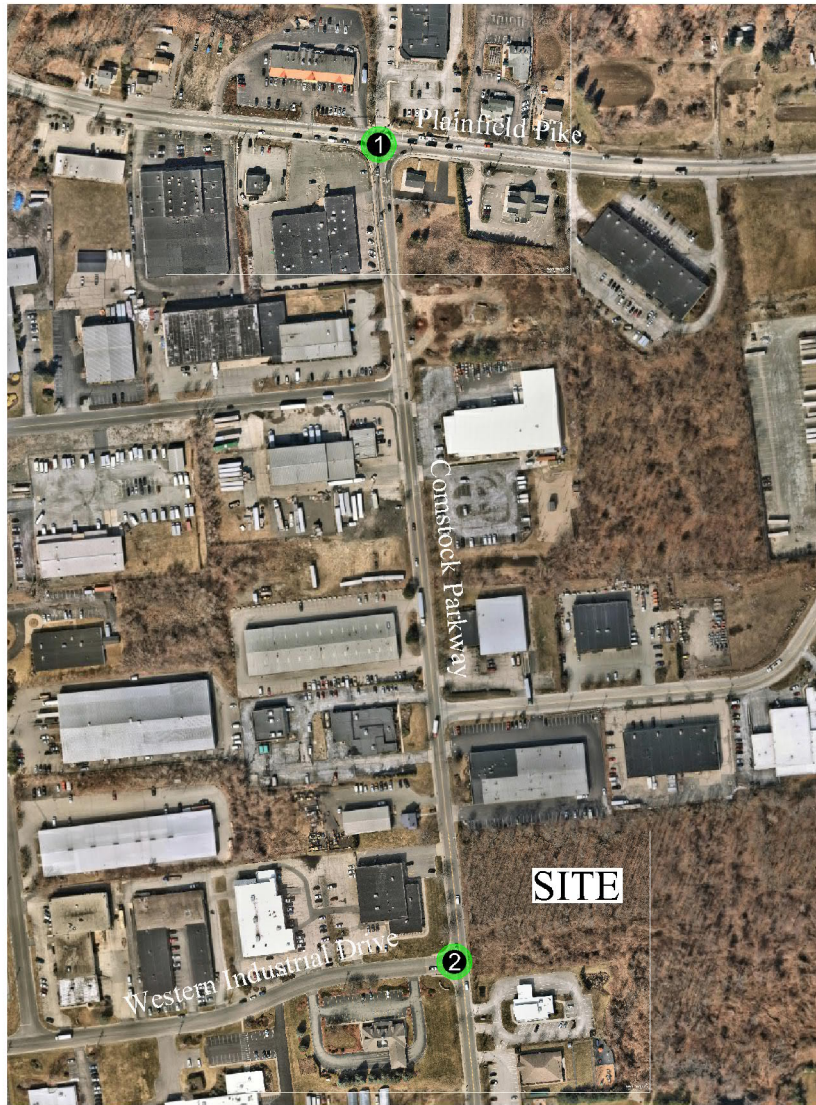
The vertical and horizontal alignment of Comstock Parkway in the project area can be described as relatively level and straight, respectively along the subject property frontage, with a gradual horizontal curve south of the site as it approaches Scituate Avenue. Based upon the existing roadway geometry as described, the available sight distance at the proposed site driveway location on Comstock Parkway,



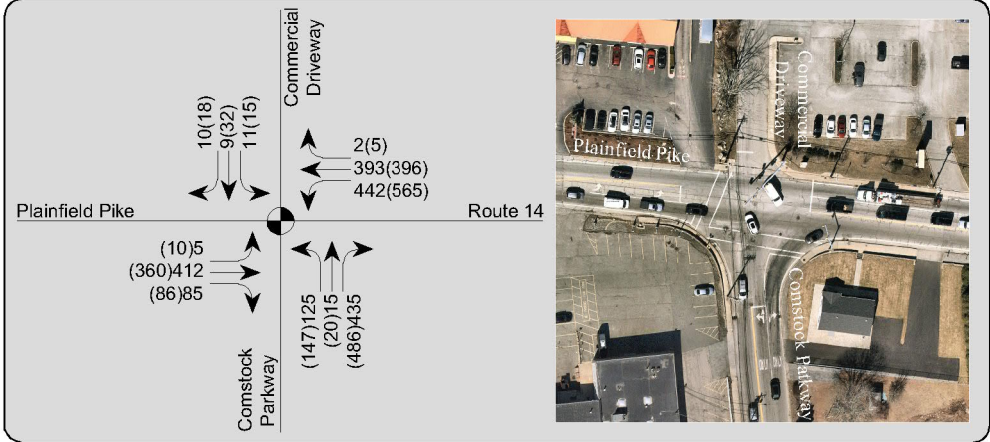
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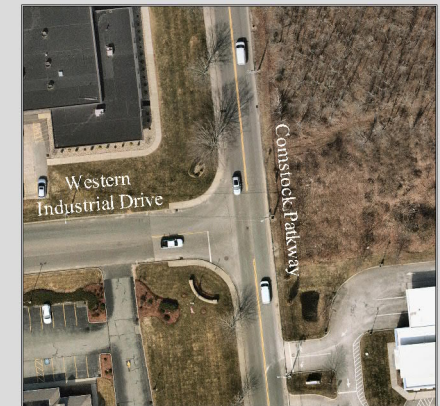
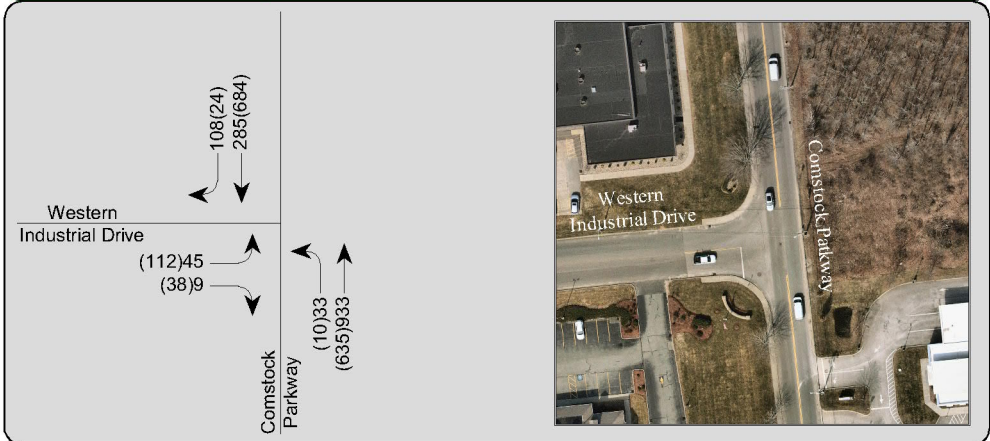
Figure 3 - Existing Traffic Volumes



1 Plainfield Pike (Route 14)/Comstock Parkway/Commercial Driveway



2 Comstock Parkway/Western Industrial Drive



LEGEND:

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

opposite Western Industrial Drive, was determined to be greater than 500 feet to the north and south. These values are in excess of AASHTO's recommended minimum sight distance of 155 feet based on the posted speed limit of 25 mph and greater than 305 feet based on the measured 85th percentile vehicle speed of 38 mph.

As a result of the preliminary evaluation of the existing roadway geometry and physical features, it does not appear that any significant physical roadway safety deficiencies exist within the defined study area. Also, as part of our analysis, a review of crash statistics was completed. Data was reviewed from the City of Cranston Police Department for the latest three-year period available from January 2017 to December 2019 to determine if any location in the project area experienced a high frequency or pattern of crashes.

A total of 37 crashes (avg. 12 per year) occurred in the project area over the three-year study period, with six involving injuries. Summarizing the data, twenty-four of the crashes with four involving injuries occurred at the signalized intersection of Comstock Parkway with Plainfield Pike; four of the crashes with one involving injuries occurred at the unsignalized intersection of Comstock Parkway with Western Industrial Way; and nine of the crashes with one involving injuries occurred along the segment of Comstock Parkway between Plainfield Pike and Western Industrial Way.

The predominant crash type at the signalized intersection of Comstock Parkway with Plainfield Pike were rear end collisions, which is typical of signalized junctions due to the numerous starting and stopping movements required for the signal change intervals; eight were angle crashes that can be attributed to a few factors, including drivers not yielding the right of way during the permitted left turn phase along Plainfield Pike (5), not yielding the right of way (2), and running a red light; and two were sideswipe collisions on the northbound approach that has two lanes.

All four crashes, with one involving an injury, at the unsignalized intersection of Comstock Parkway at Western Industrial Drive were rear end collisions that can be attributed to slow and/or stopping traffic that are turning in and/or out of Western Industrial Drive. In addition, five of the crashes that occurred along Comstock Parkway between Plainfield Pike and Western Industrial Drive were angle crashes, two were single vehicle crashes, and one was a rear end collision. All of the angle crashes occurred at an intersecting side street that can be attributed to motorists not yielding the right of way. One of the single vehicle crashes involved a vehicle striking a tree to avoid collision with another vehicle and the other involved a motorcycle losing control due to an illegal maneuver.

Based upon the historical crash data obtained from the local police, and a review of existing roadway geometry and operations, roadway or traffic related safety enhancements could be investigated to improve safety within the immediate project area. The RIDOT could review the following safety enhancements at the signalized intersection of Comstock Parkway with Plainfield Pike:

1. The clearance intervals to determine if they require adjustment in an effort to reduce the number of rear-end collisions.
2. Addition of reflectorized yellow strips around the edge of the existing signal head backplates to enhance traffic signal visibility.

3. Addition of a flashing yellow arrow signal for the Plainfield Pike eastbound and westbound permitted left turn phases to potentially reduce the number of angle crashes during the permitted phases.

In addition, the city could review the following safety enhancements along Comstock Parkway including at side street intersections:

1. Installation of a stop line and upgrading and/or installation of a stop sign to meet current MUTCD standards to emphasize the traffic control for the Western Industrial Drive, Amflex Drive, and Stamp Farm Road approaches to Comstock Parkway.
2. Installation and/or upgrading the speed limit signs along Comstock Parkway to emphasize the speed regulations.
3. Installation of a crosswalk on Western Industrial Drive.

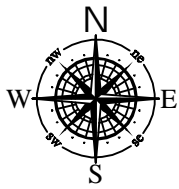
5.0 IMPACT ANALYSIS

5.1 TRIP GENERATION

To determine the traffic impact of a proposed development, estimates of anticipated traffic to be generated by a particular land use must be calculated. As previously discussed, the development proposal consists of the construction of two separate buildings with one fronting Comstock Parkway; a 70,000 square foot building for industrial/office use; and a second 199,180 square foot building for industrial use situated at the rear of the property. It anticipated that both buildings will accommodate tenants (i.e., manufactures, wholesalers) that require interiors with shelving to allow storage of goods and/or materials. Access to the site will be provided at the unsignalized intersection of Comstock Parkway with Western Industrial Drive that will be modified to create a four-way junction. Figure 4 on the following page depicts the site layout and access plan provided by *DiPrete Engineering*.

For this site, projected traffic volumes for the commercial project were based on use of trip generation factors. These factors are taken from the "Trip Generation" manual, an informational report published by the Institute of Transportation Engineers (ITE), a national professional organization for traffic and transportation engineers. The data provided in the ITE report are based on extensive traffic studies for various types of land uses (residential, commercial, industrial, etc.). This data has been found to be very reliable and provides a sound basis for estimating future trips to new developments.

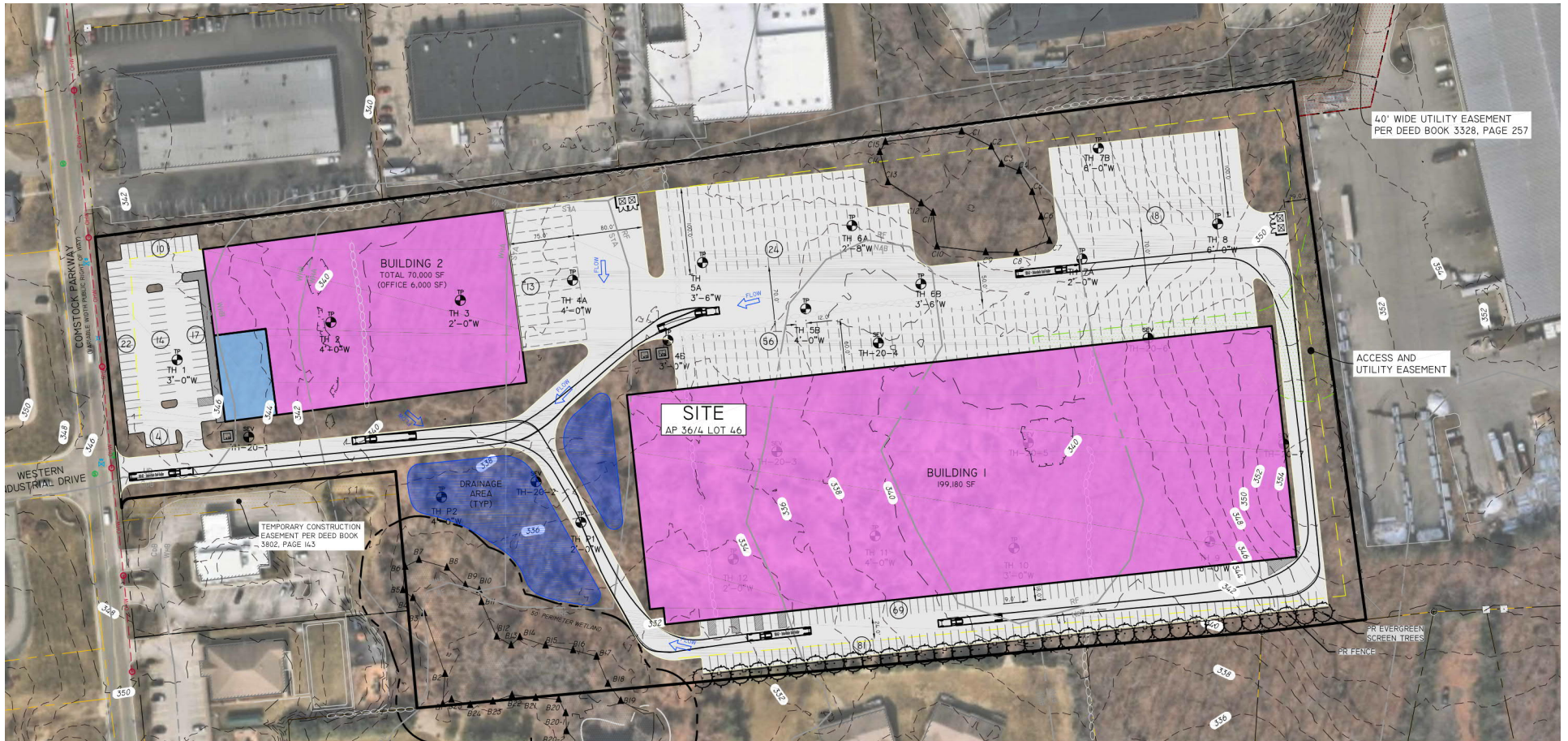
For the proposed industrial development project that includes two warehouse type buildings, Land Use Code 150 Warehousing was reviewed for applicability in developing an estimate of site related vehicle trips. The appropriate worksheets from the manual are included in the Appendix along with the trip estimate calculations. Table 1 summarizes the estimate of peak hour site trip volumes calculated for this project using the square footage of the buildings as the independent variable in the trip generation equations.



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Figure 4 - Site Layout



Site Plan provided by DiPrete Engineering

TABLE 1 – Trip Generation Estimate

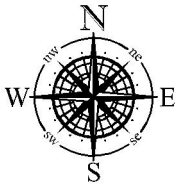
	Description	Enter	Exit	Total
<i>AM Peak Hour</i>				
ITE Land Use Code 150	Warehousing	35	11	46
<i>PM Peak Hour</i>				
ITE Land Use Code 150	Warehousing	15	37	52

As part of this report update, we have completed an additional analysis to address a comment relating to the potential employee base that has been presented for review by the city. The peer reviewer agreed with the above use of the ITE Trip Generation land use and trip values estimated for this project. A warehouse type land use typically generates minor peak hour volumes which can be seen in the table and can be the result of multiple shifts and arrival patterns of employees over the course of the day for this type of land use. In order to demonstrate the impact of the potential number of employees indicated in the plan application, this same land use was used utilizing the number of employees as the independent variable in the trip generation formula. This method results in a highly conservative value of site trips and potential traffic impacts to the study intersections. The trip calculations, distributions and the operational analysis for this effort has been included in the Appendix as backup to the review comments.

5.2 FUTURE TRAFFIC VOLUMES

In order to properly assess the impacts of a development, future traffic conditions of area roadways should be estimated for the period when the development is constructed and fully occupied. Typically, the expansion of base traffic is calculated when a project is to be constructed over an extended period (+3 to 5 years). In all instances, area growth that may affect capacity results should be considered. It is anticipated that this project would be constructed and occupied within a 24 month period so for this project, a conservative annual growth rate 1.0 percent was utilized for the future background traffic growth. It should be noted that Comstock Parkway has seen little to no growth in traffic volumes over the last decade and the city has seen an annual population growth rate of less than 0.25% during this period. The one percent rate was applied to the existing volumes to establish a Future 2024 Build traffic condition on the servicing roadways. The Future 2024 Build condition included traffic generated by the proposed industrial project. Figure 5 on the following page depicts the estimated future traffic volumes at the study intersections. Site distribution figures are also provided in the Appendix for reference.

In developing the intersection volumes to be analyzed under build conditions, a directional distribution of the site traffic was estimated. The distribution was based on current traffic patterns along Comstock Parkway including consideration of the site's land use and proximity to Interstate 295. It is important to note that warehouse type land uses are estimated to have higher percentage of cars generated during the AM and PM peak hours compared to trucks, which is associated with employee work shifts. Much of the truck related traffic for this land use occurs during off-peak traffic conditions of the adjacent servicing



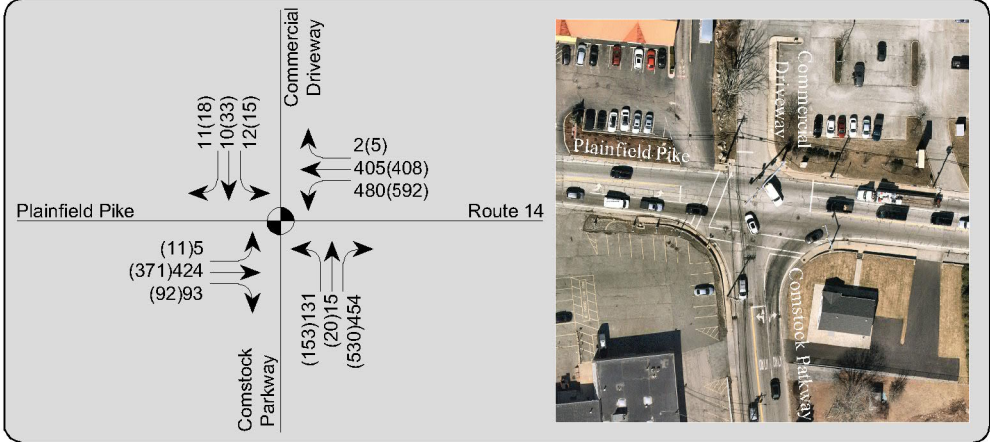
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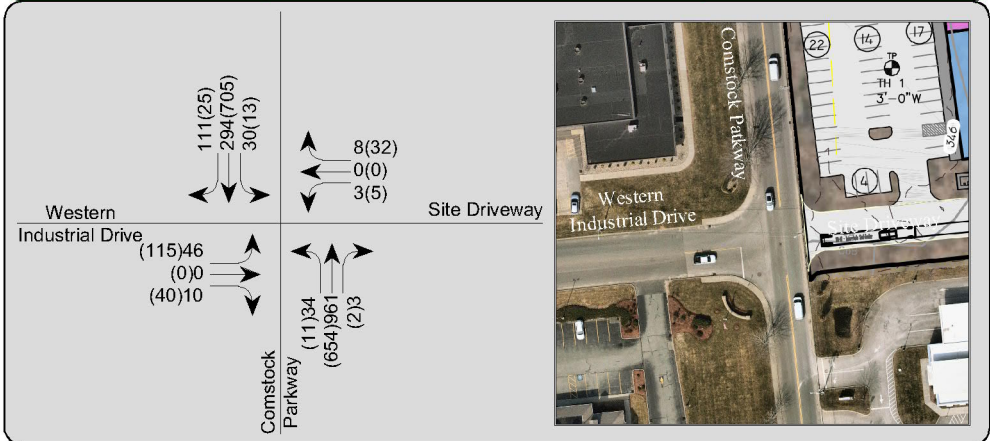
Figure 5 - Future Traffic Volumes



1 Plainfield Pike (Route 14)/Comstock Parkway/Commercial Driveway



2 Comstock Parkway/Western Industrial Drive/Site Driveway



LEGEND:

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

roadways. As a result, cars as percentage of total site trips during the morning and afternoon peak hours are estimated to be 70% and 80%, respectively.

It is estimated that 100% of site related truck trips will arrive and depart to the north via I-295 during both the morning and afternoon peak hours. For employee traffic, it is estimated that 80% of car related site trips will arrive from and depart to the north and 20% will arrive from and depart to the south.

5.3 OPERATIONAL ANALYSIS

The key to any traffic impact analysis is the evaluation of roadway operations during peak traffic periods on the servicing roadway system. This situation would occur when the site-generated traffic, combined with the traffic volumes on the main roadway, result in the highest one-hour volume serviced along a roadway segment, or through an intersection. Review of record traffic data found that the weekday AM and PM peak hours would represent this worst-case combination of site-generated traffic with the servicing roadway peak traffic period. The Highway Capacity Manual methodology provides the most accurate means of evaluating traffic capacity and delays for roadways and intersections. The results of this procedure are expressed in terms of Level of Service (LOS). Level of Service is a qualitative measure of traffic flow efficiency based on anticipated vehicle delays. For example, LOS "A" represents the best condition with little or no delay, while LOS "F" indicates that the roadway/intersection is at full capacity resulting in extended vehicle delays and potential queuing. Table 2 outlines the Level of Service delay criteria presented in the Highway Capacity Manual for signalized and unsignalized intersections.

TABLE 2 – Highway Capacity Manual Criteria

Level of Service	Unsignalized Delay Per Vehicle (sec)	Signalized Delay Per Vehicle (sec)
A	<10	<10
B	>10 and <15	>10 and <20
C	>15 and <25	>20 and <35
D	>25 and <35	>35 and <55
E	>35 and <50	>55 and <80
F	>50	>80

The Comstock Parkway intersections with Plainfield Pike and with Western Industrial Drive were studied for the existing and future weekday morning and afternoon peak hours. The capacity analysis worksheets are included in the Appendix and Tables 3 and 4 summarize the results of the analyses. Table 3 depicts the current conditions at the study intersections. As can be seen in the table, the signalized intersection of Plainfield Pike (Route 14) with Comstock Parkway/Commercial Driveway was determined to operate overall at an acceptable LOS B during both the AM and PM peak hours, with critical movements experiencing LOS C or better.

In addition, at the unsignalized intersection of Comstock Parkway with Western Industrial Drive, the Comstock Parkway northbound left turn traffic onto Western Industrial Drive and the Western Industrial

Drive eastbound right turn traffic onto Comstock Parkway both operate in an acceptable manner with the critical movements experiencing minor delays of under 16 seconds, representing Levels of Service (LOS) C or better during both the weekday morning and afternoon peak hours. The movement that experiences greater delays is the minor Western Industrial Drive westbound left turn movement where delays were estimated to be greater than 50 seconds during both the weekday morning and afternoon peak periods.

TABLE 3 – Level of Service Summary (Existing Conditions)

Location / Movement	2021 EXISTING CONDITIONS							
	AM Peak Hour				PM Peak Hour			
	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c
<i>Plainfield Pike (Route 14) at Comstock Parkway / Commercial Driveway (S)</i>								
Plainfield Pike EB Left	B	12.0	1	0.01	B	14.0	1	0.02
Plainfield Pike EB Thru/Right	C	26.8	17	0.88	C	25.5	13	0.86
Plainfield Pike WB Left	B	13.5	8	0.85	B	16.8	10	0.88
Plainfield Pike WB Thru/Right	A	7.8	6	0.43	A	7.6	6	0.40
Comstock Pkwy NB Left/Thru	C	21.0	7	0.37	C	27.5	8	0.62
Comstock Pkwy NB Right	C	20.4	6	0.77	B	15.6	5	0.70
Commercial Dr SB	B	19.2	2	0.10	C	20.9	2	0.28
OVERALL	B	17.9	-	-	B	17.6	-	-
<i>Comstock Parkway at Western Industrial Drive (U)</i>								
Comstock Pkwy NB Left	A	8.2	1	0.03	A	9.9	1	0.02
Western Industrial Dr EB Left	E	46.8	2	0.36	E	44.2*	4	0.58
Western Industrial Dr EB Right	B	10.3	1	0.02	C	17.0*	1	0.12

(S) – Signalized

(U) – Unsignalized

* Calibrated

One condition that does have a positive impact on the available gaps in traffic are the adjacent signalized intersections at Plainfield Pike (Route 14) to the north and Scituate Avenue to the south. The traffic signals help create gaps in Comstock Parkway traffic during the through traffic phases on the arterials and the change intervals that driveway and side street traffic can utilize to access the main road. The positive effect of the adjacent signals cannot be adequately modeled into the HCS analysis. As a result, to define actual delay conditions on West Industrial Drive, an intersection stop delay study was completed during the afternoon peak hour between 4:30 and 5:30 PM, which is the worst-case peak condition, to verify the estimated analysis delays.

Based upon the delay study completed for the Western Industrial Drive eastbound approach during the afternoon peak hour, it was determined that left turning traffic experienced an average delay of approximately 44 seconds and not the 138.2 seconds that the HCS Analysis initially estimated and

therefore the analysis was calibrated to represent actual conditions. Greater delays for left turns were consistent for a short period of time between 5:03 and 5:06 PM, which is consistent with employees leaving immediately at the end of the work day. Average vehicle queue for this movement were 1 to 2 vehicles with a maximum queue of 9 vehicles that occurred during the rush at around 5:00 PM for a very short duration. In addition, right turning traffic experienced less delay of approximately 17 seconds, which is consistent with the analysis, with an average vehicle queue of 1 vehicle.

Table 4 presents the future design period analysis taking into consideration base traffic growth along with the site development as noted earlier along the servicing roadways. The results of the analysis found that the Plainfield Pike (Route 14) signalized intersection with Comstock Parkway with optimization will continue to operate overall in an acceptable manner at LOS C during both the morning and afternoon peak hours of traffic with critical movements experiencing LOS D or better. The signal timing optimization if determined necessary will be coordinated with the Rhode Island Department of Transportation (RIDOT) through the Physical Alteration Permit process if future traffic conditions are realized and warrant the modification. This type of adjustment is typically made by the RIDOT as part of their general signal maintenance and optimization program.

TABLE 4 – Level of Service Summary (Future Build Conditions)

Location / Movement	FUTURE 2024 BUILD CONDITIONS							
	AM Peak Hour				PM Peak Hour			
	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c
<i>Plainfield Pike (Route 14) at Comstock Parkway / Commercial Driveway (S)</i> ¹								
Plainfield Pike EB Left	B	14.1	1	0.01	B	15.9	1	0.02
Plainfield Pike EB Thru/Right	D	41.5	19	0.93	D	35.8	15	0.87
Plainfield Pike WB Left	C	22.3	10	0.89	C	24.8	14	0.84
Plainfield Pike WB Thru/Right	A	7.9	7	0.42	A	7.8	7	0.35
Comstock Pkwy NB Left/Thru	C	25.6	7	0.47	D	35.2	7	0.76
Comstock Pkwy NB Right	B	18.8	7	0.72	B	16.4	7	0.55
Commercial Dr SB	C	22.4	2	0.15	C	23.4	2	0.24
OVERALL	C	23.7	-	-	C	22.7	-	-
<i>Comstock Parkway at Western Industrial Drive (U)</i>								
Comstock Pkwy NB Left	A	8.3	1	0.03	A	9.8	1	0.02
Comstock Pkwy SB Left	B	11.6	1	0.06	A	9.5	1	0.02
Western Industrial Dr EB Left	F	111.1	3	0.63	F	75.2*	5	0.76
Western Industrial Dr EB Right	B	10.4	1	0.02	C	17.6*	1	0.13
Site Driveway WB	D	28.8	1	0.07	C	19.1	1	0.13

(S) – Signalized

(U) – Unsignalized

* Calibrated

¹ Optimized Timings

Under the future build condition, the unsignalized intersection of Comstock Parkway with Western Industrial Drive will be modified to include a new eastbound approach from the site, which will be *Stop* controlled. All critical movements at the unsignalized intersection, were estimated to operate in an acceptable manner at LOS D or better except for the Western Industrial Drive left turn movement during both the morning and afternoon peak hours where it will continue to experience greater delays as defined under existing conditions. As noted, an analysis was completed utilizing the higher trip values realized with the use of the number of employees as a factor in the trip estimate. The conservative operational analysis is provided in Appendix for reference and demonstrates that the study intersections should operate in an acceptable manner during the busiest periods of the day using hourly trip values that should not be realized with the warehouse land use.

The unsignalized capacity analysis results for the minor approach delays are consistent with most unsignalized driveways or side street intersections along Comstock Parkway due to the high main street volumes and limitations of the unsignalized analysis as previously discussed. The signalization benefits of the adjacent intersections, which provide additional sufficient gaps in main street traffic is difficult to model in the analysis. It should also be noted that a secondary outlet (Stamp Farm Road) is available for the industrial park that vehicles can utilize to access Comstock Parkway in the future to balance minor approach delays from the industrial park during the short afternoon peak traffic condition.

6.0 CONCLUSIONS AND RECOMMENDATIONS

In summary, the study has shown that the proposed industrial project access and circulation has been designed to provide a level of traffic safety and efficiency on the servicing roadway system. The safety of the proposed site driveway intersection on Comstock Parkway was reviewed for geometry and sight distances. The proposed driveway intersection was determined to provide sufficient sight distances in accordance with AASHTO criteria for visibility and decision making of drivers attempting to enter/exit main street traffic from the proposed driveway.

In reference to safety, as previously noted, The RIDOT could review the following safety enhancements at the signalized intersection of Comstock Parkway with Plainfield Pike as part of their general signal maintenance and optimization program:

1. The clearance intervals to determine if they require adjustment in an effort to reduce the number of rear-end collisions.
2. Addition of reflectorized yellow strips around the perimeter of the existing signal head backplates to enhance traffic signal visibility.
3. Addition of a flashing yellow arrow signal for the Plainfield Pike eastbound and westbound permitted left turn phases to potentially reduce the number of angle crashes.

In addition, the city could review the following safety enhancements along Comstock Parkway including at side street intersections:

1. Installation of a stop line and crosswalk and upgrading and/or installation of a *Stop* sign to meet current MUTCD standards to emphasize the traffic control for the Western Industrial Drive, Amflex Drive, and Stamp Farm Road approaches to Comstock Parkway.
2. Installation and/or upgrading the speed limit signs along Comstock Parkway to emphasize the speed regulations.

The results of the operational analysis determined that the estimated increase in traffic during the peak periods resulting from the proposed industrial project will have a minor impact on overall traffic operations along Comstock Parkway in the project area, particularly during the weekday morning and afternoon peak hours when the site would service its greatest daily volumes.

Therefore, based upon the data collected on the servicing roadways, the analysis completed as part of this study, along with the access design and other recommendations proposed, the industrial development project was determined to have adequate and safe access to a public street, and will not have an adverse impact on public safety and welfare in the study area.

APPENDIX

-
- A. Traffic Volume Data
 - B. Stop Sign Delay Study
 - C. Traffic Crash Data
 - D. Trip Generation
 - E. Operational Analysis

APPENDIX A – Traffic Volume Data

Automatic Traffic Recorder Count

Comstock Parkway

Intersection Turning Movement Count

Plainfield Pike (Route 14) at Comstock Parkway

Comstock Parkway at Western Industrial Drive

A

Automatic Traffic Recorder Count

Comstock Parkway

Comstock Parkway

Traffic Volumes

BETA Group, Inc.

701 George Washington Highway
Lincoln, Rhode Island 02865
401.333.2382

Project Name: Proposed Industrial Development
Town/City: Cranston, RI
Roadway: Comstock Parkway
Location: North of Western Industrial Drive

Start Date: 9/10/2021
End Date: 9/17/2021

Time	9/6/21 Mon	9/7/21 Tue	9/8/21 Wed	9/9/21 Thu	9/10/21 Fri	Weekday Average	9/11/21 Sat	9/12/21 Sun
12:00 AM	*	*	*	*	*	*	112	105
01:00	*	*	*	*	*	*	59	76
02:00	*	*	*	*	*	*	60	54
03:00	*	*	*	*	*	*	38	26
04:00	*	*	*	*	*	*	65	30
05:00	*	*	*	*	*	*	115	60
06:00	*	*	*	*	*	*	296	175
07:00	*	*	*	*	*	*	578	390
08:00	*	*	*	*	*	*	836	591
09:00	*	*	*	*	*	*	976	833
10:00	*	*	*	*	*	*	1062	995
11:00	*	*	*	*	*	*	1145	1035
12:00 PM	*	*	*	*	*	*	1119	1101
01:00	*	*	*	*	270	270	1077	947
02:00	*	*	*	*	1109	1109	980	851
03:00	*	*	*	*	1349	1349	937	808
04:00	*	*	*	*	1375	1375	934	769
05:00	*	*	*	*	1309	1309	860	702
06:00	*	*	*	*	963	963	688	574
07:00	*	*	*	*	749	749	638	623
08:00	*	*	*	*	564	564	454	461
09:00	*	*	*	*	427	427	389	290
10:00	*	*	*	*	334	334	301	158
11:00	*	*	*	*	208	208	201	87
Total	0	0	0	0	8657	8657	13920	11741
Percent	0.0%	0.0%	0.0%	0.0%	100.0%		160.8%	135.6%
AM Peak							11:00	11:00
Volume							1145	1035
PM Peak					04:00	04:00	12:00 PM	12:00 PM
Volume					1375	1375	1119	1101

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701 George Washington Highway
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Project Name: Proposed Industrial Development
Town/City: Cranston, RI
Roadway: Comstock Parkway
Location: North of Western Industrial Drive

Start Date: 9/10/2021
End Date: 9/17/2021

Time	9/13/21 Mon	9/14/21 Tue	9/15/21 Wed	9/16/21 Thu	9/17/21 Fri	Weekday Average	9/18/21 Sat	9/19/21 Sun
12:00 AM	51	55	53	99	81	68	*	*
01:00	29	36	50	40	56	42	*	*
02:00	44	46	49	56	52	49	*	*
03:00	27	27	31	35	31	30	*	*
04:00	105	101	113	116	113	110	*	*
05:00	287	291	299	279	297	291	*	*
06:00	803	851	814	795	803	813	*	*
07:00	1336	1379	1315	1227	1330	1317	*	*
08:00	1161	1260	1237	1182	1246	1217	*	*
09:00	844	999	1022	933	931	946	*	*
10:00	901	821	881	850	823	855	*	*
11:00	864	800	940	902	981	897	*	*
12:00 PM	911	873	1006	1027	1044	972	*	*
01:00	920	833	969	950	966	928	*	*
02:00	975	998	1004	1051	979	1001	*	*
03:00	1211	1323	1281	1250	*	1266	*	*
04:00	1419	1469	1438	1371	*	1424	*	*
05:00	1244	1286	1400	1265	*	1299	*	*
06:00	929	924	999	972	*	956	*	*
07:00	595	691	788	707	*	695	*	*
08:00	430	459	502	494	*	471	*	*
09:00	292	319	288	279	*	294	*	*
10:00	170	213	197	192	*	193	*	*
11:00	98	110	127	122	*	114	*	*
Total	15646	16164	16803	16194	9733	16248	0	0
Percent	96.3%	99.5%	103.4%	99.7%	59.9%		0.0%	0.0%
AM Peak	07:00	07:00	07:00	07:00	07:00	07:00		
Volume	1336	1379	1315	1227	1330	1317		
PM Peak	04:00	04:00	04:00	04:00	12:00 PM	04:00		
Volume	1419	1469	1438	1371	1044	1424		

BETA Group, Inc.
 701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive

Start Date: 9/10/2021
 End Date: 9/17/2021

9/6/2021 Time	Monday		Tuesday		Wednesday		Thursday		Friday		Weekday Average		Saturday		Sunday		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	34	78	37	68
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	21	38	29	47
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	16	44	17	37
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	16	22	10	16
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	47	18	22	8
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	88	27	44	16
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	194	102	121	54
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	378	200	246	144
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	528	308	353	238
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	566	410	512	321
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	633	429	549	446
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	636	509	569	466
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	588	531	598	503
1:00	*	*	*	*	*	*	*	*	*	148	122	148	122	560	517	473	474
2:00	*	*	*	*	*	*	*	*	*	532	577	532	577	490	490	453	398
3:00	*	*	*	*	*	*	*	*	*	695	654	695	654	446	491	415	393
4:00	*	*	*	*	*	*	*	*	*	714	661	714	661	474	460	366	403
5:00	*	*	*	*	*	*	*	*	*	652	657	652	657	427	433	320	382
6:00	*	*	*	*	*	*	*	*	*	470	493	470	493	357	331	265	309
7:00	*	*	*	*	*	*	*	*	*	324	425	324	425	281	357	330	293
8:00	*	*	*	*	*	*	*	*	*	234	330	234	330	197	257	190	271
9:00	*	*	*	*	*	*	*	*	*	184	243	184	243	170	219	114	176
10:00	*	*	*	*	*	*	*	*	*	123	211	123	211	107	194	63	95
11:00	*	*	*	*	*	*	*	*	*	76	132	76	132	76	125	32	55
Total	0	0	0	0	0	0	0	0	0	4152	4505	4152	4505	7330	6590	6128	5613
Day	0		0		0		0		0	8657		8657		13920		11741	
AM Peak														11:00	11:00	11:00	11:00
Volume														636	509	569	466
PM Peak										4:00	4:00	4:00	4:00	12:00 PM	12:00 PM	12:00 PM	12:00 PM
Volume										714	661	714	661	588	531	598	503

BETA Group, Inc.

701 George Washington Highway
Lincoln, Rhode Island 02865
401.333.2382

Project Name: Proposed Industrial Development
Town/City: Cranston, RI
Roadway: Comstock Parkway
Location: North of Western Industrial Drive

Start Date: 9/10/2021
End Date: 9/17/2021

9/13/2021 Time	Monday		Tuesday		Wednesday		Thursday		Friday		Weekday Average		Saturday		Sunday	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	14	37	15	40	18	35	37	62	24	57	22	46	*	*	*	*
1:00	11	18	14	22	18	32	18	22	22	34	17	26	*	*	*	*
2:00	13	31	13	33	15	34	17	39	13	39	14	35	*	*	*	*
3:00	17	10	19	8	21	10	22	13	21	10	20	10	*	*	*	*
4:00	87	18	83	18	93	20	82	34	89	24	87	23	*	*	*	*
5:00	243	44	239	52	247	52	231	48	241	56	240	50	*	*	*	*
6:00	568	235	616	235	573	241	548	247	543	260	570	244	*	*	*	*
7:00	971	365	991	388	954	361	891	336	948	382	951	366	*	*	*	*
8:00	795	366	831	429	819	418	779	403	830	416	811	406	*	*	*	*
9:00	511	333	596	403	622	400	596	337	575	356	580	366	*	*	*	*
10:00	522	379	474	347	519	362	496	354	468	355	496	359	*	*	*	*
11:00	495	369	450	350	521	419	510	392	545	436	504	393	*	*	*	*
12:00 PM	488	423	484	389	525	481	533	494	562	482	518	454	*	*	*	*
1:00	491	429	414	419	530	439	528	422	504	462	493	434	*	*	*	*
2:00	460	515	464	534	498	506	504	547	482	497	482	520	*	*	*	*
3:00	614	597	640	683	637	644	602	648	*	*	623	643	*	*	*	*
4:00	687	732	700	769	748	690	651	720	*	*	696	728	*	*	*	*
5:00	542	702	588	698	701	699	589	676	*	*	605	694	*	*	*	*
6:00	413	516	401	523	447	552	459	513	*	*	430	526	*	*	*	*
7:00	227	368	299	392	323	465	313	394	*	*	290	405	*	*	*	*
8:00	150	280	170	289	207	295	183	311	*	*	178	294	*	*	*	*
9:00	101	191	125	194	93	195	107	172	*	*	106	188	*	*	*	*
10:00	61	109	74	139	71	126	57	135	*	*	66	127	*	*	*	*
11:00	38	60	50	60	48	79	52	70	*	*	47	67	*	*	*	*
Total	8519	7127	8750	7414	9248	7555	8805	7389	5867	3866	8846	7404	0	0	0	0
Day	15646		16164		16803		16194		9733		16250		0		0	
AM Peak	7:00	10:00	7:00	8:00	7:00	11:00	7:00	8:00	7:00	11:00	7:00	8:00				
Volume	971	379	991	429	954	419	891	403	948	436	951	406				
PM Peak	4:00	4:00	4:00	4:00	4:00	5:00	4:00	4:00	12:00 PM	2:00	4:00	4:00				
Volume	687	732	700	769	748	699	651	720	562	497	696	728				
Comb Total	15646		16164		16803		16194		18390		24907		13920		11741	
ADT	ADT: 14,298		AADT: 14,298													

Speed Data

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/10/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	1	1	5	39	61	40	1	0	0	0	0	0	0	148
2:00	1	9	30	147	207	121	15	2	0	0	0	0	0	532
3:00	0	1	15	193	343	117	24	1	1	0	0	0	0	695
4:00	0	0	37	155	315	170	28	7	2	0	0	0	0	714
5:00	0	0	17	113	310	167	40	4	0	1	0	0	0	652
6:00	0	0	24	63	184	157	37	5	0	0	0	0	0	470
7:00	1	1	14	51	134	104	16	2	1	0	0	0	0	324
8:00	1	0	9	33	90	81	19	1	0	0	0	0	0	234
9:00	0	5	10	19	57	65	18	9	1	0	0	0	0	184
10:00	0	1	1	19	33	44	15	5	1	2	0	0	2	123
11:00	0	2	5	6	23	27	12	1	0	0	0	0	0	76
Total	4	20	167	838	1757	1093	225	37	6	3	0	0	2	4152

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/11/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	1	4	10	11	5	1	0	2	0	0	0	34
1:00	0	0	2	5	5	8	1	0	0	0	0	0	0	21
2:00	0	0	1	1	3	4	5	1	1	0	0	0	0	16
3:00	0	0	0	2	4	3	4	1	1	0	1	0	0	16
4:00	0	0	2	7	12	10	12	3	1	0	0	0	0	47
5:00	0	1	1	10	30	25	16	4	1	0	0	0	0	88
6:00	0	0	2	12	42	86	44	5	3	0	0	0	0	194
7:00	0	2	5	25	119	158	64	4	0	1	0	0	0	378
8:00	0	2	11	58	210	207	37	3	0	0	0	0	0	528
9:00	0	1	7	78	253	186	37	4	0	0	0	0	0	566
10:00	0	2	11	106	298	183	27	5	0	1	0	0	0	633
11:00	0	2	11	119	306	169	26	3	0	0	0	0	0	636
12:00 PM	0	1	3	70	277	203	33	1	0	0	0	0	0	588
1:00	0	0	9	78	227	199	40	7	0	0	0	0	0	560
2:00	0	0	13	72	196	155	45	8	0	1	0	0	0	490
3:00	0	0	2	39	177	170	50	6	2	0	0	0	0	446
4:00	0	2	3	78	190	163	32	3	2	1	0	0	0	474
5:00	1	1	1	29	169	171	52	3	0	0	0	0	0	427
6:00	0	0	8	26	142	148	29	4	0	0	0	0	0	357
7:00	0	2	6	49	123	76	22	1	2	0	0	0	0	281
8:00	0	0	1	29	78	63	17	7	2	0	0	0	0	197
9:00	0	0	5	22	64	58	20	1	0	0	0	0	0	170
10:00	0	1	0	7	45	41	11	1	1	0	0	0	0	107
11:00	0	0	2	4	21	32	13	3	0	0	1	0	0	76
Total	1	17	107	930	3001	2529	642	79	16	6	2	0	0	7330

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/12/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	3	9	21	3	0	0	1	0	0	0	37
1:00	0	0	2	6	9	5	6	0	0	1	0	0	0	29
2:00	0	0	1	2	2	5	4	2	1	0	0	0	0	17
3:00	0	0	0	0	1	3	2	2	1	1	0	0	0	10
4:00	0	0	0	1	4	6	11	0	0	0	0	0	0	22
5:00	0	0	0	3	15	14	8	2	1	0	0	0	1	44
6:00	0	0	0	3	37	53	23	4	1	0	0	0	0	121
7:00	0	0	2	12	69	113	42	6	1	1	0	0	0	246
8:00	0	3	0	13	126	157	50	4	0	0	0	0	0	353
9:00	0	3	2	44	198	213	45	4	3	0	0	0	0	512
10:00	0	0	0	60	221	229	32	6	1	0	0	0	0	549
11:00	0	0	2	42	244	235	42	3	1	0	0	0	0	569
12:00 PM	0	0	1	34	241	262	55	4	1	0	0	0	0	598
1:00	0	0	0	53	198	181	37	4	0	0	0	0	0	473
2:00	0	0	0	28	154	202	65	4	0	0	0	0	0	453
3:00	0	4	4	27	132	191	54	3	0	0	0	0	0	415
4:00	0	0	0	21	107	167	67	3	0	1	0	0	0	366
5:00	0	0	2	13	113	137	49	2	3	1	0	0	0	320
6:00	0	0	0	20	77	122	37	9	0	0	0	0	0	265
7:00	0	0	1	64	130	112	20	2	0	1	0	0	0	330
8:00	0	0	1	16	78	69	18	5	2	0	1	0	0	190
9:00	0	0	1	8	47	42	14	2	0	0	0	0	0	114
10:00	0	0	0	3	16	24	14	4	0	2	0	0	0	63
11:00	0	0	1	2	7	10	10	1	0	1	0	0	0	32
Total	0	10	20	478	2235	2573	708	76	16	10	1	0	1	6128

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/13/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	2	4	6	1	0	1	0	0	0	14
1:00	0	0	1	0	1	3	4	2	0	0	0	0	0	11
2:00	0	0	0	1	2	6	3	1	0	0	0	0	0	13
3:00	0	0	0	3	2	6	4	1	1	0	0	0	0	17
4:00	0	2	4	8	17	31	21	4	0	0	0	0	0	87
5:00	0	1	5	24	67	106	32	7	1	0	0	0	0	243
6:00	0	0	11	125	265	146	20	1	0	0	0	0	0	568
7:00	0	7	43	242	489	168	20	1	0	1	0	0	0	971
8:00	1	8	35	156	431	147	14	2	1	0	0	0	0	795
9:00	0	7	22	81	229	144	25	3	0	0	0	0	0	511
10:00	1	5	56	121	206	114	16	3	0	0	0	0	0	522
11:00	0	8	23	98	194	141	30	0	1	0	0	0	0	495
12:00 PM	0	10	28	93	216	119	18	4	0	0	0	0	0	488
1:00	0	1	20	110	216	125	16	2	1	0	0	0	0	491
2:00	0	3	18	93	179	139	26	1	0	0	0	1	0	460
3:00	1	7	42	193	250	104	17	0	0	0	0	0	0	614
4:00	1	7	35	161	278	177	25	3	0	0	0	0	0	687
5:00	1	5	11	91	218	172	39	4	1	0	0	0	0	542
6:00	0	0	8	57	166	137	39	5	0	1	0	0	0	413
7:00	0	2	2	45	86	73	18	1	0	0	0	0	0	227
8:00	1	2	12	14	49	58	10	4	0	0	0	0	0	150
9:00	1	4	5	16	31	33	10	1	0	0	0	0	0	101
10:00	0	0	2	11	13	24	9	1	1	0	0	0	0	61
11:00	0	0	2	1	11	19	4	1	0	0	0	0	0	38
Total	7	79	385	1744	3618	2196	426	53	7	3	0	1	0	8519

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/14/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	2	5	7	1	0	0	0	0	0	0	15
1:00	0	0	3	3	4	1	2	1	0	0	0	0	0	14
2:00	0	0	3	4	2	3	1	0	0	0	0	0	0	13
3:00	0	0	2	1	4	4	6	1	1	0	0	0	0	19
4:00	0	0	3	4	16	32	20	6	2	0	0	0	0	83
5:00	0	0	4	24	71	107	26	7	0	0	0	0	0	239
6:00	0	1	5	90	293	203	23	1	0	0	0	0	0	616
7:00	1	6	46	262	473	181	17	4	1	0	0	0	0	991
8:00	0	0	24	196	409	174	26	1	0	1	0	0	0	831
9:00	0	0	14	97	259	190	33	2	1	0	0	0	0	596
10:00	0	4	26	101	200	120	21	2	0	0	0	0	0	474
11:00	2	3	21	74	191	137	17	3	2	0	0	0	0	450
12:00 PM	0	0	21	108	208	120	21	6	0	0	0	0	0	484
1:00	0	0	10	67	193	99	40	0	3	1	1	0	0	414
2:00	0	10	29	78	196	132	17	2	0	0	0	0	0	464
3:00	7	16	54	162	256	118	24	3	0	0	0	0	0	640
4:00	0	3	39	195	314	132	16	0	1	0	0	0	0	700
5:00	0	0	11	99	270	179	27	2	0	0	0	0	0	588
6:00	0	0	8	58	163	137	32	3	0	0	0	0	0	401
7:00	0	4	6	59	125	90	14	1	0	0	0	0	0	299
8:00	0	1	5	18	60	69	16	1	0	0	0	0	0	170
9:00	0	3	7	15	39	44	15	0	2	0	0	0	0	125
10:00	0	0	2	4	17	32	16	2	1	0	0	0	0	74
11:00	0	0	2	8	11	19	6	4	0	0	0	0	0	50
Total	10	51	345	1729	3779	2330	437	52	14	2	1	0	0	8750

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/15/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	5	5	3	4	1	0	0	0	0	0	18
1:00	0	0	1	4	3	5	4	1	0	0	0	0	0	18
2:00	0	1	2	4	3	4	1	0	0	0	0	0	0	15
3:00	0	0	0	1	4	8	5	3	0	0	0	0	0	21
4:00	0	2	4	10	15	34	22	5	1	0	0	0	0	93
5:00	0	0	3	12	78	105	41	8	0	0	0	0	0	247
6:00	4	5	16	63	300	163	21	1	0	0	0	0	0	573
7:00	0	1	43	262	462	176	10	0	0	0	0	0	0	954
8:00	0	1	26	199	408	165	16	4	0	0	0	0	0	819
9:00	7	8	42	140	267	131	25	2	0	0	0	0	0	622
10:00	0	10	52	108	191	138	19	1	0	0	0	0	0	519
11:00	0	4	16	107	243	134	14	1	1	1	0	0	0	521
12:00 PM	0	8	21	81	245	141	25	4	0	0	0	0	0	525
1:00	0	4	14	102	234	145	25	3	3	0	0	0	0	530
2:00	0	7	26	108	205	127	22	2	1	0	0	0	0	498
3:00	1	4	35	148	250	158	32	8	1	0	0	0	0	637
4:00	6	7	29	165	338	179	20	4	0	0	0	0	0	748
5:00	1	19	29	111	329	181	28	3	0	0	0	0	0	701
6:00	0	0	4	71	190	136	43	2	1	0	0	0	0	447
7:00	0	1	9	67	127	94	21	4	0	0	0	0	0	323
8:00	0	1	5	48	83	52	16	2	0	0	0	0	0	207
9:00	0	4	7	6	35	29	10	2	0	0	0	0	0	93
10:00	0	0	2	6	18	31	11	2	1	0	0	0	0	71
11:00	0	2	2	6	15	12	11	0	0	0	0	0	0	48
Total	19	89	388	1834	4048	2351	446	63	9	1	0	0	0	9248

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: NB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/16/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	4	9	12	11	1	0	0	0	0	0	37
1:00	0	0	0	9	4	4	1	0	0	0	0	0	0	18
2:00	0	3	4	0	5	1	3	0	1	0	0	0	0	17
3:00	0	0	2	0	3	8	4	3	0	2	0	0	0	22
4:00	0	2	4	6	11	29	22	7	1	0	0	0	0	82
5:00	0	0	1	24	60	102	36	8	0	0	0	0	0	231
6:00	0	0	8	85	330	115	10	0	0	0	0	0	0	548
7:00	0	8	31	253	430	151	13	3	2	0	0	0	0	891
8:00	0	0	31	195	381	159	12	1	0	0	0	0	0	779
9:00	0	7	46	105	300	117	18	0	1	2	0	0	0	596
10:00	0	3	37	111	212	114	18	1	0	0	0	0	0	496
11:00	5	6	56	117	184	116	23	2	1	0	0	0	0	510
12:00 PM	0	3	15	119	244	133	18	1	0	0	0	0	0	533
1:00	13	9	22	99	246	129	10	0	0	0	0	0	0	528
2:00	0	5	24	88	234	134	19	0	0	0	0	0	0	504
3:00	0	4	37	149	242	143	23	3	1	0	0	0	0	602
4:00	0	0	31	162	276	169	11	2	0	0	0	0	0	651
5:00	0	0	8	104	274	168	34	1	0	0	0	0	0	589
6:00	0	0	10	65	224	130	25	3	2	0	0	0	0	459
7:00	0	1	9	71	149	62	17	4	0	0	0	0	0	313
8:00	0	6	8	16	75	61	16	0	1	0	0	0	0	183
9:00	0	5	7	9	41	35	8	2	0	0	0	0	0	107
10:00	0	0	6	5	16	17	9	2	2	0	0	0	0	57
11:00	0	0	1	5	21	13	11	1	0	0	0	0	0	52
Total	18	62	398	1801	3971	2122	372	45	12	4	0	0	0	8805

BETA Group, Inc.

701 George Washington Highway
Lincoln, Rhode Island 02865
401.333.2382

Project Name: Proposed Industrial Development
Town/City: Cranston, RI
Roadway: Comstock Parkway
Location: North of Western Industrial Drive
Direction: NB

Start Date: 9/10/2021
End Date: 9/17/2021

9/17/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	1	1	8	9	5	0	0	0	0	0	0	24
1:00	0	0	1	5	5	4	5	2	0	0	0	0	0	22
2:00	0	0	2	1	1	5	2	2	0	0	0	0	0	13
3:00	0	0	0	1	11	4	4	0	0	1	0	0	0	21
4:00	0	0	4	5	15	29	27	7	2	0	0	0	0	89
5:00	0	1	1	16	78	111	30	3	1	0	0	0	0	241
6:00	0	4	19	90	253	152	25	0	0	0	0	0	0	543
7:00	0	2	43	220	518	148	13	2	0	1	1	0	0	948
8:00	8	6	35	293	355	115	17	1	0	0	0	0	0	830
9:00	1	7	37	140	226	147	17	0	0	0	0	0	0	575
10:00	0	1	28	99	195	115	25	5	0	0	0	0	0	468
11:00	1	9	31	122	240	121	17	4	0	0	0	0	0	545
12:00 PM	1	7	17	154	259	107	12	5	0	0	0	0	0	562
1:00	0	3	21	121	224	115	13	6	1	0	0	0	0	504
2:00	1	2	18	95	203	137	19	7	0	0	0	0	0	482
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	12	42	258	1363	2591	1319	231	44	4	2	1	0	0	5867
Grand Total	71	370	2068	10717	25000	16513	3487	449	84	31	5	1	3	58799
Stats			Percentile	15th	50th	85th	95th							
			Speed	28.5	33.5	37.8	40.9							
			Mean Speed (Average)	33.3										
			10 MPH Pace Speed	30-39										
			Number in Pace	41397										
			Percent in Pace	70.4%										
			Number > 25 MPH	56290										
			Percent > 25 MPH	95.7%										

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/10/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	0	1	11	43	50	15	1	1	0	0	0	0	0	122
2:00	0	4	39	182	242	100	9	1	0	0	0	0	0	577
3:00	1	4	43	195	293	101	16	0	0	0	0	0	0	654
4:00	2	15	47	171	314	104	6	2	0	0	0	0	0	661
5:00	3	11	26	176	293	128	18	2	0	0	0	0	0	657
6:00	0	18	41	108	218	95	12	1	0	0	0	0	0	493
7:00	12	9	21	100	185	84	12	2	0	0	0	0	0	425
8:00	4	1	30	79	132	65	16	3	0	0	0	0	0	330
9:00	0	1	8	34	118	60	20	2	0	0	0	0	0	243
10:00	0	1	6	36	88	62	18	0	0	0	0	0	0	211
11:00	0	0	1	10	59	45	13	4	0	0	0	0	0	132
Total	22	65	273	1134	1992	859	141	18	0	0	0	0	1	4505

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/11/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	13	35	14	11	3	1	0	1	0	0	78
1:00	0	0	2	1	8	14	11	2	0	0	0	0	0	38
2:00	0	1	0	6	19	13	4	0	1	0	0	0	0	44
3:00	0	0	3	2	8	4	2	3	0	0	0	0	0	22
4:00	0	0	0	3	6	3	5	0	0	1	0	0	0	18
5:00	0	0	4	5	14	4	0	0	0	0	0	0	0	27
6:00	0	0	5	13	37	29	14	4	0	0	0	0	0	102
7:00	0	4	3	38	73	64	16	2	0	0	0	0	0	200
8:00	1	3	14	36	159	73	20	2	0	0	0	0	0	308
9:00	1	0	5	86	182	121	10	5	0	0	0	0	0	410
10:00	0	2	2	54	209	134	25	2	0	1	0	0	0	429
11:00	0	0	19	102	255	111	20	2	0	0	0	0	0	509
12:00 PM	0	2	21	119	239	131	17	2	0	0	0	0	0	531
1:00	0	3	8	110	259	120	14	2	1	0	0	0	0	517
2:00	0	0	6	86	219	160	18	1	0	0	0	0	0	490
3:00	0	0	6	65	229	156	27	7	1	0	0	0	0	491
4:00	0	0	1	68	209	149	30	3	0	0	0	0	0	460
5:00	0	0	5	88	187	136	15	2	0	0	0	0	0	433
6:00	0	0	4	36	177	95	16	3	0	0	0	0	0	331
7:00	0	0	9	115	165	49	15	3	1	0	0	0	0	357
8:00	0	1	4	57	136	53	4	2	0	0	0	0	0	257
9:00	0	0	11	43	105	55	5	0	0	0	0	0	0	219
10:00	0	0	4	20	91	57	18	4	0	0	0	0	0	194
11:00	0	0	2	23	42	40	15	2	1	0	0	0	0	125
Total	2	16	138	1189	3063	1785	332	56	6	2	1	0	0	6590

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/12/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	1	9	21	20	12	2	1	0	1	0	0	68
1:00	0	0	0	6	10	22	7	2	0	0	0	0	0	47
2:00	0	0	0	3	10	16	6	2	0	0	0	0	0	37
3:00	0	0	0	1	6	4	4	1	0	0	0	0	0	16
4:00	0	0	0	2	1	2	2	1	0	0	0	0	0	8
5:00	0	0	0	3	6	3	2	0	2	0	0	0	0	16
6:00	0	0	1	9	14	22	6	2	0	0	0	0	0	54
7:00	0	0	4	16	47	48	24	3	2	0	0	0	0	144
8:00	0	3	0	45	91	76	15	5	3	0	0	0	0	238
9:00	1	2	6	38	143	107	17	6	1	0	0	0	0	321
10:00	0	0	5	76	203	131	28	3	0	0	0	0	0	446
11:00	0	0	8	85	216	126	26	4	1	0	0	0	0	466
12:00 PM	0	0	6	100	239	125	30	1	2	0	0	0	0	503
1:00	0	0	0	82	223	151	15	3	0	0	0	0	0	474
2:00	6	3	6	56	164	130	31	0	2	0	0	0	0	398
3:00	0	0	6	54	175	129	27	2	0	0	0	0	0	393
4:00	0	0	11	42	160	153	33	3	0	1	0	0	0	403
5:00	0	0	0	26	183	133	38	2	0	0	0	0	0	382
6:00	0	0	0	27	137	116	25	3	1	0	0	0	0	309
7:00	0	0	6	48	146	74	19	0	0	0	0	0	0	293
8:00	0	0	3	44	125	81	15	3	0	0	0	0	0	271
9:00	0	0	4	22	76	60	10	4	0	0	0	0	0	176
10:00	0	2	1	12	31	37	7	5	0	0	0	0	0	95
11:00	0	0	0	8	16	19	6	6	0	0	0	0	0	55
Total	7	11	68	814	2443	1785	405	63	15	1	1	0	0	5613

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/13/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	3	10	17	6	1	0	0	0	0	0	37
1:00	0	0	1	3	5	6	2	1	0	0	0	0	0	18
2:00	0	2	0	7	11	7	3	1	0	0	0	0	0	31
3:00	0	1	0	0	1	8	0	0	0	0	0	0	0	10
4:00	0	0	0	3	5	5	3	1	0	1	0	0	0	18
5:00	0	0	3	14	14	11	2	0	0	0	0	0	0	44
6:00	0	0	16	75	102	34	6	1	1	0	0	0	0	235
7:00	0	1	22	115	150	67	10	0	0	0	0	0	0	365
8:00	0	4	30	132	138	55	5	0	1	0	0	0	1	366
9:00	2	1	22	83	144	67	12	1	1	0	0	0	0	333
10:00	8	9	34	96	164	59	8	1	0	0	0	0	0	379
11:00	2	6	31	98	153	59	14	3	2	0	1	0	0	369
12:00 PM	9	5	22	114	177	83	11	2	0	0	0	0	0	423
1:00	2	6	38	116	185	71	8	2	1	0	0	0	0	429
2:00	0	3	26	127	247	94	16	0	0	0	0	0	2	515
3:00	3	5	64	143	283	90	5	2	0	0	1	0	1	597
4:00	14	1	55	276	292	82	6	6	0	0	0	0	0	732
5:00	6	14	37	179	321	137	7	1	0	0	0	0	0	702
6:00	0	7	31	118	267	80	10	3	0	0	0	0	0	516
7:00	0	2	18	101	160	79	7	1	0	0	0	0	0	368
8:00	0	2	17	55	114	78	14	0	0	0	0	0	0	280
9:00	0	0	11	25	89	51	10	4	1	0	0	0	0	191
10:00	0	0	2	18	40	35	10	1	2	1	0	0	0	109
11:00	0	0	1	5	23	16	11	4	0	0	0	0	0	60
Total	46	69	481	1906	3095	1291	186	36	9	2	2	0	4	7127

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/14/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	3	4	12	10	9	1	0	0	0	0	0	40
1:00	0	0	0	1	9	6	5	1	0	0	0	0	0	22
2:00	0	0	1	10	10	10	1	0	1	0	0	0	0	33
3:00	0	0	0	1	1	4	1	1	0	0	0	0	0	8
4:00	0	0	0	3	7	1	4	2	1	0	0	0	0	18
5:00	0	0	3	20	13	8	7	1	0	0	0	0	0	52
6:00	0	2	20	65	97	40	9	2	0	0	0	0	0	235
7:00	1	8	39	108	167	47	16	1	0	0	0	1	0	388
8:00	1	5	41	131	178	64	9	0	0	0	0	0	0	429
9:00	0	0	38	120	177	62	6	0	0	0	0	0	0	403
10:00	0	2	40	113	118	66	7	1	0	0	0	0	0	347
11:00	0	0	11	89	152	81	16	0	1	0	0	0	0	350
12:00 PM	1	12	18	125	156	65	9	3	0	0	0	0	0	389
1:00	3	5	11	156	156	76	11	1	0	0	0	0	0	419
2:00	4	1	17	111	303	79	17	2	0	0	0	0	0	534
3:00	4	16	44	254	308	50	7	0	0	0	0	0	0	683
4:00	11	39	55	308	300	50	6	0	0	0	0	0	0	769
5:00	0	13	47	208	291	123	15	1	0	0	0	0	0	698
6:00	0	16	8	120	247	116	11	5	0	0	0	0	0	523
7:00	1	4	20	100	175	81	7	2	1	1	0	0	0	392
8:00	1	1	9	50	143	73	11	1	0	0	0	0	0	289
9:00	0	1	8	29	86	53	15	2	0	0	0	0	0	194
10:00	0	0	3	19	39	54	21	3	0	0	0	0	0	139
11:00	0	1	1	7	20	17	11	3	0	0	0	0	0	60
Total	27	127	437	2152	3165	1236	231	33	4	1	0	1	0	7414

BETA Group, Inc.

701 George Washington Highway
Lincoln, Rhode Island 02865
401.333.2382

Project Name: Proposed Industrial Development
Town/City: Cranston, RI
Roadway: Comstock Parkway
Location: North of Western Industrial Drive
Direction: SB

Start Date: 9/10/2021
End Date: 9/17/2021

9/15/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	0	4	11	14	4	1	0	0	0	0	0	35
1:00	0	0	1	1	14	10	5	1	0	0	0	0	0	32
2:00	0	1	1	9	10	8	4	0	1	0	0	0	0	34
3:00	0	0	0	1	3	4	1	0	1	0	0	0	0	10
4:00	0	0	3	5	6	2	3	0	1	0	0	0	0	20
5:00	0	0	12	10	18	4	6	2	0	0	0	0	0	52
6:00	1	1	23	59	99	50	8	0	0	0	0	0	0	241
7:00	0	7	15	108	162	57	10	1	0	0	0	1	0	361
8:00	0	15	29	164	154	46	8	1	1	0	0	0	0	418
9:00	0	8	34	132	165	58	3	0	0	0	0	0	0	400
10:00	0	13	43	104	134	57	10	1	0	0	0	0	0	362
11:00	5	7	27	138	173	58	9	1	0	0	1	0	0	419
12:00 PM	1	1	43	141	187	98	9	1	0	0	0	0	0	481
1:00	3	2	23	120	218	65	7	1	0	0	0	0	0	439
2:00	0	10	35	155	221	70	12	2	0	0	0	1	0	506
3:00	4	7	40	195	281	104	13	0	0	0	0	0	0	644
4:00	12	18	57	184	339	70	7	0	3	0	0	0	0	690
5:00	1	21	32	149	348	141	6	0	0	0	1	0	0	699
6:00	0	21	45	94	241	131	18	1	1	0	0	0	0	552
7:00	0	5	11	130	230	80	9	0	0	0	0	0	0	465
8:00	4	2	7	62	145	68	7	0	0	0	0	0	0	295
9:00	0	1	3	23	94	59	13	0	2	0	0	0	0	195
10:00	0	0	2	18	41	56	5	4	0	0	0	0	0	126
11:00	0	0	8	10	23	23	11	4	0	0	0	0	0	79
Total	31	141	494	2016	3317	1333	188	21	10	0	2	2	0	7555

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/16/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	5	27	22	6	1	1	0	0	0	0	62
1:00	0	0	0	0	13	5	1	2	1	0	0	0	0	22
2:00	0	1	5	4	16	9	2	1	0	1	0	0	0	39
3:00	0	0	0	0	4	3	4	1	1	0	0	0	0	13
4:00	0	3	4	4	8	7	4	3	1	0	0	0	0	34
5:00	1	0	7	11	12	9	8	0	0	0	0	0	0	48
6:00	0	2	26	96	82	33	8	0	0	0	0	0	0	247
7:00	0	5	14	137	139	34	6	1	0	0	0	0	0	336
8:00	0	3	34	144	161	55	6	0	0	0	0	0	0	403
9:00	0	0	34	113	150	31	6	0	1	1	0	0	1	337
10:00	0	0	21	103	148	70	9	2	0	0	0	0	1	354
11:00	7	6	47	119	120	79	14	0	0	0	0	0	0	392
12:00 PM	0	2	28	149	207	96	11	1	0	0	0	0	0	494
1:00	1	0	46	138	160	65	10	1	1	0	0	0	0	422
2:00	0	2	50	170	243	63	16	2	1	0	0	0	0	547
3:00	0	10	58	212	275	77	16	0	0	0	0	0	0	648
4:00	6	17	47	283	248	109	9	1	0	0	0	0	0	720
5:00	2	3	35	195	308	114	16	3	0	0	0	0	0	676
6:00	1	3	16	117	252	99	24	1	0	0	0	0	0	513
7:00	3	1	22	114	191	57	6	0	0	0	0	0	0	394
8:00	0	0	12	60	139	89	9	1	0	1	0	0	0	311
9:00	0	0	5	25	72	53	13	4	0	0	0	0	0	172
10:00	0	0	17	14	51	43	7	1	0	2	0	0	0	135
11:00	0	0	0	8	33	14	15	0	0	0	0	0	0	70
Total	21	58	528	2221	3059	1236	226	26	7	5	0	0	2	7389

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: SB

Start Date: 9/10/2021
 End Date: 9/17/2021

9/17/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	2	10	11	14	12	7	0	0	0	0	0	57
1:00	0	0	2	4	12	10	3	3	0	0	0	0	0	34
2:00	2	0	3	9	13	7	3	0	1	1	0	0	0	39
3:00	0	0	0	1	2	6	0	1	0	0	0	0	0	10
4:00	0	1	2	7	3	5	2	3	0	1	0	0	0	24
5:00	0	0	5	13	19	11	6	1	1	0	0	0	0	56
6:00	0	7	31	95	86	32	7	2	0	0	0	0	0	260
7:00	0	4	17	126	170	53	10	1	1	0	0	0	0	382
8:00	4	6	70	114	147	69	5	0	0	0	0	0	1	416
9:00	0	5	21	92	160	65	13	0	0	0	0	0	0	356
10:00	2	3	16	125	131	59	13	5	0	0	0	0	1	355
11:00	0	11	72	134	155	59	3	1	0	0	0	0	1	436
12:00 PM	4	8	35	166	206	55	7	0	0	0	0	0	1	482
1:00	1	5	43	128	181	81	19	4	0	0	0	0	0	462
2:00	0	0	20	151	221	96	6	1	0	0	0	0	2	497
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	13	51	339	1175	1517	622	109	29	3	2	0	0	6	3866
Grand Total	169	538	2758	12607	21651	10147	1818	282	54	13	6	3	13	50059
Stats		Percentile	15th	50th	85th	95th								
		Speed	27.2	32.2	36.6	39.7								
	Mean Speed (Average)		32.0											
	10 MPH Pace Speed		25-34											
	Number in Pace		33880											
	Percent in Pace		67.7%											
	Number > 25 MPH		46594											
	Percent > 25 MPH		93.1%											

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/10/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	1	2	16	82	111	55	2	1	0	0	0	0	0	270
2:00	1	13	69	329	449	221	24	3	0	0	0	0	0	1109
3:00	1	5	58	388	636	218	40	1	1	0	0	0	1	1349
4:00	2	15	84	326	629	274	34	9	2	0	0	0	0	1375
5:00	3	11	43	289	603	295	58	6	0	1	0	0	0	1309
6:00	0	18	65	171	402	252	49	6	0	0	0	0	0	963
7:00	13	10	35	151	319	188	28	4	1	0	0	0	0	749
8:00	5	1	39	112	222	146	35	4	0	0	0	0	0	564
9:00	0	6	18	53	175	125	38	11	1	0	0	0	0	427
10:00	0	2	7	55	121	106	33	5	1	2	0	0	2	334
11:00	0	2	6	16	82	72	25	5	0	0	0	0	0	208
Total	26	85	440	1972	3749	1952	366	55	6	3	0	0	3	8657

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/11/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	1	17	45	25	16	4	1	2	1	0	0	112
1:00	0	0	4	6	13	22	12	2	0	0	0	0	0	59
2:00	0	1	1	7	22	17	9	1	2	0	0	0	0	60
3:00	0	0	3	4	12	7	6	4	1	0	1	0	0	38
4:00	0	0	2	10	18	13	17	3	1	1	0	0	0	65
5:00	0	1	5	15	44	29	16	4	1	0	0	0	0	115
6:00	0	0	7	25	79	115	58	9	3	0	0	0	0	296
7:00	0	6	8	63	192	222	80	6	0	1	0	0	0	578
8:00	1	5	25	94	369	280	57	5	0	0	0	0	0	836
9:00	1	1	12	164	435	307	47	9	0	0	0	0	0	976
10:00	0	4	13	160	507	317	52	7	0	2	0	0	0	1062
11:00	0	2	30	221	561	280	46	5	0	0	0	0	0	1145
12:00 PM	0	3	24	189	516	334	50	3	0	0	0	0	0	1119
1:00	0	3	17	188	486	319	54	9	1	0	0	0	0	1077
2:00	0	0	19	158	415	315	63	9	0	1	0	0	0	980
3:00	0	0	8	104	406	326	77	13	3	0	0	0	0	937
4:00	0	2	4	146	399	312	62	6	2	1	0	0	0	934
5:00	1	1	6	117	356	307	67	5	0	0	0	0	0	860
6:00	0	0	12	62	319	243	45	7	0	0	0	0	0	688
7:00	0	2	15	164	288	125	37	4	3	0	0	0	0	638
8:00	0	1	5	86	214	116	21	9	2	0	0	0	0	454
9:00	0	0	16	65	169	113	25	1	0	0	0	0	0	389
10:00	0	1	4	27	136	98	29	5	1	0	0	0	0	301
11:00	0	0	4	27	63	72	28	5	1	0	1	0	0	201
Total	3	33	245	2119	6064	4314	974	135	22	8	3	0	0	13920

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/12/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	1	12	30	41	15	2	1	1	1	0	0	105
1:00	0	0	2	12	19	27	13	2	0	1	0	0	0	76
2:00	0	0	1	5	12	21	10	4	1	0	0	0	0	54
3:00	0	0	0	1	7	7	6	3	1	1	0	0	0	26
4:00	0	0	0	3	5	8	13	1	0	0	0	0	0	30
5:00	0	0	0	6	21	17	10	2	3	0	0	0	1	60
6:00	0	0	1	12	51	75	29	6	1	0	0	0	0	175
7:00	0	0	6	28	116	161	66	9	3	1	0	0	0	390
8:00	0	6	0	58	217	233	65	9	3	0	0	0	0	591
9:00	1	5	8	82	341	320	62	10	4	0	0	0	0	833
10:00	0	0	5	136	424	360	60	9	1	0	0	0	0	995
11:00	0	0	10	127	460	361	68	7	2	0	0	0	0	1035
12:00 PM	0	0	7	134	480	387	85	5	3	0	0	0	0	1101
1:00	0	0	0	135	421	332	52	7	0	0	0	0	0	947
2:00	6	3	6	84	318	332	96	4	2	0	0	0	0	851
3:00	0	4	10	81	307	320	81	5	0	0	0	0	0	808
4:00	0	0	11	63	267	320	100	6	0	2	0	0	0	769
5:00	0	0	2	39	296	270	87	4	3	1	0	0	0	702
6:00	0	0	0	47	214	238	62	12	1	0	0	0	0	574
7:00	0	0	7	112	276	186	39	2	0	1	0	0	0	623
8:00	0	0	4	60	203	150	33	8	2	0	1	0	0	461
9:00	0	0	5	30	123	102	24	6	0	0	0	0	0	290
10:00	0	2	1	15	47	61	21	9	0	2	0	0	0	158
11:00	0	0	1	10	23	29	16	7	0	1	0	0	0	87
Total	7	21	88	1292	4678	4358	1113	139	31	11	2	0	1	11741

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/13/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	3	12	21	12	2	0	1	0	0	0	51
1:00	0	0	2	3	6	9	6	3	0	0	0	0	0	29
2:00	0	2	0	8	13	13	6	2	0	0	0	0	0	44
3:00	0	1	0	3	3	14	4	1	1	0	0	0	0	27
4:00	0	2	4	11	22	36	24	5	0	1	0	0	0	105
5:00	0	1	8	38	81	117	34	7	1	0	0	0	0	287
6:00	0	0	27	200	367	180	26	2	1	0	0	0	0	803
7:00	0	8	65	357	639	235	30	1	0	1	0	0	0	1336
8:00	1	12	65	288	569	202	19	2	2	0	0	0	1	1161
9:00	2	8	44	164	373	211	37	4	1	0	0	0	0	844
10:00	9	14	90	217	370	173	24	4	0	0	0	0	0	901
11:00	2	14	54	196	347	200	44	3	3	0	1	0	0	864
12:00 PM	9	15	50	207	393	202	29	6	0	0	0	0	0	911
1:00	2	7	58	226	401	196	24	4	2	0	0	0	0	920
2:00	0	6	44	220	426	233	42	1	0	0	0	1	2	975
3:00	4	12	106	336	533	194	22	2	0	0	1	0	1	1211
4:00	15	8	90	437	570	259	31	9	0	0	0	0	0	1419
5:00	7	19	48	270	539	309	46	5	1	0	0	0	0	1244
6:00	0	7	39	175	433	217	49	8	0	1	0	0	0	929
7:00	0	4	20	146	246	152	25	2	0	0	0	0	0	595
8:00	1	4	29	69	163	136	24	4	0	0	0	0	0	430
9:00	1	4	16	41	120	84	20	5	1	0	0	0	0	292
10:00	0	0	4	29	53	59	19	2	3	1	0	0	0	170
11:00	0	0	3	6	34	35	15	5	0	0	0	0	0	98
Total	53	148	866	3650	6713	3487	612	89	16	5	2	1	4	15646

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/14/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	3	6	17	17	10	1	0	0	0	0	0	55
1:00	0	0	3	4	13	7	7	2	0	0	0	0	0	36
2:00	0	0	4	14	12	13	2	0	1	0	0	0	0	46
3:00	0	0	2	2	5	8	7	2	1	0	0	0	0	27
4:00	0	0	3	7	23	33	24	8	3	0	0	0	0	101
5:00	0	0	7	44	84	115	33	8	0	0	0	0	0	291
6:00	0	3	25	155	390	243	32	3	0	0	0	0	0	851
7:00	2	14	85	370	640	228	33	5	1	0	0	1	0	1379
8:00	1	5	65	327	587	238	35	1	0	1	0	0	0	1260
9:00	0	0	52	217	436	252	39	2	1	0	0	0	0	999
10:00	0	6	66	214	318	186	28	3	0	0	0	0	0	821
11:00	2	3	32	163	343	218	33	3	3	0	0	0	0	800
12:00 PM	1	12	39	233	364	185	30	9	0	0	0	0	0	873
1:00	3	5	21	223	349	175	51	1	3	1	1	0	0	833
2:00	4	11	46	189	499	211	34	4	0	0	0	0	0	998
3:00	11	32	98	416	564	168	31	3	0	0	0	0	0	1323
4:00	11	42	94	503	614	182	22	0	1	0	0	0	0	1469
5:00	0	13	58	307	561	302	42	3	0	0	0	0	0	1286
6:00	0	16	16	178	410	253	43	8	0	0	0	0	0	924
7:00	1	8	26	159	300	171	21	3	1	1	0	0	0	691
8:00	1	2	14	68	203	142	27	2	0	0	0	0	0	459
9:00	0	4	15	44	125	97	30	2	2	0	0	0	0	319
10:00	0	0	5	23	56	86	37	5	1	0	0	0	0	213
11:00	0	1	3	15	31	36	17	7	0	0	0	0	0	110
Total	37	178	782	3881	6944	3566	668	85	18	3	1	1	0	16164

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/15/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	0	9	16	17	8	2	0	0	0	0	0	53
1:00	0	0	2	5	17	15	9	2	0	0	0	0	0	50
2:00	0	2	3	13	13	12	5	0	1	0	0	0	0	49
3:00	0	0	0	2	7	12	6	3	1	0	0	0	0	31
4:00	0	2	7	15	21	36	25	5	2	0	0	0	0	113
5:00	0	0	15	22	96	109	47	10	0	0	0	0	0	299
6:00	5	6	39	122	399	213	29	1	0	0	0	0	0	814
7:00	0	8	58	370	624	233	20	1	0	0	0	1	0	1315
8:00	0	16	55	363	562	211	24	5	1	0	0	0	0	1237
9:00	7	16	76	272	432	189	28	2	0	0	0	0	0	1022
10:00	0	23	95	212	325	195	29	2	0	0	0	0	0	881
11:00	5	11	43	245	416	192	23	2	1	1	1	0	0	940
12:00 PM	1	9	64	222	432	239	34	5	0	0	0	0	0	1006
1:00	3	6	37	222	452	210	32	4	3	0	0	0	0	969
2:00	0	17	61	263	426	197	34	4	1	0	0	1	0	1004
3:00	5	11	75	343	531	262	45	8	1	0	0	0	0	1281
4:00	18	25	86	349	677	249	27	4	3	0	0	0	0	1438
5:00	2	40	61	260	677	322	34	3	0	0	1	0	0	1400
6:00	0	21	49	165	431	267	61	3	2	0	0	0	0	999
7:00	0	6	20	197	357	174	30	4	0	0	0	0	0	788
8:00	4	3	12	110	228	120	23	2	0	0	0	0	0	502
9:00	0	5	10	29	129	88	23	2	2	0	0	0	0	288
10:00	0	0	4	24	59	87	16	6	1	0	0	0	0	197
11:00	0	2	10	16	38	35	22	4	0	0	0	0	0	127
Total	50	230	882	3850	7365	3684	634	84	19	1	2	2	0	16803

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/16/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	9	36	34	17	2	1	0	0	0	0	99
1:00	0	0	0	9	17	9	2	2	1	0	0	0	0	40
2:00	0	4	9	4	21	10	5	1	1	1	0	0	0	56
3:00	0	0	2	0	7	11	8	4	1	2	0	0	0	35
4:00	0	5	8	10	19	36	26	10	2	0	0	0	0	116
5:00	1	0	8	35	72	111	44	8	0	0	0	0	0	279
6:00	0	2	34	181	412	148	18	0	0	0	0	0	0	795
7:00	0	13	45	390	569	185	19	4	2	0	0	0	0	1227
8:00	0	3	65	339	542	214	18	1	0	0	0	0	0	1182
9:00	0	7	80	218	450	148	24	0	2	3	0	0	1	933
10:00	0	3	58	214	360	184	27	3	0	0	0	0	1	850
11:00	12	12	103	236	304	195	37	2	1	0	0	0	0	902
12:00 PM	0	5	43	268	451	229	29	2	0	0	0	0	0	1027
1:00	14	9	68	237	406	194	20	1	1	0	0	0	0	950
2:00	0	7	74	258	477	197	35	2	1	0	0	0	0	1051
3:00	0	14	95	361	517	220	39	3	1	0	0	0	0	1250
4:00	6	17	78	445	524	278	20	3	0	0	0	0	0	1371
5:00	2	3	43	299	582	282	50	4	0	0	0	0	0	1265
6:00	1	3	26	182	476	229	49	4	2	0	0	0	0	972
7:00	3	2	31	185	340	119	23	4	0	0	0	0	0	707
8:00	0	6	20	76	214	150	25	1	1	1	0	0	0	494
9:00	0	5	12	34	113	88	21	6	0	0	0	0	0	279
10:00	0	0	23	19	67	60	16	3	2	2	0	0	0	192
11:00	0	0	1	13	54	27	26	1	0	0	0	0	0	122
Total	39	120	926	4022	7030	3358	598	71	19	9	0	0	2	16194

BETA Group, Inc.

701 George Washington Highway
 Lincoln, Rhode Island 02865
 401.333.2382

Project Name: Proposed Industrial Development
 Town/City: Cranston, RI
 Roadway: Comstock Parkway
 Location: North of Western Industrial Drive
 Direction: Combined

Start Date: 9/10/2021
 End Date: 9/17/2021

9/17/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	3	11	19	23	17	7	0	0	0	0	0	81
1:00	0	0	3	9	17	14	8	5	0	0	0	0	0	56
2:00	2	0	5	10	14	12	5	2	1	1	0	0	0	52
3:00	0	0	0	2	13	10	4	1	0	1	0	0	0	31
4:00	0	1	6	12	18	34	29	10	2	1	0	0	0	113
5:00	0	1	6	29	97	122	36	4	2	0	0	0	0	297
6:00	0	11	50	185	339	184	32	2	0	0	0	0	0	803
7:00	0	6	60	346	688	201	23	3	1	1	1	0	0	1330
8:00	12	12	105	407	502	184	22	1	0	0	0	0	1	1246
9:00	1	12	58	232	386	212	30	0	0	0	0	0	0	931
10:00	2	4	44	224	326	174	38	10	0	0	0	0	1	823
11:00	1	20	103	256	395	180	20	5	0	0	0	0	1	981
12:00 PM	5	15	52	320	465	162	19	5	0	0	0	0	1	1044
1:00	1	8	64	249	405	196	32	10	1	0	0	0	0	966
2:00	1	2	38	246	424	233	25	8	0	0	0	0	2	979
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	25	93	597	2538	4108	1941	340	73	7	4	1	0	6	9733
Grand Total	240	908	4826	23324	46651	26660	5305	731	138	44	11	4	16	108858
Stats			Percentile	15th	50th	85th	95th							
			Speed	27.9	32.8	37.2	40.3							
			Mean Speed (Average)	32.7										
			10 MPH Pace Speed	30-39										
			Number in Pace	73245										
			Percent in Pace	67.3%										
			Number > 25 MPH	102884										
			Percent > 25 MPH	94.5%										

A

Intersection Turning Movement Count

Plainfield Pike (Route 14) at Comstock Parkway

Comstock Parkway at Western Industrial Drive

Plainfield Pike (Route 14) at Comstock Parkway

Accurate Counts

978-664-2565

N/S Street : CVS Dwy / Comstock Pkwy
 E/W Street : Plainfield Pike (Route 14)
 City/State : Cranston, RI
 Weather : Clear

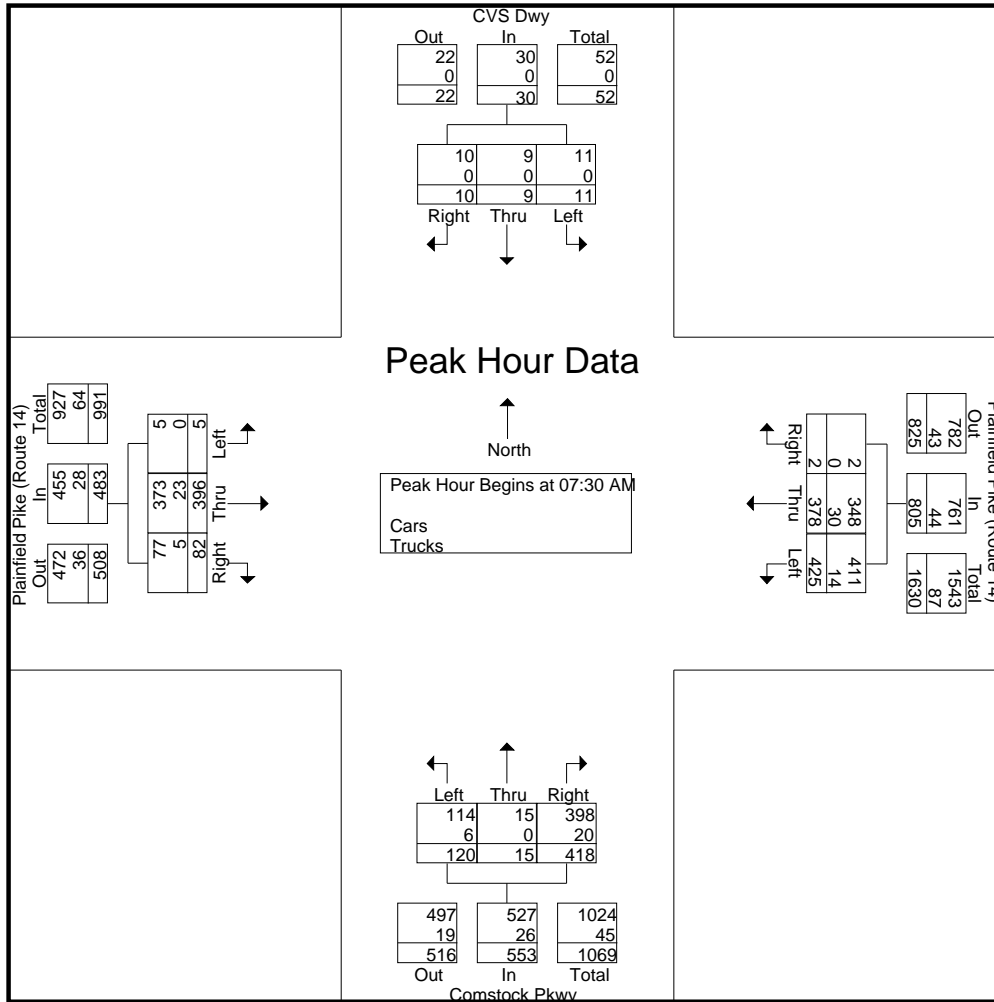
File Name : 10052001
 Site Code : 10052001
 Start Date : 9/22/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	CVS Dwy From North			Plainfield Pike (Route 14) From East			Comstock Pkwy From South			Plainfield Pike (Route 14) From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	2	1	80	82	0	24	0	99	1	84	15	388
07:15 AM	2	0	0	80	83	0	33	1	100	1	89	20	409
07:30 AM	4	1	0	99	91	0	23	5	105	0	103	20	451
07:45 AM	2	2	0	126	106	1	29	1	103	3	94	17	484
Total	8	5	1	385	362	1	109	7	407	5	370	72	1732
08:00 AM	0	3	3	98	90	0	37	4	121	2	103	23	484
08:15 AM	5	3	7	102	91	1	31	5	89	0	96	22	452
08:30 AM	2	2	2	82	87	0	27	2	99	2	96	14	415
08:45 AM	7	2	1	69	98	0	30	7	89	1	91	25	420
Total	14	10	13	351	366	1	125	18	398	5	386	84	1771
Grand Total	22	15	14	736	728	2	234	25	805	10	756	156	3503
Apprch %	43.1	29.4	27.5	50.2	49.7	0.1	22	2.3	75.7	1.1	82	16.9	
Total %	0.6	0.4	0.4	21	20.8	0.1	6.7	0.7	23	0.3	21.6	4.5	
Cars	22	15	14	714	661	2	223	25	774	10	704	148	3312
% Cars	100	100	100	97	90.8	100	95.3	100	96.1	100	93.1	94.9	94.5
Trucks	0	0	0	22	67	0	11	0	31	0	52	8	191
% Trucks	0	0	0	3	9.2	0	4.7	0	3.9	0	6.9	5.1	5.5

Start Time	CVS Dwy From North				Plainfield Pike (Route 14) From East				Comstock Pkwy From South				Plainfield Pike (Route 14) From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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	4	1	0	5	99	91	0	190	23	5	105	133	0	103	20	123	451
07:45 AM	2	2	0	4	126	106	1	233	29	1	103	133	3	94	17	114	484
08:00 AM	0	3	3	6	98	90	0	188	37	4	121	162	2	103	23	128	484
08:15 AM	5	3	7	15	102	91	1	194	31	5	89	125	0	96	22	118	452
Total Volume	11	9	10	30	425	378	2	805	120	15	418	553	5	396	82	483	1871
% App. Total	36.7	30	33.3		52.8	47	0.2		21.7	2.7	75.6		1	82	17		
PHF	.550	.750	.357	.500	.843	.892	.500	.864	.811	.750	.864	.853	.417	.961	.891	.943	.966
Cars	11	9	10	30	411	348	2	761	114	15	398	527	5	373	77	455	1773
% Cars	100	100	100	100	96.7	92.1	100	94.5	95.0	100	95.2	95.3	100	94.2	93.9	94.2	94.8
Trucks	0	0	0	0	14	30	0	44	6	0	20	26	0	23	5	28	98
% Trucks	0	0	0	0	3.3	7.9	0	5.5	5.0	0	4.8	4.7	0	5.8	6.1	5.8	5.2

N/S Street : CVS Dwy / Comstock Pkwy
E/W Street : Plainfield Pike (Route 14)
City/State : Cranston, RI
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : CVS Dwy / Comstock Pkwy
 E/W Street : Plainfield Pike (Route 14)
 City/State : Cranston, RI
 Weather : Clear

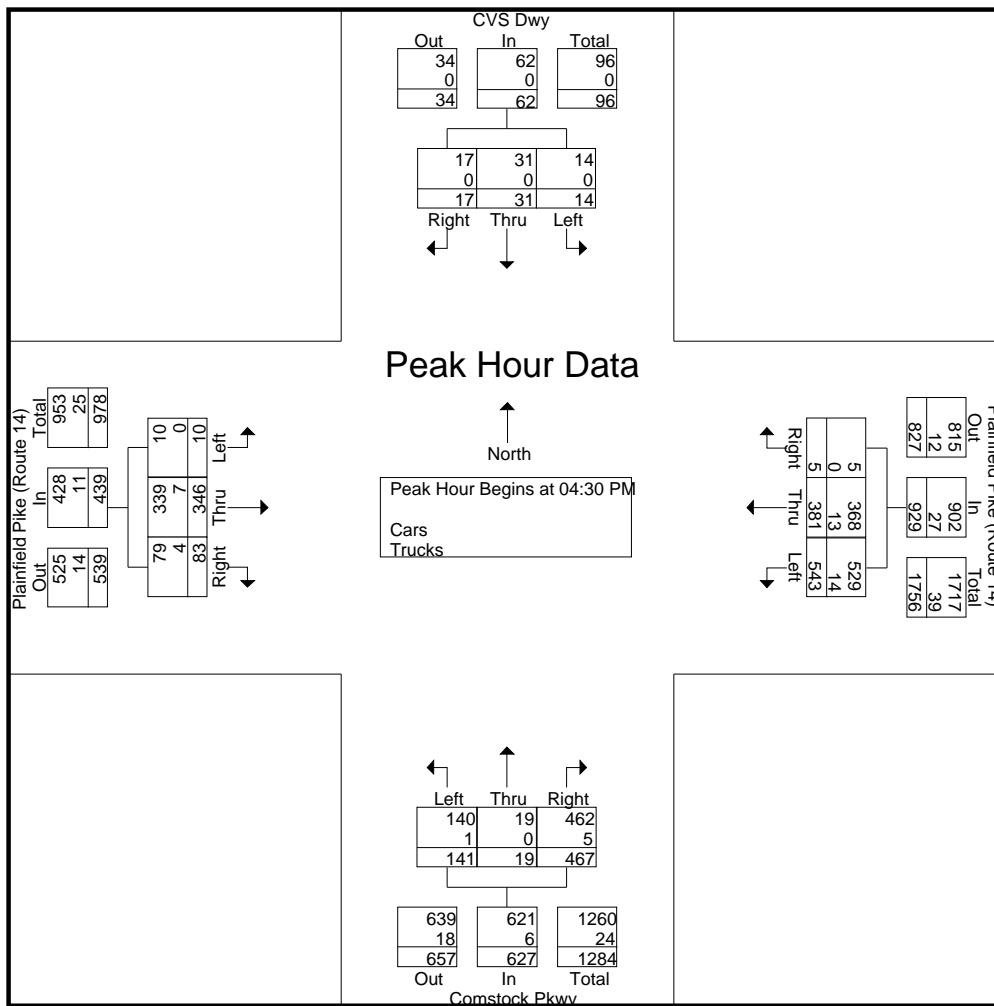
File Name : 10052001
 Site Code : 10052001
 Start Date : 9/22/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	CVS Dwy From North			Plainfield Pike (Route 14) From East			Comstock Pkwy From South			Plainfield Pike (Route 14) From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	11	9	2	137	103	0	37	2	83	3	97	14	498
04:15 PM	8	6	4	147	102	0	25	3	85	1	63	23	467
04:30 PM	2	11	4	137	99	2	40	6	135	2	88	17	543
04:45 PM	5	7	6	129	88	2	32	4	118	2	72	16	481
Total	26	33	16	550	392	4	134	15	421	8	320	70	1989
05:00 PM	6	6	3	136	95	1	39	2	113	4	102	27	534
05:15 PM	1	7	4	141	99	0	30	7	101	2	84	23	499
05:30 PM	8	12	4	146	77	1	32	6	94	1	79	18	478
05:45 PM	5	6	9	156	80	1	23	2	87	1	61	20	451
Total	20	31	20	579	351	3	124	17	395	8	326	88	1962
Grand Total	46	64	36	1129	743	7	258	32	816	16	646	158	3951
Apprch %	31.5	43.8	24.7	60.1	39.5	0.4	23.3	2.9	73.8	2	78.8	19.3	
Total %	1.2	1.6	0.9	28.6	18.8	0.2	6.5	0.8	20.7	0.4	16.4	4	
Cars	46	64	36	1104	720	7	251	32	801	16	632	152	3861
% Cars	100	100	100	97.8	96.9	100	97.3	100	98.2	100	97.8	96.2	97.7
Trucks	0	0	0	25	23	0	7	0	15	0	14	6	90
% Trucks	0	0	0	2.2	3.1	0	2.7	0	1.8	0	2.2	3.8	2.3

Start Time	CVS Dwy From North				Plainfield Pike (Route 14) From East				Comstock Pkwy From South				Plainfield Pike (Route 14) From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	2	11	4	17	137	99	2	238	40	6	135	181	2	88	17	107	543
04:45 PM	5	7	6	18	129	88	2	219	32	4	118	154	2	72	16	90	481
05:00 PM	6	6	3	15	136	95	1	232	39	2	113	154	4	102	27	133	534
05:15 PM	1	7	4	12	141	99	0	240	30	7	101	138	2	84	23	109	499
Total Volume	14	31	17	62	543	381	5	929	141	19	467	627	10	346	83	439	2057
% App. Total	22.6	50	27.4		58.4	41	0.5		22.5	3	74.5		2.3	78.8	18.9		
PHF	.583	.705	.708	.861	.963	.962	.625	.968	.881	.679	.865	.866	.625	.848	.769	.825	.947
Cars	14	31	17	62	529	368	5	902	140	19	462	621	10	339	79	428	2013
% Cars	100	100	100	100	97.4	96.6	100	97.1	99.3	100	98.9	99.0	100	98.0	95.2	97.5	97.9
Trucks	0	0	0	0	14	13	0	27	1	0	5	6	0	7	4	11	44
% Trucks	0	0	0	0	2.6	3.4	0	2.9	0.7	0	1.1	1.0	0	2.0	4.8	2.5	2.1

N/S Street : CVS Dwy / Comstock Pkwy
E/W Street : Plainfield Pike (Route 14)
City/State : Cranston, RI
Weather : Clear



Comstock Parkway at Western Industrial Drive

Accurate Counts

978-664-2565

N/S Street : Comstock Parkway
 E/W Street : Western Industrial Drive
 City/State : Cranston, RI
 Weather : Clear

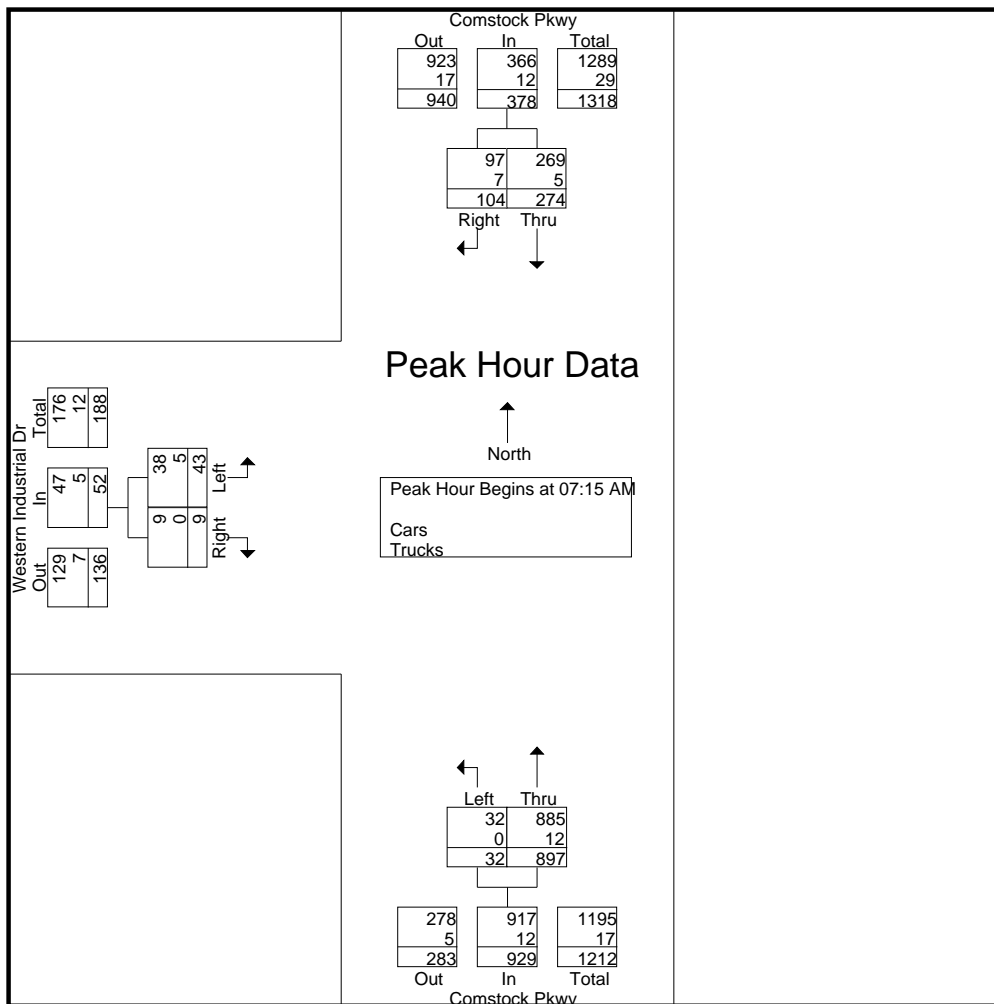
File Name : 10052002
 Site Code : 10052002
 Start Date : 9/22/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Comstock Pkwy From North		Comstock Pkwy From South		Western Industrial Dr From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:00 AM	57	16	8	172	17	2	272
07:15 AM	54	16	3	243	7	1	324
07:30 AM	57	26	7	219	7	2	318
07:45 AM	82	28	15	210	16	3	354
Total	250	86	33	844	47	8	1268
08:00 AM	81	34	7	225	13	3	363
08:15 AM	96	13	8	183	14	3	317
08:30 AM	82	9	4	211	14	2	322
08:45 AM	78	15	8	168	5	3	277
Total	337	71	27	787	46	11	1279
Grand Total	587	157	60	1631	93	19	2547
Apprch %	78.9	21.1	3.5	96.5	83	17	
Total %	23	6.2	2.4	64	3.7	0.7	
Cars	576	146	59	1609	83	17	2490
% Cars	98.1	93	98.3	98.7	89.2	89.5	97.8
Trucks	11	11	1	22	10	2	57
% Trucks	1.9	7	1.7	1.3	10.8	10.5	2.2

Start Time	Comstock Pkwy From North			Comstock Pkwy From South			Western Industrial Dr From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	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	54	16	70	3	243	246	7	1	8	324
07:30 AM	57	26	83	7	219	226	7	2	9	318
07:45 AM	82	28	110	15	210	225	16	3	19	354
08:00 AM	81	34	115	7	225	232	13	3	16	363
Total Volume	274	104	378	32	897	929	43	9	52	1359
% App. Total	72.5	27.5		3.4	96.6		82.7	17.3		
PHF	.835	.765	.822	.533	.923	.944	.672	.750	.684	.936
Cars	269	97	366	32	885	917	38	9	47	1330
% Cars	98.2	93.3	96.8	100	98.7	98.7	88.4	100	90.4	97.9
Trucks	5	7	12	0	12	12	5	0	5	29
% Trucks	1.8	6.7	3.2	0	1.3	1.3	11.6	0	9.6	2.1

N/S Street : Comstock Parkway
E/W Street : Western Industrial Drive
City/State : Cranston, RI
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Comstock Parkway
 E/W Street : Western Industrial Drive
 City/State : Cranston, RI
 Weather : Clear

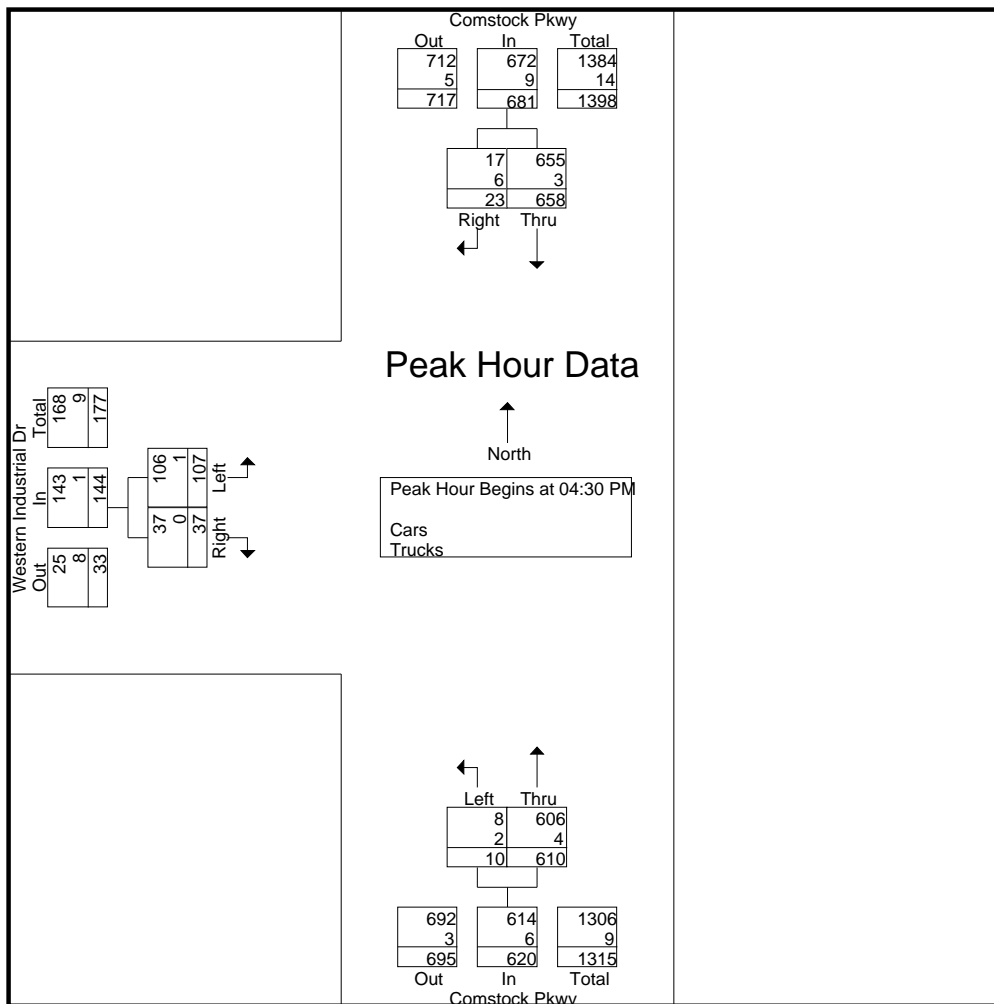
File Name : 10052002
 Site Code : 10052002
 Start Date : 9/22/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Comstock Pkwy From North		Comstock Pkwy From South		Western Industrial Dr From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:00 PM	165	6	4	125	24	12	336
04:15 PM	156	6	1	121	16	6	306
04:30 PM	171	4	3	156	35	18	387
04:45 PM	132	5	3	160	23	9	332
Total	624	21	11	562	98	45	1361
05:00 PM	184	6	2	143	37	7	379
05:15 PM	171	8	2	151	12	3	347
05:30 PM	173	10	2	141	15	14	355
05:45 PM	128	9	0	130	12	2	281
Total	656	33	6	565	76	26	1362
Grand Total	1280	54	17	1127	174	71	2723
Apprch %	96	4	1.5	98.5	71	29	
Total %	47	2	0.6	41.4	6.4	2.6	
Cars	1275	39	15	1115	168	71	2683
% Cars	99.6	72.2	88.2	98.9	96.6	100	98.5
Trucks	5	15	2	12	6	0	40
% Trucks	0.4	27.8	11.8	1.1	3.4	0	1.5

Start Time	Comstock Pkwy From North			Comstock Pkwy From South			Western Industrial Dr From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	171	4	175	3	156	159	35	18	53	387
04:45 PM	132	5	137	3	160	163	23	9	32	332
05:00 PM	184	6	190	2	143	145	37	7	44	379
05:15 PM	171	8	179	2	151	153	12	3	15	347
Total Volume	658	23	681	10	610	620	107	37	144	1445
% App. Total	96.6	3.4		1.6	98.4		74.3	25.7		
PHF	.894	.719	.896	.833	.953	.951	.723	.514	.679	.933
Cars	655	17	672	8	606	614	106	37	143	1429
% Cars	99.5	73.9	98.7	80.0	99.3	99.0	99.1	100	99.3	98.9
Trucks	3	6	9	2	4	6	1	0	1	16
% Trucks	0.5	26.1	1.3	20.0	0.7	1.0	0.9	0	0.7	1.1

N/S Street : Comstock Parkway
E/W Street : Western Industrial Drive
City/State : Cranston, RI
Weather : Clear



APPENDIX B – Stop Sign Delay Study

Western Industrial Drive at Comstock Parkway

BETA Group, Inc.
 701 George Washington Highway
 Lincoln, Rhode Island, 02865
 P:401.333.2382

Project: Proposed Industrial Development
 Town/City: Cranston, RI
 Location: Western Industrial Drive
 Weather: Sunny 60's

File Name : Unsignalized Delay
 Site Code : 01005201
 Start Date : 9/27/2021
 Page No : 1

L n.	No.	Joined Queue	Released From Queue	Delay
1	1	4:31:47 PM	4:31:49 PM	2
1	2	4:32:22 PM	4:32:23 PM	1
1	3	4:32:26 PM	4:32:28 PM	2
1	4	4:32:40 PM	4:33:01 PM	21
1	5	4:32:46 PM	4:33:06 PM	20
1	6	4:32:59 PM	4:33:51 PM	52
1	7	4:33:04 PM	4:33:55 PM	51
1	8	4:33:42 PM	4:34:24 PM	42
1	9	4:34:03 PM	4:34:59 PM	56
1	10	4:34:34 PM	4:35:54 PM	80
1	11	4:35:00 PM	4:36:00 PM	60
1	12	4:35:09 PM	4:36:21 PM	72
1	13	4:35:19 PM	4:36:28 PM	69
1	14	4:35:19 PM	4:37:22 PM	123
1	15	4:36:07 PM	4:37:25 PM	78
1	16	4:36:37 PM	4:37:44 PM	67
1	17	4:38:01 PM	4:38:06 PM	5
1	18	4:38:27 PM	4:39:00 PM	33
1	19	4:38:44 PM	4:39:07 PM	23
1	20	4:38:57 PM	4:39:32 PM	35
1	21	4:39:41 PM	4:39:51 PM	10
1	22	4:39:50 PM	4:39:55 PM	5
1	23	4:40:11 PM	4:40:47 PM	36
1	24	4:40:12 PM	4:40:50 PM	38
1	25	4:40:36 PM	4:40:57 PM	21
1	26	4:40:36 PM	4:41:56 PM	80
1	27	4:41:47 PM	4:42:00 PM	13
1	28	4:42:57 PM	4:43:18 PM	21
1	29	4:44:54 PM	4:44:58 PM	4
1	30	4:46:16 PM	4:46:33 PM	17
1	31	4:46:19 PM	4:46:41 PM	22
1	32	4:46:22 PM	4:46:56 PM	34
1	33	4:48:11 PM	4:48:22 PM	11
1	34	4:49:27 PM	4:49:32 PM	5
1	35	4:50:02 PM	4:50:15 PM	13
1	36	4:52:25 PM	4:52:50 PM	25
1	37	4:53:01 PM	4:53:05 PM	4
1	38	4:53:14 PM	4:53:53 PM	39
1	39	4:53:46 PM	4:54:21 PM	35
1	40	4:54:29 PM	4:54:35 PM	6
1	41	4:55:44 PM	4:55:55 PM	11
1	42	4:56:12 PM	4:56:33 PM	21
1	43	4:58:01 PM	4:58:03 PM	2
1	44	4:58:31 PM	4:58:39 PM	8
1	45	4:59:24 PM	4:59:56 PM	32
1	46	5:00:05 PM	5:00:24 PM	19
1	47	5:00:09 PM	5:00:28 PM	19
1	48	5:00:32 PM	5:00:34 PM	2
1	49	5:00:44 PM	5:00:46 PM	2
1	50	5:01:29 PM	5:01:32 PM	3
1	51	5:02:06 PM	5:02:32 PM	26
1	52	5:02:19 PM	5:03:23 PM	64
1	53	5:02:23 PM	5:03:28 PM	65
1	54	5:02:34 PM	5:03:37 PM	63
1	55	5:02:57 PM	5:04:09 PM	72

BETA Group, Inc.
 701 George Washington Highway
 Lincoln, Rhode Island, 02865
 P:401.333.2382

Project: Proposed Industrial Development
 Town/City: Cranston, RI
 Location: Western Industrial Drive
 Weather: Sunny 60's

File Name : Unsignalized Delay
 Site Code : 01005201
 Start Date : 9/27/2021
 Page No : 2

L n.	No.	Joined Queue	Released From Queue	Delay	
1	56	5:03:01 PM	5:04:42 PM	101	
1	57	5:03:03 PM	5:04:43 PM	100	
1	58	5:03:21 PM	5:04:48 PM	87	
1	59	5:03:22 PM	5:05:02 PM	100	
1	60	5:03:40 PM	5:05:16 PM	96	
1	61	5:03:41 PM	5:05:49 PM	128	
1	62	5:03:41 PM	5:06:10 PM	149	
1	63	5:03:52 PM	5:06:34 PM	162	
1	64	5:04:15 PM	5:06:34 PM	139	
1	65	5:04:57 PM	5:06:39 PM	102	
1	66	5:04:57 PM	5:06:43 PM	106	
1	67	5:04:57 PM	5:06:56 PM	119	
1	68	5:05:14 PM	5:07:25 PM	131	
1	69	5:05:43 PM	5:07:29 PM	106	
1	70	5:06:05 PM	5:07:33 PM	88	
1	71	5:06:27 PM	5:07:37 PM	70	
1	72	5:07:03 PM	5:07:41 PM	38	
1	73	5:07:55 PM	5:08:11 PM	16	
1	74	5:08:04 PM	5:08:18 PM	14	
1	75	5:08:14 PM	5:08:35 PM	21	
1	76	5:08:22 PM	5:08:50 PM	28	
1	77	5:08:33 PM	5:09:00 PM	27	
1	78	5:09:15 PM	5:09:33 PM	18	
1	79	5:10:34 PM	5:10:56 PM	22	
1	80	5:10:37 PM	5:11:00 PM	23	
1	81	5:10:44 PM	5:11:03 PM	19	
1	82	5:11:08 PM	5:11:59 PM	51	
1	83	5:12:29 PM	5:12:32 PM	3	
1	84	5:12:51 PM	5:15:20 PM	149	
1	85	5:12:55 PM	5:15:21 PM	146	
1	86	5:14:48 PM	5:15:22 PM	34	
1	87	5:15:37 PM	5:15:38 PM	1	
1	88	5:15:47 PM	5:15:53 PM	6	
1	89	5:16:29 PM	5:17:00 PM	31	
1	90	5:17:07 PM	5:17:51 PM	44	
1	91	5:17:47 PM	5:17:57 PM	10	
1	92	5:18:39 PM	5:18:46 PM	7	
1	93	5:18:44 PM	5:18:48 PM	4	
1	94	5:19:36 PM	5:19:52 PM	16	
1	95	5:20:23 PM	5:20:30 PM	7	
1	96	5:27:23 PM	5:27:30 PM	7	
1	97	5:27:36 PM	5:27:50 PM	14	
1	98	5:27:37 PM	5:28:00 PM	23	
1	99	5:29:43 PM	5:30:33 PM	50	
2	1	4:31:10 PM	4:31:11 PM	1	
2	2	4:31:16 PM	4:31:22 PM	6	
2	3	4:31:53 PM	4:31:54 PM	1	
2	4	4:33:31 PM	4:33:32 PM	1	
2	5	4:33:37 PM	4:33:47 PM	10	
2	6	4:33:54 PM	4:34:07 PM	13	
2	7	4:34:23 PM	4:34:31 PM	8	
2	8	4:35:07 PM	4:35:53 PM	46	
2	9	4:35:10 PM	4:35:57 PM	47	
2	10	4:35:20 PM	4:35:59 PM	39	
2	11	4:35:28 PM	4:36:20 PM	52	
2	12	4:35:33 PM	4:36:36 PM	63	
2	13	4:35:44 PM	4:36:42 PM	58	

BETA Group, Inc.
 701 George Washington Highway
 Lincoln, Rhode Island, 02865
 P:401.333.2382

Project: Proposed Industrial Development
 Town/City: Cranston, RI
 Location: Western Industrial Drive
 Weather: Sunny 60's

File Name : Unsignalized Delay
 Site Code : 01005201
 Start Date : 9/27/2021
 Page No : 3

L n.	No.	Joined Queue	Released From Queue	Delay	
2	14	4:36:16 PM	4:37:01 PM	45	
2	15	4:36:35 PM	4:37:20 PM	45	
2	16	4:37:00 PM	4:37:24 PM	24	
2	17	4:38:22 PM	4:38:52 PM	30	
2	18	4:38:50 PM	4:39:01 PM	11	
2	19	4:38:57 PM	4:39:07 PM	10	
2	20	4:39:03 PM	4:39:29 PM	26	
2	21	4:39:15 PM	4:39:38 PM	23	
2	22	4:39:33 PM	4:39:42 PM	9	
2	23	4:41:06 PM	4:41:12 PM	6	
2	24	4:42:29 PM	4:42:32 PM	3	
2	25	4:44:13 PM	4:44:28 PM	15	
2	26	4:44:32 PM	4:44:41 PM	9	
2	27	4:46:10 PM	4:46:18 PM	8	
2	28	4:52:19 PM	4:52:47 PM	28	
2	29	4:53:34 PM	4:53:53 PM	19	
2	30	4:55:37 PM	4:55:38 PM	1	
2	31	4:56:20 PM	4:56:34 PM	14	
2	32	5:01:45 PM	5:01:50 PM	5	
2	33	5:03:59 PM	5:04:09 PM	10	
2	34	5:05:42 PM	5:05:48 PM	6	
2	35	5:06:37 PM	5:06:39 PM	2	
2	36	5:07:10 PM	5:07:24 PM	14	
2	37	5:12:06 PM	5:12:12 PM	6	
2	38	5:12:07 PM	5:12:15 PM	8	
2	39	5:15:16 PM	5:15:24 PM	8	
2	40	5:16:19 PM	5:16:27 PM	8	
2	41	5:22:26 PM	5:22:27 PM	1	
2	42	5:23:48 PM	5:24:06 PM	18	
2	43	5:27:46 PM	5:28:00 PM	14	
2	44	5:28:28 PM	5:28:34 PM	6	
2	45	5:29:01 PM	5:29:02 PM	1	
2	46	5:29:19 PM	5:29:21 PM	2	

Summary Information:

4:30:00 PM - 5:31:00 PM	Left Turn	Right Turn
Total Vehicle Count:	99	46
Delayed Vehicle Count:	99	46
Through Vehicle Count:	0	0
Average Stopped Time:	43.97	16.957
Maximum Stopped Time:	162	63
Min. Secs. for Delay:	0	0
Average Queue:	1.23	0.223
Queue Density:	2.63	1.683
Maximum Queue:	9	6
Delay in Vehicle Hour:	1.23	0.22
Total Delay:	4353	780

APPENDIX C – Traffic Crash Data

January 2017 through December 2019

Comstock Parkway – Plainfield Pike (Route 14) to Western Industrial Drive

Crash Data Summary

	Year			Total	Average per Year
	2017	2018	2019		
Intersections					
Comstock Parkway at Plainfield Pike	10	7	8	25	8
Comstock Parkway at Western Industrial Drive	1	1	2	4	1
Corridor					
Comstock Parkway - Plainfield Pike to Western Industrial Parkway	3	2	3	8	3
Total	14	10	13	37	12

Comstock Parkway at Plainfield Pike

	2017	2018	2019	Total	Percent
Collision Type					
Rear End	8	5	2	15	60%
Angle	2	2	4	8	32%
Head-On	0	0	0	0	0%
Pedestrian	0	0	0	0	0%
Sideswipe, Same Direction	0	0	2	2	8%
Sideswipe, Opposite Direction	0	0	0	0	0%
Collision with Object	0	0	0	0	0%
Other	0	0	0	0	0%
Unknown	0	0	0	0	0%
Crash Severity					
Property	9	6	6	21	84%
Injury	1	1	2	4	16%
Light Condition					
Daylight	8	5	5	18	72%
Dawn	0	0	1	1	4%
Dusk	0	0	0	0	0%
Dark - Lighted	2	2	2	6	24%
Dark - Not Lighted	0	0	0	0	0%
Dark - Unknown Lighting	0	0	0	0	0%
Road Condition					
Dry	8	7	7	22	88%
Wet	0	0	1	1	4%
Snow	1	0	0	1	4%
Ice/Frost	1	0	0	1	4%
Other	0	0	0	0	0%
Unknown	0	0	0	0	0%
Hour of Day					
6:00 AM - 9:00 AM	5	1	2	8	32%
9:00 AM - 3:00 PM	4	2	1	7	28%
3:00 PM - 6:00 PM	0	3	4	7	28%
6:00 PM - 6:00 AM	1	1	1	3	12%
Total Crashes:	10	7	8	25	

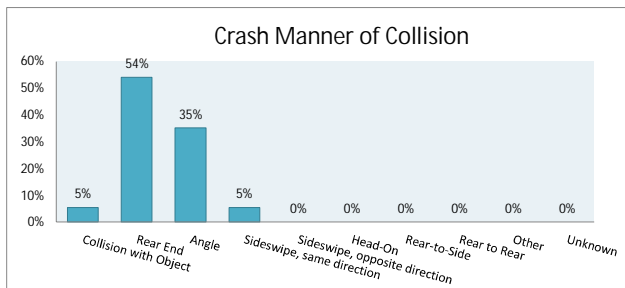
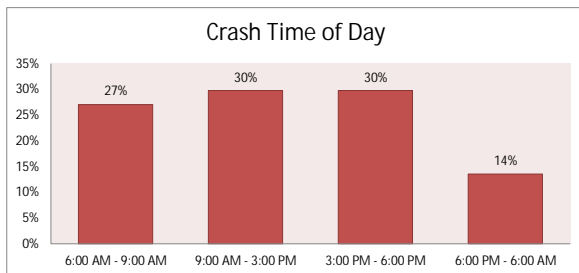
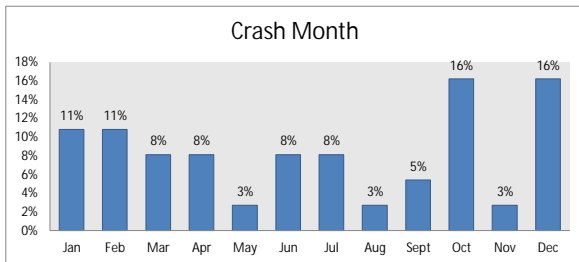
Comstock Parkway at Western Industrial Drive

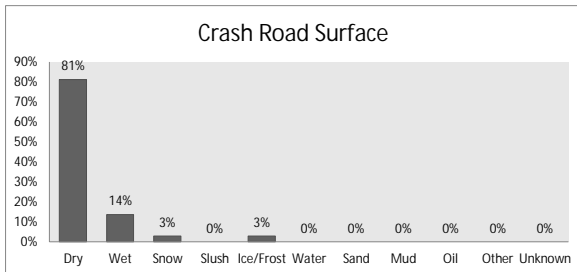
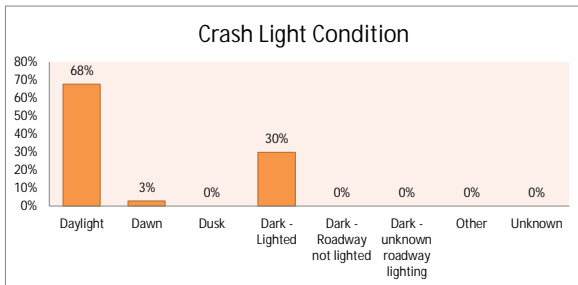
	2017	2018	2019	Total	Percent
Collision Type					
Rear End	1	1	2	4	100%
Angle	0	0	0	0	0%
Head-On	0	0	0	0	0%
Pedestrian	0	0	0	0	0%
Sideswipe, Same Direction	0	0	0	0	0%
Sideswipe, Opposite Direction	0	0	0	0	0%
Collision with Object	0	0	0	0	0%
Other	0	0	0	0	0%
Unknown	0	0	0	0	0%
Crash Severity					
Property	1	1	1	3	75%
Injury	0	0	1	1	25%
Light Condition					
Daylight	0	1	1	2	50%
Dawn	0	0	0	0	0%
Dusk	0	0	0	0	0%
Dark - Lighted	1	0	1	2	50%
Dark - Not Lighted	0	0	0	0	0%
Dark - Unknown Lighting	0	0	0	0	0%
Road Condition					
Dry	1	1	1	3	75%
Wet	0	0	1	1	25%
Snow	0	0	0	0	0%
Other	0	0	0	0	0%
Unknown	0	0	0	0	0%
Hour of Day					
6:00 AM - 9:00 AM	0	0	1	1	25%
9:00 AM - 3:00 PM	0	1	1	2	50%
3:00 PM - 6:00 PM	1	0	0	1	25%
6:00 PM - 6:00 AM	0	0	0	0	0%
Total Crashes:	1	1	2	4	

Comstock Parkway - Plaifield Pike to Western Industrial Parkway

	2017	2018	2019	Total	Percent
Collision Type					
Rear End	0	0	1	1	13%
Angle	2	1	2	5	63%
Head-On	0	0	0	0	0%
Pedestrian	0	0	0	0	0%
Sideswipe, Same Direction	0	0	0	0	0%
Sideswipe, Opposite Direction	0	0	0	0	0%
Collision with Object	1	1	0	2	25%
Other	0	0	0	0	0%
Unknown	0	0	0	0	0%
Crash Severity					
Property	2	2	3	7	88%
Injury	1	0	0	1	13%
Light Condition					
Daylight	2	1	2	5	63%
Dawn	0	0	0	0	0%
Dusk	0	0	0	0	0%
Dark - Lighted	1	1	1	3	38%
Dark - Not Lighted	0	0	0	0	0%
Dark - Unknown Lighting	0	0	0	0	0%
Road Condition					
Dry	2	1	2	5	63%
Wet	1	1	1	3	38%
Snow	0	0	0	0	0%
Other	0	0	0	0	0%
Unknown	0	0	0	0	0%
Hour of Day					
6:00 AM - 9:00 AM	1	0	0	1	13%
9:00 AM - 3:00 PM	0	1	1	2	25%
3:00 PM - 6:00 PM	1	1	1	3	38%
6:00 PM - 6:00 AM	1	0	1	2	25%
Total Crashes:	3	2	3	8	

Crash Data Summary Charts





APPENDIX D – Trip Generation

ITE Trip Generation Summary

Site Trip Distribution

Gross Floor Area Independent Variable

Number of Employees Independent Variable

ITE Land Use Code

ITE Land Use Code 150 – Warehousing

D

ITE Trip Generation Summary

Trip Generation Summary

Summary:

	<u>Description</u>	<u>Enter</u>	<u>Exit</u>	<u>Total</u>
<u>Weekday AM Peak Hour</u>				
ITE Land Use Code 150	Warehousing (GFA)	35	11	46
ITE Land Use Code 150	Warehousing (Employees)	153	60	213
<u>Weekday PM Peak Hour</u>				
ITE Land Use Code 150	Warehousing (GFA)	15	37	52
ITE Land Use Code 150	Warehousing (Employees)	90	160	250

Calculations;

ITE Land Use Code 150 Warehousing (270,000 GFA)

Independent Variable (X) = Thousand Gross Floor Area (GFA)		X = 270
<u>AM Peak</u>	Directional Distribution:	77% Entering 23% Exiting
	T = 0.17 (X)	Enter: 35
	T = 0.17 270	Exit: 11
	T = 46	Total: 46
<u>PM Peak</u>	Directional Distribution:	27% Entering 73% Exiting
	T = 0.19 (X)	Enter: 15
	T = 0.19 270	Exit: 37
	T = 52	Total: 52

ITE Land Use Code 150 Warehousing (400 Employees)

Independent Variable (X) = Number of Employees		X = 400
<u>AM Peak</u>	Directional Distribution:	72% Entering 28% Exiting
	T = 0.52(X)+4.93	Enter: 153
	T = 0.52(400)+4.93	Exit: 60
	T = 213	Total: 213
<u>PM Peak</u>	Directional Distribution:	36% Entering 64% Exiting
	T = 0.98Ln(X)-0.35	Enter: 90
	T = 0.98Ln(400)-0.35	Exit: 160
	T = 250	Total: 250

D

Site Trip Distribution

Gross Floor Area Independent Variable
Number of Employees Independent Variable

Gross Floor Area Independent Variable



Plainfield Pike

Route 14

← 25

5 →

← 2
→ 6

Comstock Parkway

Western Industrial Drive

Site Driveway

30 ↓

↑ 8
↓ 3

SITE

Site Trips:

Enter: 35
Exit: 11
Total: 46

5 ↘



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WEEKDAY TRAFFIC DISTRIBUTION
AM PEAK HOUR BUILD

PROPOSED INDUSTRIAL DEVELOPMENT
CRANSTON, RHODE ISLAND



Plainfield Pike

Route 14

10

3

2 30

Comstock Parkway

Western Industrial Drive

Site Driveway

13

32
5

SITE

Site Trips:

Enter: 15
Exit: 37
Total: 52

2



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WEEKDAY TRAFFIC DISTRIBUTION
PM PEAK HOUR BUILD

PROPOSED INDUSTRIAL DEVELOPMENT
CRANSTON, RHODE ISLAND

Number of Employees Independent Variable



Plainfield Pike

Route 14

110

20

10 35

Comstock Parkway

130

45
15

Western Industrial Drive

Site Driveway

SITE

Site Trips:

Enter: 153

Exit: 60

Total: 213

23



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WEEKDAY TRAFFIC DISTRIBUTION
AM PEAK HOUR BUILD

PROPOSED INDUSTRIAL DEVELOPMENT
CRANSTON, RHODE ISLAND



Plainfield Pike

Route 14

65

10

20 120

Comstock Parkway

75

140
20

Western Industrial Drive

Site Driveway

SITE

Site Trips:

Enter: 90

Exit: 160

Total: 250

15



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WEEKDAY TRAFFIC DISTRIBUTION
PM PEAK HOUR BUILD

PROPOSED INDUSTRIAL DEVELOPMENT
CRANSTON, RHODE ISLAND

D

ITE Land Use Code

ITE Land Use Code 150 – Warehousing

ITE Land Use Code 150 – Warehousing

Land Use: 150

Warehousing

Description

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 13 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 11:30 a.m. and 12:30 p.m. and 3:00 and 4:00 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas.

Source Numbers

184, 331, 406, 411, 443, 579, 583, 596, 598, 611, 619, 642, 752, 869, 875, 876, 914, 940

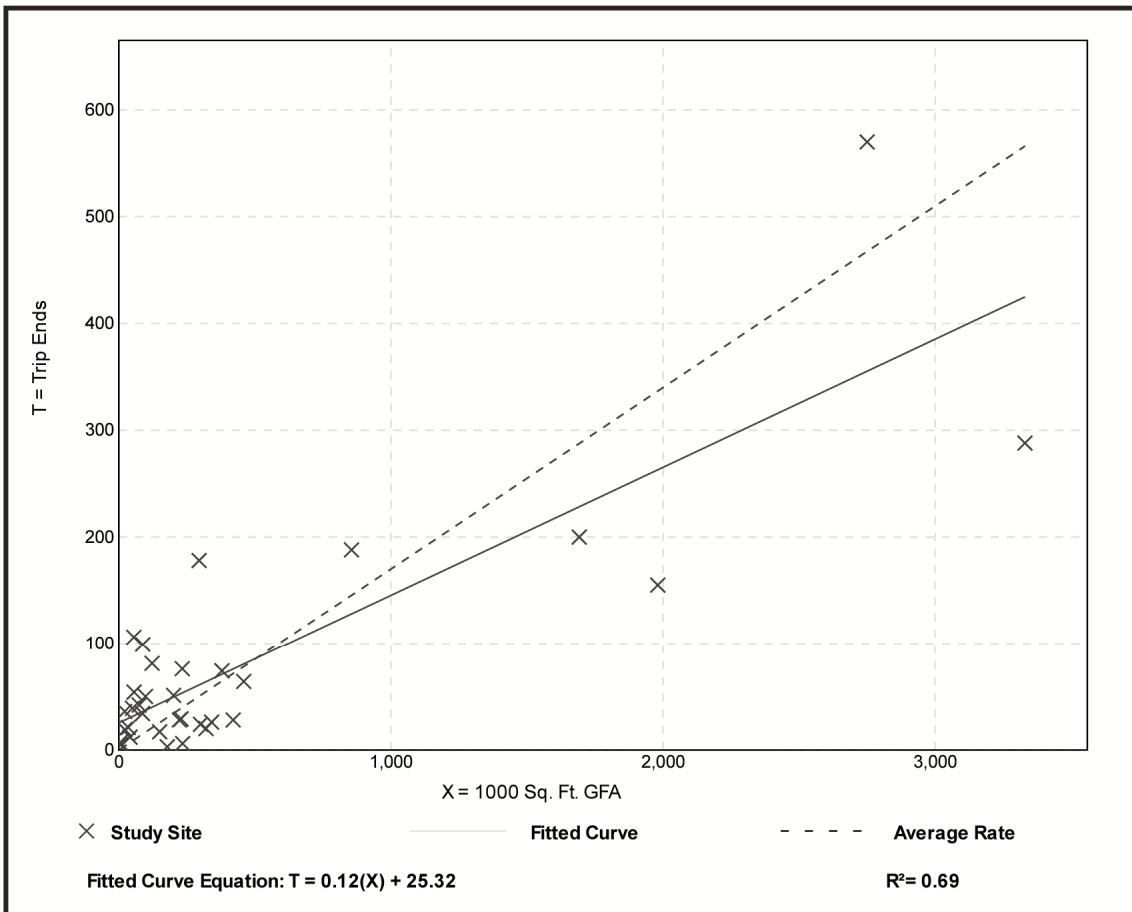
Warehousing (150)

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: 34
 1000 Sq. Ft. GFA: 451
 Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



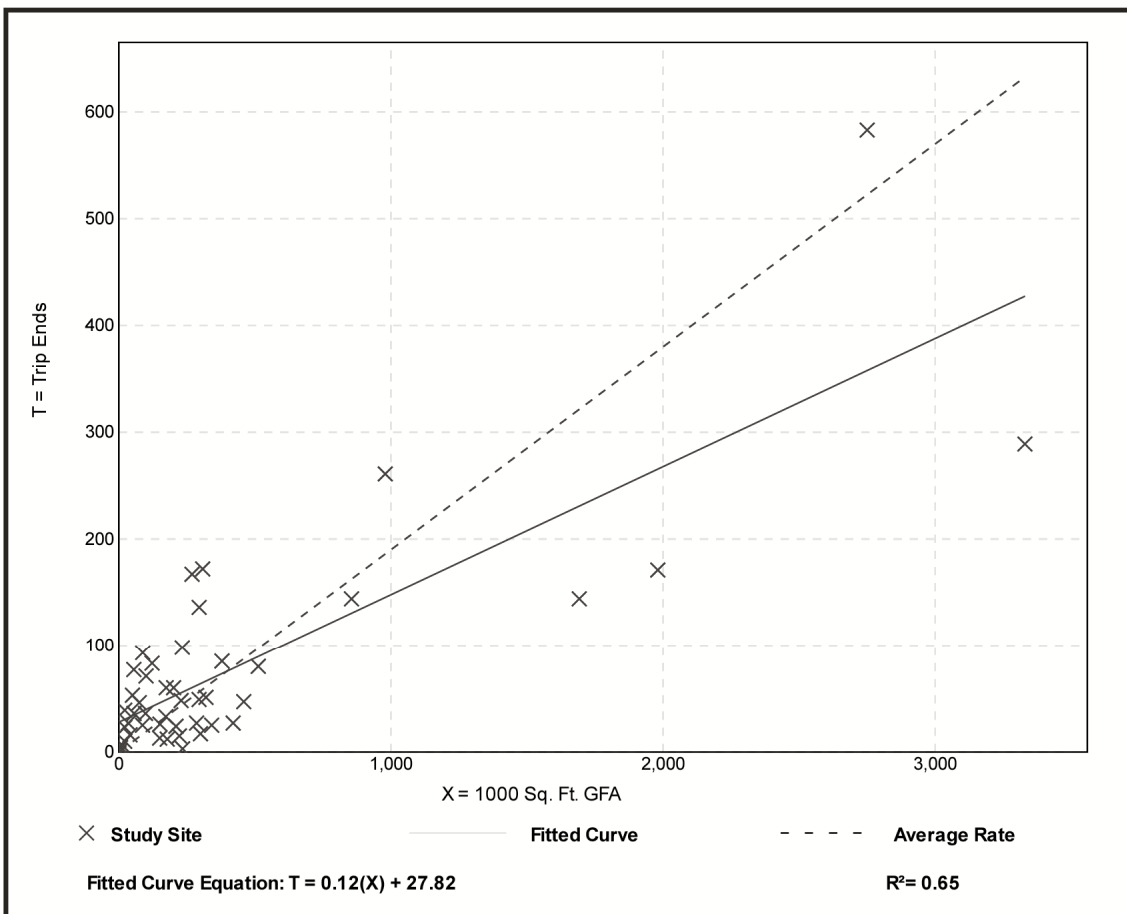
Warehousing (150)

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: 47
 1000 Sq. Ft. GFA: 400
 Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



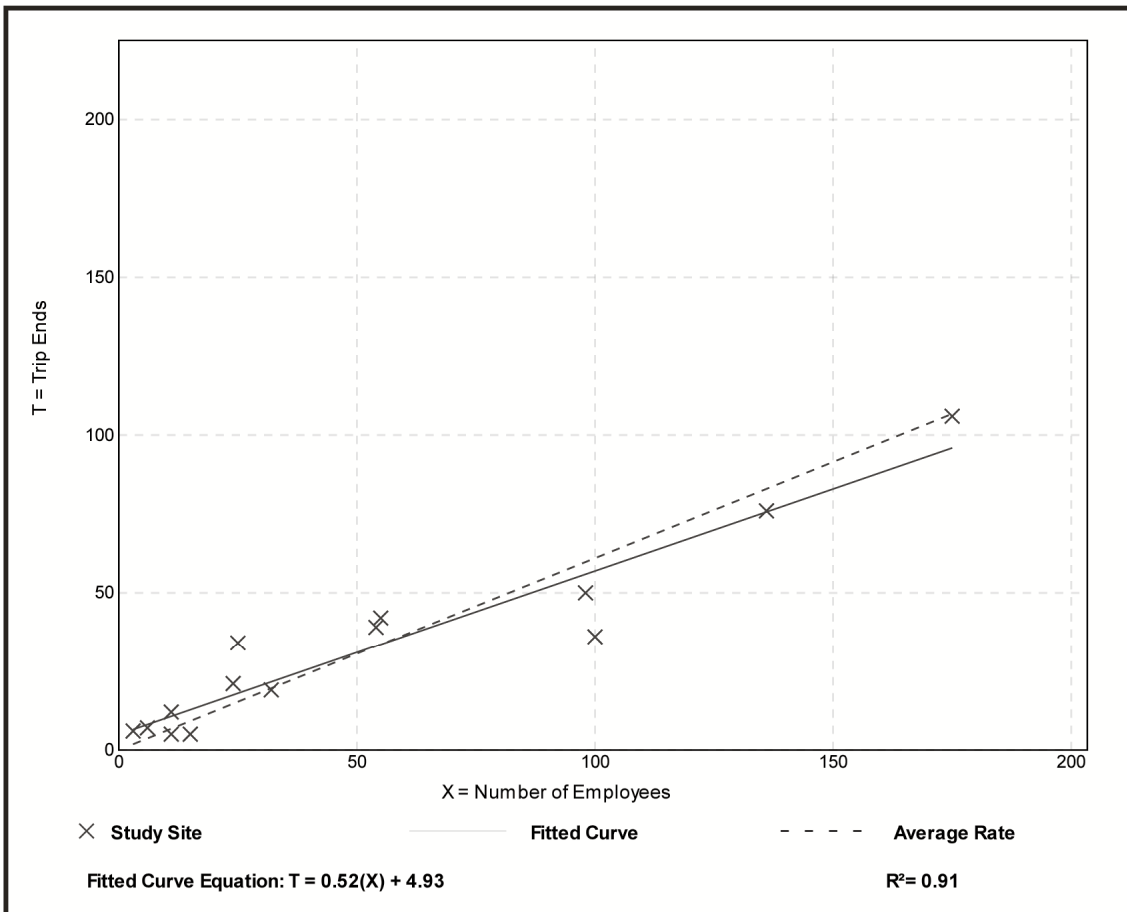
Warehousing (150)

Vehicle Trip Ends vs: Employees
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: 14
 Avg. Num. of Employees: 53
 Directional Distribution: 72% entering, 28% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.61	0.33 - 2.00	0.23

Data Plot and Equation



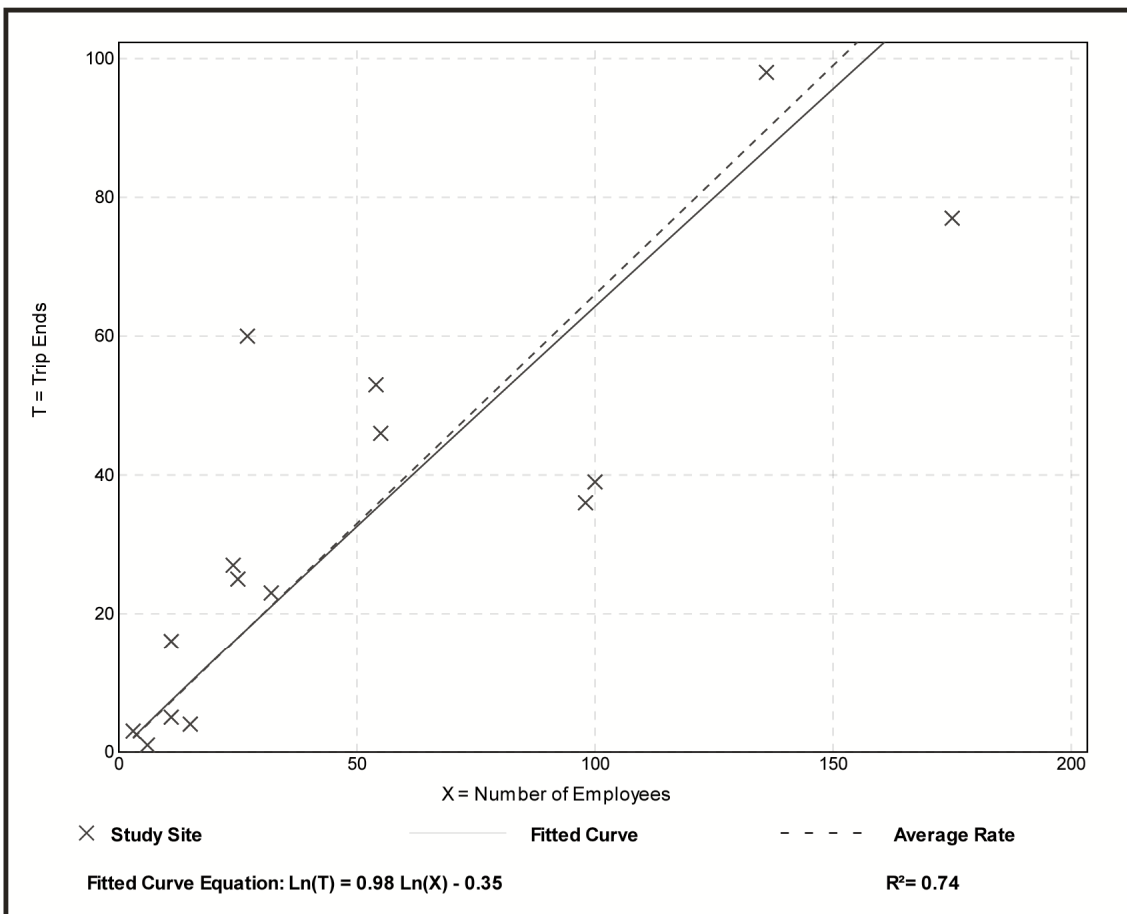
Warehousing (150)

Vehicle Trip Ends vs: Employees
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: 15
 Avg. Num. of Employees: 51
 Directional Distribution: 36% entering, 65% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.66	0.17 - 2.22	0.40

Data Plot and Equation



APPENDIX E – Operational Analysis

Existing Conditions

Plainfield Pike (Route 14) at Comstock Parkway

Comstock Parkway at Western Industrial Drive

Future Build Conditions (Gross Floor Area Independent Variable)

Plainfield Pike (Route 14) at Comstock Parkway

Comstock Parkway at Western Industrial Drive/Site Driveway

Future Build Conditions (Number of Employees Independent Variable)

Plainfield Pike (Route 14) at Comstock Parkway

Comstock Parkway at Western Industrial Drive/Site Driveway

E

Existing Weekday AM / PM(Calibrated) Peak Hour

Plainfield Pike (Route 14) at Comstock Parkway

Comstock Parkway at Western Industrial Drive

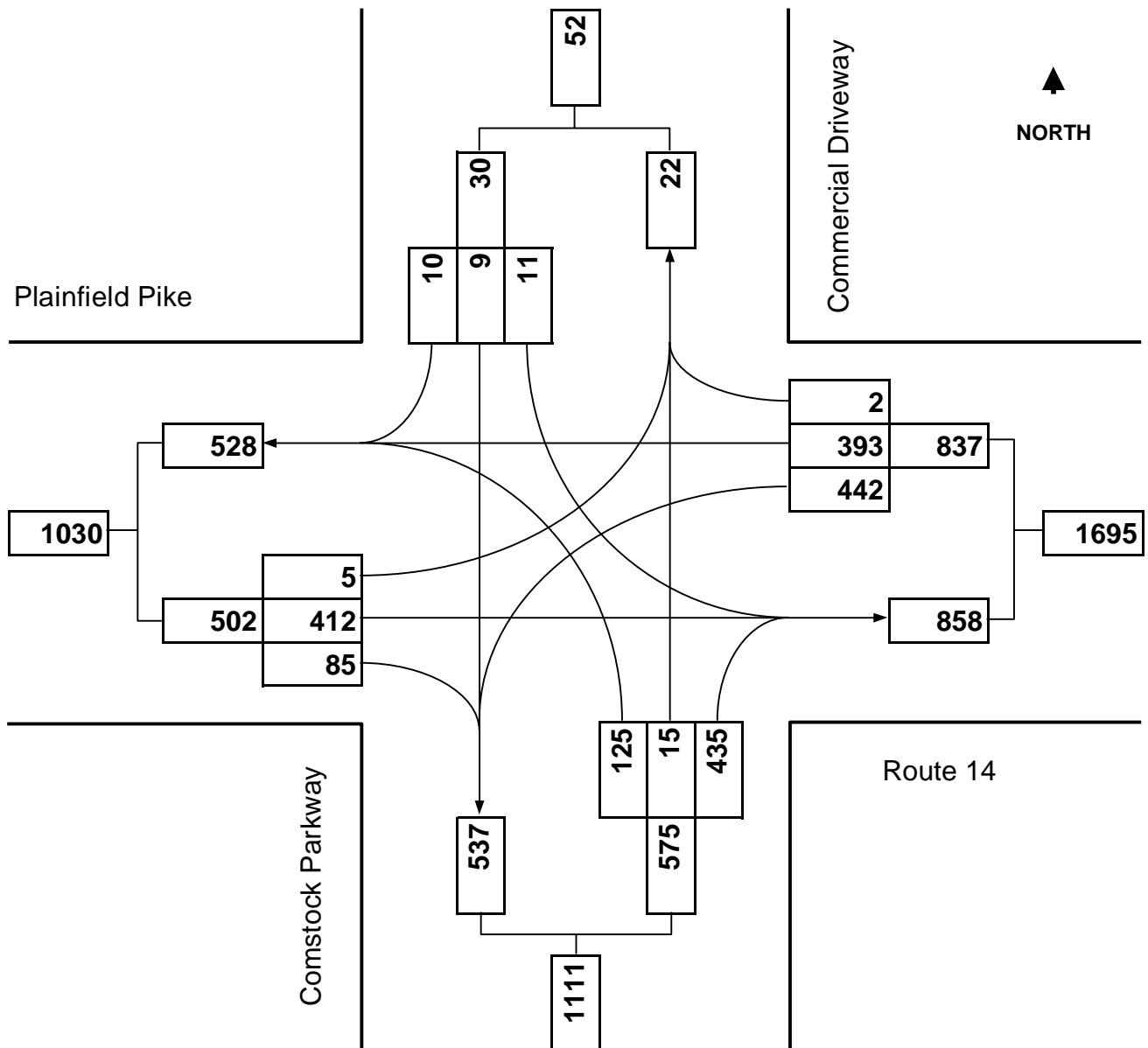
Plainfield Pike (Route 14) at Comstock Parkway



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Turning Movement Diagram

Major Street:	Plainfield Pike (Route 14)	Minor Street:	Comstock Parkway/Com. Dwy.
City/Town:	Cranston, RI	Day of Week:	Weekday
Reference No.:	10052	Peak Period:	7:30 AM - 8:30 AM
Existing:	AM Peak Hour	Future:	n/a



Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	412	85	442	393	2	125	15	435	11	9	10
Future Volume (veh/h)	5	412	85	442	393	2	125	15	435	11	9	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	1811	1856	1781	1900	1826	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	5	438	90	470	418	2	133	16	463	12	10	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	6	6	3	8	0	5	0	5	0	0	0
Cap, veh/h	474	497	102	552	968	5	365	37	604	136	107	78
Arrive On Green	0.01	0.34	0.34	0.21	0.55	0.55	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	1458	300	1767	1771	8	1357	209	1547	268	598	433
Grp Volume(v), veh/h	5	0	528	470	0	420	149	0	463	33	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1757	1767	0	1780	1566	0	1547	1299	0	0
Q Serve(g_s), s	0.1	0.0	15.8	8.3	0.0	7.8	0.0	0.0	10.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	15.8	8.3	0.0	7.8	4.4	0.0	10.0	4.4	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.00	0.89		1.00	0.36		0.33
Lane Grp Cap(c), veh/h	474	0	599	552	0	973	403	0	604	321	0	0
V/C Ratio(X)	0.01	0.00	0.88	0.85	0.00	0.43	0.37	0.00	0.77	0.10	0.00	0.00
Avail Cap(c_a), veh/h	642	0	772	987	0	1420	403	0	604	321	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	17.3	10.2	0.0	7.5	20.6	0.0	14.8	19.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	9.5	3.3	0.0	0.3	0.4	0.0	5.6	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	7.1	2.7	0.0	2.4	1.6	0.0	5.3	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	0.0	26.8	13.5	0.0	7.8	21.0	0.0	20.4	19.2	0.0	0.0
LnGrp LOS	B	A	C	B	A	A	C	A	C	B	A	A
Approach Vol, veh/h		533			890			612				33
Approach Delay, s/veh		26.6			10.8			20.5				19.2
Approach LOS		C			B			C				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	24.5		15.0	4.8	36.0		15.0				
Change Period (Y+Rc), s	4.5	5.5		5.0	4.5	5.5		5.0				
Max Green Setting (Gmax), s	25.5	24.5		10.0	5.5	44.5		10.0				
Max Q Clear Time (g_c+I1), s	10.3	17.8		6.4	2.1	9.8		12.0				
Green Ext Time (p_c), s	1.4	1.2		0.0	0.0	1.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				17.9								
HCM 6th LOS				B								

Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	5	412	442	393	125	15	435	11	9
Future Volume (vph)	5	412	442	393	125	15	435	11	9
Lane Group Flow (vph)	5	528	470	420	0	149	463	0	33
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6		8	1		4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	8	8	1	4	4
Switch Phase									
Minimum Initial (s)	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	8.5	11.5	10.5	11.5	11.0	11.0	10.5	11.0	11.0
Total Split (s)	10.0	30.0	30.0	50.0	15.0	15.0	30.0	15.0	15.0
Total Split (%)	13.3%	40.0%	40.0%	66.7%	20.0%	20.0%	40.0%	20.0%	20.0%
Yellow Time (s)	3.5	4.5	3.5	4.5	3.0	3.0	3.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	5.5	4.5	5.5		5.0	4.5		5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	Min	None	Min	None	None	None	None	None
v/c Ratio	0.01	0.86	0.73	0.36		0.75	0.54		0.14
Control Delay	6.4	37.5	15.2	6.5		56.5	8.9		22.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	6.4	37.5	15.2	6.5		56.5	8.9		22.8
Queue Length 50th (ft)	1	190	81	55		61	67		8
Queue Length 95th (ft)	4	#414	178	150		#169	138		33
Internal Link Dist (ft)		547		561		1714			196
Turn Bay Length (ft)	75		350				150		
Base Capacity (vph)	510	677	818	1276		206	1033		251
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.78	0.57	0.33		0.72	0.45		0.13

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 65.5

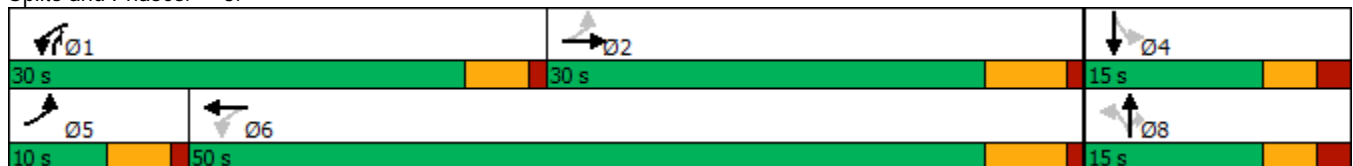
Natural Cycle: 65

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3:

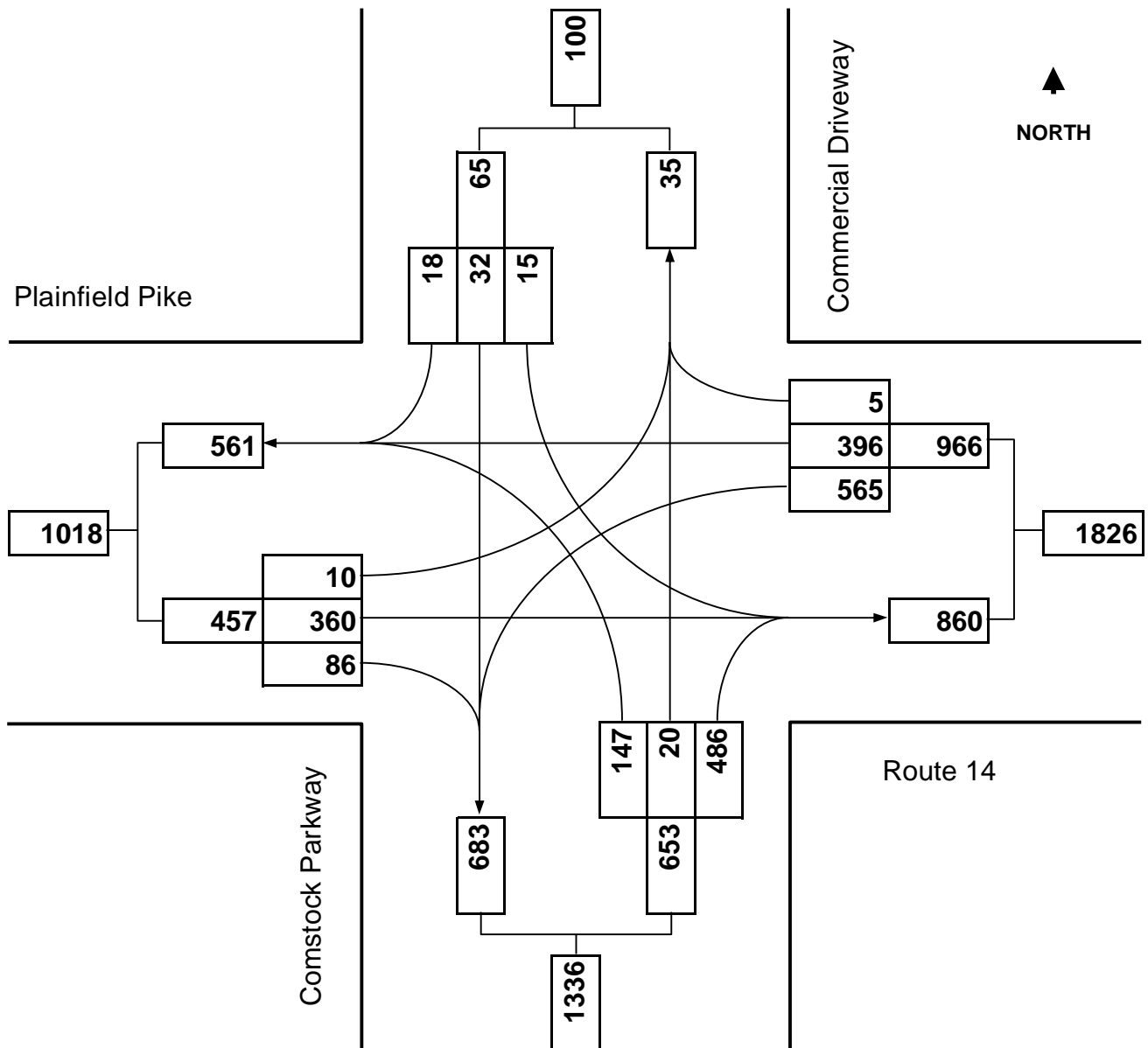




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Turning Movement Diagram

Major Street:	Plainfield Pike (Route 14)	Minor Street:	Comstock Parkway/Com. Dwy.
City/Town:	Cranston, RI	Day of Week:	Weekday
Reference No.:	10052	Peak Period:	4:30 PM - 5:30 PM
Existing:	PM Peak Hour	Future:	n/a



Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	360	86	565	396	5	147	20	486	15	32	18
Future Volume (veh/h)	10	360	86	565	396	5	147	20	486	15	32	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1826	1856	1856	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	10	367	88	577	404	5	150	20	496	15	33	18
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	5	3	3	0	1	0	1	0	0	0
Cap, veh/h	436	428	103	654	1011	13	258	19	710	77	113	43
Arrive On Green	0.01	0.29	0.29	0.27	0.55	0.55	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	1458	350	1767	1829	23	797	106	1598	0	649	243
Grp Volume(v), veh/h	10	0	455	577	0	409	170	0	496	66	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1807	1767	0	1851	903	0	1598	892	0	0
Q Serve(g_s), s	0.2	0.0	13.6	11.7	0.0	7.3	0.0	0.0	10.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	13.6	11.7	0.0	7.3	10.0	0.0	10.0	10.0	0.0	0.0
Prop In Lane	1.00		0.19	1.00		0.01	0.88		1.00	0.23		0.27
Lane Grp Cap(c), veh/h	436	0	530	654	0	1024	276	0	710	233	0	0
V/C Ratio(X)	0.02	0.00	0.86	0.88	0.00	0.40	0.62	0.00	0.70	0.28	0.00	0.00
Avail Cap(c_a), veh/h	591	0	774	965	0	1440	276	0	710	233	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.9	0.0	19.1	10.5	0.0	7.3	24.0	0.0	12.8	20.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	6.4	6.3	0.0	0.2	3.5	0.0	2.8	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.0	4.5	0.0	2.3	2.4	0.0	4.8	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	25.5	16.8	0.0	7.6	27.5	0.0	15.6	20.9	0.0	0.0
LnGrp LOS	B	A	C	B	A	A	C	A	B	C	A	A
Approach Vol, veh/h		465			986			666				66
Approach Delay, s/veh		25.3			13.0			18.6				20.9
Approach LOS		C			B			B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	22.3		15.0	5.1	37.1		15.0				
Change Period (Y+Rc), s	4.5	5.5		5.0	4.5	5.5		5.0				
Max Green Setting (Gmax), s	25.5	24.5		10.0	5.5	44.5		10.0				
Max Q Clear Time (g_c+l1), s	13.7	15.6		12.0	2.2	9.3		12.0				
Green Ext Time (p_c), s	1.7	1.2		0.0	0.0	1.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	360	565	396	147	20	486	15	32
Future Volume (vph)	10	360	565	396	147	20	486	15	32
Lane Group Flow (vph)	10	455	577	409	0	170	496	0	66
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6		8	1		4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	8	8	1	4	4
Switch Phase									
Minimum Initial (s)	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	8.5	11.5	10.5	11.5	11.0	11.0	10.5	11.0	11.0
Total Split (s)	10.0	30.0	30.0	50.0	15.0	15.0	30.0	15.0	15.0
Total Split (%)	13.3%	40.0%	40.0%	66.7%	20.0%	20.0%	40.0%	20.0%	20.0%
Yellow Time (s)	3.5	4.5	3.5	4.5	3.0	3.0	3.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	5.5	4.5	5.5		5.0	4.5		5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	Min	Min	Min	None	None	Min	None	None
v/c Ratio	0.02	0.81	0.81	0.34		0.84	0.51		0.25
Control Delay	6.7	33.6	19.0	6.3		67.3	6.9		24.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	6.7	33.6	19.0	6.3		67.3	6.9		24.8
Queue Length 50th (ft)	1	164	112	53		71	52		18
Queue Length 95th (ft)	5	#319	239	142		#196	127		55
Internal Link Dist (ft)		547		561		1714			196
Turn Bay Length (ft)	75		350				150		
Base Capacity (vph)	479	719	851	1388		213	1118		278
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.63	0.68	0.29		0.80	0.44		0.24

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 64.4

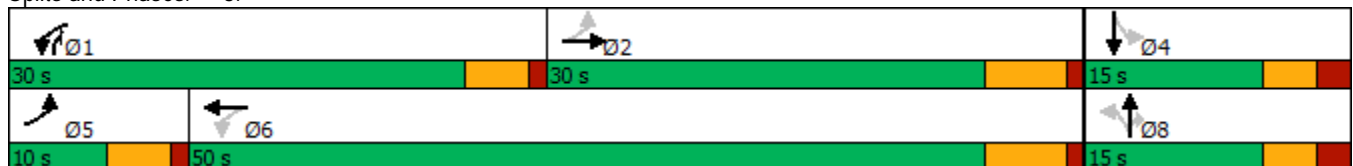
Natural Cycle: 70

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3:



Comstock Parkway at Western Industrial Drive



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Turning Movement Diagram

Major Street: Comstock Parkway

Minor Street: Western Industrial Drive

City/Town: Cranston, RI

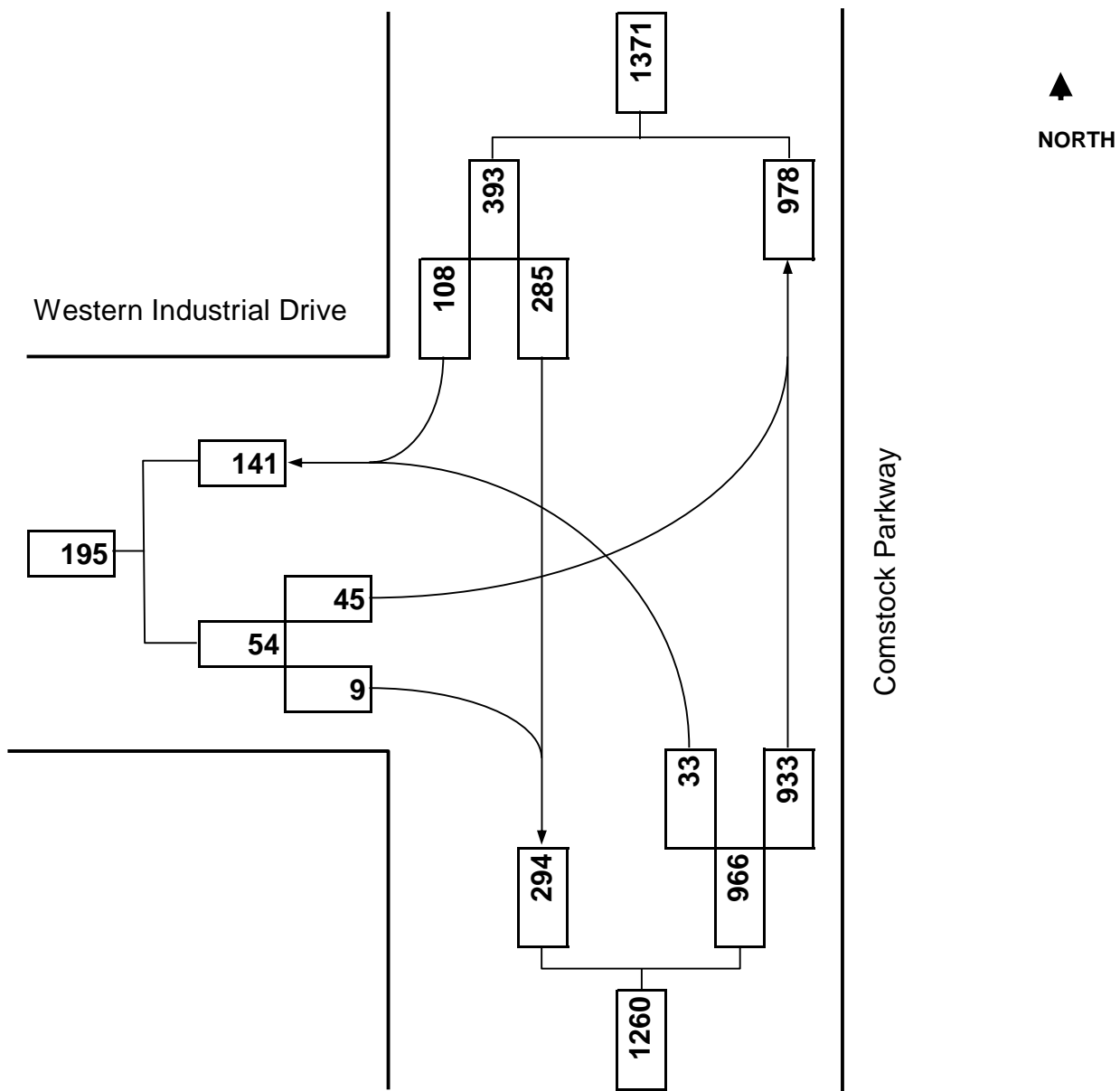
Day of Week: Weekday

Reference No.: 10052

Peak Period: 7:30 AM - 8:30 AM

Existing: AM Peak Hour

Future: n/a



HCS7 Two-Way Stop-Control Report

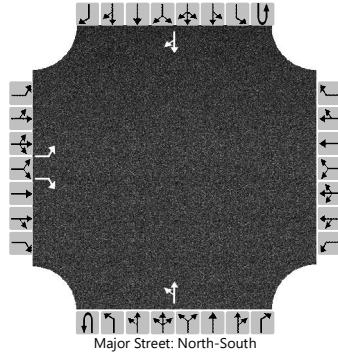
General Information

Analyst	Traffic Dept.
Agency/Co.	BETA Group
Date Performed	9/29/2021
Analysis Year	2021
Time Analyzed	Exist. AM Peak
Intersection Orientation	North-South
Project Description	Prop. Industrial Development

Site Information

Intersection	Comstock at Western Ind.
Jurisdiction	Cranston, RI
East/West Street	Western Industrial Drive
North/South Street	Comstock Parkway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	0	1		0	0	0		0	1	0		0	1	0	
Configuration		L		R						LT						TR	
Volume (veh/h)		45		9						33	933				285	108	
Percent Heavy Vehicles (%)		12		0						0							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.52		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.61		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		48		10						35								
Capacity, c (veh/h)		133		688						1152								
v/c Ratio		0.36		0.01						0.03								
95% Queue Length, Q ₉₅ (veh)		1.5		0.0						0.1								
Control Delay (s/veh)		46.8		10.3						8.2								
Level of Service (LOS)		E		B						A								
Approach Delay (s/veh)		40.7									0.8							
Approach LOS		E																



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Turning Movement Diagram

Major Street: Comstock Parkway

Minor Street: Western Industrial Drive

City/Town: Cranston, RI

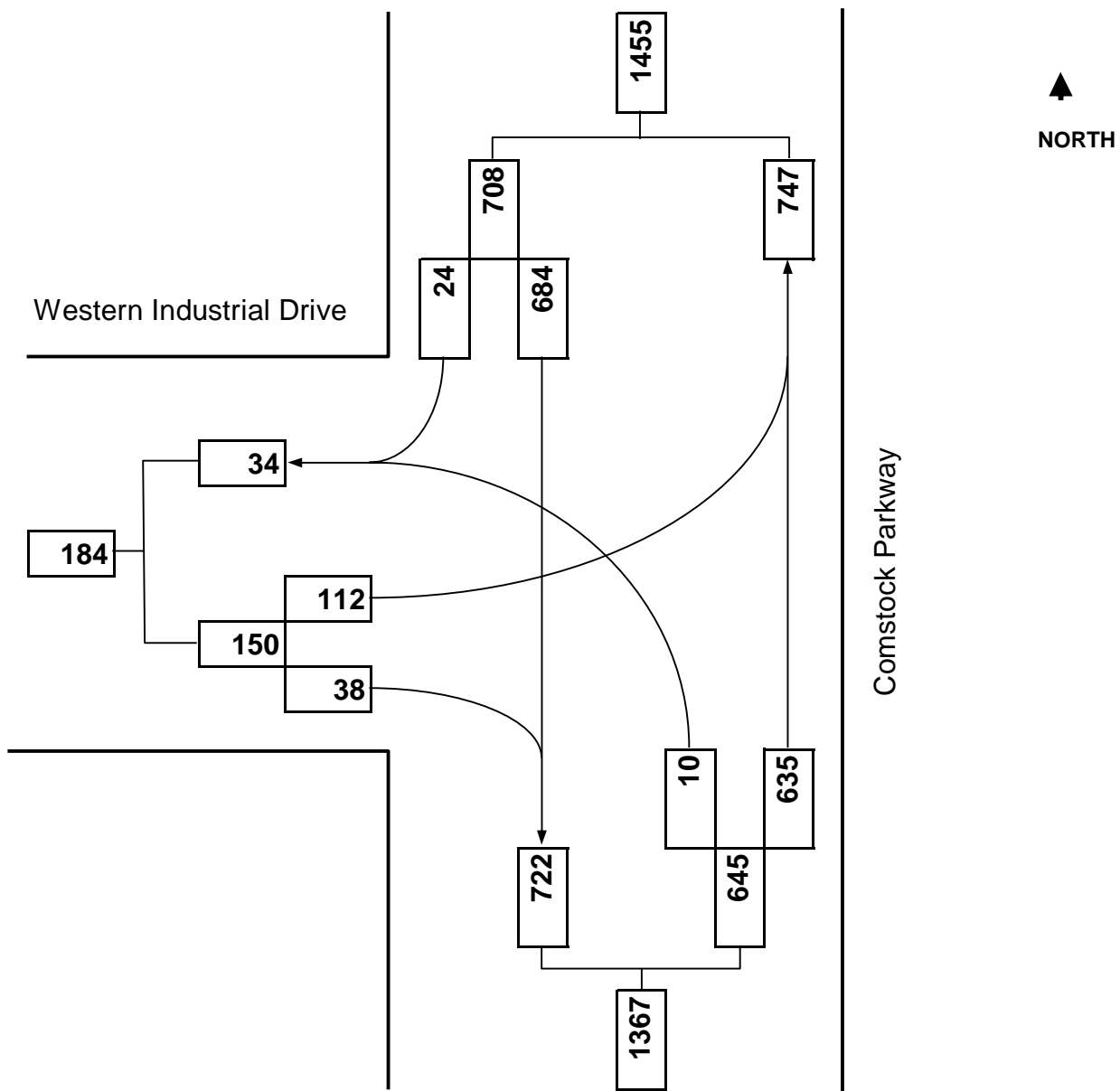
Day of Week: Weekday

Reference No.: 10052

Peak Period: 4:30 PM - 5:30 PM

Existing: PM Peak Hour

Future: n/a



HCS7 Two-Way Stop-Control Report

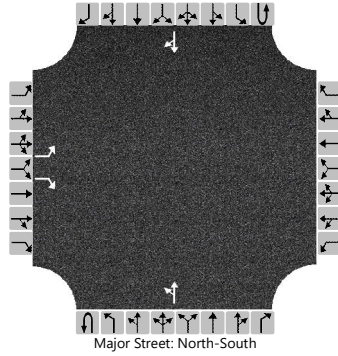
General Information

Analyst	Traffic Dept.
Agency/Co.	BETA Group
Date Performed	9/29/2021
Analysis Year	2021
Time Analyzed	Exist. PM Peak (Cal.)
Intersection Orientation	North-South
Project Description	Prop. Industrial Development

Site Information

Intersection	Comstock at Western Ind.
Jurisdiction	Cranston, RI
East/West Street	Western Industrial Drive
North/South Street	Comstock Parkway
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	0	1		0	0	0		0	1	0		0	1	0	
Configuration		L		R						LT						TR	
Volume (veh/h)		112		38						10	635				684	24	
Percent Heavy Vehicles (%)		1		0						20							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		5.65		7.15						4.30						
Base Follow-Up Headway (sec)		3.0		3.3						2.2						
Follow-Up Headway (sec)		3.01		3.30						2.38						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		120		41						11								
Capacity, c (veh/h)		207		341						775								
v/c Ratio		0.58		0.12						0.01								
95% Queue Length, Q ₉₅ (veh)		3.2		0.4						0.0								
Control Delay (s/veh)		44.2		17.0						9.7								
Level of Service (LOS)		E		C						A								
Approach Delay (s/veh)		37.3									0.4							
Approach LOS		E																

E

**Future 2024 Build Weekday AM / PM(Calibrated) Peak Hour
(Gross Floor Area Independent Variable)**

Plainfield Pike (Route 14) at Comstock Parkway
Comstock Parkway at Western Industrial Drive/Site Driveway

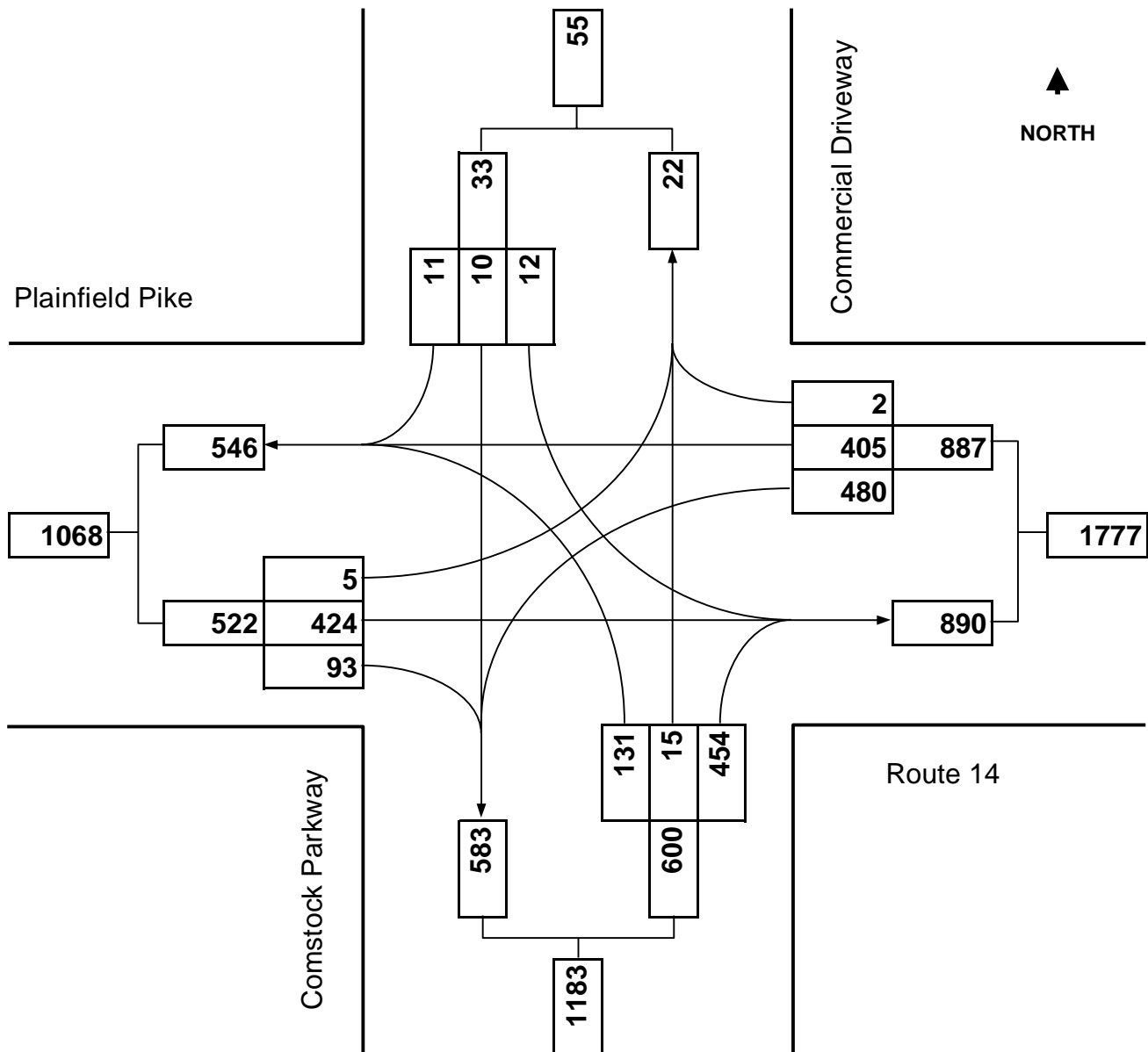
Plainfield Pike (Route 14) at Comstock Parkway



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Turning Movement Diagram

Major Street:	Plainfield Pike (Route 14)	Minor Street:	Comstock Parkway/Com. Dwy.
City/Town:	Cranston, RI	Day of Week:	Weekday
Reference No.:	10052	Peak Period:	AM Peak Hour
Existing:	n/a	Future:	2024 Build



Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI

10/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↕	
Traffic Volume (veh/h)	5	424	93	480	405	2	131	15	454	12	10	11
Future Volume (veh/h)	5	424	93	480	405	2	131	15	454	12	10	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	1811	1856	1781	1900	1826	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	5	451	99	511	431	2	139	16	483	13	11	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	6	6	3	8	0	5	0	5	0	0	0
Cap, veh/h	448	485	106	577	1026	5	303	28	668	102	83	55
Arrive On Green	0.01	0.34	0.34	0.25	0.58	0.58	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	1438	316	1767	1772	8	1071	152	1547	142	449	296
Grp Volume(v), veh/h	5	0	550	511	0	433	155	0	483	36	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1754	1767	0	1780	1223	0	1547	887	0	0
Q Serve(g_s), s	0.1	0.0	19.7	12.6	0.0	8.8	0.0	0.0	12.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	19.7	12.6	0.0	8.8	8.4	0.0	12.0	8.5	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.00	0.90		1.00	0.36		0.33
Lane Grp Cap(c), veh/h	448	0	591	577	0	1031	331	0	668	239	0	0
V/C Ratio(X)	0.01	0.00	0.93	0.89	0.00	0.42	0.47	0.00	0.72	0.15	0.00	0.00
Avail Cap(c_a), veh/h	591	0	608	834	0	1165	331	0	668	239	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.1	0.0	20.8	14.5	0.0	7.6	25.0	0.0	15.2	22.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	20.7	7.8	0.0	0.3	0.7	0.0	3.6	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	10.7	5.4	0.0	2.8	2.2	0.0	5.8	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	0.0	41.5	22.3	0.0	7.9	25.6	0.0	18.8	22.4	0.0	0.0
LnGrp LOS	B	A	D	C	A	A	C	A	B	C	A	A
Approach Vol, veh/h		555			944			638				36
Approach Delay, s/veh		41.3			15.7			20.5				22.4
Approach LOS		D			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.6	27.4		17.0	4.8	43.1		17.0				
Change Period (Y+Rc), s	4.5	5.5		5.0	4.5	5.5		5.0				
Max Green Setting (Gmax), s	25.5	22.5		12.0	5.5	42.5		12.0				
Max Q Clear Time (g_c+I1), s	14.6	21.7		10.5	2.1	10.8		14.0				
Green Ext Time (p_c), s	1.4	0.2		0.0	0.0	1.6		0.0				

Intersection Summary

HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	5	424	480	405	131	15	454	12	10
Future Volume (vph)	5	424	480	405	131	15	454	12	10
Lane Group Flow (vph)	5	550	511	433	0	155	483	0	36
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6		8	1		4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	8	8	1	4	4
Switch Phase									
Minimum Initial (s)	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	8.5	11.5	10.5	11.5	11.0	11.0	10.5	11.0	11.0
Total Split (s)	10.0	28.0	30.0	48.0	17.0	17.0	30.0	17.0	17.0
Total Split (%)	13.3%	37.3%	40.0%	64.0%	22.7%	22.7%	40.0%	22.7%	22.7%
Yellow Time (s)	3.5	4.5	3.5	4.5	3.0	3.0	3.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	5.5	4.5	5.5		5.0	4.5		5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	Min	Min	Min	None	None	Min	None	None
v/c Ratio	0.01	0.93	0.80	0.37		0.75	0.56		0.14
Control Delay	7.2	49.7	21.9	7.2		52.9	9.6		21.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	7.2	49.7	21.9	7.2		52.9	9.6		21.7
Queue Length 50th (ft)	1	233	128	66		65	80		9
Queue Length 95th (ft)	4	#462	239	169		#160	154		34
Internal Link Dist (ft)		547		561		1714			196
Turn Bay Length (ft)	75		350				150		
Base Capacity (vph)	485	591	768	1194		233	998		287
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.93	0.67	0.36		0.67	0.48		0.13

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 68.4

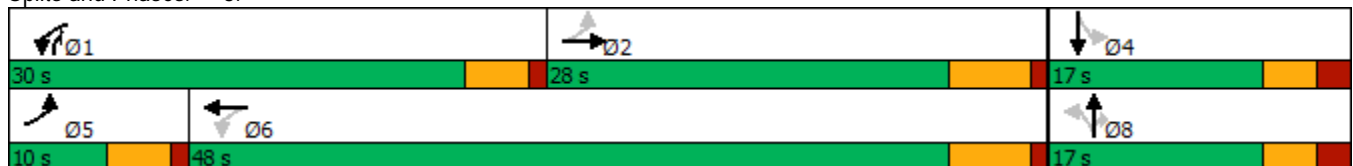
Natural Cycle: 75

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3:

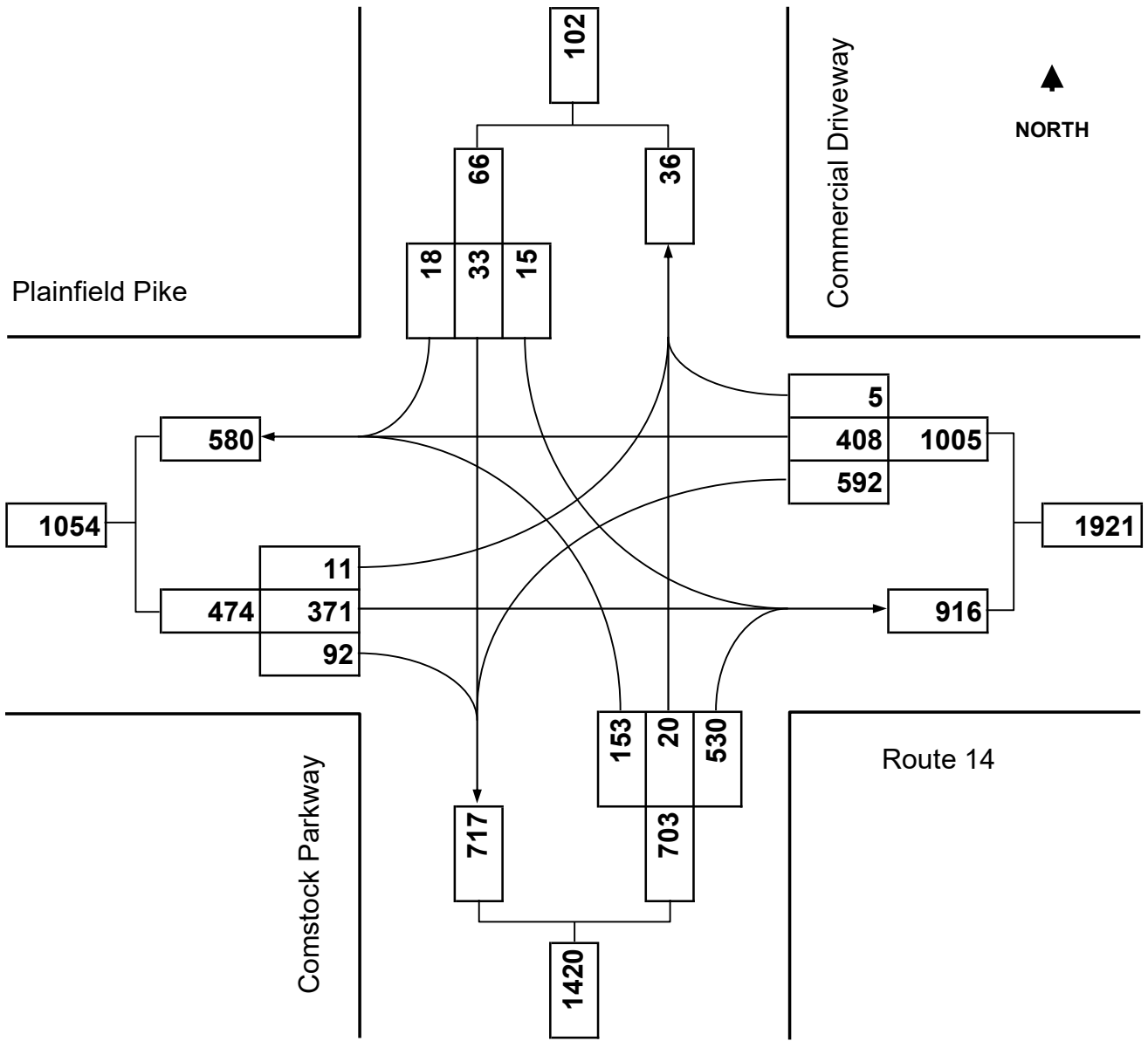




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Turning Movement Diagram

Major Street:	Plainfield Pike (Route 14)	Minor Street:	Comstock Parkway/Com. Dwy.
City/Town:	Cranston, RI	Day of Week:	Weekday
Reference No.:	10052	Peak Period:	PM Peak Hour
Existing:	n/a	Future:	2024 Build



Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI

10/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	371	92	592	408	5	153	20	530	15	33	18
Future Volume (veh/h)	10	371	92	592	408	5	153	20	530	15	33	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1826	1856	1856	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	10	379	94	604	416	5	156	20	541	15	34	18
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	5	3	3	0	1	0	1	0	0	0
Cap, veh/h	416	424	105	666	1053	13	235	17	762	68	110	40
Arrive On Green	0.01	0.29	0.29	0.29	0.58	0.58	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	1447	359	1767	1830	22	710	91	1598	0	598	220
Grp Volume(v), veh/h	10	0	473	604	0	421	176	0	541	67	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1806	1767	0	1852	801	0	1598	818	0	0
Q Serve(g_s), s	0.3	0.0	16.4	15.6	0.0	8.1	0.0	0.0	12.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	16.4	15.6	0.0	8.1	12.0	0.0	12.0	12.0	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.01	0.89		1.00	0.22		0.27
Lane Grp Cap(c), veh/h	416	0	529	666	0	1066	252	0	762	218	0	0
V/C Ratio(X)	0.02	0.00	0.89	0.91	0.00	0.39	0.70	0.00	0.71	0.31	0.00	0.00
Avail Cap(c_a), veh/h	551	0	623	840	0	1207	252	0	762	218	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	22.1	13.6	0.0	7.6	27.6	0.0	13.5	22.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	13.7	11.2	0.0	0.2	7.7	0.0	2.9	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	8.4	7.1	0.0	2.7	3.2	0.0	6.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	35.8	24.8	0.0	7.8	35.2	0.0	16.4	23.4	0.0	0.0
LnGrp LOS	B	A	D	C	A	A	D	A	B	C	A	A
Approach Vol, veh/h		483			1025			717				67
Approach Delay, s/veh		35.4			17.9			21.0				23.4
Approach LOS		D			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.6	24.6		17.0	5.2	43.0		17.0				
Change Period (Y+Rc), s	4.5	5.5		5.0	4.5	5.5		5.0				
Max Green Setting (Gmax), s	25.5	22.5		12.0	5.5	42.5		12.0				
Max Q Clear Time (g_c+I1), s	17.6	18.4		14.0	2.3	10.1		14.0				
Green Ext Time (p_c), s	1.5	0.8		0.0	0.0	1.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				22.7								
HCM 6th LOS				C								

Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	371	592	408	153	20	530	15	33
Future Volume (vph)	10	371	592	408	153	20	530	15	33
Lane Group Flow (vph)	10	473	604	421	0	176	541	0	67
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6		8	1		4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	8	8	1	4	4
Switch Phase									
Minimum Initial (s)	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	8.5	11.5	10.5	11.5	11.0	11.0	10.5	11.0	11.0
Total Split (s)	10.0	28.0	30.0	48.0	17.0	17.0	30.0	17.0	17.0
Total Split (%)	13.3%	37.3%	40.0%	64.0%	22.7%	22.7%	40.0%	22.7%	22.7%
Yellow Time (s)	3.5	4.5	3.5	4.5	3.0	3.0	3.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	5.5	4.5	5.5		5.0	4.5		5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	Min	Min	Min	None	None	Min	None	None
v/c Ratio	0.02	0.87	0.84	0.35		0.76	0.55		0.24
Control Delay	7.3	41.9	24.2	6.9		51.9	8.3		24.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	7.3	41.9	24.2	6.9		51.9	8.3		24.0
Queue Length 50th (ft)	1	199	161	62		79	79		20
Queue Length 95th (ft)	5	#365	#343	159		#174	158		54
Internal Link Dist (ft)		547		561		1714			196
Turn Bay Length (ft)	75		350				150		
Base Capacity (vph)	451	605	786	1282		259	1053		305
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.78	0.77	0.33		0.68	0.51		0.22

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 69.5

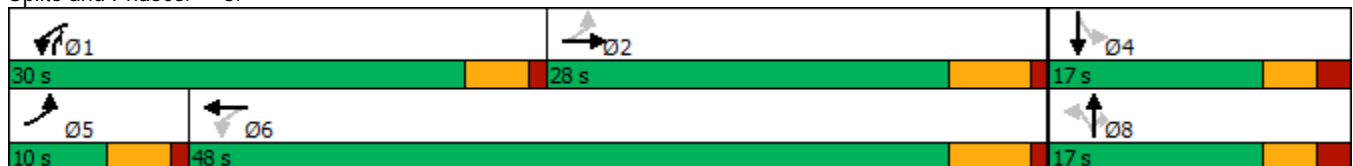
Natural Cycle: 70

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3:



Comstock Parkway at Western Industrial Drive/Site Driveway

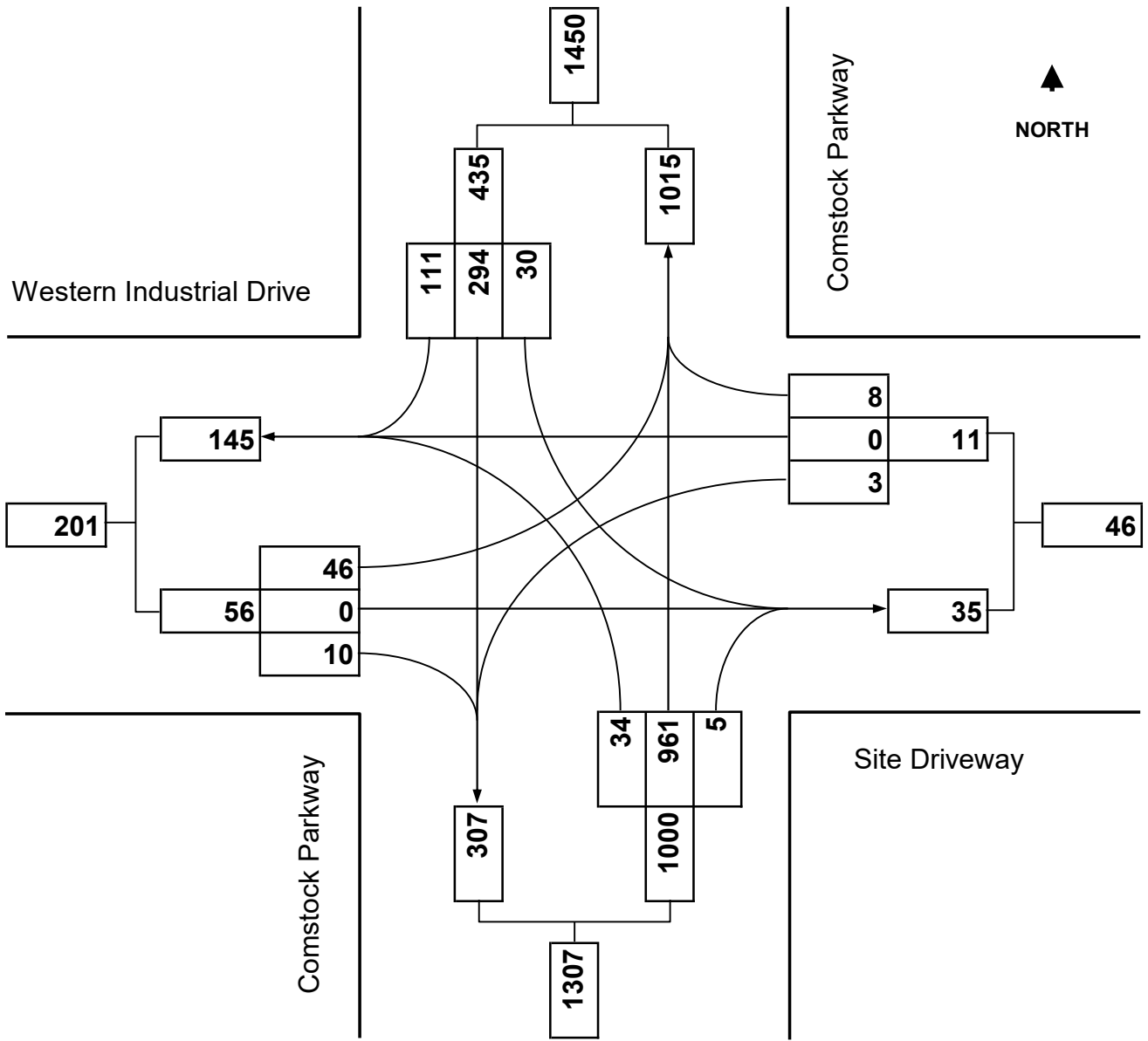


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Turning Movement Diagram

Major Street: Comstock Parkway
City/Town: Cranston, RI
Reference No.: 10052
Existing: n/a

Minor Street: Western Industrial Dr./Site Dwy.
Day of Week: Weekday
Peak Period: AM Peak Hour
Future: 2024 Build



HCS7 Two-Way Stop-Control Report

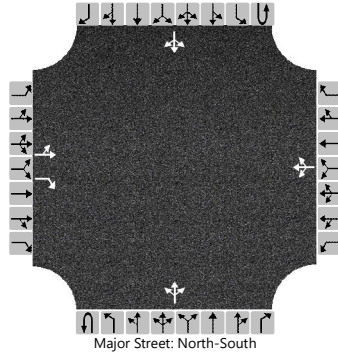
General Information

Analyst	Traffic Dept.
Agency/Co.	BETA Group
Date Performed	9/29/2021
Analysis Year	2024
Time Analyzed	Build AM Peak (GFA)
Intersection Orientation	North-South
Project Description	Prop. Industrial Development

Site Information

Intersection	Comstock at Western Ind.
Jurisdiction	Cranston, RI
East/West Street	Western Industrial Drive
North/South Street	Comstock Parkway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	1		0	1	0	0	0	1	0	0	0	1	0	
Configuration		LT		R			LTR				LTR				LTR		
Volume (veh/h)		46	0	10		3	0	8		34	961	5		30	294	111	
Percent Heavy Vehicles (%)		12	0	0		0	0	30		0				30			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.22	6.50	6.20		7.10	6.50	6.50		4.10				4.40		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.61	4.00	3.30		3.50	4.00	3.57		2.20				2.47		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		49		11		12				36				32			
Capacity, c (veh/h)		77		679		163				1139				578			
v/c Ratio		0.63		0.02		0.07				0.03				0.06			
95% Queue Length, Q ₉₅ (veh)		2.9		0.0		0.2				0.1				0.2			
Control Delay (s/veh)		111.1		10.4		28.8				8.3				11.6			
Level of Service (LOS)		F		B		D				A				B			
Approach Delay (s/veh)		93.1				28.8				0.9				1.6			
Approach LOS		F				D											

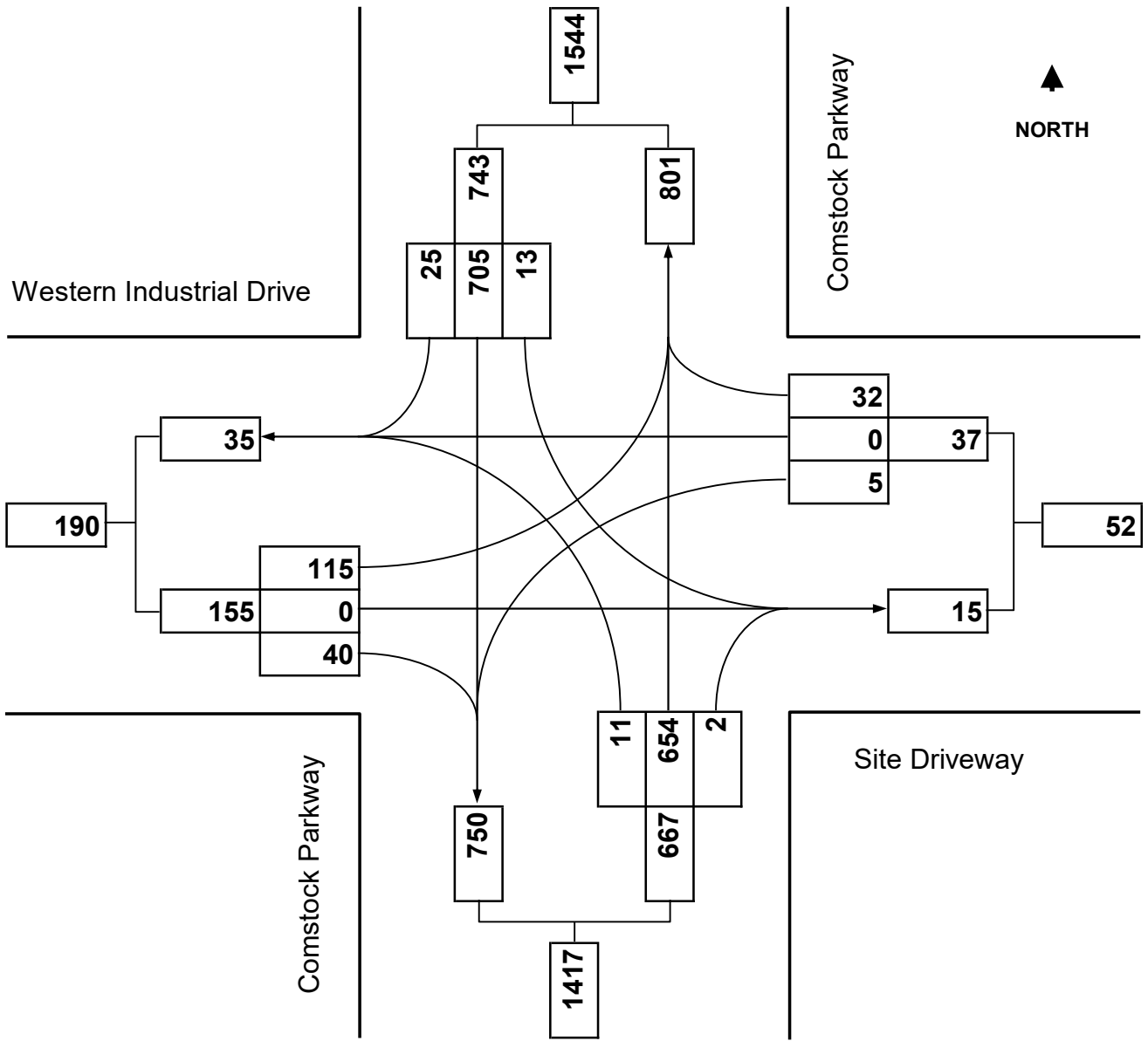


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Turning Movement Diagram

Major Street: Comstock Parkway
City/Town: Cranston, RI
Reference No.: 10052
Existing: n/a

Minor Street: Western Industrial Dr./Site Dwy.
Day of Week: Weekday
Peak Period: PM Peak Hour
Future: 2024 Build



HCS7 Two-Way Stop-Control Report

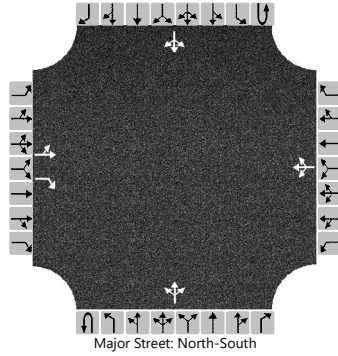
General Information

Analyst	Traffic Dept.
Agency/Co.	BETA Group
Date Performed	9/29/2021
Analysis Year	2024
Time Analyzed	Build PM Peak (Cal - GFA)
Intersection Orientation	North-South
Project Description	Prop. Industrial Development

Site Information

Intersection	Comstock at Western Ind.
Jurisdiction	Cranston, RI
East/West Street	Western Industrial Drive
North/South Street	Comstock Parkway
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	1		0	1	0	0	0	1	0	0	0	1	0	
Configuration		LT		R			LTR				LTR				LTR		
Volume (veh/h)		115	0	40		5	0	32		11	654	2		13	705	25	
Percent Heavy Vehicles (%)		1	0	0		0	0	20		20				20			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1					4.1		
Critical Headway (sec)		5.65	6.50	7.15		5.65	6.50	7.15		4.30					4.30		
Base Follow-Up Headway (sec)		3.0	4.0	3.3		3.5	4.0	3.3		2.2					2.2		
Follow-Up Headway (sec)		3.01	4.00	3.30		3.50	4.00	3.48		2.38					2.38		

Delay, Queue Length, and Level of Service

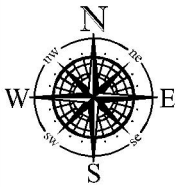
Flow Rate, v (veh/h)		124		43		40				12					14		
Capacity, c (veh/h)		163		329		296				759					815		
v/c Ratio		0.76		0.13		0.13				0.02					0.02		
95% Queue Length, Q ₉₅ (veh)		4.8		0.4		0.5				0.0					0.1		
Control Delay (s/veh)		75.2		17.6		19.1				9.8					9.5		
Level of Service (LOS)		F		C		C				A					A		
Approach Delay (s/veh)		60.3				19.1				0.4				0.5			
Approach LOS		F				C											

E

**Future 2024 Build Weekday AM / PM(Calibrated) Peak Hour
(Number of Employees Independent Variable)**

Future Traffic Volumes Figure
Level of Service Table
Plainfield Pike (Route 14) at Comstock Parkway
Comstock Parkway at Western Industrial Drive/Site Driveway

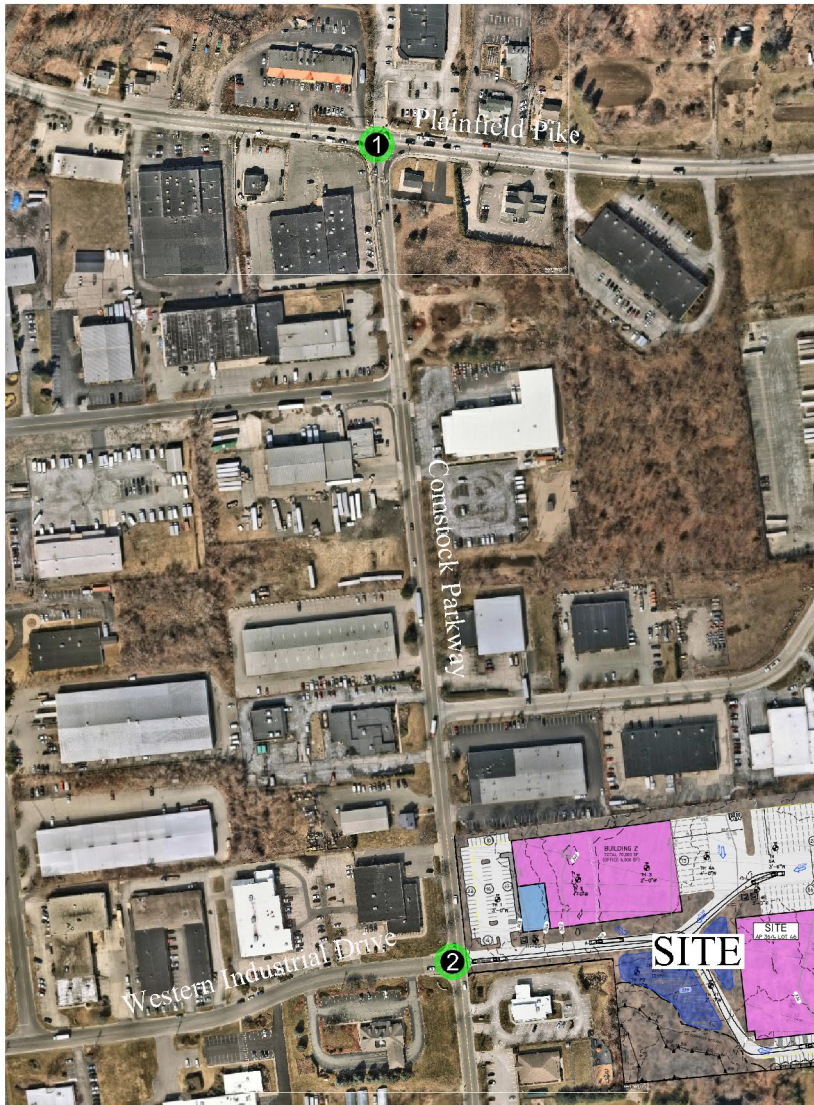
Future Traffic Volume Figure



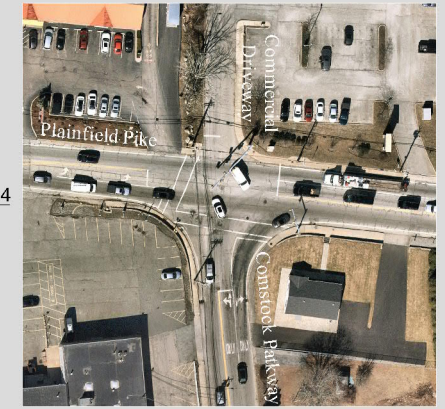
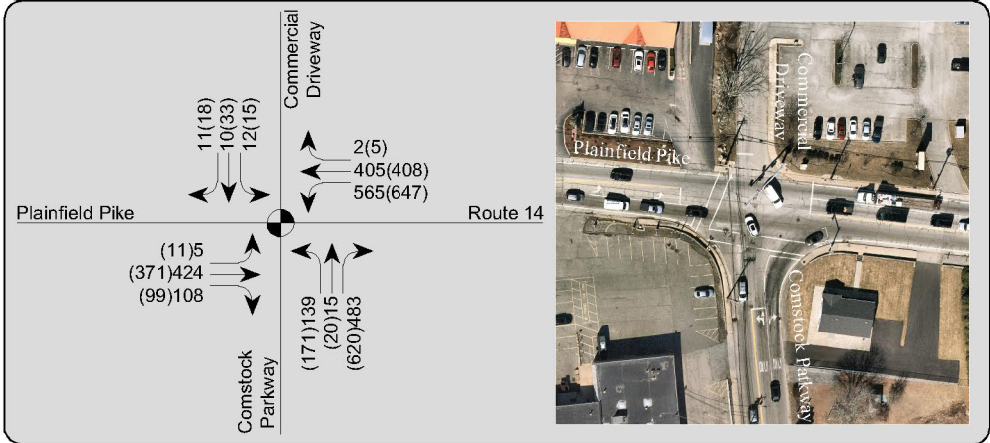
Proposed Industrial Development

CRANSTON, RHODE ISLAND

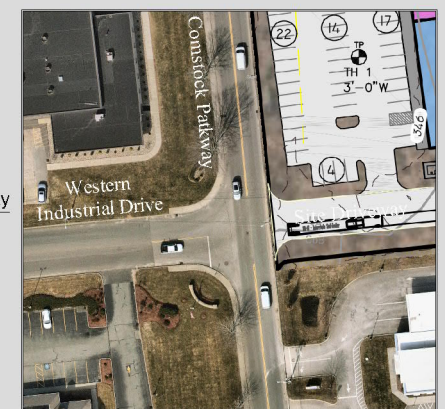
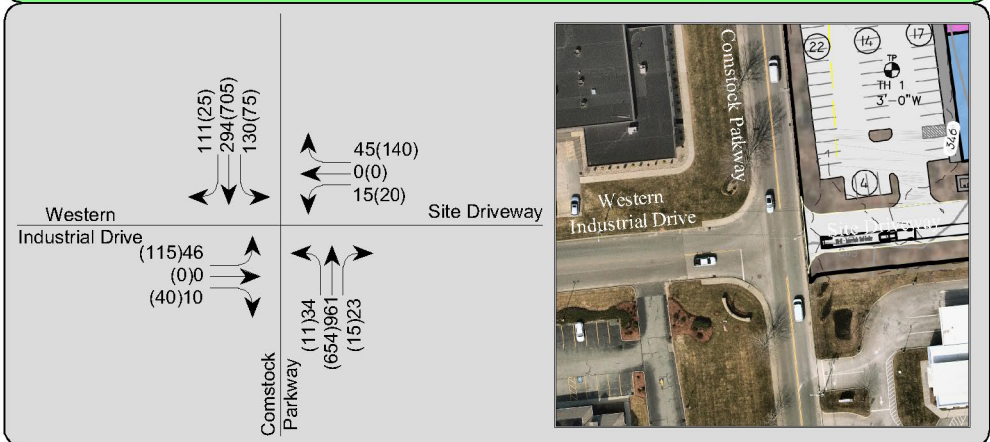
Future Traffic Volumes (Employee Independent Variable)



1 Plainfield Pike (Route 14)/Comstock Parkway/Commercial Driveway



2 Comstock Parkway/Western Industrial Drive/Site Driveway



LEGEND:

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

Level of Service Table

Level of Service Summary (Future Build Conditions – Employees Independent Variable)

Location / Movement	FUTURE 2024 BUILD CONDITIONS							
	AM Peak Hour				PM Peak Hour			
	LOS	Delay	95 th % Queue Length (veh.)	v/c	LOS	Delay	95 th % Queue Length (veh.)	v/c
Plainfield Pike (Route 14) at Comstock Parkway / Commercial Driveway (S) ¹								
Plainfield Pike EB Left	B	16.8	1	0.01	B	18.2	1	0.03
Plainfield Pike EB Thru/Right	E	60.6	19	0.99	D	45.8	15	0.92
Plainfield Pike WB Left	D	54.8	17	0.99	D	41.9	18	0.96
Plainfield Pike WB Thru/Right	A	7.8	8	0.40	A	8.0	7	0.38
Comstock Pkwy NB Left/Thru	D	35.2	7	0.64	E	55.1	7	0.84
Comstock Pkwy NB Right	B	18.4	7	0.70	B	19.5	9	0.78
Commercial Dr SB	C	26.6	2	0.25	C	26.3	2	0.33
OVERALL	D	37.5	-	-	C	31.6	-	-
Comstock Parkway at Western Industrial Drive (U)								
Comstock Pkwy NB Left	A	8.3	1	0.03	A	9.8	1	0.02
Comstock Pkwy SB Left	B	11.6	1	0.24	A	10.0	1	0.10
Western Industrial Dr EB Left	F	479.9	6	1.42	F	484.8*	5	1.75
Western Industrial Dr EB Right	B	10.4	1	0.02	C	17.6*	1	0.13
Site Driveway WB	F	65.8	3	0.54	E	36.7	1	0.62

(S) – Signalized

(U) – Unsignalized

* Calibrated

¹ Optimized Timings

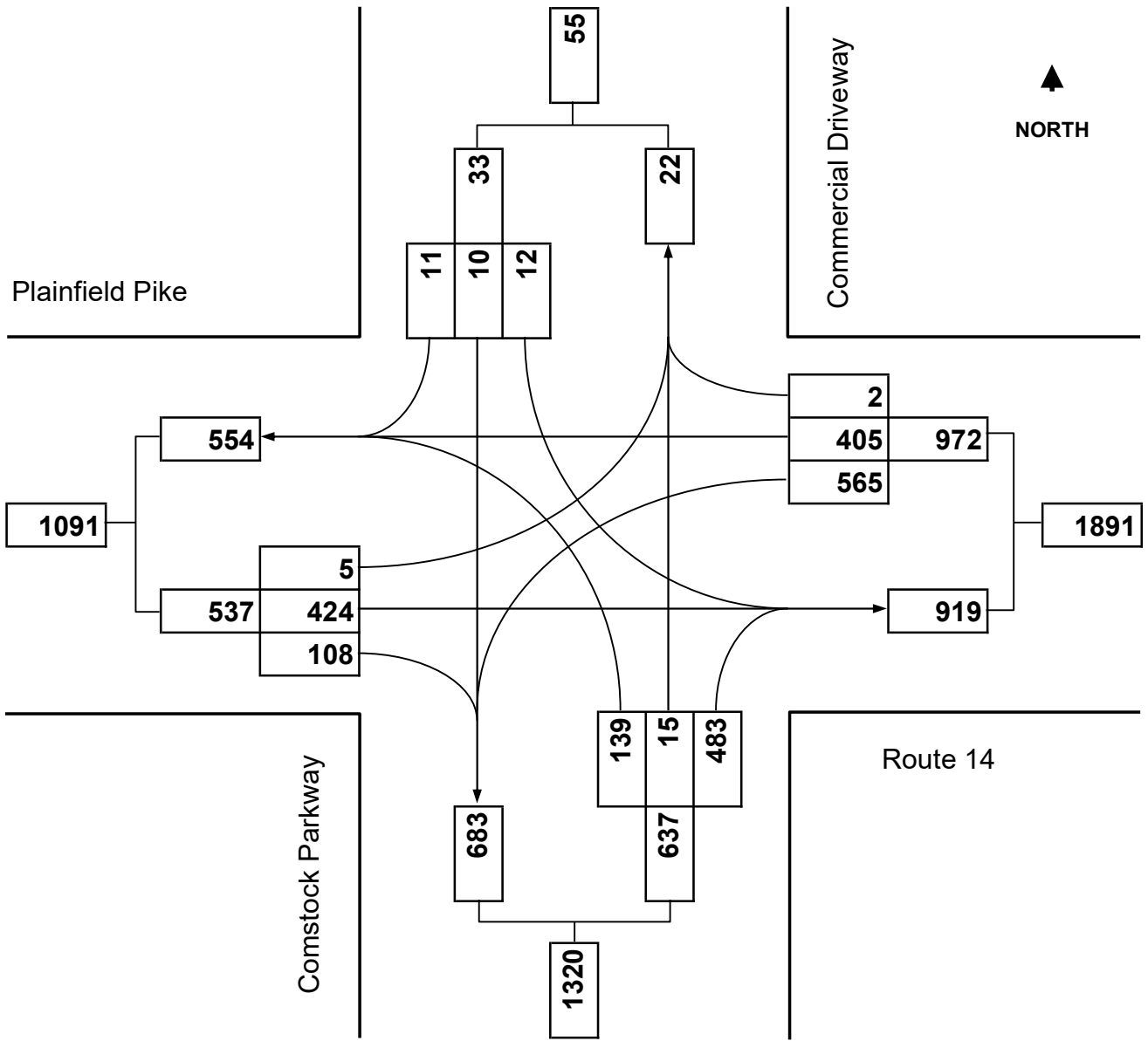
Plainfield Pike (Route 14) at Comstock Parkway



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Turning Movement Diagram

Major Street:	Plainfield Pike (Route 14)	Minor Street:	Comstock Parkway/Com. Dwy.
City/Town:	Cranston, RI	Day of Week:	Weekday
Reference No.:	10052	Peak Period:	AM Peak Hour
Existing:	n/a	Future:	2024 Build



Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↕	
Traffic Volume (veh/h)	5	424	108	565	405	2	139	15	483	12	10	11
Future Volume (veh/h)	5	424	108	565	405	2	139	15	483	12	10	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	1811	1856	1781	1900	1826	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	5	451	115	601	431	2	148	16	514	13	11	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	6	6	3	8	0	5	0	5	0	0	0
Cap, veh/h	423	455	116	606	1077	5	240	16	732	66	54	27
Arrive On Green	0.01	0.33	0.33	0.29	0.61	0.61	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	1392	355	1767	1772	8	794	86	1547	1	290	146
Grp Volume(v), veh/h	5	0	566	601	0	433	164	0	514	36	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1747	1767	0	1780	880	0	1547	437	0	0
Q Serve(g_s), s	0.1	0.0	24.2	21.2	0.0	9.4	0.0	0.0	14.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	24.2	21.2	0.0	9.4	14.0	0.0	14.0	14.0	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.00	0.90		1.00	0.36		0.33
Lane Grp Cap(c), veh/h	423	0	571	606	0	1082	256	0	732	147	0	0
V/C Ratio(X)	0.01	0.00	0.99	0.99	0.00	0.40	0.64	0.00	0.70	0.25	0.00	0.00
Avail Cap(c_a), veh/h	546	0	571	606	0	1082	256	0	732	147	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.8	0.0	25.1	20.4	0.0	7.6	30.5	0.0	15.6	26.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	35.4	34.4	0.0	0.2	4.8	0.0	2.8	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	14.9	15.6	0.0	3.1	3.2	0.0	6.8	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	0.0	60.6	54.8	0.0	7.8	35.2	0.0	18.4	26.6	0.0	0.0
LnGrp LOS	B	A	E	D	A	A	D	A	B	C	A	A
Approach Vol, veh/h		571			1034			678				36
Approach Delay, s/veh		60.2			35.1			22.4				26.6
Approach LOS		E			D			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	30.0		19.0	4.9	51.1		19.0				
Change Period (Y+Rc), s	4.5	5.5		5.0	4.5	5.5		5.0				
Max Green Setting (Gmax), s	21.5	24.5		14.0	5.5	40.5		14.0				
Max Q Clear Time (g_c+I1), s	23.2	26.2		16.0	2.1	11.4		16.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.6		0.0				

Intersection Summary

HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	5	424	565	405	139	15	483	12	10
Future Volume (vph)	5	424	565	405	139	15	483	12	10
Lane Group Flow (vph)	5	566	601	433	0	164	514	0	36
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6		3	1		3
Permitted Phases	2		6		3		3	3	
Detector Phase	5	2	1	6	3	3	1	3	3
Switch Phase									
Minimum Initial (s)	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	8.5	11.5	10.5	11.5	11.0	11.0	10.5	11.0	11.0
Total Split (s)	10.0	30.0	26.0	46.0	19.0	19.0	26.0	19.0	19.0
Total Split (%)	13.3%	40.0%	34.7%	61.3%	25.3%	25.3%	34.7%	25.3%	25.3%
Yellow Time (s)	3.5	4.5	3.5	4.5	3.0	3.0	3.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	5.5	4.5	5.5		5.0	4.5		5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	Min	Min	Min	None	None	Min	None	None
v/c Ratio	0.01	0.95	0.95	0.37		0.75	0.57		0.13
Control Delay	6.6	53.4	44.4	7.8		51.6	10.1		20.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	6.6	53.4	44.4	7.8		51.6	10.1		20.5
Queue Length 50th (ft)	1	250	210	74		72	89		9
Queue Length 95th (ft)	3	#455	#421	182		#155	173		33
Internal Link Dist (ft)		547		561		1714			196
Turn Bay Length (ft)	75		350				150		
Base Capacity (vph)	473	593	633	1165		250	897		309
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.95	0.95	0.37		0.66	0.57		0.12

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 73.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3:

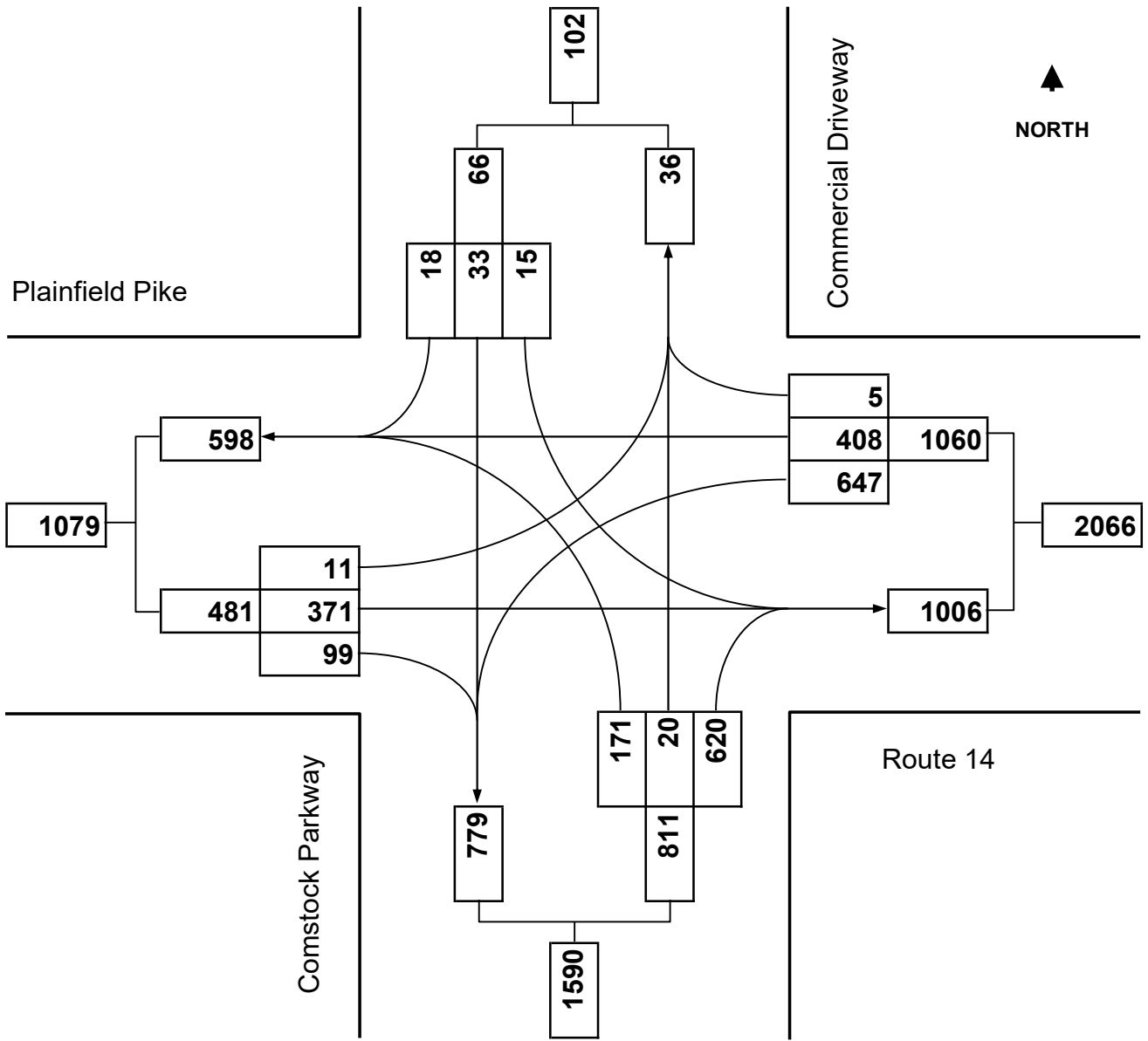




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Turning Movement Diagram

Major Street:	Plainfield Pike (Route 14)	Minor Street:	Comstock Parkway/Com. Dwy.
City/Town:	Cranston, RI	Day of Week:	Weekday
Reference No.:	10052	Peak Period:	PM Peak Hour
Existing:	n/a	Future:	2024 Build



Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	371	99	647	408	5	171	20	620	15	33	18
Future Volume (veh/h)	11	371	99	647	408	5	171	20	620	15	33	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1826	1856	1856	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	11	379	101	660	416	5	174	20	633	15	34	18
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	5	3	3	0	1	0	1	0	0	0
Cap, veh/h	401	412	110	688	1091	13	216	14	811	60	103	38
Arrive On Green	0.01	0.29	0.29	0.32	0.60	0.60	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	1423	379	1767	1830	22	652	75	1598	0	545	200
Grp Volume(v), veh/h	11	0	480	660	0	421	194	0	633	67	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1802	1767	0	1852	727	0	1598	745	0	0
Q Serve(g_s), s	0.3	0.0	19.1	21.6	0.0	8.8	0.0	0.0	14.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	19.1	21.6	0.0	8.8	14.0	0.0	14.0	14.0	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.01	0.90		1.00	0.22		0.27
Lane Grp Cap(c), veh/h	401	0	521	688	0	1104	230	0	811	201	0	0
V/C Ratio(X)	0.03	0.00	0.92	0.96	0.00	0.38	0.84	0.00	0.78	0.33	0.00	0.00
Avail Cap(c_a), veh/h	516	0	549	688	0	1104	230	0	811	201	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.2	0.0	25.4	17.3	0.0	7.8	32.0	0.0	14.8	25.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	20.4	24.6	0.0	0.2	23.1	0.0	4.7	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	10.6	12.3	0.0	3.0	4.9	0.0	8.6	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	45.8	41.9	0.0	8.0	55.1	0.0	19.5	26.3	0.0	0.0
LnGrp LOS	B	A	D	D	A	A	E	A	B	C	A	A
Approach Vol, veh/h		491			1081			827			67	
Approach Delay, s/veh		45.2			28.7			27.9			26.3	
Approach LOS		D			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.0	26.9		19.0	5.3	49.6		19.0				
Change Period (Y+Rc), s	4.5	5.5		5.0	4.5	5.5		5.0				
Max Green Setting (Gmax), s	23.5	22.5		14.0	5.5	40.5		14.0				
Max Q Clear Time (g_c+l1), s	23.6	21.1		16.0	2.3	10.8		16.0				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	1.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				31.6								
HCM 6th LOS				C								

Proposed Industrial Development
Plainfield Pike (Route 14) at Comstock Parkway

Cranston, RI
10/28/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	371	647	408	171	20	620	15	33
Future Volume (vph)	11	371	647	408	171	20	620	15	33
Lane Group Flow (vph)	11	480	660	421	0	194	633	0	67
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6		8	1		4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	8	8	1	4	4
Switch Phase									
Minimum Initial (s)	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	8.5	11.5	10.5	11.5	11.0	11.0	10.5	11.0	11.0
Total Split (s)	10.0	28.0	28.0	46.0	19.0	19.0	28.0	19.0	19.0
Total Split (%)	13.3%	37.3%	37.3%	61.3%	25.3%	25.3%	37.3%	25.3%	25.3%
Yellow Time (s)	3.5	4.5	3.5	4.5	3.0	3.0	3.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	5.5	4.5	5.5		5.0	4.5		5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	Min	Min	Min	None	None	Min	None	None
v/c Ratio	0.03	0.89	0.94	0.35		0.76	0.63		0.22
Control Delay	7.4	45.7	39.1	7.6		49.6	10.3		22.4
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	7.4	45.7	39.1	7.6		49.6	10.3		22.4
Queue Length 50th (ft)	1	203	222	70		85	115		19
Queue Length 95th (ft)	6	#373	#444	172		#179	218		52
Internal Link Dist (ft)		547		561		1714			196
Turn Bay Length (ft)	75		350				150		
Base Capacity (vph)	437	571	704	1204		284	999		335
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.84	0.94	0.35		0.68	0.63		0.20

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 72.5

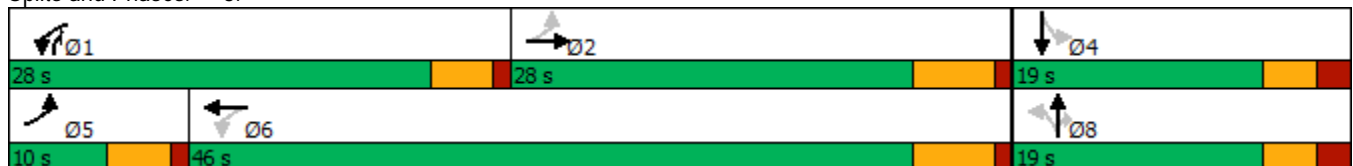
Natural Cycle: 80

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3:



Comstock Parkway at Western Industrial Drive/Site Driveway



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Turning Movement Diagram

Major Street: Comstock Parkway

Minor Street: Western Industrial Dr./Site Dwy.

City/Town: Cranston, RI

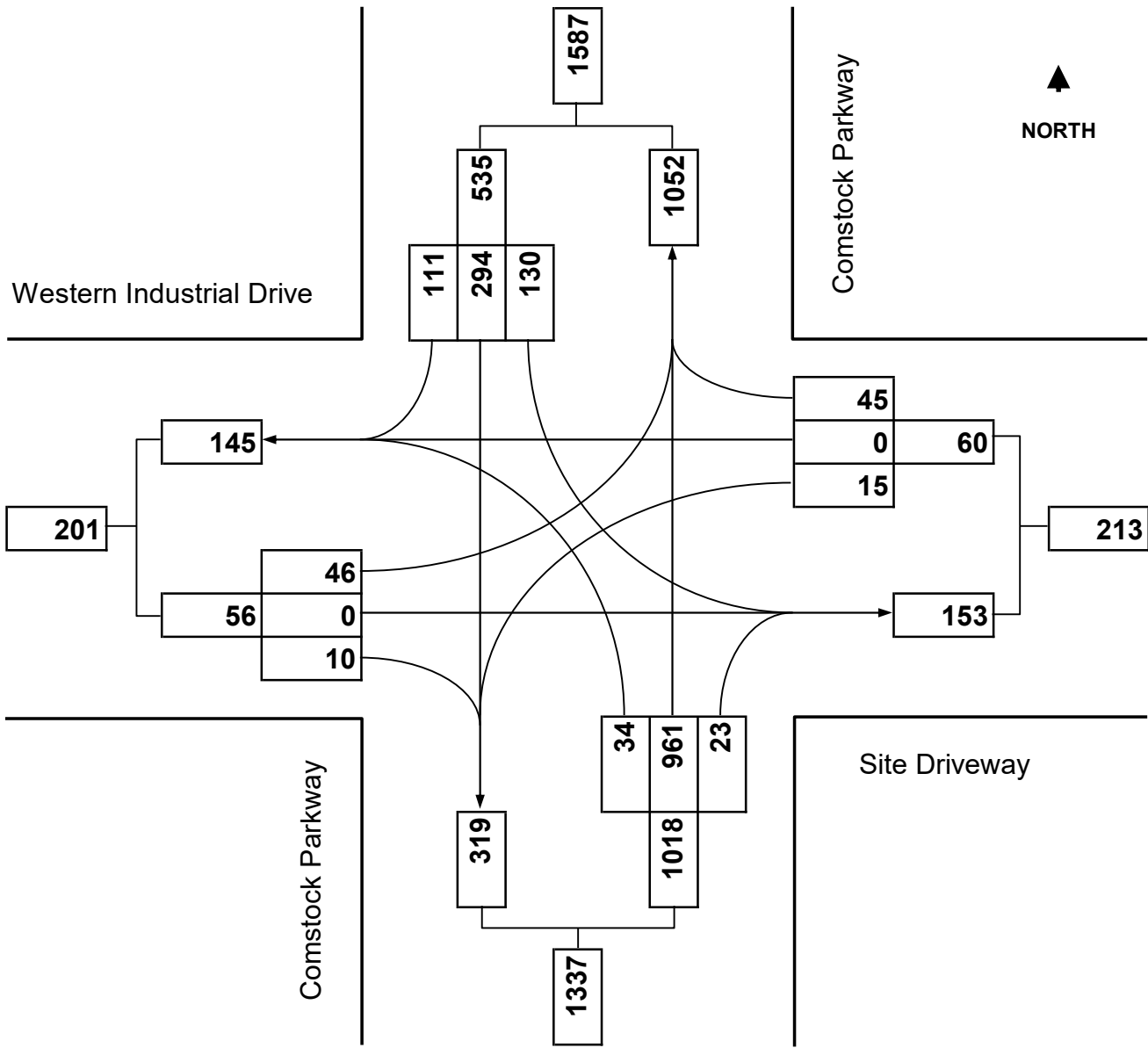
Day of Week: Weekday

Reference No.: 10052

Peak Period: AM Peak Hour

Existing: n/a

Future: 2024 Build



HCS7 Two-Way Stop-Control Report

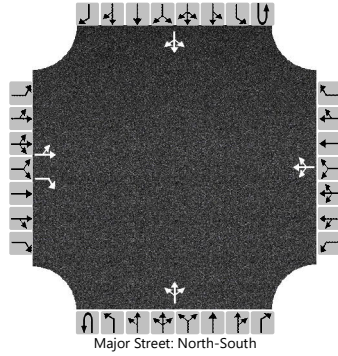
General Information

Analyst	Traffic Dept.
Agency/Co.	BETA Group
Date Performed	9/29/2021
Analysis Year	2024
Time Analyzed	Build AM Peak (Employees)
Intersection Orientation	North-South
Project Description	Prop. Industrial Development

Site Information

Intersection	Comstock at Western Ind.
Jurisdiction	Cranston, RI
East/West Street	Western Industrial Drive
North/South Street	Comstock Parkway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	1		0	1	0	0	0	1	0	0	0	1	0	
Configuration		LT		R			LTR				LTR				LTR		
Volume (veh/h)		46	0	10		15	0	45		34	961	23		130	294	111	
Percent Heavy Vehicles (%)		12	0	0		0	0	30		0				30			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.22	6.50	6.20		7.10	6.50	6.50		4.10				4.40		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.61	4.00	3.30		3.50	4.00	3.57		2.20				2.47		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		49		11		64				36				138			
Capacity, c (veh/h)		34		679		119				1139				568			
v/c Ratio		1.42		0.02		0.54				0.03				0.24			
95% Queue Length, Q ₉₅ (veh)		5.3		0.0		2.5				0.1				0.9			
Control Delay (s/veh)		479.9		10.4		65.8				8.3				13.4			
Level of Service (LOS)		F		B		F				A				B			
Approach Delay (s/veh)		396.1				65.8				0.9				6.5			
Approach LOS		F				F											



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Turning Movement Diagram

Major Street: Comstock Parkway

Minor Street: Western Industrial Dr./Site Dwy.

City/Town: Cranston, RI

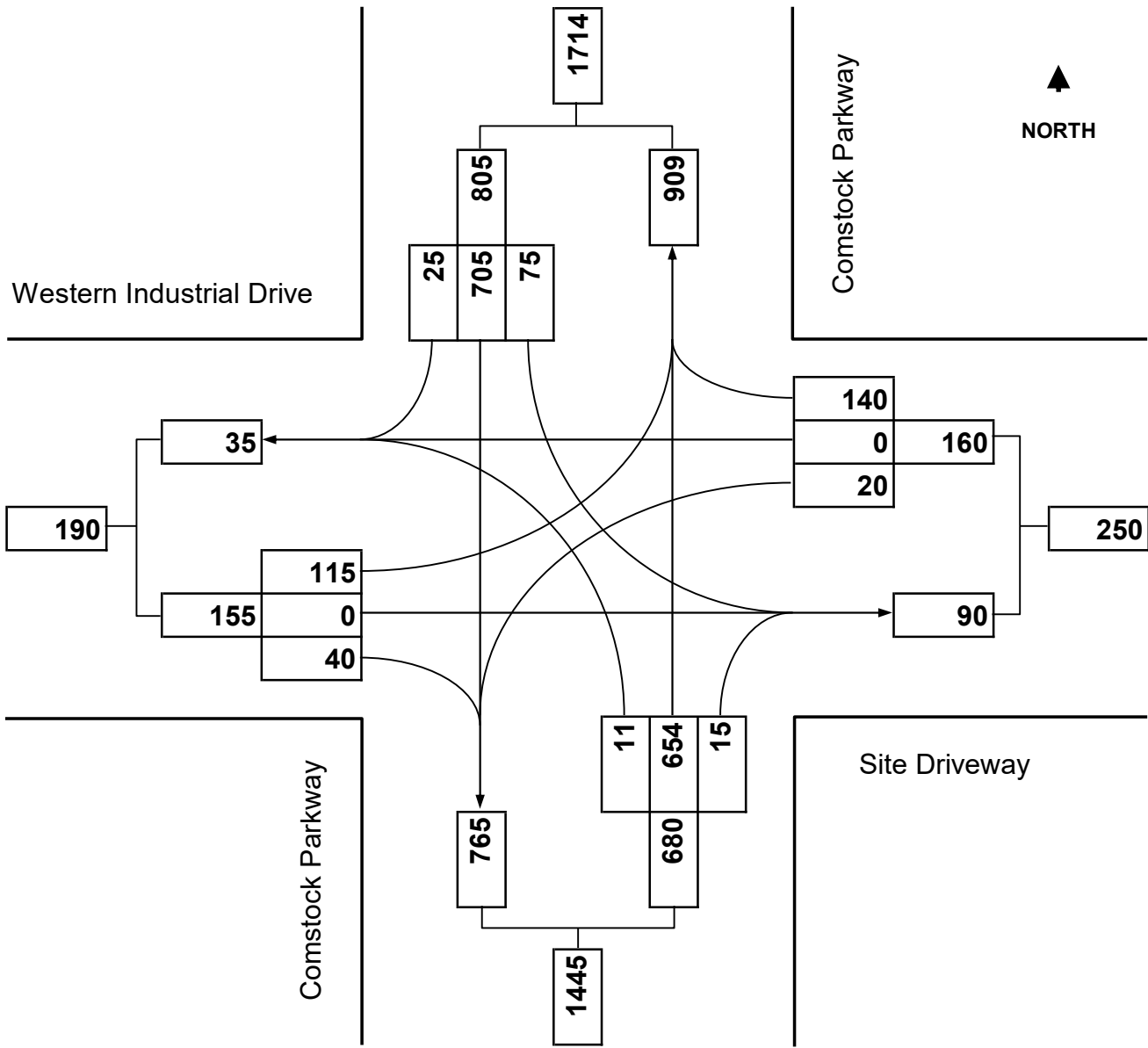
Day of Week: Weekday

Reference No.: 10052

Peak Period: PM Peak Hour

Existing: n/a

Future: 2024 Build



HCS7 Two-Way Stop-Control Report

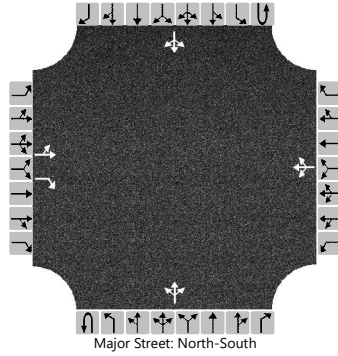
General Information

Analyst	Traffic Dept.
Agency/Co.	BETA Group
Date Performed	9/29/2021
Analysis Year	2024
Time Analyzed	Build PM Peak (Cal. - Em)
Intersection Orientation	North-South
Project Description	Prop. Industrial Development

Site Information

Intersection	Comstock at Western Ind.
Jurisdiction	Cranston, RI
East/West Street	Western Industrial Drive
North/South Street	Comstock Parkway
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	1		0	1	0		0	1	0		0	1	0	
Configuration		LT		R			LTR				LTR				LTR		
Volume (veh/h)		115	0	40		20	0	140		11	654	15		75	705	25	
Percent Heavy Vehicles (%)		1	0	0		0	0	20		20				20			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		5.65	6.50	7.15		5.65	6.50	7.15		4.30				4.30		
Base Follow-Up Headway (sec)		3.0	4.0	3.3		3.0	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.01	4.00	3.30		3.00	4.00	3.48		2.38				2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		124		43		172				12				81				
Capacity, c (veh/h)		71		329		279				759				805				
v/c Ratio		1.75		0.13		0.62				0.02				0.10				
95% Queue Length, Q ₉₅ (veh)		10.9		0.4		3.8				0.0				0.3				
Control Delay (s/veh)		484.8		17.6		36.7				9.8				10.0				
Level of Service (LOS)		F		C		E				A				A				
Approach Delay (s/veh)		364.2				36.7					0.4				2.5			
Approach LOS		F				E												