

# Traffic Impact Study

The Dreher Group

Block 436, Lot 11.01  
City of Linden  
Union County, New Jersey

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## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	EXISTING ROADWAY CONDITIONS.....	2
III.	EXISTING TRAFFIC CONDITIONS .....	3
IV.	TRIP GENERATION & DISTRIBUTION .....	5
V.	PRIMARY TRIP DISTRIBUTION.....	7
VI.	FUTURE TRAFFIC CONDITIONS .....	9
VII.	HCM CAPACITY ANALYSIS.....	10
VIII.	SITE ACCESS AND PARKING ASSESSMENT .....	14
IX.	SUMMARY AND CONCLUSIONS .....	15

## TABLES

Table 1 – Data Collection Efforts and Established Peak Hours.....	4
Table 2 – ITE Peak Hour and Daily Site Generated Trips .....	5
Table 3 – Trip Generation Calculations.....	5
Table 4 – ITE Peak Hour Site Generated Trips with Pass-By Credit.....	6
Table 5 – 2010 Census Tract Populations.....	7
Table 6– Trip Distribution .....	8
Table 7 – HCM: Signalized and Unsignalized LOS/Delay Criteria.....	10
Table 8 – Level of Service Summary.....	11
Table 9 – Routes 1 & 9 with Park Avenue (CR 616) Intersection Volume Comparison .....	12

## APPENDICES

Appendix A.....	Traffic Figures
Appendix B. ....	Traffic Count Data
Appendix C. ....	Trip Generation
Appendix D.....	Capacity Analysis
Appendix E. ....	NJDOT LOS Summary Tables

## I. INTRODUCTION

This Traffic Impact Study has been prepared for The Dreher Group (“Applicant”) in association with a proposed convenience market with gasoline pumps and shopping center within the City of Linden, Union County, New Jersey. The subject property is situated within Block 436, Lot 11.01 and is located at the southwest corner of the intersection of Routes 1 & 9 with Park Avenue (CR 616). The site is currently developed as a service station with a minimart, car wash, and gasoline pumps. The subject property is located within the Redevelopment Zone known as Infineum. A site location map is included as **Figure 1** in **Appendix A**.

The Applicant proposes to raze the existing service station and construct a 5,051 SF convenience market with gasoline pumps and a 7,200 SF shopping center. It is proposed to eliminate the existing driveways along Park Avenue and construct a full movement driveway along Park Avenue (CR 616). Additionally, it is proposed to eliminate the existing ingress only driveway and reconstruct the egress only driveway to a right in/right out only driveway along Routes 1 & 9 southbound. Overall, the modified driveway configuration will reduce the number of curb cuts along Park Avenue (CR 616) and Routes 1 & 9 and will increase the spacing distance from the driveways to the intersection of Routes 1 & 9 with Park Avenue (CR 616). It is also proposed to construct an additional northbound left turn lane at the intersection of Routes 1 & 9 with Park Avenue (CR 616) as part of the *Goethals Bridge Interchange Ramps Project*. The proposed Site Plan is provided as **Figure 2** in **Appendix A**.

It is anticipated a New Jersey Department of Transportation (“NJDOT”) Major Access Permit with Planning Review will be submitted for the site access along Routes 1 & 9 southbound. This Traffic Impact Study has been prepared in accordance with the methodologies set forth by the NJDOT in the New Jersey State Highway Access Management Code (“New Jersey Access Code”).

This study presents an evaluation of the current and future traffic conditions in the vicinity of the site. Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the project, including the existing physical and traffic operating characteristics;
- Determination of the Existing Conditions;
- Site Generated Trips described in the ITE Trip Generation Manual, 10<sup>th</sup> Edition;
- Trip Distribution and Assignment;
- Forecast of 2023 No-Build Traffic Volumes;
- Forecast of the 2023 Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2023 No-Build and Build Conditions;
- NJDOT LOS Assessment;
- Site Access and Parking Assessment; and
- Summary and Conclusions.

## **II. EXISTING ROADWAY CONDITIONS**

A field investigation was conducted adjacent to the project site to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations, and existing vehicular/pedestrian traffic patterns.

### **Roadways**

**Routes 1 & 9** is a generally north-south oriented urban principal arterial under the jurisdiction of NJDOT. Within the project vicinity, the roadway supports three travel lanes in each direction with a curbed median. The posted speed limit is 45 MPH.

**Park Avenue (CR 616)** is a generally east-west oriented urban minor arterial/urban local road under the jurisdiction of Union County. Within the project vicinity, the roadway supports two travel lanes in each direction. The posted speed limit is 25 MPH.

### **Signalized Intersections**

**Routes 1 & 9 and Park Avenue (CR 616)** is a three-phase signalized intersection operating on a variable cycle length. The northbound and southbound approaches of Routes 1 & 9 provide an exclusive left turn lane, two exclusive through lanes, and a shared through/right turn lane. The westbound approach of Park Avenue (CR 616) provides an exclusive left turn lane and a shared through/right turn lane. The eastbound approach of Park Avenue (CR 616) provides an exclusive left turn lane, an exclusive through lane, and an exclusive right turn lane.

### **III. EXISTING TRAFFIC CONDITIONS**

Traffic data was collected within the study area to gain an understanding of the existing roadway conditions and operations.

#### **Traffic Impact Study Area**

This Traffic Impact Study Area and Traffic Count Program were established in accordance with the methodologies set forth by the NJDOT in the New Jersey Access Code. The New Jersey Access Code defines an off-site study location as an increase in 100 conflicting half-trips. The Traffic Impact Study Area and Traffic Count Program were defined in the Scope of Study for The Dreher Group, dated April 7, 2017, prepared by Maser Consulting. The Scope of Study was submitted and reviewed by NJDOT prior to the Department pre-application meeting held on April 26, 2017.

Based upon the Scope of Study and Department pre-application meeting, the following intersections are located within the Traffic Impact Study Area and require analysis:

- Routes 1 & 9 with Park Avenue (CR 616) (Weekday AM Peak Period, Weekday PM Peak Period, and Saturday Peak Period);
- Routes 1 & 9 southbound and South Site Driveway (Weekday AM Peak Period, Weekday PM Peak Period, and Saturday Peak Period);
- Routes 1 & 9 southbound and North Site Driveway (Weekday AM Peak Period, Weekday PM Peak Period, and Saturday Peak Period); and
- Park Avenue (CR 616) eastbound and East Site Driveway (Weekday AM Peak Period, Weekday PM Peak Period, and Saturday Peak Period).
- Park Avenue (CR 616) eastbound and West Site Driveway (Weekday AM Peak Period, Weekday PM Peak Period, and Saturday Peak Period).

#### **MioVision Video Camera Installations**

MioVision traffic video cameras were installed and collected intersection turning movement count data on Thursday, March 23, 2017 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM and Saturday, March 25, 2017 from 11:00 AM to 2:00 PM at the aforementioned intersections. Additional counts were conducted on Wednesday, February 19, 2020 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM and Saturday, February 22, 2020 from 11:00 AM to 2:00 PM at the intersection of Routes 1 & 9 with Park Avenue (CR 616).

The data collection efforts and the network peak hours are detailed in **Table 1**. The processed manual count data is provided in **Appendix B**.

**Table 1 – Data Collection Efforts and Established Peak Hours**

<b>Peak Period</b>	<b>Date Collected</b>	<b>Traffic Count Time Frame</b>	<b>Network Peak Hour</b>
Weekday AM Peak Period	Thursday, March 23, 2017 & Wednesday, February 19, 2020	7:00AM – 9:00PM	7:30 AM – 8:30 AM
Weekday PM Peak Period	Thursday, March 23, 2017 & Wednesday, February 19, 2020	4:00PM – 6:00PM	4:45 PM – 5:45 PM
Saturday Mid-Day Peak Period	Saturday, March 25, 2017 & Saturday, February 22, 2020	11:00AM – 2:00PM	12:45 PM – 1:45 PM

A Volume Flow Diagram illustrating the Existing Traffic Volumes is provided as **Figure 3** in **Appendix A**.

## IV. TRIP GENERATION & DISTRIBUTION

### ITE Trip Generation

Trip generation estimates for the development of The Project were made utilizing data published under Land Use Code 820 – Shopping Center and Land Use Code 960 – Super Convenience Market/Gas Station in the Institute of Transportation Engineers’ (ITE) publication *Trip Generation, Tenth Edition*. This publication sets for trip generation rates based on traffic counts conducted at research sites throughout the country. **Table 2** details the anticipated trips for The Project.

The ITE peak hour and daily site generated trip calculations are detailed in **Table 2**. The comprehensive trip generation worksheet is provided in **Appendix B**.

**Table 2 – ITE Peak Hour and Daily Site Generated Trips**

ITE Land Use Code	Size	AM Peak Hour	PM Peak Hour	Weekday Daily	SAT Peak Hour	SAT Daily
820 – Shopping Center	7,200 SF	7	85	1,005	77	332
960 – Super Convenience Market/Gas Station	5,051 SF	420	350	4,231	322	3,536
<b>Total</b>		<b>427</b>	<b>435</b>	<b>5,236</b>	<b>399</b>	<b>3,868</b>

As previously mentioned, the site is currently developed as a service station with minimart, car wash, and gasoline pumps, therefore a credit was applied to the proposed trip generation for the existing site. Trip generation estimates for the existing site were made utilizing data published under Land Use Code X05 – Service Station with Minimart, Car Wash, and Gas within the NJDOT HAPS program.

**Table 3 – Trip Generation Calculations**

ITE Land Use Code		Size	AM Peak Hour	PM Peak Hour	SAT Peak Hour
Proposed	960 – Super Convenience Market/Gas Station	5,051 SF	420	350	322
Existing	X05 – Service Station with Minimart, Car Wash, and Gas	1 Station	-110	-151	-151
<i>Difference/New Trips</i>			<i>310</i>	<i>199</i>	<i>171</i>
Proposed	820 – Shopping Center	7,200 SF	7	85	77
<b>Total</b>			<b>317</b>	<b>284</b>	<b>248</b>

### *Pass-By Trips*

Pass-By Trips are those trips which are not made for the sole purpose of patronizing the proposed development and are currently within the existing traffic volumes. An example of a pass-by trip would be a motorist, whose existing commuting route makes use of the adjacent roadway, which directly intersects a proposed driveway. After the development is constructed, this motorist may elect to make an intermediate shopping trip at the subject development while conducting their normal commuting trip. This trip is not 'new' to the roadway network, as it already existed prior to the development being constructed. The only impact this trip would have on the roadway network would be the increase in traffic for ingress and egress movements at the proposed site driveway.

Within the *ITE Trip Generation Handbook, 2<sup>nd</sup> Edition*, pass-by rates have been established for individual land uses. These rates are published as a percentage of the total site generated traffic. They are based on numerous site studies where surveys were conducted to determine if the trip was a primary destination or an intermediate trip. ITE does not publish pass-by data for Land Use Code 960 – Super Convenience Market/Gas Station, however data published under a similar land use, Land Use Code 853 – Convenience Market with Gasoline Pumps was utilized. The pass by rates for LUC 853 are 63% and 66% during the AM and PM peak hours, respectively. It is noted there is no data published for the Saturday peak hour, accordingly a 50% pass-by rate was utilized. The ITE published average pass-by rate for Land Use Code 820 – Shopping Center is 34% and 26% during the PM and Saturday peak hours, respectively. The following table details the pass-by and primary site generated trips.

**Table 4 – ITE Peak Hour Site Generated Trips with Pass-By Credit**

Land Use Code		AM Peak Hour			PM Peak Hour			SAT Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
820 – Shopping Center	Total Trips	4	3	7	42	43	85	40	37	77
	Passby Trips	0	0	0	14	14	28	10	10	20
	Primary Trips	4	3	7	28	29	57	30	27	57
960 – Super Convenience Market/Gas Station	Total Trips	155	155	310	100	99	199	86	85	171
	Passby Trips	98	98	196	66	66	132	43	43	86
	Primary Trips	57	57	114	34	33	67	43	42	85
<b>Total Passby Trips</b>		<b>98</b>	<b>98</b>	<b>196</b>	<b>80</b>	<b>80</b>	<b>160</b>	<b>53</b>	<b>53</b>	<b>106</b>
<b>Total Primary/New Trips</b>		<b>61</b>	<b>60</b>	<b>121</b>	<b>62</b>	<b>62</b>	<b>124</b>	<b>73</b>	<b>69</b>	<b>142</b>



## V. PRIMARY TRIP DISTRIBUTION

As stated in the previous section of this report, retail developments generate two trip types; pass-by trips and primary trips. As new vehicle trips will be generated from the surrounding residential communities, a three-mile market area and gravity model were utilized to distribute the primary site generated trips. The passby trips were distributed along Routes 1 & 9 and Park Avenue (CR 616). It was assumed 80% of the passby trips would be associated with Routes 1 & 9 southbound, 10% with Routes 1 & 9 northbound, and 10% with Park Avenue (CR 616) eastbound. The following sections of the report detail the trip distribution methodology.

### Gravity Model

The gravity model methodology was based on the National Cooperative Highway Research Program Report 187, *Quick Urban Response Travel Estimation Techniques and Transferable Parameters*. This methodology assumes that the distribution is proportional to population densities and distance within a given radius from the site. The primary retail market area for the development is defined using a three-mile radius. A map which graphically identifies the census tracts within the market area and the gravity model worksheet is appended to this report.

Population estimates for each census tract in the defined market area were made based on census data for 2010. The trip distributions at the site driveways and within the surrounding roadway network were calculated based on this data. **Table 4** details the census tracts that were identified in the market area and their population.

**Table 5 – 2010 Census Tract Populations**

Attractor/Generator			2010 Population	Trip Percent
County	Township	Tract		
Union	Linden City	352	2,494	36.65%
Union	Elizabeth City	307.02	8,789	14.35%
Union	Linden City	345	4,759	9.83%
Union	Elizabeth City	307.01	1,809	9.57%
Union	Elizabeth City	320.02	4,333	5.73%
Union	Elizabeth City	320.01	6,559	3.86%
Union	Elizabeth City	309	6,332	3.81%
Union	Elizabeth City	308.02	3,121	2.87%
Union	Elizabeth City	319.03	5,535	2.53%
Union	Elizabeth City	306	3,295	1.88%
Union	Elizabeth City	311	5,622	1.76%
Union	Linden City	346	4,262	1.57%

**Table 5 (continued) – 2010 Census Tract Populations**

Union	Elizabeth City	319.04	3,183	1.27%
Union	Roselle Borough	341	3,373	1.17%
Union	Linden City	351	3,739	1.08%
Union	Roselle Borough	344	3,754	0.64%
Union	Elizabeth City	399	1,883	0.30%
Union	Elizabeth City	305	5,399	0.29%
Union	Linden City	354	2,705	0.25%
Union	Elizabeth City	318.01	5,298	0.16%
Union	Elizabeth City	321	6,957	0.16%
Union	Linden City	347	4,083	0.13%
Union	Roselle Borough	340	6,750	0.09%
Union	Linden City	353	5,458	0.05%
Total				100.00%

Following census tract identification and defining specific routes to/from the site, the following trip distribution is calculated for the adjacent roadway network.

**Table 6– Trip Distribution**

To/From	Distribution
Park Avenue (CR 616) (East of Site)	25%
Park Avenue (CR 616) (West of Site)	25%
Routes 1 & 9 (North of Site)	45%
Routes 1 & 9 (South of Site)	5%
<b>Total</b>	<b>100%</b>

The site generated trips were implemented into the roadway network based upon the anticipated distributions and are illustrated as **Figures 4 – 8 in Appendix A.**

## **VI. FUTURE TRAFFIC CONDITIONS**

### **2023 No-Build Traffic Volumes**

An estimation of the traffic operational characteristics at the build date, *without* the construction of the project (or “No-Build” condition) is made to determine the traffic impact of the development. It is proposed to construct an additional exclusive left turn lane on the northbound approach at the intersection of Routes 1 & 9 with Park Avenue (CR 616) as part of the *Goethals Bridge Interchange Ramps Project*. The existing volumes are forecasted to the build year of 2023.

#### *Background Growth*

A general background growth rate was applied to the transient traffic volumes in the study area to account for general increases in traffic due to regional population and employment growth by the build year. The 2023 No-Build traffic volumes were forecasted by applying a background growth rate from the NJDOT Annual Background Growth Rate Table.

#### *Adjacent Developments*

The City of Linden and NJDOT were contacted to determine if any developments in the vicinity of the subject property would increase adjacent roadway traffic volumes. There were no approved projects in the vicinity of the site.

A Volume Flow Diagram illustrating the 2023 No-Build traffic volumes is provided as **Figure 9** in **Appendix A**.

### **2023 Build Traffic Volumes**

The 2023 Build volumes were forecasted by adding the site generated traffic from the proposed development to the 2023 No-Build traffic volumes within the roadway network. The 2023 Build traffic volumes are summarized as **Figure 10** of **Appendix A**.

## VII. HCM CAPACITY ANALYSIS

The peak hour traffic operations within the project vicinity were evaluated at the study intersections. The analyses were performed using *Synchro Trafficware*; a traffic analysis and simulation program. The results of these analyses provide Levels of Service (LOS), volume/capacity descriptions and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics such as freedom to maneuver, traffic interruption, comfort and convenience. Six LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F", with "A" representing excellent conditions with no delays and failure and deficient operations denoted by Level "F". The HCM LOS criteria for intersections are summarized in **Table 7**.

**Table 7 – HCM: Signalized and Unsignalized LOS/Delay Criteria**

Level of Service	Average Control Delay (sec/veh)	
	Signalized Intersection	Unsignalized Intersection
<b>A</b>	< 10	< 10
<b>B</b>	> 10 – 20	> 10 – 15
<b>C</b>	> 20 – 35	> 15 – 25
<b>D</b>	> 35 – 55	> 25 – 35
<b>E</b>	> 55 – 80	> 35 – 50
<b>F</b>	> 80	> 50

The level of services for the 2023 No-Build and Build conditions are detailed in **Table 8**. The capacity analysis calculation worksheets are provided in **Appendix D**.

It is proposed to construct an additional northbound let turn lane at the intersection of Routes 1 & 9 with Park Avenue (CR 616) as part of the *Goethals Bridge Interchange Ramps Project*.

**Table 8 – Level of Service Summary**

Intersection	Lane Group		2023 No-Build						2023 Build					
			AM Peak		PM Peak		SAT Peak		AM Peak		PM Peak		SAT Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Routes 1 & 9 (NB/SB) & Park Avenue (CR 616) (EB/WB)	EB	L	F	99.8	F	154.9	F	151.6	F	83.1	F	146.8	F	100.5
		T	F	95.8	F	104.4	E	58.1	F	81.5	E	61.7	D	40.6
		R	C	35.0	C	28.1	C	33.3	C	32.9	C	24.2	C	27.0
	WB	L	F	90.2	D	40.7	D	39.6	E	61.9	D	50.0	D	41.6
		T/R	D	51.0	F	95.2	E	59.5	E	57.0	F	94.7	E	64.4
	NB	L	E	66.9	E	55.4	E	57.1	E	68.1	E	59.8	E	57.7
		T	C	27.2	C	25.6	C	20.3	C	29.8	C	28.1	C	24.2
		R	C	28.5	C	27.1	C	21.3	C	31.2	C	30.0	C	25.5
	SB	L	E	74.8	E	68.5	E	64.3	E	74.8	E	68.3	E	64.3
		T	C	34.7	D	38.4	C	31.6	D	38.8	D	45.1	D	39.7
		R	D	37.4	D	43.4	C	34.9	D	42.4	D	52.4	D	45.3
	Overall		<b>D</b>	<b>47.7</b>	<b>D</b>	<b>54.1</b>	<b>D</b>	<b>42.9</b>	<b>D*</b>	<b>47.6*</b>	<b>D*</b>	<b>54.0*</b>	<b>D*</b>	<b>43.0*</b>
Park Avenue (CR 616) (EB) & West Site Driveway (NB)	WB	L	b	13.6	b	13.8	b	12.8	b	14.1	b	14.4	b	13.0
	NB	L/R	c	17.6	c	15.0	b	13.8	c	20.4	c	23.4	c	18.4
Park Avenue (CR 616) (EB) & East Site Driveway (NB)	NB	R	b	12.5	b	12.7	b	12.2	--	--	--	--	--	--
Routes 1 & 9 (SB) & Site Driveway (EB)	EB	R	c	19.5	c	18.9	c	21.3	c	23.8	c	22.5	c	23.7

Note: uppercase indicates signalized intersection; lowercase indicates unsignalized intersection

\* Optimized signal timing directive

### **NJDOT LOS Degradation Criteria**

For signalized intersections on state highways, LOS degradation standards are defined by New Jersey Access Code Section 16:47-4.26. The general LOS standard defines that all approaches operating at a LOS “A” to “E” shall be allowed an increase in delay from the No-Build to the Build conditions no greater than 25% of the difference between the No-Build delay and the bottom of the LOS “E” delay (80 seconds). There are exceptions to this standard for left-turn lanes and lanes in which the No-Build v/c ratio exceeds 1.20. For left-turn lanes, the New Jersey Access Code states:

*“Exceptions may be made to the delay standards for left turn lanes or jughandles, but the left turns and jughandles must not back up onto the through lanes.”*

NJDOT Capacity Analysis Summary Tables comparing the No-Build and Build v/c ratios, level of service, average delay, allowable delay, and increase in delay during the AM, PM, and Saturday peak hours are provided in **Appendix E**. The following subsections summarize the findings for each study intersection.

### **Routes 1 & 9 (NB/SB) & Park Avenue (EB/WB) (CR 616)**

#### *2023 No-Build Analysis*

Under the No-Build condition, the intersection will operate at Levels of Service “E” or better during all peak hours studied, with the exception of a number of movements which will exceed capacity during the weekday morning, evening, and Saturday midday peak hours. The intersection will operate at overall Level of Service “D” during all peak hours studied.

#### *2023 Build Analysis*

With the addition of the site generated traffic it is proposed to optimize the traffic signal timing directive. With the proposed mitigation, the intersection will continue to operate at or near No Build levels of service during all peak hours studied. The following table illustrates the impact of the site generated trips on the total volume at the intersection.

**Table 9 – Routes 1 & 9 with Park Avenue (CR 616) Intersection Volume Comparison**

<b>Peak Period</b>	<b>2023 No Build Volume</b>	<b>Site Generated Volume</b>	<b>2023 Build Volume</b>	<b>Percent Increase</b>
Weekday Morning Peak Hour	4,396	98	4,462	2.2%
Weekday Evening Peak Hour	4,552	97	4,617	2.1%
Saturday Midday Peak Hour	4,401	109	4,466	2.5%

As illustrated from the table above, the site generated traffic is equivalent to 2.5% or less of the overall traffic at the intersection of Route 1 & 9 with Park Avenue (CR 616); therefore, the impact of the site generated traffic at the intersection is negligible.

### **Park Avenue (CR 616) (EB) & Site Driveways (NB)**

#### *2023 No-Build Analysis*

Under the No-Build condition, the site driveways will operate at a Level of Service “C” or better during all peak hours studied, with calculated 95<sup>th</sup> percentile queue lengths of less than two (2) vehicles, which can be accommodated within the layout of the site.

#### *2023 Build Analysis*

Under the Build Condition, it is proposed to construct one (1) right in/right out only driveway in lieu of separate ingress and egress driveways. As such, the site driveway approach will operate at a similar level of service and delay to No Builds conditions during all peak hours studied, with

calculated 95<sup>th</sup> percentile queue lengths of less than two (2) vehicles, which can be accommodated within the layout of the site.

**Routes 1 & 9 (SB) & Site Driveways (EB)**

*2023 No-Build Analysis*

Under the No-Build condition, all intersection movements will operate at acceptable Levels of Service “C” during all peak hours studied, with calculated 95<sup>th</sup> percentile queue lengths of less than two (2) vehicles, which can be accommodated within the layout of the site.

*2023 Build Analysis*

Under the Build Condition, it is proposed to construct one (1) right in/right out only driveway in lieu of separate ingress and egress driveways. As such, the site driveway approach will operate at a similar level of service and delay to No Build conditions during all peak hours studied, with calculated 95<sup>th</sup> percentile queue lengths of less than two (2) vehicles, which can be accommodated within the layout of the site.

## VIII. SITE ACCESS AND PARKING ASSESSMENT

It is proposed to eliminate the existing driveways along Park Avenue and construct a full movement driveway along Park Avenue (CR 616). Additionally, it is proposed to eliminate the existing ingress only driveway and reconstruct the egress only driveway to a right in/right out only driveway along Routes 1 & 9 southbound. Overall, the modified driveway configuration will reduce the number of curb cuts along Park Avenue (CR 616) and Routes 1 & 9 and will increase the spacing distance from the driveways to the intersection of Routes 1 & 9 with Park Avenue (CR 616). It is also proposed to add an exclusive left turn lane on the northbound approach at the intersection of Routes 1 & 9 with Park Avenue (CR 616) as part of the *Goethals Bridge Interchange Ramps Project*. The proposed site plan provides a minimum of 24-foot wide aisles and can accommodate two-way circulation throughout the site. The layout of the site provides sufficient circulation for a gas tanker delivery truck, garbage truck, and emergency vehicles to efficiently maneuver through the site.

The City of Linden Ordinance sets forth a parking requirement of 1 space per 200 SF for gas service station and 1 space per 200 SF for retail sales. For the proposed 5,051 SF super convenience market/gas station and 7,200 SF shopping this equates to a parking requirement of 62 spaces. It is proposed to provide 91 spaces, thus exceeding the City of Linden Ordinance requirements.



## IX. SUMMARY AND CONCLUSIONS

This Traffic Impact Study evaluated a proposed mixed-use development within the City of Linden, Union County, New Jersey. The findings of the Traffic Impact Study are summarized as follows:

1. The Applicant proposes to raze the existing service station and develop a 5,051 SF convenience market with gasoline pumps and a 7,200 SF shopping center.
2. It is proposed to eliminate the existing driveways along Park Avenue and construct a full movement driveway along Park Avenue (CR 616). Additionally, it is proposed to eliminate the existing ingress only driveway and reconstruct the egress only driveway to a right in/right out only driveway along Routes 1 & 9 southbound. Overall, the modified driveway configuration will reduce the number of curb cuts along Park Avenue (CR 616) and Routes 1 & 9 and will increase the spacing distance from the driveways to the intersection of Routes 1 & 9 with Park Avenue (CR 616). It is also proposed to construct an additional northbound let turn lane at the intersection of Routes 1 & 9 with Park Avenue (CR 616) as part of the *Goethals Bridge Interchange Ramps Project*.
3. A NJDOT Major Access Permit with Planning Review will be required for the site access along Routes 1 & 9 southbound.
4. Under the Build conditions, it proposed to optimize the traffic signal timing directive at the intersection of Routes 1 & 9 with Park Avenue (CR 616). It is noted, the site generated traffic is equivalent to 2.5% or less of the overall traffic at the intersection of Route 1 & 9 with Park Avenue (CR 616); therefore, the impact of the site generated traffic at the intersection is negligible.
5. Under the Build conditions, all intersection movements at the site driveway approach along Park Avenue will operate at acceptable levels of service during all three peak hours studied.
6. Under the Build conditions, all intersection movements at the site driveway approach along Routes 1 & 9 will operate at acceptable levels of service during all three peak hours studied.
7. The proposed site plan provides minimum 24-foot wide aisles and can accommodate two-way circulation throughout the site. The layout of the site provides sufficient circulation for a gas tanker delivery truck, garbage truck and emergency vehicles to efficiently maneuver through the site.
8. The City of Linden Ordinance requires 62 parking spaces for the proposed development. It is proposed to provide 91 parking spaces, thus exceeding the City Ordinance.



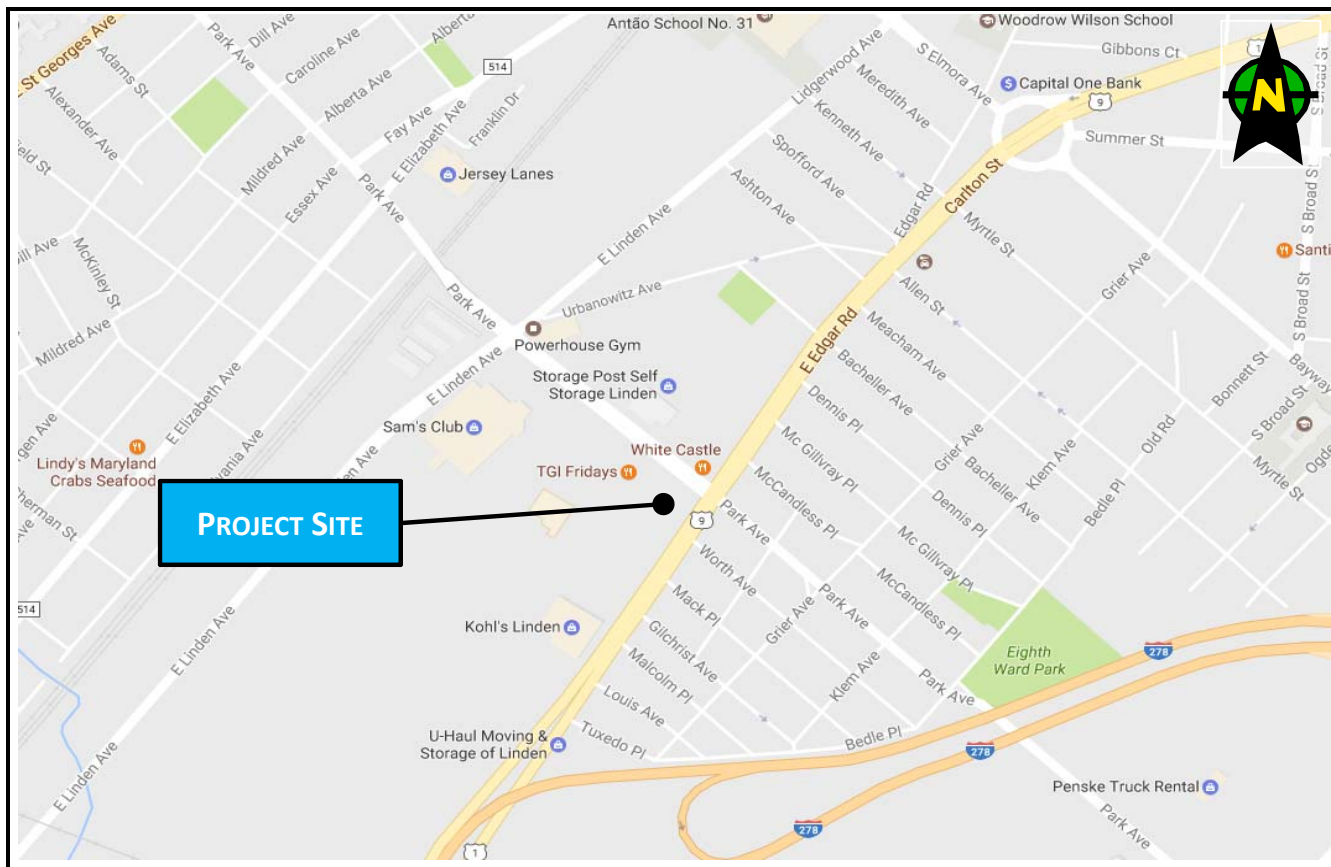
# ***THE DREHER GROUP***

## ***TRAFFIC IMPACT STUDY***

---

### **APPENDIX A**

#### **TRAFFIC FIGURES**



15002372A

## The Dreher Group

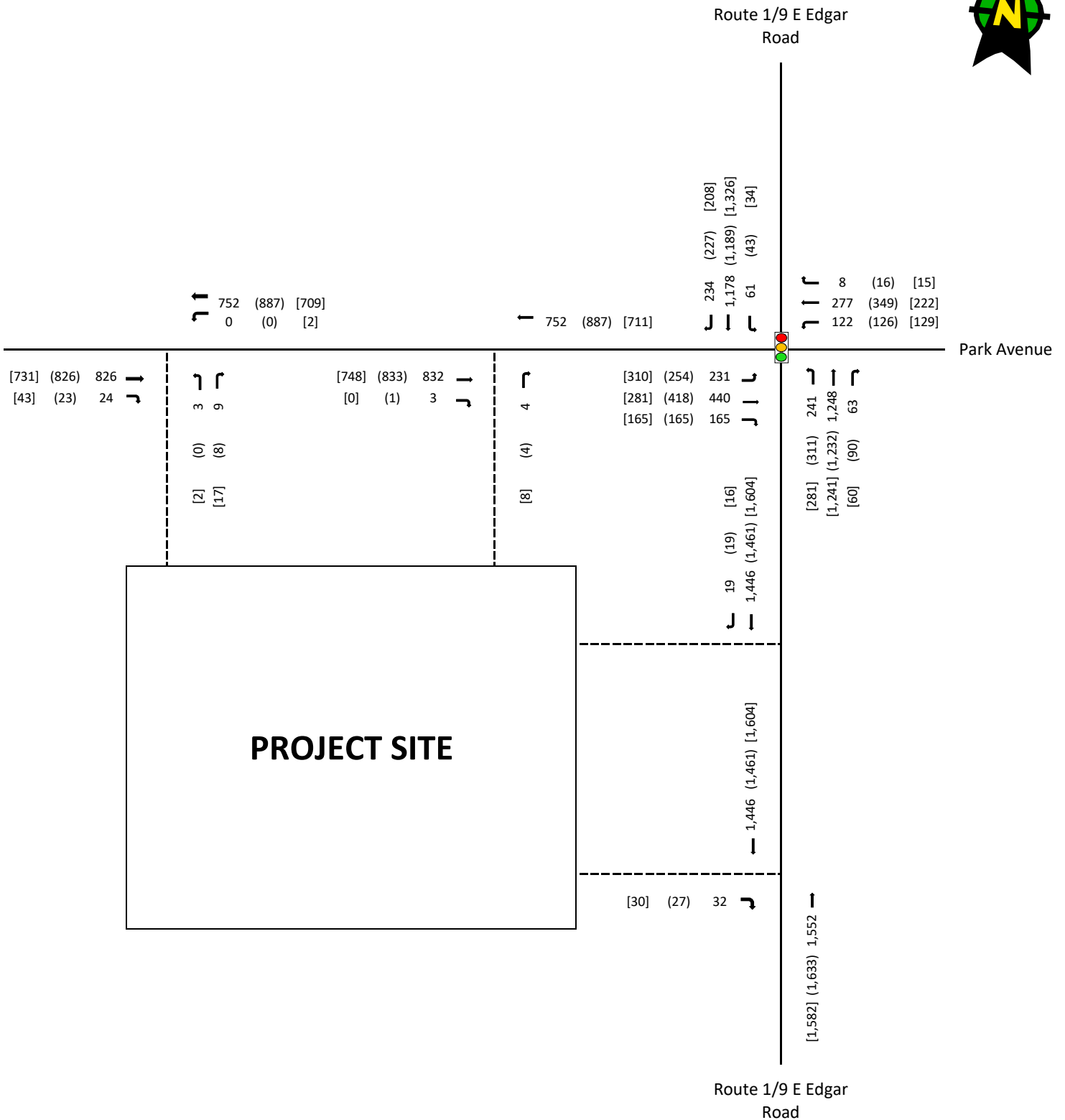
City of Linden, Union County, New Jersey

**Figure 1**

## Site Location Map









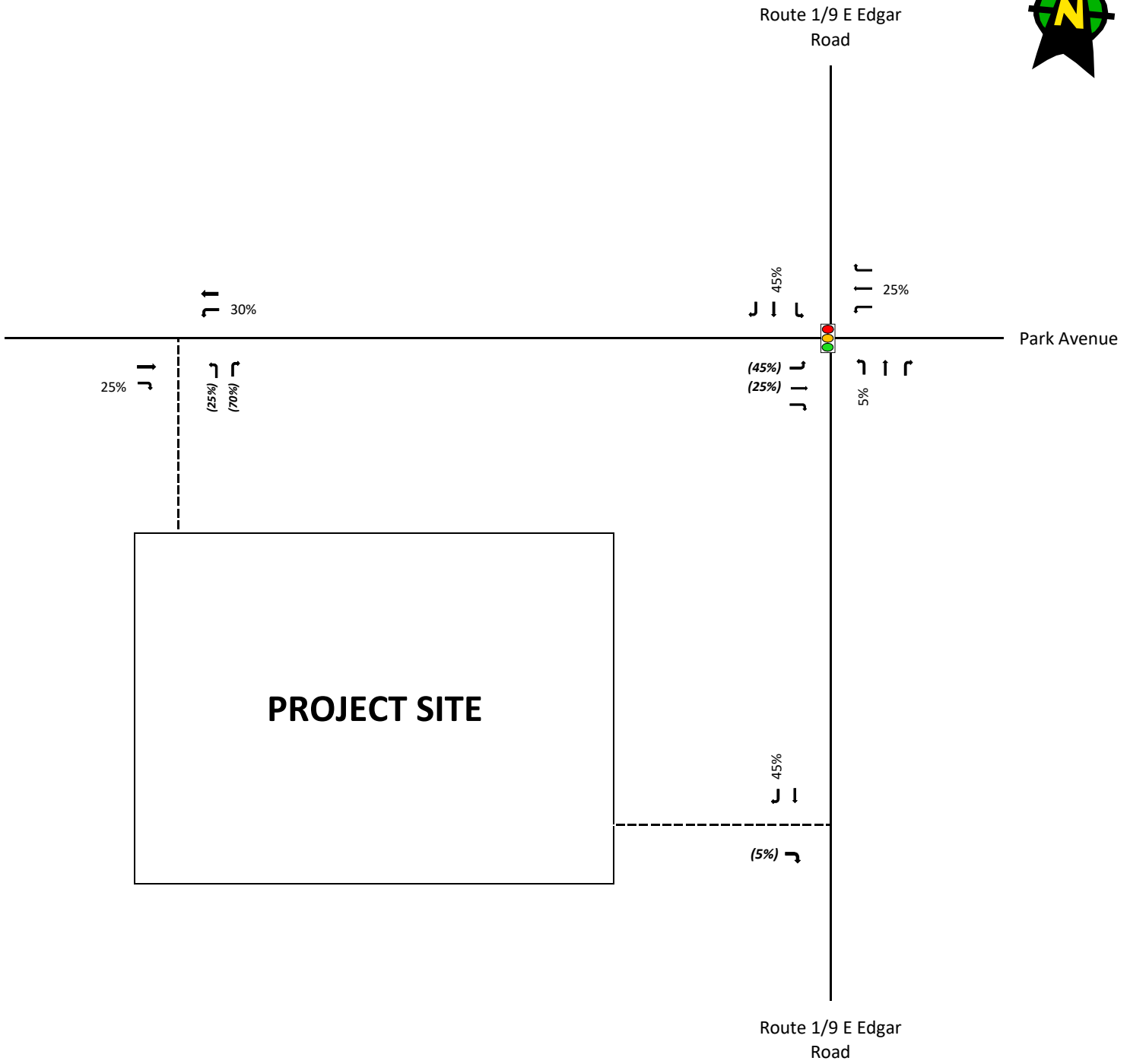
The Dreher Group  
MC Project No. 15002372A  
Linden Township, Union County, NJ

### Legend

AM Peak Hour: ### Thru Movement:   
PM Peak Hour: (###) Turning Movement:   
SAT Peak Hour: [###]

### Figure 3

Existing Volumes  
AM, PM & SAT Peak Hours



The Dreher Group  
MC Project No. 15002372A  
Linden Township, Union County, NJ

Legend	
Entering Distribution: ##%	Thru Movement: —
Exiting Distribution: (###%)	Turning Movement: ↩

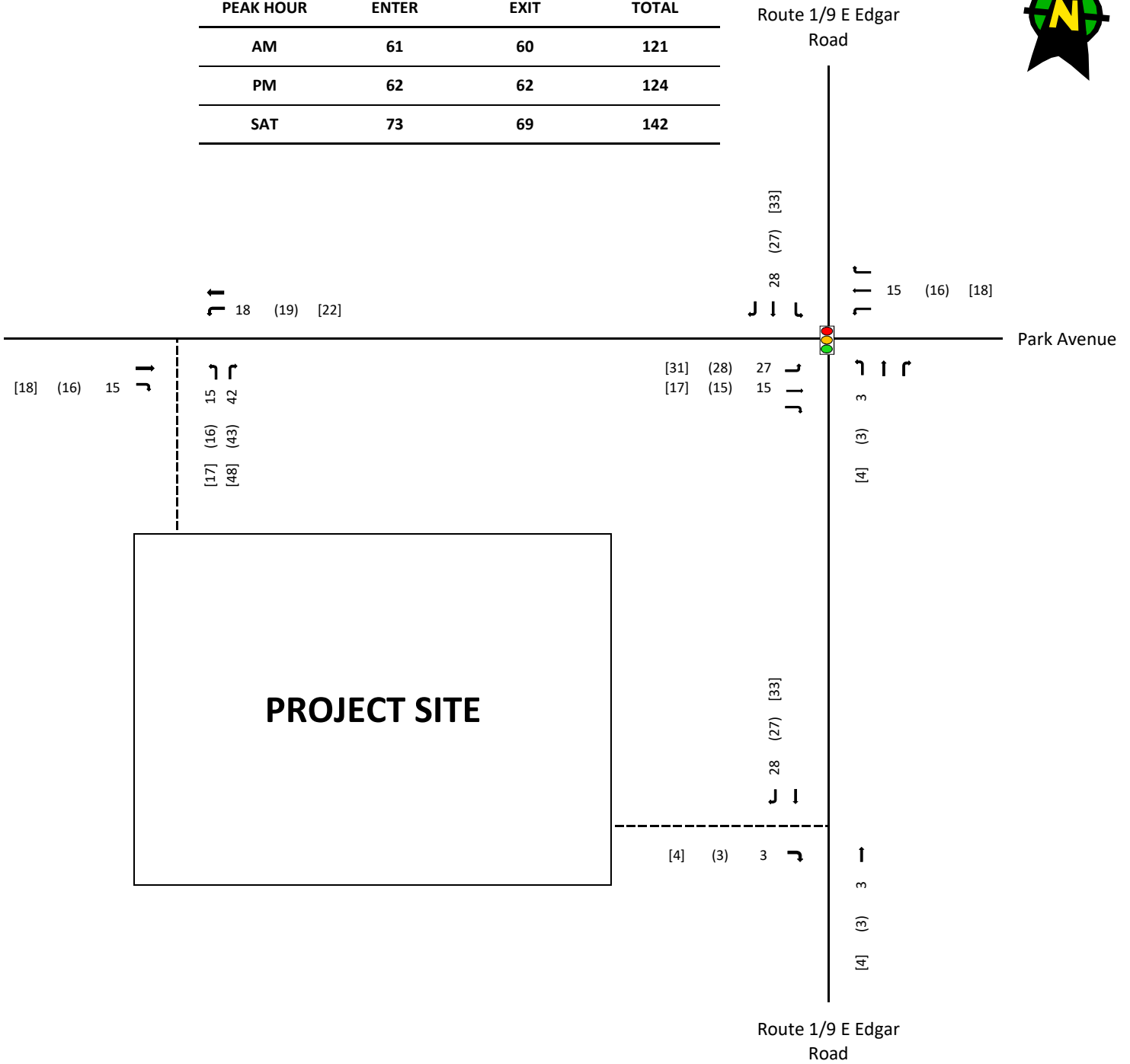
**Figure 4**

**Primary Trip Distribution**

**AM, PM & SAT Peak Hours**



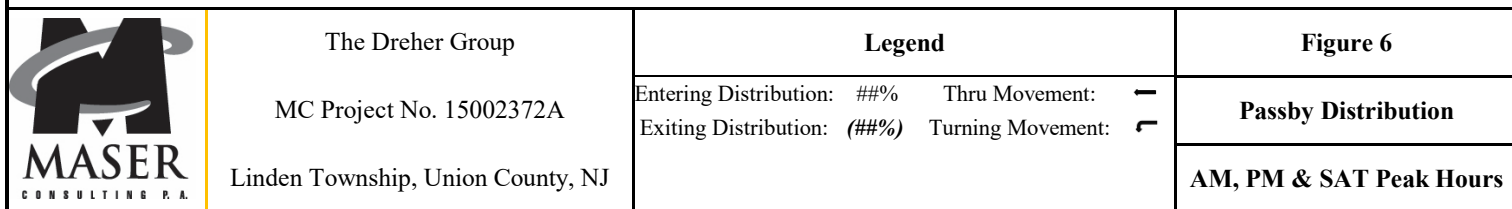
PEAK HOUR	ENTER	EXIT	TOTAL
AM	61	60	121
PM	62	62	124
SAT	73	69	142



The Dreher Group  
 MC Project No. 15002372A  
 Linden Township, Union County, NJ

Legend	
AM Peak Hour: ###	Thru Movement:
PM Peak Hour: (###)	Turning Movement:
SAT Peak Hour: [###]	

Figure 5
Primary Site Generated Trips
AM, PM & SAT Peak Hours

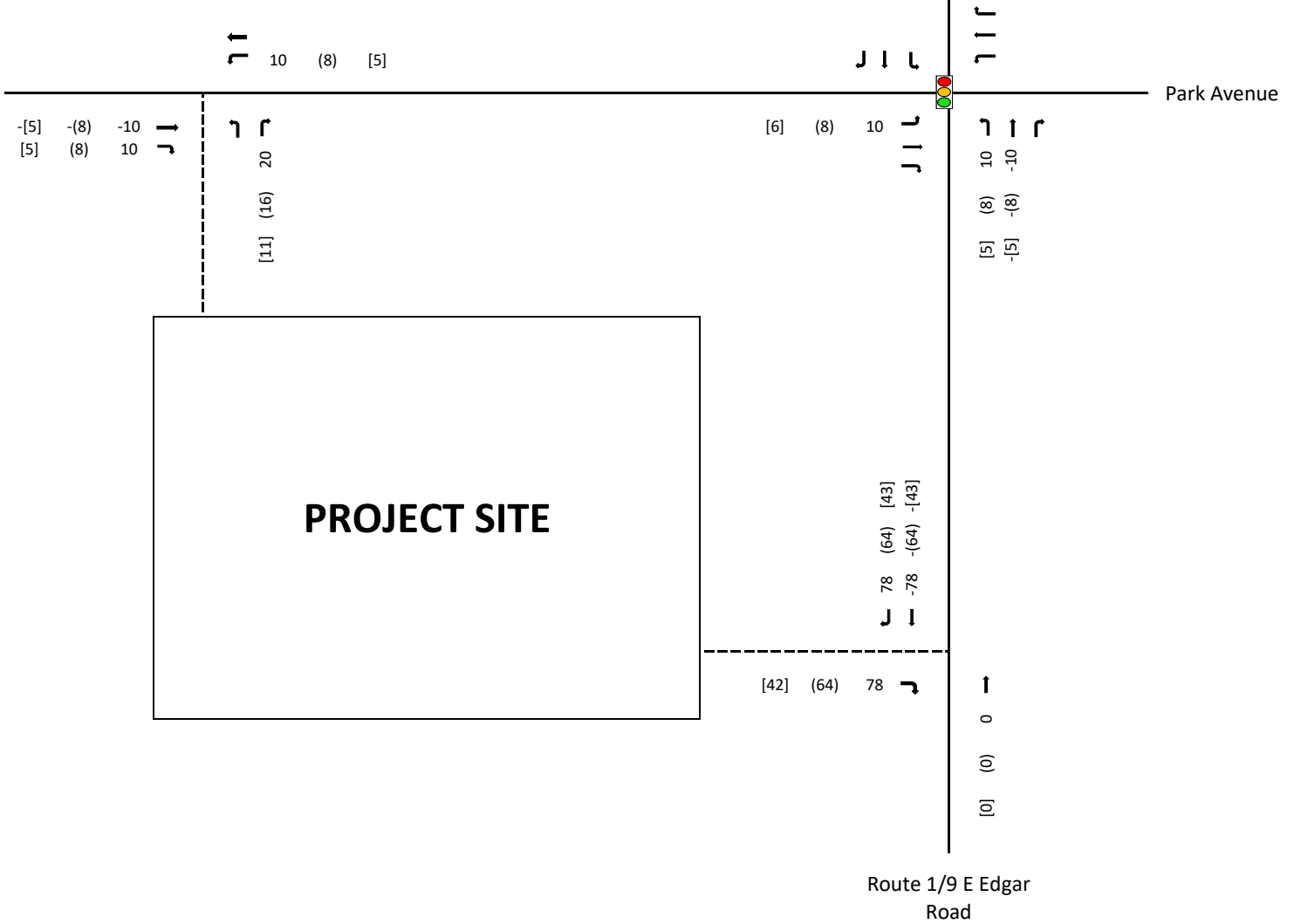






PEAK HOUR	ENTER	EXIT	TOTAL
AM	98	98	196
PM	80	80	160
SAT	53	53	106

Route 1/9 E Edgar  
Road



The Dreher Group  
MC Project No. 15002372A  
Linden Township, Union County, NJ

### Legend

AM Peak Hour: ### Thru Movement:  
PM Peak Hour: (###) Turning Movement:  
SAT Peak Hour: [###]

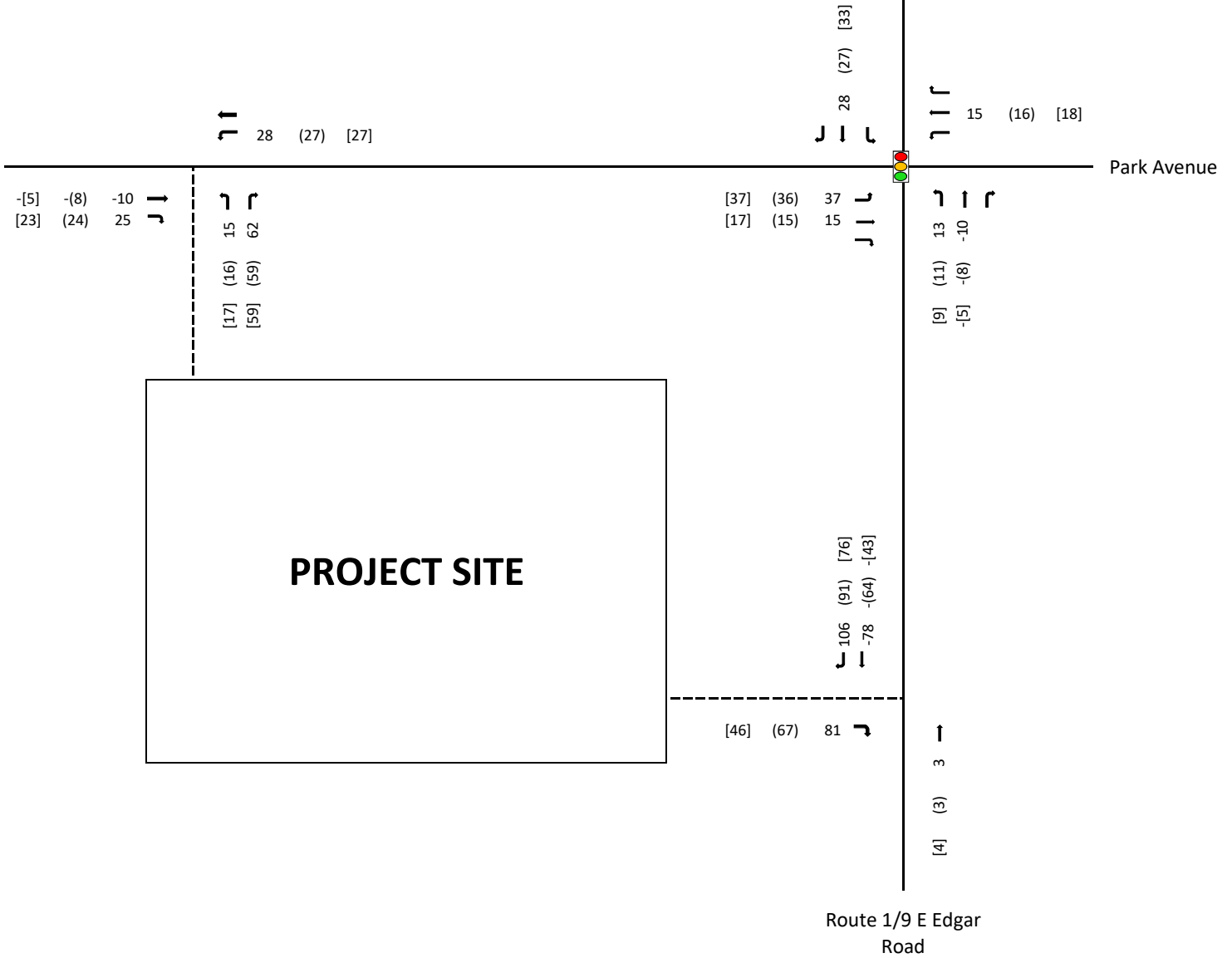
### Figure 7

#### Passby Trips

AM, PM & SAT Peak Hours

PEAK HOUR	ENTER	EXIT	TOTAL
AM	159	158	317
PM	142	142	284
SAT	126	122	248

Route 1/9 E Edgar  
Road



The Dreher Group  
MC Project No. 15002372A  
Linden Township, Union County, NJ

### Legend

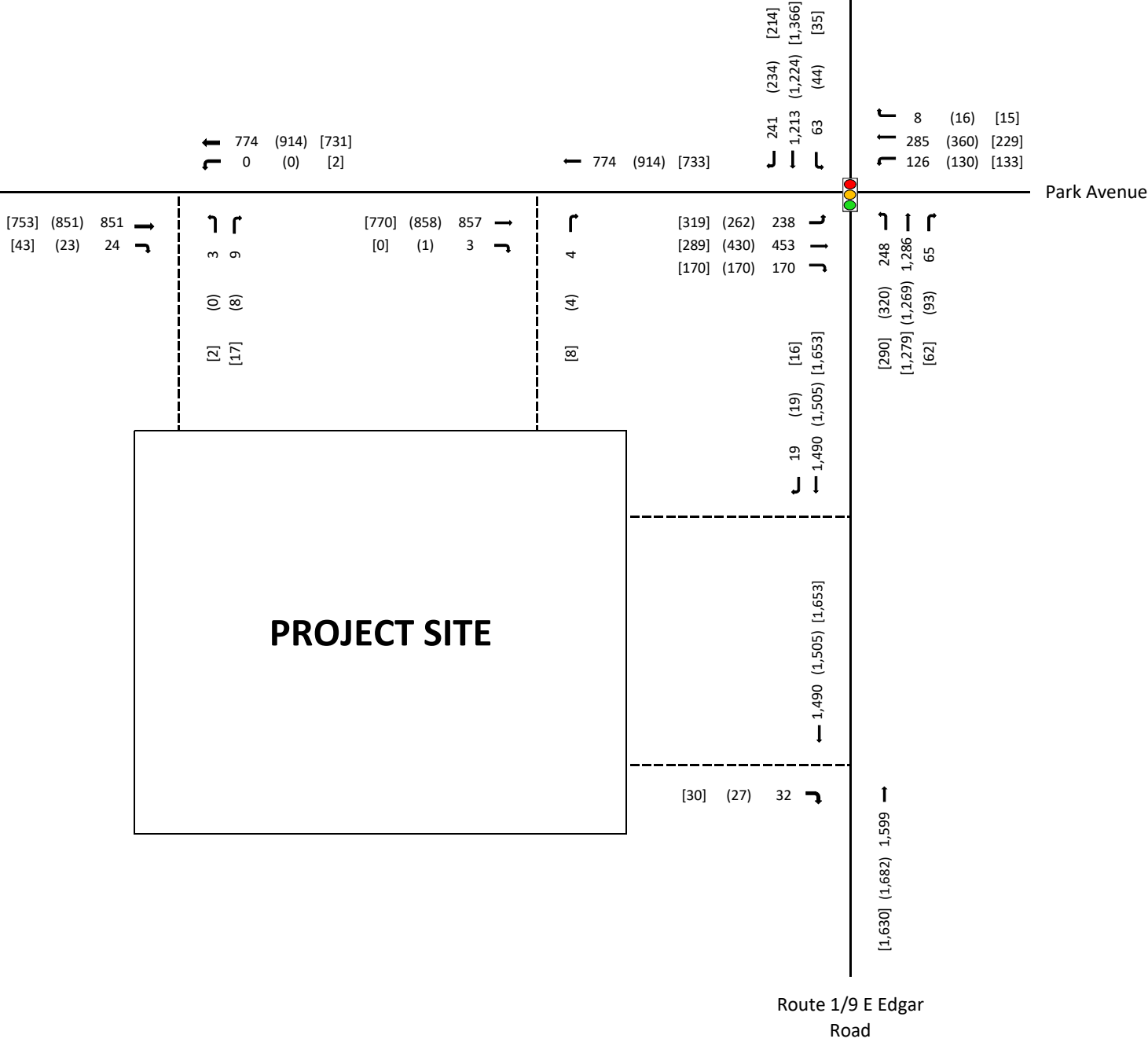
AM Peak Hour: ### Thru Movement:  
PM Peak Hour: (###) Turning Movement:  
SAT Peak Hour: [###]

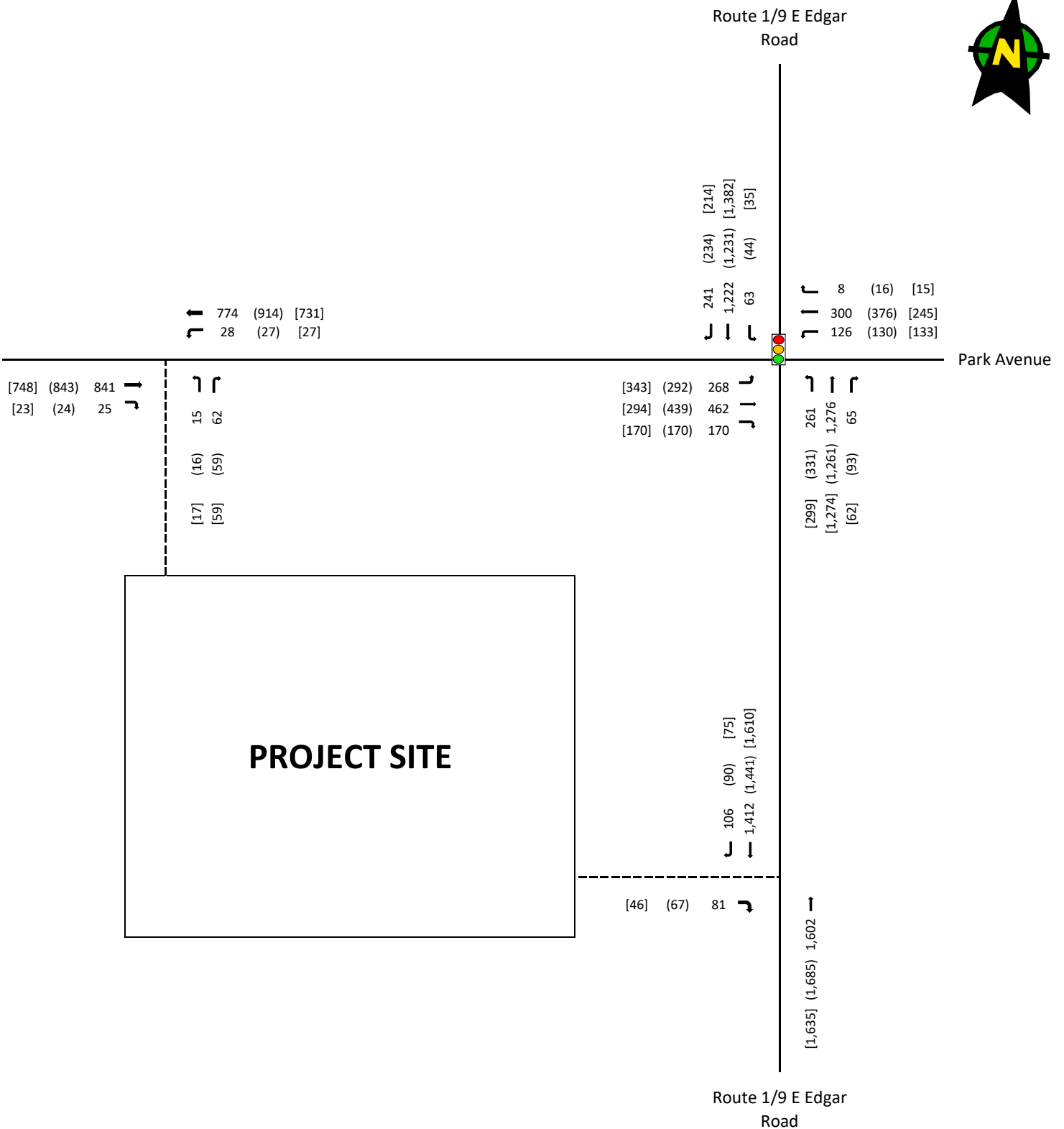
### Figure 8

**Total Site Generated Trips**  
**AM, PM & SAT Peak Hours**

BUILD-YEAR GROWTH RATE	
GROWTH RATE:	1.00%
YEARS:	3
GROWTH FACTOR:	1.030

Route 1/9 E Edgar  
Road







The Dreher Group

MC Project No. 15002372A

Linden Township, Union County, NJ

#### Legend

AM Peak Hour: ### Thru Movement: 

PM Peak Hour: (###) Turning Movement: 

SAT Peak Hour: [###]

#### Figure 10

**2023 Build Traffic Volumes**

**AM, PM & SAT Peak Hours**



# ***THE DREHER GROUP***

## ***TRAFFIC IMPACT STUDY***

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### **APPENDIX B**

#### **TRAFFIC COUNT DATA**



Imperial Traffic & Data Collection  
www.imperialtdc.com

PO BOX 4637  
Cherry Hill, New Jersey, United States 08034  
609-706-6100 lklein@imperialtdc.com

Project: Route 1/9 & Park  
Municipality: Linden, Union County, NJ  
Setup: BG  
Location: 40.645554, -74.226512

Count Name: 1. Route 1/9 & Park Avenue  
Site Code: 1  
Start Date: 02/19/2020  
Page No: 1

## Turning Movement Data

Start Time	Park Avenue Eastbound						Park Avenue Westbound						Route 1 Northbound						Route 1 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	41	98	36	0	175	0	34	72	1	0	107	1	42	346	24	1	413	0	15	274	37	0	326	1021
7:15 AM	0	51	106	32	1	189	0	25	61	3	0	89	0	41	317	17	4	375	0	15	275	47	0	337	990
7:30 AM	0	70	120	38	0	228	0	25	60	2	0	87	1	67	309	19	1	396	0	13	300	50	0	363	1074
7:45 AM	0	61	111	41	0	213	0	33	56	2	0	91	0	62	264	12	2	338	0	23	306	52	0	381	1023
Hourly Total	0	223	435	147	1	805	0	117	249	8	0	374	2	212	1236	72	8	1522	0	66	1155	186	0	1407	4108
8:00 AM	0	53	111	43	1	207	0	36	82	1	0	119	2	48	331	14	0	395	0	18	259	63	0	340	1061
8:15 AM	0	47	98	43	1	188	0	28	79	3	1	110	2	59	344	18	1	423	0	7	313	69	0	389	1110
8:30 AM	0	49	93	51	0	193	0	38	90	4	1	132	1	47	293	13	1	354	0	16	272	64	0	352	1031
8:45 AM	0	41	73	42	0	156	0	28	65	3	0	96	3	52	257	5	1	317	0	8	249	43	0	300	869
Hourly Total	0	190	375	179	2	744	0	130	316	11	2	457	8	206	1225	50	3	1489	0	49	1093	239	0	1381	4071
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	64	95	48	0	207	0	35	84	1	0	120	4	60	291	10	0	365	0	7	315	55	0	377	1069
4:15 PM	0	58	86	34	0	178	0	26	74	4	1	104	1	58	311	15	3	385	0	13	335	71	1	419	1086
4:30 PM	0	67	77	37	0	181	0	35	81	5	0	121	7	67	274	22	0	370	0	8	291	50	0	349	1021
4:45 PM	0	62	89	38	0	189	0	27	90	3	0	120	0	69	304	20	0	393	0	8	323	62	0	393	1095
Hourly Total	0	251	347	157	0	755	0	123	329	13	1	465	12	254	1180	67	3	1513	0	36	1264	238	1	1538	4271
5:00 PM	0	69	122	42	0	233	0	34	90	4	0	128	1	75	304	24	1	404	0	11	315	56	0	382	1147
5:15 PM	0	60	101	39	0	200	0	31	84	5	0	120	4	85	353	29	1	471	0	16	273	53	1	342	1133
5:30 PM	0	63	106	46	0	215	0	34	85	4	0	123	2	75	271	17	1	365	0	8	278	56	0	342	1045
5:45 PM	0	59	92	29	1	180	0	24	76	2	1	102	1	84	339	17	1	441	0	12	257	49	0	318	1041
Hourly Total	0	251	421	156	1	828	0	123	335	15	1	473	8	319	1267	87	4	1681	0	47	1123	214	1	1384	4366
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	64	67	43	0	174	0	30	43	6	0	79	6	55	248	8	4	317	0	7	319	50	0	376	946
11:15 AM	0	79	52	32	0	163	0	29	91	3	0	123	3	56	289	10	0	358	0	9	342	58	0	409	1053
11:30 AM	0	94	73	45	0	212	0	24	74	6	0	104	4	53	254	17	0	328	0	7	342	46	0	395	1039
11:45 AM	0	52	64	37	0	153	0	33	51	2	0	86	8	41	286	12	0	347	0	6	319	66	0	391	977
Hourly Total	0	289	256	157	0	702	0	116	259	17	0	392	21	205	1077	47	4	1350	0	29	1322	220	0	1571	4015
12:00 PM	0	69	70	43	0	182	0	38	59	5	0	102	8	57	285	12	0	362	0	7	305	51	0	363	1009
12:15 PM	0	68	61	40	0	169	0	42	59	5	0	106	8	70	364	12	3	454	0	6	320	57	0	383	1112
12:30 PM	0	76	70	32	1	178	0	37	63	5	1	105	2	63	268	10	0	343	0	10	328	37	1	375	1001
12:45 PM	0	71	69	35	0	175	0	34	56	3	1	93	7	65	318	20	1	410	0	9	362	59	0	430	1108
Hourly Total	0	284	270	150	1	704	0	151	237	18	2	406	25	255	1235	54	4	1569	0	32	1315	204	1	1551	4230
1:00 PM	0	86	69	36	2	191	0	27	51	5	2	83	8	61	276	7	2	352	0	11	314	54	0	379	1005
1:15 PM	0	70	76	43	1	189	0	36	52	5	0	93	11	56	344	17	1	428	0	9	338	54	0	401	1111
1:30 PM	0	83	67	51	0	201	0	32	63	2	0	97	4	69	303	16	0	392	0	5	312	41	0	358	1048

1:45 PM	0	75	72	42	0	189	0	32	61	3	0	96	7	55	301	21	0	384	0	6	343	52	0	401	1070
Hourly Total	0	314	284	172	3	770	0	127	227	15	2	369	30	241	1224	61	3	1556	0	31	1307	201	0	1539	4234
Grand Total	0	1802	2388	1118	8	5308	0	887	1952	97	8	2936	106	1692	8444	438	29	10680	0	290	8579	1502	3	10371	29295
Approach %	0.0	33.9	45.0	21.1	-	-	0.0	30.2	66.5	3.3	-	-	1.0	15.8	79.1	4.1	-	-	0.0	2.8	82.7	14.5	-	-	-
Total %	0.0	6.2	8.2	3.8	-	18.1	0.0	3.0	6.7	0.3	-	10.0	0.4	5.8	28.8	1.5	-	36.5	0.0	1.0	29.3	5.1	-	35.4	-
Lights	0	1696	2271	1075	-	5042	0	849	1834	86	-	2769	104	1636	7918	426	-	10084	0	270	8002	1385	-	9657	27552
% Lights	-	94.1	95.1	96.2	-	95.0	-	95.7	94.0	88.7	-	94.3	98.1	96.7	93.8	97.3	-	94.4	-	93.1	93.3	92.2	-	93.1	94.1
Mediums	0	73	88	36	-	197	0	24	96	8	-	128	2	43	287	11	-	343	0	14	300	77	-	391	1059
% Mediums	-	4.1	3.7	3.2	-	3.7	-	2.7	4.9	8.2	-	4.4	1.9	2.5	3.4	2.5	-	3.2	-	4.8	3.5	5.1	-	3.8	3.6
Articulated Trucks	0	33	29	7	-	69	0	14	22	3	-	39	0	13	239	1	-	253	0	6	277	40	-	323	684
% Articulated Trucks	-	1.8	1.2	0.6	-	1.3	-	1.6	1.1	3.1	-	1.3	0.0	0.8	2.8	0.2	-	2.4	-	2.1	3.2	2.7	-	3.1	2.3
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	25.0	-	-	-	-	-	0.0	-	-	-	-	-	27.6	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	8	-	-	-	-	-	21	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	75.0	-	-	-	-	-	100.0	-	-	-	-	-	72.4	-	-	-	-	-	100.0	-	-



Imperial Traffic & Data Collection  
www.imperialtdc.com

PO BOX 4637  
Cherry Hill, New Jersey, United States 08034  
609-706-6100 lklein@imperialtdc.com

Project: Route 1/9 & Park  
Municipality: Linden, Union County, NJ  
Setup: BG  
Location: 40.645554, -74.226512

Count Name: 1. Route 1/9 & Park Avenue  
Site Code: 1  
Start Date: 02/19/2020  
Page No: 4

### Turning Movement Peak Hour Data (7:30 AM)

Start Time	Park Avenue Eastbound						Park Avenue Westbound						Route 1 Northbound						Route 1 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	70	120	38	0	228	0	25	60	2	0	87	1	67	309	19	1	396	0	13	300	50	0	363	1074
7:45 AM	0	61	111	41	0	213	0	33	56	2	0	91	0	62	264	12	2	338	0	23	306	52	0	381	1023
8:00 AM	0	53	111	43	1	207	0	36	82	1	0	119	2	48	331	14	0	395	0	18	259	63	0	340	1061
8:15 AM	0	47	98	43	1	188	0	28	79	3	1	110	2	59	344	18	1	423	0	7	313	69	0	389	1110
Total	0	231	440	165	2	836	0	122	277	8	1	407	5	236	1248	63	4	1552	0	61	1178	234	0	1473	4268
Approach %	0.0	27.6	52.6	19.7	-	-	0.0	30.0	68.1	2.0	-	-	0.3	15.2	80.4	4.1	-	-	0.0	4.1	80.0	15.9	-	-	-
Total %	0.0	5.4	10.3	3.9	-	19.6	0.0	2.9	6.5	0.2	-	9.5	0.1	5.5	29.2	1.5	-	36.4	0.0	1.4	27.6	5.5	-	34.5	-
PHF	0.000	0.825	0.917	0.959	-	0.917	0.000	0.847	0.845	0.667	-	0.855	0.625	0.881	0.907	0.829	-	0.917	0.000	0.663	0.941	0.848	-	0.947	0.961
Lights	0	206	414	155	-	775	0	114	254	6	-	374	5	225	1106	61	-	1397	0	55	1045	212	-	1312	3858
% Lights	-	89.2	94.1	93.9	-	92.7	-	93.4	91.7	75.0	-	91.9	100.0	95.3	88.6	96.8	-	90.0	-	90.2	88.7	90.6	-	89.1	90.4
Mediums	0	19	18	8	-	45	0	6	19	1	-	26	0	8	72	1	-	81	0	3	61	18	-	82	234
% Mediums	-	8.2	4.1	4.8	-	5.4	-	4.9	6.9	12.5	-	6.4	0.0	3.4	5.8	1.6	-	5.2	-	4.9	5.2	7.7	-	5.6	5.5
Articulated Trucks	0	6	8	2	-	16	0	2	4	1	-	7	0	3	70	1	-	74	0	3	72	4	-	79	176
% Articulated Trucks	-	2.6	1.8	1.2	-	1.9	-	1.6	1.4	12.5	-	1.7	0.0	1.3	5.6	1.6	-	4.8	-	4.9	6.1	1.7	-	5.4	4.1
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	50.0	-	-	-	-	-	0.0	-	-	-	-	-	25.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	50.0	-	-	-	-	-	100.0	-	-	-	-	-	75.0	-	-	-	-	-	-	-	-





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PO BOX 4637  
Cherry Hill, New Jersey, United States 08034  
609-706-6100 lklein@imperialtdc.com

Project: Route 1/9 & Park  
Municipality: Linden, Union County, NJ  
Setup: BG  
Location: 40.645554, -74.226512

Count Name: 1. Route 1/9 & Park Avenue  
Site Code: 1  
Start Date: 02/19/2020  
Page No: 6

### Turning Movement Peak Hour Data (4:45 PM)

Start Time	Park Avenue Eastbound						Park Avenue Westbound						Route 1 Northbound						Route 1 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	62	89	38	0	189	0	27	90	3	0	120	0	69	304	20	0	393	0	8	323	62	0	393	1095
5:00 PM	0	69	122	42	0	233	0	34	90	4	0	128	1	75	304	24	1	404	0	11	315	56	0	382	1147
5:15 PM	0	60	101	39	0	200	0	31	84	5	0	120	4	85	353	29	1	471	0	16	273	53	1	342	1133
5:30 PM	0	63	106	46	0	215	0	34	85	4	0	123	2	75	271	17	1	365	0	8	278	56	0	342	1045
Total	0	254	418	165	0	837	0	126	349	16	0	491	7	304	1232	90	3	1633	0	43	1189	227	1	1459	4420
Approach %	0.0	30.3	49.9	19.7	-	-	0.0	25.7	71.1	3.3	-	-	0.4	18.6	75.4	5.5	-	-	0.0	2.9	81.5	15.6	-	-	-
Total %	0.0	5.7	9.5	3.7	-	18.9	0.0	2.9	7.9	0.4	-	11.1	0.2	6.9	27.9	2.0	-	36.9	0.0	1.0	26.9	5.1	-	33.0	-
PHF	0.000	0.920	0.857	0.897	-	0.898	0.000	0.926	0.969	0.800	-	0.959	0.438	0.894	0.873	0.776	-	0.867	0.000	0.672	0.920	0.915	-	0.928	0.963
Lights	0	242	408	159	-	809	0	119	334	15	-	468	7	293	1175	87	-	1562	0	38	1110	205	-	1353	4192
% Lights	-	95.3	97.6	96.4	-	96.7	-	94.4	95.7	93.8	-	95.3	100.0	96.4	95.4	96.7	-	95.7	-	88.4	93.4	90.3	-	92.7	94.8
Mediums	0	7	7	4	-	18	0	6	13	1	-	20	0	7	30	3	-	40	0	4	40	12	-	56	134
% Mediums	-	2.8	1.7	2.4	-	2.2	-	4.8	3.7	6.3	-	4.1	0.0	2.3	2.4	3.3	-	2.4	-	9.3	3.4	5.3	-	3.8	3.0
Articulated Trucks	0	5	3	2	-	10	0	1	2	0	-	3	0	4	27	0	-	31	0	1	39	10	-	50	94
% Articulated Trucks	-	2.0	0.7	1.2	-	1.2	-	0.8	0.6	0.0	-	0.6	0.0	1.3	2.2	0.0	-	1.9	-	2.3	3.3	4.4	-	3.4	2.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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PO BOX 4637  
Cherry Hill, New Jersey, United States 08034  
609-706-6100 lklein@imperialtdc.com

Project: Route 1/9 & Park  
Municipality: Linden, Union County, NJ  
Setup: BG  
Location: 40.645554, -74.226512

Count Name: 1. Route 1/9 & Park Avenue  
Site Code: 1  
Start Date: 02/19/2020  
Page No: 8

### Turning Movement Peak Hour Data (12:45 PM)

Start Time	Park Avenue Eastbound						Park Avenue Westbound						Route 1 Northbound						Route 1 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
12:45 PM	0	71	69	35	0	175	0	34	56	3	1	93	7	65	318	20	1	410	0	9	362	59	0	430	1108
1:00 PM	0	86	69	36	2	191	0	27	51	5	2	83	8	61	276	7	2	352	0	11	314	54	0	379	1005
1:15 PM	0	70	76	43	1	189	0	36	52	5	0	93	11	56	344	17	1	428	0	9	338	54	0	401	1111
1:30 PM	0	83	67	51	0	201	0	32	63	2	0	97	4	69	303	16	0	392	0	5	312	41	0	358	1048
Total	0	310	281	165	3	756	0	129	222	15	3	366	30	251	1241	60	4	1582	0	34	1326	208	0	1568	4272
Approach %	0.0	41.0	37.2	21.8	-	-	0.0	35.2	60.7	4.1	-	-	1.9	15.9	78.4	3.8	-	-	0.0	2.2	84.6	13.3	-	-	-
Total %	0.0	7.3	6.6	3.9	-	17.7	0.0	3.0	5.2	0.4	-	8.6	0.7	5.9	29.0	1.4	-	37.0	0.0	0.8	31.0	4.9	-	36.7	-
PHF	0.000	0.901	0.924	0.809	-	0.940	0.000	0.896	0.881	0.750	-	0.943	0.682	0.909	0.902	0.750	-	0.924	0.000	0.773	0.916	0.881	-	0.912	0.961
Lights	0	303	275	164	-	742	0	126	208	13	-	347	30	245	1203	60	-	1538	0	33	1278	198	-	1509	4136
% Lights	-	97.7	97.9	99.4	-	98.1	-	97.7	93.7	86.7	-	94.8	100.0	97.6	96.9	100.0	-	97.2	-	97.1	96.4	95.2	-	96.2	96.8
Mediums	0	6	6	0	-	12	0	2	13	2	-	17	0	5	31	0	-	36	0	1	34	8	-	43	108
% Mediums	-	1.9	2.1	0.0	-	1.6	-	1.6	5.9	13.3	-	4.6	0.0	2.0	2.5	0.0	-	2.3	-	2.9	2.6	3.8	-	2.7	2.5
Articulated Trucks	0	1	0	1	-	2	0	1	1	0	-	2	0	1	7	0	-	8	0	0	14	2	-	16	28
% Articulated Trucks	-	0.3	0.0	0.6	-	0.3	-	0.8	0.5	0.0	-	0.5	0.0	0.4	0.6	0.0	-	0.5	-	0.0	1.1	1.0	-	1.0	0.7
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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184 Baker Rd

Linden, NJ  
Route 1 SB/Driveway 1  
Thursday, March 23, 2017  
Location: 40.645394, -  
74.226766

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 1 SB/Dwy #1  
Site Code:  
Start Date: 03/23/2017  
Page No: 1

## Turning Movement Data

Start Time	Route 1 SB Southbound				Driveway #1 Eastbound				Int. Total
	Right	Thru	Peds	App. Total	Right	U-Turn	Peds	App. Total	
7:00 AM	4	331	1	335	0	0	0	0	335
7:15 AM	4	387	2	391	0	0	0	0	391
7:30 AM	6	370	0	376	0	0	0	0	376
7:45 AM	8	352	2	360	0	0	0	0	360
Hourly Total	22	1440	5	1462	0	0	0	0	1462
8:00 AM	4	358	0	362	0	0	0	0	362
8:15 AM	1	388	0	389	1	0	0	1	390
8:30 AM	1	350	0	351	1	0	0	1	352
8:45 AM	2	324	0	326	0	0	0	0	326
Hourly Total	8	1420	0	1428	2	0	0	2	1430
9:00 AM	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0
4:00 PM	3	333	0	336	0	0	0	0	336
4:15 PM	1	378	1	379	1	0	0	1	380
4:30 PM	4	377	0	381	0	0	0	0	381
4:45 PM	6	380	3	386	0	0	3	0	386
Hourly Total	14	1468	4	1482	1	0	3	1	1483
5:00 PM	5	397	0	402	0	0	0	0	402
5:15 PM	5	407	0	412	1	0	0	1	413
5:30 PM	4	394	0	398	0	0	0	0	398
5:45 PM	5	386	0	391	0	0	0	0	391
Hourly Total	19	1584	0	1603	1	0	0	1	1604
6:00 PM	0	1	0	1	0	0	0	0	1
Grand Total	63	5913	9	5976	4	0	3	4	5980
Approach %	1.1	98.9	-	-	100.0	0.0	-	-	-
Total %	1.1	98.9	-	99.9	0.1	0.0	-	0.1	-
Lights	56	5398	-	5454	4	0	-	4	5458
% Lights	88.9	91.3	-	91.3	100.0	-	-	100.0	91.3
Buses	0	49	-	49	0	0	-	0	49
% Buses	0.0	0.8	-	0.8	0.0	-	-	0.0	0.8
Trucks	7	466	-	473	0	0	-	0	473
% Trucks	11.1	7.9	-	7.9	0.0	-	-	0.0	7.9
Bicycles on Crosswalk	-	-	1	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	11.1	-	-	-	0.0	-	-
Pedestrians	-	-	8	-	-	-	3	-	-
% Pedestrians	-	-	88.9	-	-	-	100.0	-	-



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Linden, NJ  
Route 1 SB/Driveway 1  
Thursday, March 23, 2017  
Location: 40.645394, -  
74.226766

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
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Count Name: Rt 1 SB/Dwy #1  
Site Code:  
Start Date: 03/23/2017  
Page No: 3

### Turning Movement Peak Hour Data (7:15 AM)

Start Time	Route 1 SB Southbound				Driveway #1 Eastbound				Int. Total
	Right	Thru	Peds	App. Total	Right	U-Turn	Peds	App. Total	
7:15 AM	4	387	2	391	0	0	0	0	391
7:30 AM	6	370	0	376	0	0	0	0	376
7:45 AM	8	352	2	360	0	0	0	0	360
8:00 AM	4	358	0	362	0	0	0	0	362
Total	22	1467	4	1489	0	0	0	0	1489
Approach %	1.5	98.5	-	-	NaN	NaN	-	-	-
Total %	1.5	98.5	-	100.0	0.0	0.0	-	0.0	-
PHF	0.688	0.948	-	0.952	0.000	0.000	-	0.000	0.952
Lights	18	1303	-	1321	0	0	-	0	1321
% Lights	81.8	88.8	-	88.7	-	-	-	-	88.7
Buses	0	16	-	16	0	0	-	0	16
% Buses	0.0	1.1	-	1.1	-	-	-	-	1.1
Trucks	4	148	-	152	0	0	-	0	152
% Trucks	18.2	10.1	-	10.2	-	-	-	-	10.2
Bicycles on Crosswalk	-	-	1	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	25.0	-	-	-	-	-	-
Pedestrians	-	-	3	-	-	-	0	-	-
% Pedestrians	-	-	75.0	-	-	-	-	-	-





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Linden, NJ  
Route 1 SB/Driveway 1  
Saturday, March 25, 2017  
Location: 40.645394, -  
74.226766

Count Name: Rt 1 SB/Dwy #1-  
Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 1

## Turning Movement Data

Start Time	Route 1 SB Southbound				Driveway #1 Eastbound				Int. Total
	Right	Thru	Peds	App. Total	Right	U-Turn	Peds	App. Total	
11:00 AM	3	393	0	396	0	0	0	0	396
11:15 AM	6	398	1	404	1	0	0	1	405
11:30 AM	3	403	1	406	1	0	0	1	407
11:45 AM	3	425	0	428	1	0	0	1	429
Hourly Total	15	1619	2	1634	3	0	0	3	1637
12:00 PM	7	426	2	433	1	0	0	1	434
12:15 PM	6	404	0	410	0	0	0	0	410
12:30 PM	2	420	1	422	1	0	0	1	423
12:45 PM	7	418	0	425	0	0	0	0	425
Hourly Total	22	1668	3	1690	2	0	0	2	1692
1:00 PM	3	388	1	391	2	0	0	2	393
1:15 PM	4	446	2	450	0	0	0	0	450
1:30 PM	4	402	2	406	1	0	0	1	407
1:45 PM	4	439	0	443	0	0	0	0	443
Hourly Total	15	1675	5	1690	3	0	0	3	1693
2:00 PM	0	0	0	0	0	0	0	0	0
Grand Total	52	4962	10	5014	8	0	0	8	5022
Approach %	1.0	99.0	-	-	100.0	0.0	-	-	-
Total %	1.0	98.8	-	99.8	0.2	0.0	-	0.2	-
Lights	52	4811	-	4863	8	0	-	8	4871
% Lights	100.0	97.0	-	97.0	100.0	-	-	100.0	97.0
Buses	0	5	-	5	0	0	-	0	5
% Buses	0.0	0.1	-	0.1	0.0	-	-	0.0	0.1
Trucks	0	146	-	146	0	0	-	0	146
% Trucks	0.0	2.9	-	2.9	0.0	-	-	0.0	2.9
Bicycles on Crosswalk	-	-	2	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	20.0	-	-	-	-	-	-
Pedestrians	-	-	8	-	-	-	0	-	-
% Pedestrians	-	-	80.0	-	-	-	-	-	-



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Linden, NJ  
Route 1 SB/Driveway 1  
Saturday, March 25, 2017  
Location: 40.645394, -  
74.226766

Count Name: Rt 1 SB/Dwy #1-  
Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 3

### Turning Movement Peak Hour Data (11:45 AM)

Start Time	Route 1 SB Southbound				Driveway #1 Eastbound				Int. Total
	Right	Thru	Peds	App. Total	Right	U-Turn	Peds	App. Total	
11:45 AM	3	425	0	428	1	0	0	1	429
12:00 PM	7	426	2	433	1	0	0	1	434
12:15 PM	6	404	0	410	0	0	0	0	410
12:30 PM	2	420	1	422	1	0	0	1	423
Total	18	1675	3	1693	3	0	0	3	1696
Approach %	1.1	98.9	-	-	100.0	0.0	-	-	-
Total %	1.1	98.8	-	99.8	0.2	0.0	-	0.2	-
PHF	0.643	0.983	-	0.977	0.750	0.000	-	0.750	0.977
Lights	18	1625	-	1643	3	0	-	3	1646
% Lights	100.0	97.0	-	97.0	100.0	-	-	100.0	97.1
Buses	0	3	-	3	0	0	-	0	3
% Buses	0.0	0.2	-	0.2	0.0	-	-	0.0	0.2
Trucks	0	47	-	47	0	0	-	0	47
% Trucks	0.0	2.8	-	2.8	0.0	-	-	0.0	2.8
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	3	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-



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Linden, NJ  
Route 1 SB/Driveway 2  
Thursday, March 23, 2017  
Location: 40.645076, -  
74.227088

Coatesville, Pennsylvania, United States 19320  
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Count Name: Rt 1 SB/Dwy #2  
Site Code:  
Start Date: 03/23/2017  
Page No: 1

## Turning Movement Data

Start Time	Route 1 SB Southbound			Driveway #2 Eastbound				Int. Total
	Right	Thru	App. Total	Right	U-Turn	Peds	App. Total	
7:00 AM	0	324	324	10	0	0	10	334
7:15 AM	0	384	384	7	0	0	7	391
7:30 AM	0	378	378	8	0	0	8	386
7:45 AM	0	350	350	11	0	0	11	361
Hourly Total	0	1436	1436	36	0	0	36	1472
8:00 AM	0	364	364	8	0	0	8	372
8:15 AM	0	401	401	5	0	0	5	406
8:30 AM	0	354	354	4	0	0	4	358
8:45 AM	0	327	327	2	0	0	2	329
Hourly Total	0	1446	1446	19	0	0	19	1465
9:00 AM	0	1	1	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-
Hourly Total	0	1	1	0	0	0	0	1
4:00 PM	1	348	349	14	0	0	14	363
4:15 PM	0	361	361	9	0	0	9	370
4:30 PM	0	389	389	9	0	0	9	398
4:45 PM	0	365	365	10	0	3	10	375
Hourly Total	1	1463	1464	42	0	3	42	1506
5:00 PM	0	411	411	10	0	0	10	421
5:15 PM	0	385	385	6	0	0	6	391
5:30 PM	1	405	406	4	0	0	4	410
5:45 PM	0	374	374	7	0	0	7	381
Hourly Total	1	1575	1576	27	0	0	27	1603
Grand Total	2	5921	5923	124	0	3	124	6047
Approach %	0.0	100.0	-	100.0	0.0	-	-	-
Total %	0.0	97.9	97.9	2.1	0.0	-	2.1	-
Lights	2	5402	5404	117	0	-	117	5521
% Lights	100.0	91.2	91.2	94.4	-	-	94.4	91.3
Buses	0	47	47	0	0	-	0	47
% Buses	0.0	0.8	0.8	0.0	-	-	0.0	0.8
Trucks	0	472	472	7	0	-	7	479
% Trucks	0.0	8.0	8.0	5.6	-	-	5.6	7.9
Bicycles on Crosswalk	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-





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Linden, NJ  
Route 1 SB/Driveway 2  
Thursday, March 23, 2017  
Location: 40.645076, -  
74.227088

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Count Name: Rt 1 SB/Dwy #2  
Site Code:  
Start Date: 03/23/2017  
Page No: 3

### Turning Movement Peak Hour Data (7:30 AM)

Start Time	Route 1 SB Southbound			Driveway #2 Eastbound				Int. Total
	Right	Thru	App. Total	Right	U-Turn	Peds	App. Total	
7:30 AM	0	378	378	8	0	0	8	386
7:45 AM	0	350	350	11	0	0	11	361
8:00 AM	0	364	364	8	0	0	8	372
8:15 AM	0	401	401	5	0	0	5	406
Total	0	1493	1493	32	0	0	32	1525
Approach %	0.0	100.0	-	100.0	0.0	-	-	-
Total %	0.0	97.9	97.9	2.1	0.0	-	2.1	-
PHF	0.000	0.931	0.931	0.727	0.000	-	0.727	0.939
Lights	0	1325	1325	31	0	-	31	1356
% Lights	-	88.7	88.7	96.9	-	-	96.9	88.9
Buses	0	25	25	0	0	-	0	25
% Buses	-	1.7	1.7	0.0	-	-	0.0	1.6
Trucks	0	143	143	1	0	-	1	144
% Trucks	-	9.6	9.6	3.1	-	-	3.1	9.4
Bicycles on Crosswalk	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-



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Linden, NJ  
Route 1 SB/Driveway 2  
Thursday, March 23, 2017  
Location: 40.645076, -  
74.227088

Coatesville, Pennsylvania, United States 19320  
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Count Name: Rt 1 SB/Dwy #2  
Site Code:  
Start Date: 03/23/2017  
Page No: 5

### Turning Movement Peak Hour Data (5:00 PM)

Start Time	Route 1 SB Southbound			Driveway #2 Eastbound				Int. Total
	Right	Thru	App. Total	Right	U-Turn	Peds	App. Total	
5:00 PM	0	411	411	10	0	0	10	421
5:15 PM	0	385	385	6	0	0	6	391
5:30 PM	1	405	406	4	0	0	4	410
5:45 PM	0	374	374	7	0	0	7	381
Total	1	1575	1576	27	0	0	27	1603
Approach %	0.1	99.9	-	100.0	0.0	-	-	-
Total %	0.1	98.3	98.3	1.7	0.0	-	1.7	-
PHF	0.250	0.958	0.959	0.675	0.000	-	0.675	0.952
Lights	1	1482	1483	27	0	-	27	1510
% Lights	100.0	94.1	94.1	100.0	-	-	100.0	94.2
Buses	0	4	4	0	0	-	0	4
% Buses	0.0	0.3	0.3	0.0	-	-	0.0	0.2
Trucks	0	89	89	0	0	-	0	89
% Trucks	0.0	5.7	5.6	0.0	-	-	0.0	5.6
Bicycles on Crosswalk	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-



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Count Name: Rt 1 SB/Dwy #2-Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 1

Start Time	Route 1 SB Southbound					Northbound Approach					Driveway #2 Eastbound					Int. Total
						Northbound										
	Right	Thru	U-Turn	Peds	App. Total	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	
11:00 AM	0	411	0	0	411	315	0	0	0	315	9	0	0	0	9	735
11:15 AM	0	385	0	0	385	322	0	0	0	322	4	0	0	0	4	711
11:30 AM	0	416	0	0	416	333	0	0	0	333	5	0	0	0	5	754
11:45 AM	0	413	0	0	413	356	0	0	0	356	5	0	0	0	5	774
Hourly Total	0	1625	0	0	1625	1326	0	0	0	1326	23	0	0	0	23	2974
12:00 PM	1	444	0	0	445	329	0	0	0	329	6	0	0	0	6	780
12:15 PM	2	396	0	0	398	358	0	0	0	358	13	0	0	0	13	769
12:30 PM	0	438	0	0	438	364	0	0	0	364	5	0	0	0	5	807
12:45 PM	0	388	0	0	388	376	0	0	0	376	11	0	0	0	11	775
Hourly Total	3	1666	0	0	1669	1427	0	0	0	1427	35	0	0	0	35	3131
1:00 PM	1	403	0	0	404	345	0	0	0	345	10	0	0	0	10	759
1:15 PM	0	425	0	0	425	424	0	0	0	424	4	0	0	0	4	853
1:30 PM	1	418	0	0	419	395	0	0	0	395	10	0	0	0	10	824
1:45 PM	0	421	0	0	421	346	0	0	0	346	6	0	0	0	6	773
Hourly Total	2	1667	0	0	1669	1510	0	0	0	1510	30	0	0	0	30	3209
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	5	4958	0	0	4963	4263	0	0	0	4263	88	0	0	0	88	9314
Approach %	0.1	99.9	0.0	-	-	100.0	0.0	0.0	-	-	100.0	0.0	0.0	-	-	-
Total %	0.1	53.2	0.0	-	53.3	45.8	0.0	0.0	-	45.8	0.9	0.0	0.0	-	0.9	-
Lights	5	4809	0	-	4814	4139	0	0	-	4139	87	0	0	-	87	9040
% Lights	100.0	97.0	-	-	97.0	97.1	-	-	-	97.1	98.9	-	-	-	98.9	97.1
Buses	0	3	0	-	3	8	0	0	-	8	0	0	0	-	0	11
% Buses	0.0	0.1	-	-	0.1	0.2	-	-	-	0.2	0.0	-	-	-	0.0	0.1
Trucks	0	146	0	-	146	116	0	0	-	116	1	0	0	-	1	263
% Trucks	0.0	2.9	-	-	2.9	2.7	-	-	-	2.7	1.1	-	-	-	1.1	2.8
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



www.TSTData.com  
184 Baker Rd

Linden, NJ  
Route 1 SB/Driveway 2  
Saturday, March 25, 2017  
Location: 40.645076, -  
74.227088

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 1 SB/Dwy #2-Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 3

### Turning Movement Peak Hour Data (12:45 PM)

[illegible]



www.TSTData.com  
184 Baker Rd

Linden, NJ  
Park Ave/Driveway 3  
Thursday, March 23, 2017  
Location: 40.645614, -  
74.226868

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Park Ave/Dwy #3  
Site Code:  
Start Date: 03/23/2017  
Page No: 1

## Turning Movement Data

Start Time	Park Avenue Westbound					Driveway #3 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
7:00 AM	136	0	0	0	136	5	0	0	1	5	0	188	0	0	188	329
7:15 AM	146	0	0	1	146	1	0	0	0	1	0	191	0	0	191	338
7:30 AM	164	0	0	0	164	0	0	0	1	0	1	204	0	0	205	369
7:45 AM	188	0	0	0	188	0	0	0	0	0	1	201	0	0	202	390
Hourly Total	634	0	0	1	634	6	0	0	2	6	2	784	0	0	786	1426
8:00 AM	172	0	0	0	172	3	0	0	0	3	1	218	0	0	219	394
8:15 AM	178	0	0	0	178	1	0	0	0	1	0	184	0	0	184	363
8:30 AM	171	0	0	0	171	0	0	0	0	0	0	161	0	0	161	332
8:45 AM	155	0	0	0	155	1	0	0	0	1	0	151	0	0	151	307
Hourly Total	676	0	0	0	676	5	0	0	0	5	1	714	0	0	715	1396
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	211	0	0	2	211	2	0	0	0	2	1	182	0	0	183	396
4:15 PM	212	0	0	0	212	0	0	0	0	0	0	188	0	0	188	400
4:30 PM	210	0	0	0	210	0	0	0	0	0	0	196	0	0	196	406
4:45 PM	197	0	0	2	197	1	0	0	0	1	0	198	0	0	198	396
Hourly Total	830	0	0	4	830	3	0	0	0	3	1	764	0	0	765	1598
5:00 PM	195	0	0	0	195	1	0	0	0	1	1	181	0	0	182	378
5:15 PM	187	0	0	0	187	1	0	0	0	1	0	235	0	0	235	423
5:30 PM	179	0	0	0	179	2	0	0	1	2	0	199	0	0	199	380
5:45 PM	182	0	0	0	182	0	0	0	0	0	0	203	0	0	203	385
Hourly Total	743	0	0	0	743	4	0	0	1	4	1	818	0	0	819	1566
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	2883	0	0	5	2883	18	0	0	3	18	5	3080	0	0	3085	5986
Approach %	100.0	0.0	0.0	-	-	100.0	0.0	0.0	-	-	0.2	99.8	0.0	-	-	-
Total %	48.2	0.0	0.0	-	48.2	0.3	0.0	0.0	-	0.3	0.1	51.5	0.0	-	51.5	-
Lights	2694	0	0	-	2694	16	0	0	-	16	5	2903	0	-	2908	5618
% Lights	93.4	-	-	-	93.4	88.9	-	-	-	88.9	100.0	94.3	-	-	94.3	93.9
Buses	43	0	0	-	43	0	0	0	-	0	0	16	0	-	16	59
% Buses	1.5	-	-	-	1.5	0.0	-	-	-	0.0	0.0	0.5	-	-	0.5	1.0
Trucks	146	0	0	-	146	2	0	0	-	2	0	161	0	-	161	309
% Trucks	5.1	-	-	-	5.1	11.1	-	-	-	11.1	0.0	5.2	-	-	5.2	5.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	5	-	-	-	-	3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



www.TSTData.com  
184 Baker Rd

Linden, NJ  
Park Ave/Driveway 3  
Thursday, March 23, 2017  
Location: 40.645614, -  
74.226868

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Park Ave/Dwy #3  
Site Code:  
Start Date: 03/23/2017  
Page No: 3

### Turning Movement Peak Hour Data (7:30 AM)

Start Time	Park Avenue Westbound					Driveway #3 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
7:30 AM	164	0	0	0	164	0	0	0	1	0	1	204	0	0	205	369
7:45 AM	188	0	0	0	188	0	0	0	0	0	1	201	0	0	202	390
8:00 AM	172	0	0	0	172	3	0	0	0	3	1	218	0	0	219	394
8:15 AM	178	0	0	0	178	1	0	0	0	1	0	184	0	0	184	363
Total	702	0	0	0	702	4	0	0	1	4	3	807	0	0	810	1516
Approach %	100.0	0.0	0.0	-	-	100.0	0.0	0.0	-	-	0.4	99.6	0.0	-	-	-
Total %	46.3	0.0	0.0	-	46.3	0.3	0.0	0.0	-	0.3	0.2	53.2	0.0	-	53.4	-
PHF	0.934	0.000	0.000	-	0.934	0.333	0.000	0.000	-	0.333	0.750	0.925	0.000	-	0.925	0.962
Lights	659	0	0	-	659	4	0	0	-	4	3	756	0	-	759	1422
% Lights	93.9	-	-	-	93.9	100.0	-	-	-	100.0	100.0	93.7	-	-	93.7	93.8
Buses	11	0	0	-	11	0	0	0	-	0	0	7	0	-	7	18
% Buses	1.6	-	-	-	1.6	0.0	-	-	-	0.0	0.0	0.9	-	-	0.9	1.2
Trucks	32	0	0	-	32	0	0	0	-	0	0	44	0	-	44	76
% Trucks	4.6	-	-	-	4.6	0.0	-	-	-	0.0	0.0	5.5	-	-	5.4	5.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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184 Baker Rd

Linden, NJ  
Park Ave/Driveway 3  
Thursday, March 23, 2017  
Location: 40.645614, -  
74.226868

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Park Ave/Dwy #3  
Site Code:  
Start Date: 03/23/2017  
Page No: 5

### Turning Movement Peak Hour Data (4:30 PM)

[illegible]



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184 Baker Rd

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
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Linden, NJ  
Park Ave/Driveway 3  
Saturday, March 25, 2017  
Location: 40.645614, -  
74.226868

Count Name: Park Ave/Dwy #3-  
Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 1

## Turning Movement Data

Start Time	Park Avenue Westbound					Driveway #3 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
11:00 AM	148	0	0	0	148	1	0	0	0	1	1	158	0	0	159	308
11:15 AM	169	0	0	2	169	1	0	0	2	1	0	167	0	0	167	337
11:30 AM	163	0	0	0	163	3	0	0	0	3	0	192	0	0	192	358
11:45 AM	182	0	0	1	182	0	0	0	1	0	0	212	0	0	212	394
Hourly Total	662	0	0	3	662	5	0	0	3	5	1	729	0	0	730	1397
12:00 PM	166	0	0	0	166	0	0	0	1	0	0	200	0	0	200	366
12:15 PM	194	0	0	0	194	4	1	0	0	5	1	215	0	0	216	415
12:30 PM	162	0	0	0	162	0	0	0	1	0	0	234	0	0	234	396
12:45 PM	175	0	0	2	175	6	0	0	0	6	0	187	0	0	187	368
Hourly Total	697	0	0	2	697	10	1	0	2	11	1	836	0	0	837	1545
1:00 PM	164	0	0	0	164	1	0	0	1	1	0	213	0	0	213	378
1:15 PM	187	0	0	0	187	1	0	0	0	1	0	229	0	0	229	417
1:30 PM	151	0	0	0	151	1	0	0	1	1	0	241	0	0	241	393
1:45 PM	163	0	0	0	163	0	0	0	0	0	1	194	0	0	195	358
Hourly Total	665	0	0	0	665	3	0	0	2	3	1	877	0	0	878	1546
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	2024	0	0	5	2024	18	1	0	7	19	3	2442	0	0	2445	4488
Approach %	100.0	0.0	0.0	-	-	94.7	5.3	0.0	-	-	0.1	99.9	0.0	-	-	-
Total %	45.1	0.0	0.0	-	45.1	0.4	0.0	0.0	-	0.4	0.1	54.4	0.0	-	54.5	-
Lights	1981	0	0	-	1981	17	1	0	-	18	3	2399	0	-	2402	4401
% Lights	97.9	-	-	-	97.9	94.4	100.0	-	-	94.7	100.0	98.2	-	-	98.2	98.1
Buses	2	0	0	-	2	0	0	0	-	0	0	1	0	-	1	3
% Buses	0.1	-	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Trucks	41	0	0	-	41	1	0	0	-	1	0	42	0	-	42	84
% Trucks	2.0	-	-	-	2.0	5.6	0.0	-	-	5.3	0.0	1.7	-	-	1.7	1.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	14.3	-	-	-	-	-	-	-
Pedestrians	-	-	-	5	-	-	-	-	6	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	85.7	-	-	-	-	-	-	-





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184 Baker Rd

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Linden, NJ  
Park Ave/Driveway 3  
Saturday, March 25, 2017  
Location: 40.645614, -  
74.226868

Count Name: Park Ave/Dwy #3-  
Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 3

### Turning Movement Peak Hour Data (11:45 AM)

Start Time	Park Avenue Westbound					Driveway #3 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
11:45 AM	182	0	0	1	182	0	0	0	1	0	0	212	0	0	212	394
12:00 PM	166	0	0	0	166	0	0	0	1	0	0	200	0	0	200	366
12:15 PM	194	0	0	0	194	4	1	0	0	5	1	215	0	0	216	415
12:30 PM	162	0	0	0	162	0	0	0	1	0	0	234	0	0	234	396
Total	704	0	0	1	704	4	1	0	3	5	1	861	0	0	862	1571
Approach %	100.0	0.0	0.0	-	-	80.0	20.0	0.0	-	-	0.1	99.9	0.0	-	-	-
Total %	44.8	0.0	0.0	-	44.8	0.3	0.1	0.0	-	0.3	0.1	54.8	0.0	-	54.9	-
PHF	0.907	0.000	0.000	-	0.907	0.250	0.250	0.000	-	0.250	0.250	0.920	0.000	-	0.921	0.946
Lights	689	0	0	-	689	4	1	0	-	5	1	845	0	-	846	1540
% Lights	97.9	-	-	-	97.9	100.0	100.0	-	-	100.0	100.0	98.1	-	-	98.1	98.0
Buses	1	0	0	-	1	0	0	0	-	0	0	1	0	-	1	2
% Buses	0.1	-	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.1
Trucks	14	0	0	-	14	0	0	0	-	0	0	15	0	-	15	29
% Trucks	2.0	-	-	-	2.0	0.0	0.0	-	-	0.0	0.0	1.7	-	-	1.7	1.8
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



www.TSTData.com  
184 Baker Rd

Linden, NJ  
Park Ave/Driveway 4  
Thursday, March 23, 2017  
Location: 40.645807, -  
74.227173

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Park Ave/Dwy #4  
Site Code:  
Start Date: 03/23/2017  
Page No: 1

## Turning Movement Data

Start Time	Park Avenue Westbound					Driveway #4 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
7:00 AM	126	2	0	0	128	0	1	0	1	1	5	186	0	1	191	320
7:15 AM	158	0	0	0	158	2	0	0	0	2	5	194	0	0	199	359
7:30 AM	168	0	0	0	168	3	0	0	1	3	6	189	0	0	195	366
7:45 AM	201	0	0	0	201	2	3	0	0	5	7	209	0	0	216	422
Hourly Total	653	2	0	0	655	7	4	0	2	11	23	778	0	1	801	1467
8:00 AM	173	0	0	0	173	2	0	0	0	2	7	210	0	0	217	392
8:15 AM	175	0	0	0	175	2	0	0	0	2	4	187	0	0	191	368
8:30 AM	171	0	0	0	171	2	2	0	0	4	5	155	0	0	160	335
8:45 AM	153	0	0	0	153	0	0	0	0	0	3	149	0	0	152	305
Hourly Total	672	0	0	0	672	6	2	0	0	8	19	701	0	0	720	1400
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	220	1	0	0	221	2	1	0	0	3	10	182	0	0	192	416
4:15 PM	214	0	0	0	214	3	2	0	1	5	8	191	0	0	199	418
4:30 PM	220	0	0	0	220	0	1	0	0	1	5	185	0	0	190	411
4:45 PM	202	0	0	0	202	2	0	0	2	2	4	206	0	0	210	414
Hourly Total	856	1	0	0	857	7	4	0	3	11	27	764	0	0	791	1659
5:00 PM	202	0	0	0	202	2	0	0	0	2	5	189	0	0	194	398
5:15 PM	201	0	0	0	201	3	0	0	0	3	8	248	0	0	256	460
5:30 PM	195	0	0	0	195	2	0	0	1	2	5	186	0	0	191	388
5:45 PM	185	0	0	0	185	1	0	0	0	1	5	219	0	0	224	410
Hourly Total	783	0	0	0	783	8	0	0	1	8	23	842	0	0	865	1656
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	2964	3	0	0	2967	28	10	0	6	38	92	3086	0	1	3178	6183
Approach %	99.9	0.1	0.0	-	-	73.7	26.3	0.0	-	-	2.9	97.1	0.0	-	-	-
Total %	47.9	0.0	0.0	-	48.0	0.5	0.2	0.0	-	0.6	1.5	49.9	0.0	-	51.4	-
Lights	2771	3	0	-	2774	23	10	0	-	33	86	2920	0	-	3006	5813
% Lights	93.5	100.0	-	-	93.5	82.1	100.0	-	-	86.8	93.5	94.6	-	-	94.6	94.0
Buses	47	0	0	-	47	1	0	0	-	1	0	15	0	-	15	63
% Buses	1.6	0.0	-	-	1.6	3.6	0.0	-	-	2.6	0.0	0.5	-	-	0.5	1.0
Trucks	146	0	0	-	146	4	0	0	-	4	6	151	0	-	157	307
% Trucks	4.9	0.0	-	-	4.9	14.3	0.0	-	-	10.5	6.5	4.9	-	-	4.9	5.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	6	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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184 Baker Rd

Linden, NJ  
Park Ave/Driveway 4  
Thursday, March 23, 2017  
Location: 40.645807, -  
74.227173

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Park Ave/Dwy #4  
Site Code:  
Start Date: 03/23/2017  
Page No: 3

### Turning Movement Peak Hour Data (7:30 AM)

Start Time	Park Avenue Westbound					Driveway #4 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
7:30 AM	168	0	0	0	168	3	0	0	1	3	6	189	0	0	195	366
7:45 AM	201	0	0	0	201	2	3	0	0	5	7	209	0	0	216	422
8:00 AM	173	0	0	0	173	2	0	0	0	2	7	210	0	0	217	392
8:15 AM	175	0	0	0	175	2	0	0	0	2	4	187	0	0	191	368
Total	717	0	0	0	717	9	3	0	1	12	24	795	0	0	819	1548
Approach %	100.0	0.0	0.0	-	-	75.0	25.0	0.0	-	-	2.9	97.1	0.0	-	-	-
Total %	46.3	0.0	0.0	-	46.3	0.6	0.2	0.0	-	0.8	1.6	51.4	0.0	-	52.9	-
PHF	0.892	0.000	0.000	-	0.892	0.750	0.250	0.000	-	0.600	0.857	0.946	0.000	-	0.944	0.917
Lights	674	0	0	-	674	6	3	0	-	9	23	750	0	-	773	1456
% Lights	94.0	-	-	-	94.0	66.7	100.0	-	-	75.0	95.8	94.3	-	-	94.4	94.1
Buses	13	0	0	-	13	1	0	0	-	1	0	6	0	-	6	20
% Buses	1.8	-	-	-	1.8	11.1	0.0	-	-	8.3	0.0	0.8	-	-	0.7	1.3
Trucks	30	0	0	-	30	2	0	0	-	2	1	39	0	-	40	72
% Trucks	4.2	-	-	-	4.2	22.2	0.0	-	-	16.7	4.2	4.9	-	-	4.9	4.7
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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184 Baker Rd

Linden, NJ  
Park Ave/Driveway 4  
Thursday, March 23, 2017  
Location: 40.645807, -  
74.227173

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Park Ave/Dwy #4  
Site Code:  
Start Date: 03/23/2017  
Page No: 5

### Turning Movement Peak Hour Data (4:30 PM)

Start Time	Park Avenue Westbound					Driveway #4 Northbound					Park Avenue Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
4:30 PM	220	0	0	0	220	0	1	0	0	1	5	185	0	0	190	411
4:45 PM	202	0	0	0	202	2	0	0	2	2	4	206	0	0	210	414
5:00 PM	202	0	0	0	202	2	0	0	0	2	5	189	0	0	194	398
5:15 PM	201	0	0	0	201	3	0	0	0	3	8	248	0	0	256	460
Total	825	0	0	0	825	7	1	0	2	8	22	828	0	0	850	1683
Approach %	100.0	0.0	0.0	-	-	87.5	12.5	0.0	-	-	2.6	97.4	0.0	-	-	-
Total %	49.0	0.0	0.0	-	49.0	0.4	0.1	0.0	-	0.5	1.3	49.2	0.0	-	50.5	-
PHF	0.938	0.000	0.000	-	0.938	0.583	0.250	0.000	-	0.667	0.688	0.835	0.000	-	0.830	0.915
Lights	780	0	0	-	780	7	1	0	-	8	22	786	0	-	808	1596
% Lights	94.5	-	-	-	94.5	100.0	100.0	-	-	100.0	100.0	94.9	-	-	95.1	94.8
Buses	4	0	0	-	4	0	0	0	-	0	0	3	0	-	3	7
% Buses	0.5	-	-	-	0.5	0.0	0.0	-	-	0.0	0.0	0.4	-	-	0.4	0.4
Trucks	41	0	0	-	41	0	0	0	-	0	0	39	0	-	39	80
% Trucks	5.0	-	-	-	5.0	0.0	0.0	-	-	0.0	0.0	4.7	-	-	4.6	4.8
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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Coatesville, Pennsylvania, United States 19320  
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Linden, NJ  
Park Ave/Driveway 4  
Saturday, March 25, 2017  
Location: 40.645807, -  
74.227173

Count Name: Park Ave/Dwy #4-  
Sat  
Site Code:  
Start Date: 03/25/2017  
Page No: 1

## Turning Movement Data

Start Time	Southbound Approach						Park Avenue Westbound						Driveway #4 Northbound						Park Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
11:00 AM	7	0	0	0	0	7	1	149	0	0	0	150	4	0	0	0	0	4	6	158	3	0	0	167	328
11:15 AM	2	0	2	0	0	4	3	169	1	0	0	173	5	0	1	0	0	6	8	169	4	0	0	181	364
11:30 AM	6	0	3	0	0	9	1	159	1	0	0	161	3	0	1	0	0	4	5	182	3	0	0	190	364
11:45 AM	6	0	0	0	0	6	1	181	1	0	0	183	2	0	2	0	0	4	12	216	2	0	0	230	423
Hourly Total	21	0	5	0	0	26	6	658	3	0	0	667	14	0	4	0	0	18	31	725	12	0	0	768	1479
12:00 PM	4	0	0	0	0	4	5	162	0	0	0	167	2	0	6	0	1	8	9	191	3	0	0	203	382
12:15 PM	7	0	0	0	0	7	4	187	1	0	0	192	7	0	1	0	0	8	11	216	1	0	0	228	435
12:30 PM	3	0	0	0	0	3	0	158	0	0	0	158	5	0	1	0	1	6	19	211	0	0	0	230	397
12:45 PM	12	1	0	0	0	13	3	173	0	0	0	176	8	1	0	0	0	9	10	180	7	0	0	197	395
Hourly Total	26	1	0	0	0	27	12	680	1	0	0	693	22	1	8	0	2	31	49	798	11	0	0	858	1609
1:00 PM	10	0	2	0	0	12	2	166	2	0	0	170	4	0	0	0	1	4	7	201	2	0	0	210	396
1:15 PM	6	0	3	0	0	9	3	182	0	0	0	185	0	0	1	0	0	1	7	227	5	1	0	240	435
1:30 PM	4	0	6	0	2	10	0	145	3	0	0	148	3	0	0	0	1	3	8	220	2	0	0	230	391
1:45 PM	6	0	1	0	0	7	4	161	0	0	0	165	3	0	2	0	0	5	9	200	2	0	0	211	388
Hourly Total	26	0	12	0	2	38	9	654	5	0	0	668	10	0	3	0	2	13	31	848	11	1	0	891	1610
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	73	1	17	0	2	91	27	1992	9	0	0	2028	46	1	15	0	4	62	111	2372	34	1	0	2518	4699
Approach %	80.2	1.1	18.7	0.0	-	-	1.3	98.2	0.4	0.0	-	-	74.2	1.6	24.2	0.0	-	-	4.4	94.2	1.4	0.0	-	-	-
Total %	1.6	0.0	0.4	0.0	-	1.9	0.6	42.4	0.2	0.0	-	43.2	1.0	0.0	0.3	0.0	-	1.3	2.4	50.5	0.7	0.0	-	53.6	-
Lights	73	1	17	0	-	91	27	1947	9	0	-	1983	45	1	15	0	-	61	109	2330	34	1	-	2474	4609
% Lights	100.0	100.0	100.0	-	-	100.0	100.0	97.7	100.0	-	-	97.8	97.8	100.0	100.0	-	-	98.4	98.2	98.2	100.0	100.0	-	98.3	98.1
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Trucks	0	0	0	0	-	0	0	44	0	0	-	44	1	0	0	0	-	1	2	41	0	0	-	43	88
% Trucks	0.0	0.0	0.0	-	-	0.0	0.0	2.2	0.0	-	-	2.2	2.2	0.0	0.0	-	-	1.6	1.8	1.7	0.0	0.0	-	1.7	1.9
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	25.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	75.0	-	-	-	-	-	-	-	-

### Turning Movement Peak Hour Data (11:45 AM)

Start Time	Southbound Approach Southbound						Park Avenue Westbound						Driveway #4 Northbound						Park Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
11:45 AM	6	0	0	0	0	6	1	181	1	0	0	183	2	0	2	0	0	4	12	216	2	0	0	230	423
12:00 PM	4	0	0	0	0	4	5	162	0	0	0	167	2	0	6	0	1	8	9	191	3	0	0	203	382
12:15 PM	7	0	0	0	0	7	4	187	1	0	0	192	7	0	1	0	0	8	11	216	1	0	0	228	435
12:30 PM	3	0	0	0	0	3	0	158	0	0	0	158	5	0	1	0	1	6	19	211	0	0	0	230	397
Total	20	0	0	0	0	20	10	688	2	0	0	700	16	0	10	0	2	26	51	834	6	0	0	891	1637
Approach %	100.0	0.0	0.0	0.0	-	-	1.4	98.3	0.3	0.0	-	-	61.5	0.0	38.5	0.0	-	-	5.7	93.6	0.7	0.0	-	-	-
Total %	1.2	0.0	0.0	0.0	-	1.2	0.6	42.0	0.1	0.0	-	42.8	1.0	0.0	0.6	0.0	-	1.6	3.1	50.9	0.4	0.0	-	54.4	-
PHF	0.714	0.000	0.000	0.000	-	0.714	0.500	0.920	0.500	0.000	-	0.911	0.571	0.000	0.417	0.000	-	0.813	0.671	0.965	0.500	0.000	-	0.968	0.941
Lights	20	0	0	0	-	20	10	672	2	0	-	684	16	0	10	0	-	26	51	818	6	0	-	875	1605
% Lights	100.0	-	-	-	-	100.0	100.0	97.7	100.0	-	-	97.7	100.0	-	100.0	-	-	100.0	100.0	98.1	100.0	-	-	98.2	98.0
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Buses	0.0	-	-	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	-	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.1
Trucks	0	0	0	0	-	0	0	15	0	0	-	15	0	0	0	0	-	0	0	15	0	0	-	15	30
% Trucks	0.0	-	-	-	-	0.0	0.0	2.2	0.0	-	-	2.1	0.0	-	0.0	-	-	0.0	0.0	1.8	0.0	-	-	1.7	1.8
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



# ***THE DREHER GROUP***

## ***TRAFFIC IMPACT STUDY***

---

### **APPENDIX C**

#### **TRIP GENERATION**

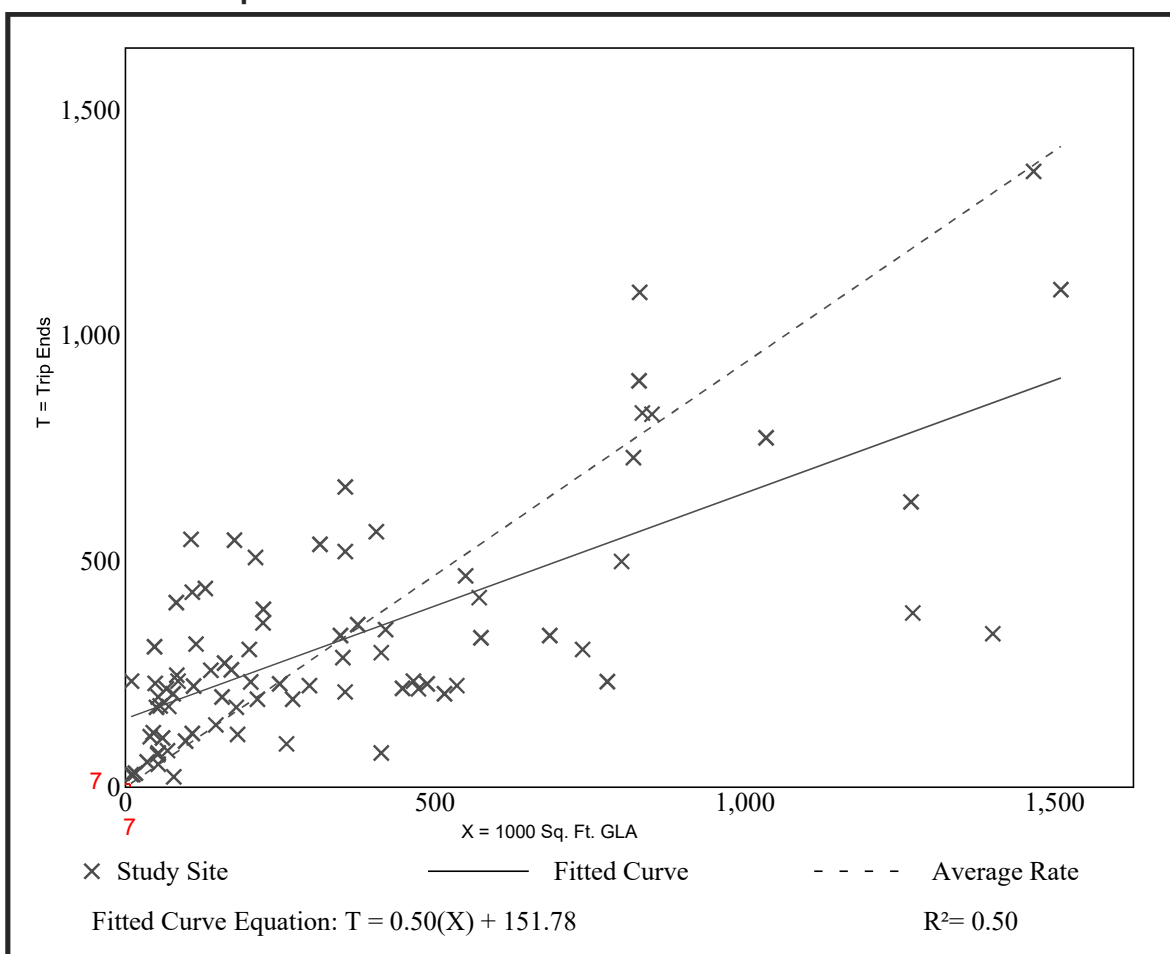
Shopping Center  
(820)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 84  
 Avg. 1000 Sq. Ft. GLA: 351  
 Directional Distribution: 62% entering, 38% exiting

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

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

### Data Plot and Equation



*Trip Gen Manual, 10th Ed + Supplement* • Institute of Transportation Engineers



Shopping Center  
(820)

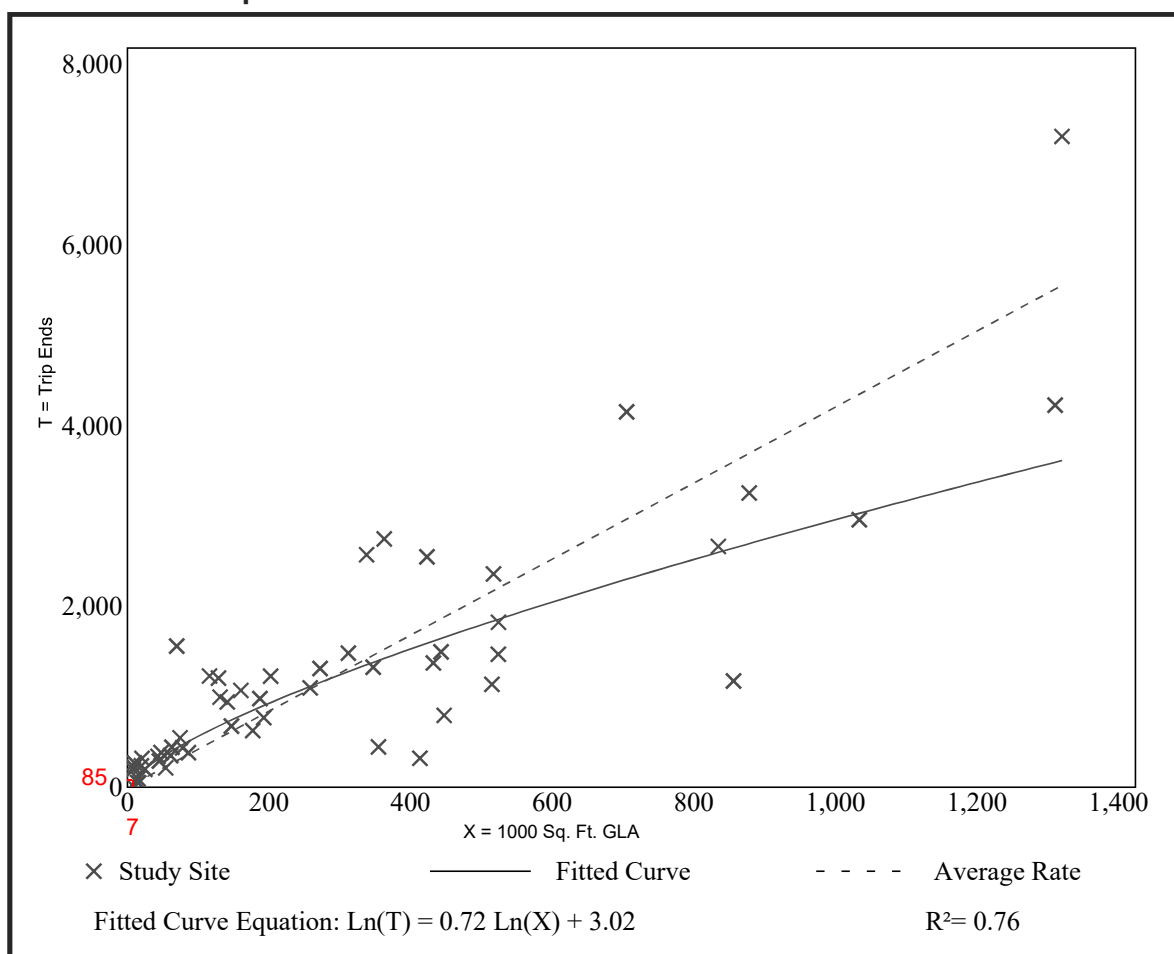
**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 53  
Avg. 1000 Sq. Ft. GLA: 298  
Directional Distribution: 50% entering, 50% exiting

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

Average Rate	Range of Rates	Standard Deviation
4.21	0.78 - 27.27	2.47

### Data Plot and Equation



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Shopping Center  
(820)

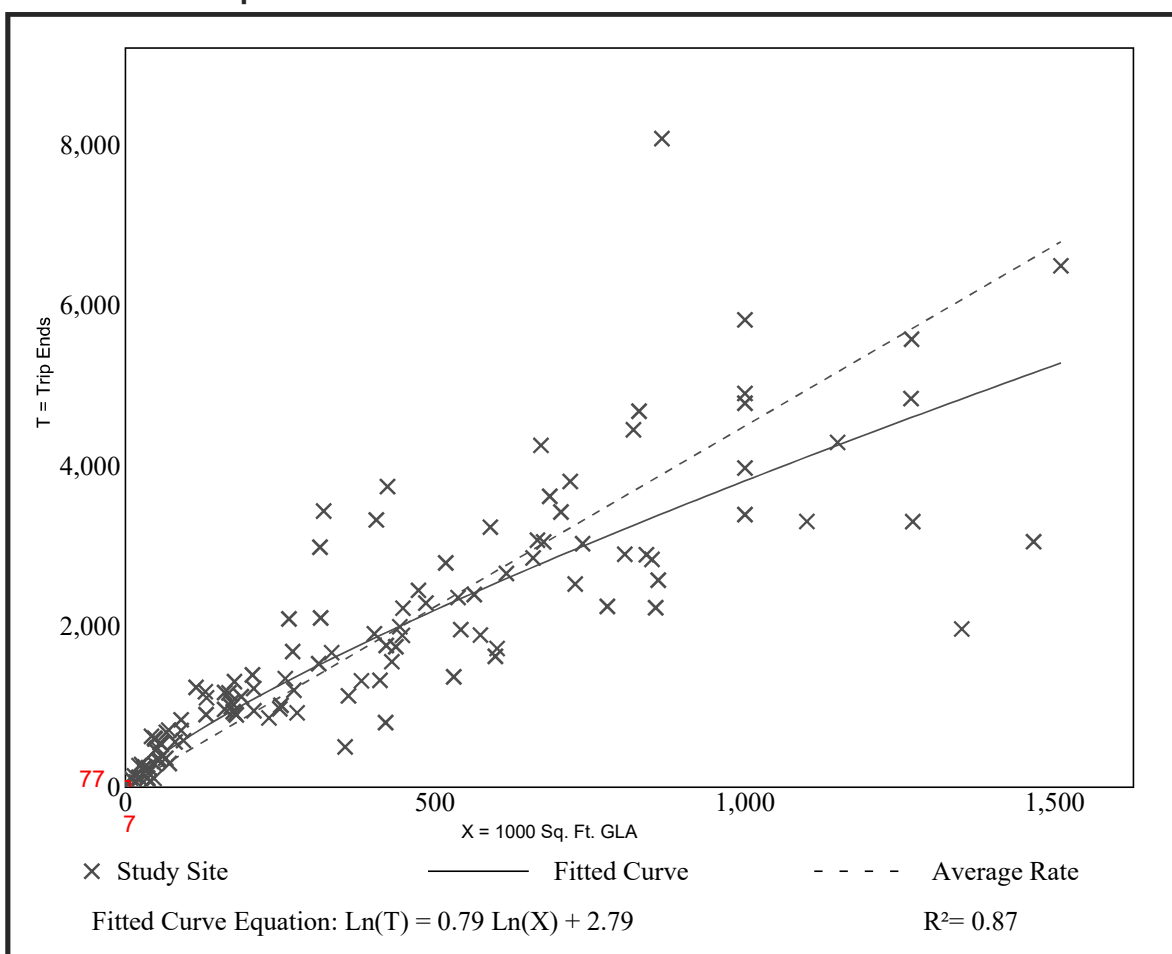
**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Saturday, Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 119  
Avg. 1000 Sq. Ft. GLA: 416  
Directional Distribution: 52% entering, 48% exiting

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

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

### Data Plot and Equation



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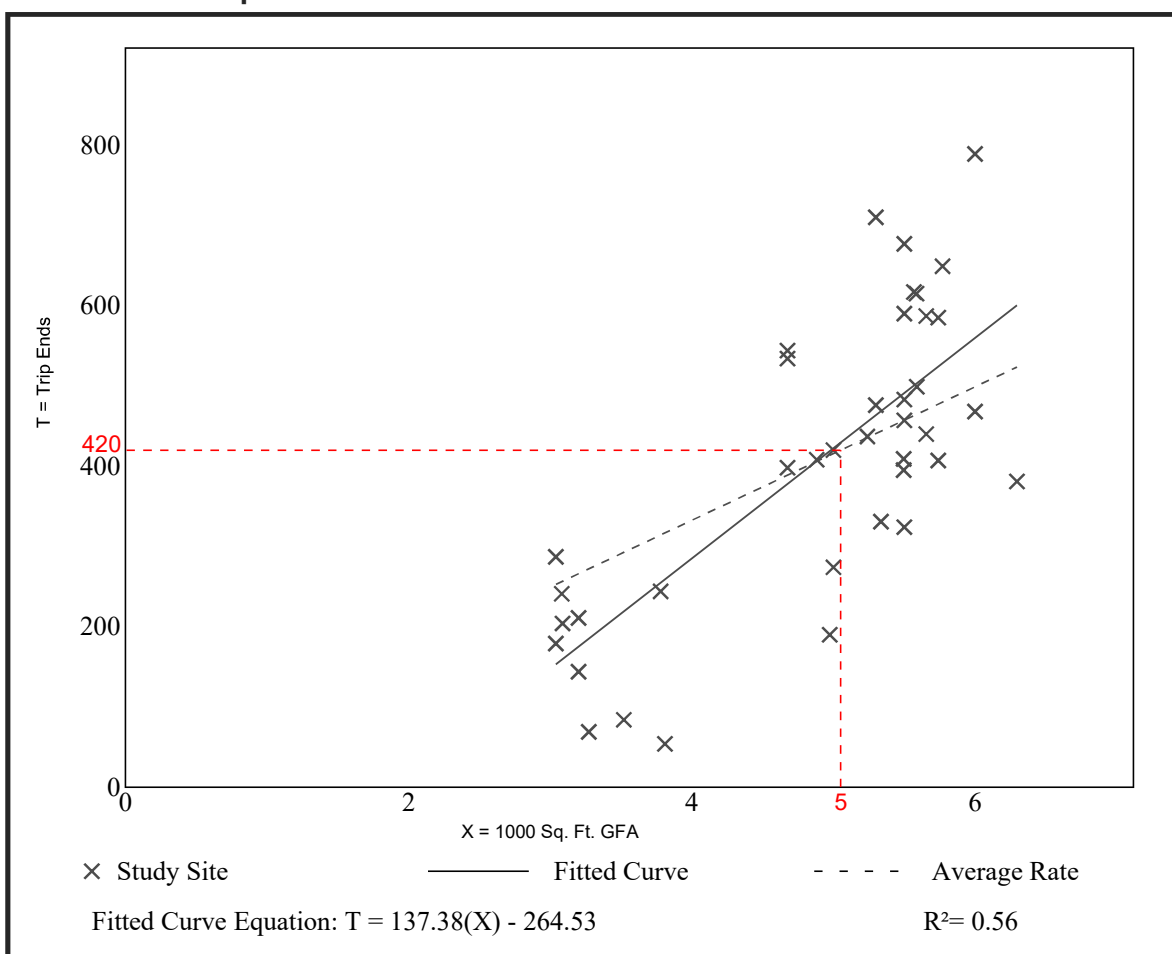
Super Convenience Market/Gas Station  
(960)

**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: 39  
 Avg. 1000 Sq. Ft. GFA: 5  
 Directional Distribution: 50% entering, 50% exiting

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

Average Rate	Range of Rates	Standard Deviation
83.14	14.17 - 133.96	28.07

### Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement • Institute of Transportation Engineers

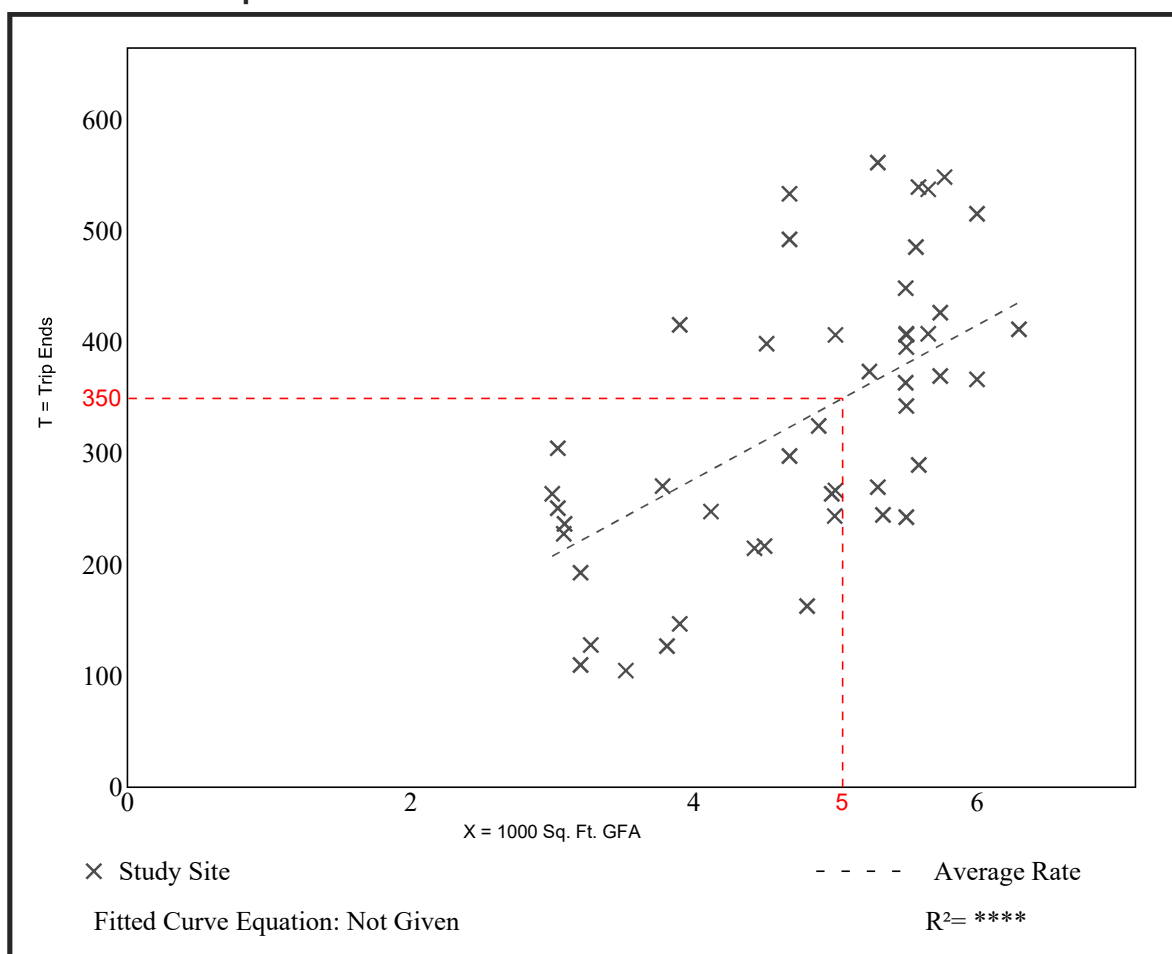
Super Convenience Market/Gas Station  
(960)

**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: 48  
 Avg. 1000 Sq. Ft. GFA: 5  
 Directional Distribution: 50% entering, 50% exiting

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

Average Rate	Range of Rates	Standard Deviation
69.28	29.83 - 114.20	21.07

### Data Plot and Equation



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Super Convenience Market/Gas Station  
(960)

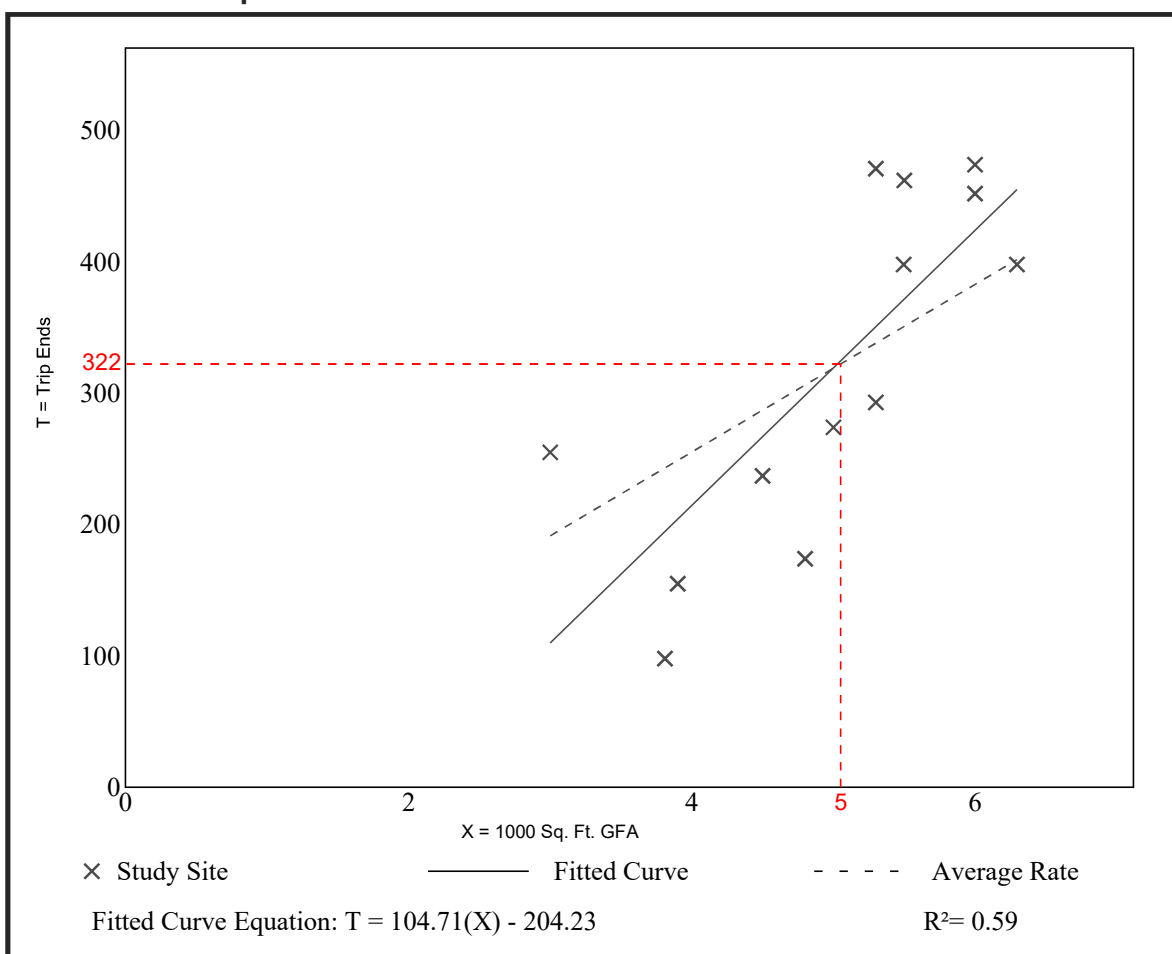
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 13  
Avg. 1000 Sq. Ft. GFA: 5  
Directional Distribution: 50% entering, 50% exiting

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

Average Rate	Range of Rates	Standard Deviation
63.80	25.72 - 88.87	19.29

### Data Plot and Equation



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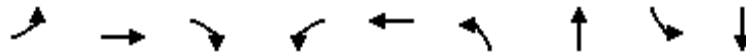
# ***THE DREHER GROUP***

## ***TRAFFIC IMPACT STUDY***

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### **APPENDIX D**

#### **CAPACITY ANALYSIS**



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	238	453	170	126	285	248	1286	63	1213
Future Volume (vph)	238	453	170	126	285	248	1286	63	1213
Lane Group Flow (vph)	243	462	173	129	299	253	1378	64	1484
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	49.0	5.0	49.0
Minimum Split (s)	8.0	13.0	10.0	8.0	13.0	10.0	56.0	10.0	56.0
Total Split (s)	11.0	43.0	35.0	11.0	43.0	35.0	56.0	35.0	56.0
Total Split (%)	7.6%	29.7%	24.1%	7.6%	29.7%	24.1%	38.6%	24.1%	38.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	5.0
All-Red Time (s)	0.0	3.0	2.0	0.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	5.0	3.0	6.0	5.0	7.0	5.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
v/c Ratio	0.96	1.01	0.26	0.90	0.66	0.71	0.61	0.56	0.75
Control Delay	88.5	97.8	20.1	89.7	56.4	73.1	29.1	82.3	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.5	97.8	20.1	89.7	56.4	73.1	29.1	82.3	36.7
Queue Length 50th (ft)	174	~447	73	86	254	120	348	60	416
Queue Length 95th (ft)	#349	#677	123	#201	362	163	425	109	504
Internal Link Dist (ft)		24			617		54		882
Turn Bay Length (ft)								320	
Base Capacity (vph)	254	457	800	143	451	683	2276	336	1989
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	1.01	0.22	0.90	0.66	0.37	0.61	0.19	0.75

## Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 94 (65%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

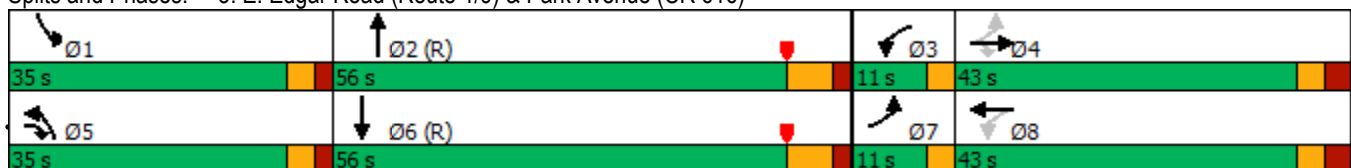
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.























Splits and Phases: 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)



KMC

## 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	453	170	126	285	8	248	1286	65	63	1213	241
Future Volume (veh/h)	238	453	170	126	285	8	248	1286	65	63	1213	241
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	1781	1811	1826	1767	1796	1796	1811	1737	1737	1737	1707	1707
Adj Flow Rate, veh/h	243	462	173	129	291	8	253	1312	66	64	1238	246
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, %	8	6	5	9	7	7	6	11	11	11	13	13
Cap, veh/h	252	462	536	143	444	12	306	2294	115	80	1768	351
Arrive On Green	0.06	0.26	0.26	0.06	0.26	0.26	0.09	0.50	0.50	0.05	0.45	0.45
Sat Flow, veh/h	1697	1811	1547	1682	1740	48	3346	4624	233	1654	3900	775
Grp Volume(v), veh/h	243	462	173	129	0	299	253	897	481	64	986	498
Grp Sat Flow(s),veh/h/ln	1697	1811	1547	1682	0	1788	1673	1581	1695	1654	1554	1568
Q Serve(g_s), s	8.0	37.0	11.9	8.0	0.0	21.7	10.8	28.9	28.9	5.6	36.9	36.9
Cycle Q Clear(g_c), s	8.0	37.0	11.9	8.0	0.0	21.7	10.8	28.9	28.9	5.6	36.9	36.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.14	1.00		0.49
Lane Grp Cap(c), veh/h	252	462	536	143	0	456	306	1569	841	80	1409	711
V/C Ratio(X)	0.96	1.00	0.32	0.90	0.00	0.66	0.83	0.57	0.57	0.80	0.70	0.70
Avail Cap(c_a), veh/h	252	462	536	143	0	456	692	1569	841	342	1409	711
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	54.0	34.8	43.0	0.0	48.3	64.7	25.7	25.7	68.3	31.7	31.7
Incr Delay (d2), s/veh	46.5	41.8	0.1	47.2	0.0	2.7	2.2	1.5	2.8	6.5	2.9	5.7
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	8.6	22.3	4.6	5.4	0.0	10.2	4.6	10.8	11.9	2.5	13.9	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.8	95.8	35.0	90.2	0.0	51.0	66.9	27.2	28.5	74.8	34.7	37.4
LnGrp LOS	F	F	C	F	A	D	E	C	C	E	C	D
Approach Vol, veh/h		878			428			1631			1548	
Approach Delay, s/veh		84.9			62.8			33.8			37.2	
Approach LOS		F			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	78.9	11.0	43.0	18.3	72.7	11.0	43.0				
Change Period (Y+Rc), s	5.0	7.0	3.0	6.0	5.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	30.0	49.0	8.0	37.0	30.0	49.0	8.0	37.0				
Max Q Clear Time (g_c+I1), s	7.6	30.9	10.0	39.0	12.8	38.9	10.0	23.7				
Green Ext Time (p_c), s	0.1	3.1	0.0	0.0	0.5	3.0	0.0	0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			47.7									
HCM 6th LOS			D									



15002372A - Dreher Linden  
6: West Site Driveway & Park Avenue (CR 616)

2023 No Build Conditions  
AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Vol, veh/h	851	24	1	774	3	9
Future Vol, veh/h	851	24	1	774	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	4	0	6	0	33
Mvmt Flow	925	26	1	841	3	10
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	951	0	1361	476
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	423	-
Critical Hdwy	-	-	5.3	-	6.25	7.76
Critical Hdwy Stg 1	-	-	-	-	6.6	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	3.1	-	3.65	4.23
Pot Cap-1 Maneuver	-	-	419	-	171	398
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	614	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	419	-	170	398
Mov Cap-2 Maneuver	-	-	-	-	170	-
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	614	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		17.6	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	298	-	-	419	-	
HCM Lane V/C Ratio	0.044	-	-	0.003	-	
HCM Control Delay (s)	17.6	-	-	13.6	0	
HCM Lane LOS	C	-	-	B	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

15002372A - Dreher Linden  
9: East Site Driveway & Park Avenue (CR 616)

2023 No Build Conditions  
AM Peak

Intersection

Int Delay, s/veh 0



















Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	857	3	0	774	0	4
Future Vol, veh/h	857	3	0	774	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	0	0	6	0	0
Mvmt Flow	893	3	0	806	0	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 448
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.9
Pot Cap-1 Maneuver	-	- 0	- 0 482
Stage 1	-	- 0	- 0 -
Stage 2	-	- 0	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 482
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NE
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBT
Capacity (veh/h)	482	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-
HCM Control Delay (s)	12.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	32	0	1599	1490	0
Future Vol, veh/h	0	32	0	1599	1490	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	2	2	11	0
Mvmt Flow	0	34	0	1701	1585	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	793	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	-	-	-	-
Pot Cap-1 Maneuver	0	283	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	283	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	19.5	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	283	-			
HCM Lane V/C Ratio	-	0.12	-			
HCM Control Delay (s)	-	19.5	-			
HCM Lane LOS	-	C	-			
HCM 95th %tile Q(veh)	-	0.4	-			

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	262	430	170	130	360	320	1269	44	1224
Future Volume (vph)	262	430	170	130	360	320	1269	44	1224
Lane Group Flow (vph)	282	462	183	140	404	344	1465	47	1568
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	39.0	5.0	39.0
Minimum Split (s)	8.0	32.0	10.0	8.0	32.0	10.0	46.0	10.0	46.0
Total Split (s)	15.0	32.0	27.0	15.0	32.0	27.0	46.0	27.0	46.0
Total Split (%)	12.5%	26.7%	22.5%	12.5%	26.7%	22.5%	38.3%	22.5%	38.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	5.0
All-Red Time (s)	0.0	3.0	2.0	0.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	5.0	3.0	6.0	5.0	7.0	5.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
v/c Ratio	1.17	1.11	0.26	0.63	1.02	0.72	0.66	0.46	0.88
Control Delay	139.6	121.5	14.2	39.8	97.6	57.9	28.1	66.7	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.6	121.5	14.2	39.8	97.6	57.9	28.1	66.7	42.3
Queue Length 50th (ft)	~207	~421	54	74	~331	133	324	36	404
Queue Length 95th (ft)	#386	#635	99	124	#533	175	404	74	#553
Internal Link Dist (ft)		24			617		54		882
Turn Bay Length (ft)								320	
Base Capacity (vph)	242	415	757	243	395	623	2226	262	1775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	1.11	0.24	0.58	1.02	0.55	0.66	0.18	0.88

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

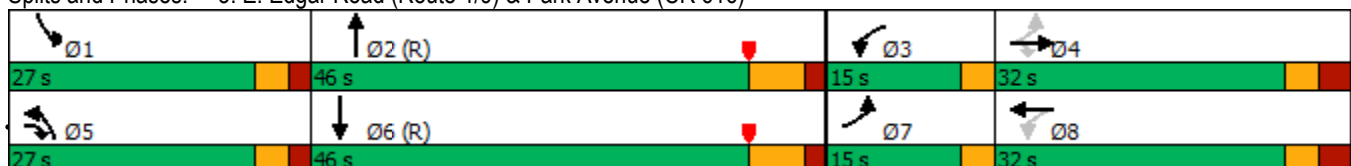
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.























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

Queue shown is maximum after two cycles.

Splits and Phases: 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)



KMC

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	430	170	130	360	16	320	1269	93	44	1224	234
Future Volume (veh/h)	262	430	170	130	360	16	320	1269	93	44	1224	234
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	1856	1826	1841	1856	1856	1856	1856	1826	1826	1515	1811	1811
Adj Flow Rate, veh/h	282	462	183	140	387	17	344	1365	100	47	1316	252
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	5	4	3	3	3	3	5	5	26	6	6
Cap, veh/h	237	437	560	196	382	17	409	2224	163	56	1621	310
Arrive On Green	0.10	0.24	0.24	0.08	0.22	0.22	0.12	0.47	0.47	0.04	0.39	0.39
Sat Flow, veh/h	1767	1826	1560	1767	1764	77	3428	4739	347	1443	4166	798
Grp Volume(v), veh/h	282	462	183	140	0	404	344	957	508	47	1041	527
Grp Sat Flow(s),veh/h/ln	1767	1826	1560	1767	0	1842	1714	1662	1763	1443	1648	1668
Q Serve(g_s), s	12.0	28.7	10.2	7.3	0.0	26.0	11.8	25.8	25.8	3.9	33.8	33.9
Cycle Q Clear(g_c), s	12.0	28.7	10.2	7.3	0.0	26.0	11.8	25.8	25.8	3.9	33.8	33.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.20	1.00		0.48
Lane Grp Cap(c), veh/h	237	437	560	196	0	399	409	1559	827	56	1282	649
V/C Ratio(X)	1.19	1.06	0.33	0.71	0.00	1.01	0.84	0.61	0.61	0.83	0.81	0.81
Avail Cap(c_a), veh/h	237	437	560	237	0	399	629	1559	827	264	1282	649
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	45.6	28.0	35.3	0.0	47.0	51.7	23.7	23.7	57.3	32.7	32.7
Incr Delay (d2), s/veh	120.0	58.8	0.1	5.4	0.0	48.2	3.7	1.8	3.4	11.2	5.7	10.7
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	13.3	20.2	3.9	3.5	0.0	17.3	5.1	9.9	10.8	1.6	13.8	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	154.9	104.4	28.1	40.7	0.0	95.2	55.4	25.6	27.1	68.5	38.4	43.4
LnGrp LOS	F	F	C	D	A	F	E	C	C	E	D	D
Approach Vol, veh/h		927			544			1809			1615	
Approach Delay, s/veh		104.7			81.2			31.7			40.9	
Approach LOS		F			F			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	63.3	12.3	34.7	19.3	53.7	15.0	32.0				
Change Period (Y+Rc), s	5.0	7.0	3.0	6.0	5.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	22.0	39.0	12.0	26.0	22.0	39.0	12.0	26.0				
Max Q Clear Time (g_c+I1), s	5.9	27.8	9.3	30.7	13.8	35.9	14.0	28.0				
Green Ext Time (p_c), s	0.0	2.9	0.1	0.0	0.5	1.5	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.1									
HCM 6th LOS			D									

15002372A - Dreher Linden  
6: West Site Driveway & Park Avenue (CR 616)

2023 No Build Conditions  
PM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Vol, veh/h	851	23	1	914	1	8
Future Vol, veh/h	851	23	1	914	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	4	0	0
Mvmt Flow	946	26	1	1016	1	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	972	0	1469	486
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	-	-	5.3	-	6.25	7.1
Critical Hdwy Stg 1	-	-	-	-	6.6	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	3.1	-	3.65	3.9
Pot Cap-1 Maneuver	-	-	410	-	148	455
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	555	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	410	-	147	455
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	555	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		15	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	369	-	-	410	-	
HCM Lane V/C Ratio	0.027	-	-	0.003	-	
HCM Control Delay (s)	15	-	-	13.8	0	
HCM Lane LOS	C	-	-	B	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	858	1	0	914	0	4
Future Vol, veh/h	858	1	0	914	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	0	0	4	0	0
Mvmt Flow	923	1	0	983	0	4

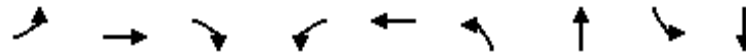
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	-	-	462
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.9
Pot Cap-1 Maneuver	-	-	0	-	472
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	472
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBT
Capacity (veh/h)	472	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-
HCM Control Delay (s)	12.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	27	0	1682	1505	0
Future Vol, veh/h	0	27	0	1682	1505	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	6	0
Mvmt Flow	0	28	0	1771	1584	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	792	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.1	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	288	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	288	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	18.9	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	288	-			
HCM Lane V/C Ratio	-	0.099	-			
HCM Control Delay (s)	-	18.9	-			
HCM Lane LOS	-	C	-			
HCM 95th %tile Q(veh)	-	0.3	-			





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	319	289	170	133	229	290	1279	35	1366
Future Volume (vph)	319	289	170	133	229	290	1279	35	1366
Lane Group Flow (vph)	343	311	183	143	262	312	1442	38	1699
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	37.0	5.0	37.0
Minimum Split (s)	8.0	13.0	10.0	8.0	13.0	10.0	44.0	10.0	44.0
Total Split (s)	17.0	35.0	24.0	17.0	35.0	24.0	44.0	24.0	44.0
Total Split (%)	14.2%	29.2%	20.0%	14.2%	29.2%	20.0%	36.7%	20.0%	36.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	5.0
All-Red Time (s)	0.0	3.0	2.0	0.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	5.0	3.0	6.0	5.0	7.0	5.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
v/c Ratio	1.07	0.81	0.27	0.51	0.77	0.71	0.58	0.36	0.86
Control Delay	101.9	61.6	9.5	33.2	60.3	59.4	24.5	62.5	39.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.9	61.6	9.5	33.2	60.3	59.4	24.5	62.5	39.4
Queue Length 50th (ft)	~230	232	32	77	192	121	300	29	432
Queue Length 95th (ft)	#348	323	74	117	268	164	408	64	#642
Internal Link Dist (ft)		24			617		54		882
Turn Bay Length (ft)								320	
Base Capacity (vph)	321	450	725	319	446	543	2495	277	1974
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.69	0.25	0.45	0.59	0.57	0.58	0.14	0.86

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

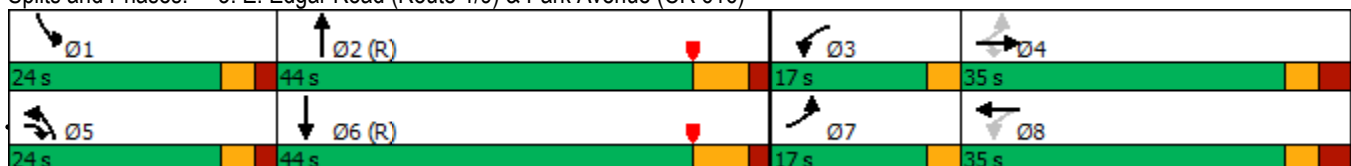
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
























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

Queue shown is maximum after two cycles.

Splits and Phases: 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)



KMC

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	289	170	133	229	15	290	1279	62	35	1366	214
Future Volume (veh/h)	319	289	170	133	229	15	290	1279	62	35	1366	214
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	1870	1870	1870	1885	1870	1870	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	343	311	183	143	246	16	312	1375	67	38	1469	230
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	2	2	2	3	3	3	3	3
Cap, veh/h	290	361	478	237	276	18	375	2572	125	53	1949	305
Arrive On Green	0.12	0.19	0.19	0.08	0.16	0.16	0.11	0.52	0.52	0.03	0.44	0.44
Sat Flow, veh/h	1781	1870	1585	1795	1737	113	3456	4948	241	1767	4418	691
Grp Volume(v), veh/h	343	311	183	143	0	262	312	938	504	38	1123	576
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1795	0	1850	1728	1689	1812	1767	1689	1731
Q Serve(g_s), s	14.0	19.3	10.9	7.9	0.0	16.7	10.6	22.2	22.2	2.6	33.4	33.5
Cycle Q Clear(g_c), s	14.0	19.3	10.9	7.9	0.0	16.7	10.6	22.2	22.2	2.6	33.4	33.5
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.13	1.00		0.40
Lane Grp Cap(c), veh/h	290	361	478	237	0	293	375	1755	942	53	1490	764
V/C Ratio(X)	1.18	0.86	0.38	0.60	0.00	0.89	0.83	0.53	0.53	0.72	0.75	0.75
Avail Cap(c_a), veh/h	290	452	555	299	0	447	547	1755	942	280	1490	764
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	46.9	33.1	38.7	0.0	49.5	52.4	19.2	19.2	57.7	28.1	28.1
Incr Delay (d2), s/veh	111.8	11.2	0.2	0.9	0.0	10.1	4.7	1.2	2.2	6.6	3.6	6.8
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	11.0	10.2	4.3	3.6	0.0	8.6	4.7	8.4	9.2	1.2	13.4	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	151.6	58.1	33.3	39.6	0.0	59.5	57.1	20.3	21.3	64.3	31.6	34.9
LnGrp LOS	F	E	C	D	A	E	E	C	C	E	C	C
Approach Vol, veh/h		837			405			1754			1737	
Approach Delay, s/veh		91.0			52.5			27.2			33.4	
Approach LOS		F			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	69.4	12.9	29.1	18.0	59.9	17.0	25.0				
Change Period (Y+Rc), s	5.0	7.0	3.0	6.0	5.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	19.0	37.0	14.0	29.0	19.0	37.0	14.0	29.0				
Max Q Clear Time (g_c+I1), s	4.6	24.2	9.9	21.3	12.6	35.5	16.0	18.7				
Green Ext Time (p_c), s	0.0	2.9	0.1	0.8	0.4	0.9	0.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.9									
HCM 6th LOS			D									

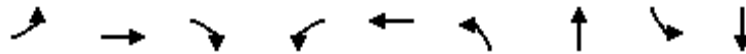
Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Vol, veh/h	753	43	2	731	2	17
Future Vol, veh/h	753	43	2	731	2	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	810	46	2	786	2	18
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	856	0	1230	428
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	397	-
Critical Hdwy	-	-	5.3	-	6.25	7.1
Critical Hdwy Stg 1	-	-	-	-	6.6	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	3.1	-	3.65	3.9
Pot Cap-1 Maneuver	-	-	465	-	204	496
Stage 1	-	-	-	-	317	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	465	-	202	496
Mov Cap-2 Maneuver	-	-	-	-	202	-
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	632	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		13.8	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	430	-	-	465	-	
HCM Lane V/C Ratio	0.048	-	-	0.005	-	
HCM Control Delay (s)	13.8	-	-	12.8	0.1	
HCM Lane LOS	B	-	-	B	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

15002372A - Dreher Linden  
9: East Site Driveway & Park Avenue (CR 616)

2023 No Build Conditions  
SAT Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	770	1	0	733	0	8
Future Vol, veh/h	770	1	0	733	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	828	1	0	788	0	9
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	415
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	-	-	0	-	0	506
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	506
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	12.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBT		
Capacity (veh/h)	506	-	-	-		
HCM Lane V/C Ratio	0.017	-	-	-		
HCM Control Delay (s)	12.2	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	30	0	1630	1653	0
Future Vol, veh/h	0	30	0	1630	1653	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	32	0	1734	1759	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	880	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.1	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	252	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	252	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	21.3	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	252	-			
HCM Lane V/C Ratio	-	0.127	-			
HCM Control Delay (s)	-	21.3	-			
HCM Lane LOS	-	C	-			
HCM 95th %tile Q(veh)	-	0.4	-			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	268	462	170	126	300	261	1276	63	1222
Future Volume (vph)	268	462	170	126	300	261	1276	63	1222
Lane Group Flow (vph)	273	471	173	129	314	266	1368	64	1493
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	49.0	5.0	49.0
Minimum Split (s)	8.0	13.0	10.0	8.0	13.0	10.0	56.0	10.0	56.0
Total Split (s)	17.0	46.0	27.0	12.0	41.0	27.0	56.0	31.0	60.0
Total Split (%)	11.7%	31.7%	18.6%	8.3%	28.3%	18.6%	38.6%	21.4%	41.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	5.0
All-Red Time (s)	0.0	3.0	2.0	0.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	5.0	3.0	6.0	5.0	7.0	5.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
v/c Ratio	0.95	0.97	0.25	0.83	0.75	0.72	0.63	0.56	0.80
Control Delay	79.3	86.0	18.5	72.2	63.5	73.1	32.0	82.3	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	86.0	18.5	72.2	63.5	73.1	32.0	82.3	41.2
Queue Length 50th (ft)	190	439	70	82	275	127	364	60	445
Queue Length 95th (ft)	#368	#660	117	#184	388	171	443	109	537
Internal Link Dist (ft)		142			617		152		882
Turn Bay Length (ft)								320	
Base Capacity (vph)	287	494	742	155	427	501	2170	291	1871
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.95	0.23	0.83	0.74	0.53	0.63	0.22	0.80

## Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 94 (65%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

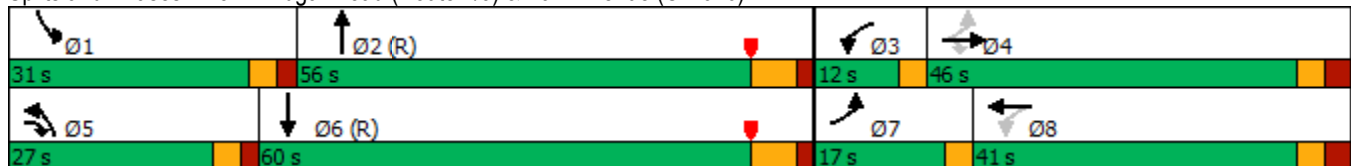
Natural Cycle: 110























Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	462	170	126	300	8	261	1276	65	63	1222	241
Future Volume (veh/h)	268	462	170	126	300	8	261	1276	65	63	1222	241
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	1781	1811	1826	1767	1796	1796	1811	1737	1737	1737	1707	1707
Adj Flow Rate, veh/h	273	471	173	129	306	8	266	1302	66	64	1247	246
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, %	8	6	5	9	7	7	6	11	11	11	13	13
Cap, veh/h	289	491	566	165	413	11	317	2187	111	80	1668	329
Arrive On Green	0.10	0.27	0.27	0.06	0.24	0.24	0.09	0.47	0.47	0.05	0.43	0.43
Sat Flow, veh/h	1697	1811	1547	1682	1743	46	3346	4622	234	1654	3906	770
Grp Volume(v), veh/h	273	471	173	129	0	314	266	891	477	64	992	501
Grp Sat Flow(s),veh/h/ln	1697	1811	1547	1682	0	1788	1673	1581	1695	1654	1554	1569
Q Serve(g_s), s	14.0	37.1	11.6	8.4	0.0	23.6	11.3	30.0	30.0	5.6	39.0	39.0
Cycle Q Clear(g_c), s	14.0	37.1	11.6	8.4	0.0	23.6	11.3	30.0	30.0	5.6	39.0	39.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.14	1.00		0.49
Lane Grp Cap(c), veh/h	289	491	566	165	0	423	317	1496	802	80	1327	670
V/C Ratio(X)	0.95	0.96	0.31	0.78	0.00	0.74	0.84	0.60	0.60	0.80	0.75	0.75
Avail Cap(c_a), veh/h	289	500	573	165	0	432	508	1496	802	297	1327	670
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	52.0	32.8	42.6	0.0	51.2	64.6	28.0	28.0	68.3	34.9	34.9
Incr Delay (d2), s/veh	38.1	29.5	0.1	19.3	0.0	5.8	3.5	1.8	3.2	6.6	3.9	7.5
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	6.7	21.0	4.5	4.5	0.0	11.4	4.9	11.3	12.5	2.5	14.9	15.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.1	81.5	32.9	61.9	0.0	57.0	68.1	29.8	31.2	74.8	38.8	42.4
LnGrp LOS	F	F	C	E	A	E	E	C	C	E	D	D
Approach Vol, veh/h		917			443			1634			1557	
Approach Delay, s/veh		72.8			58.4			36.4			41.5	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	75.6	12.0	45.3	18.7	68.9	17.0	40.3				
Change Period (Y+Rc), s	5.0	7.0	3.0	6.0	5.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	26.0	49.0	9.0	40.0	22.0	53.0	14.0	35.0				
Max Q Clear Time (g_c+I1), s	7.6	32.0	10.4	39.1	13.3	41.0	16.0	25.6				
Green Ext Time (p_c), s	0.1	3.0	0.0	0.2	0.4	3.2	0.0	0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			47.6									
HCM 6th LOS			D									

Intersection

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Vol, veh/h	841	25	28	774	15	62
Future Vol, veh/h	841	25	28	774	15	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	0	6	2	2
Mvmt Flow	914	27	30	841	16	67



















Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	941
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.1
Pot Cap-1 Maneuver	-	-	424
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	424
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	316	-	-	424	-
HCM Lane V/C Ratio	0.265	-	-	0.072	-
HCM Control Delay (s)	20.4	-	-	14.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1	-	-	0.2	-



Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	81	0	1602	1412	106
Future Vol, veh/h	0	81	0	1602	1412	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	94	94	94	92
Heavy Vehicles, %	2	2	2	2	11	2
Mvmt Flow	0	88	0	1704	1502	115
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	809	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	278	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	278	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	23.8	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 278		-	-		
HCM Lane V/C Ratio	- 0.317		-	-		
HCM Control Delay (s)	- 23.8		-	-		
HCM Lane LOS	- C		-	-		
HCM 95th %tile Q(veh)	- 1.3		-	-		

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	292	439	170	130	376	331	1261	44	1231
Future Volume (vph)	292	439	170	130	376	331	1261	44	1231
Lane Group Flow (vph)	314	472	183	140	421	356	1456	47	1576
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	30.0	5.0	38.0
Minimum Split (s)	8.0	32.0	10.0	8.0	32.0	10.0	37.0	10.0	45.0
Total Split (s)	17.0	40.0	24.0	10.0	33.0	24.0	37.0	33.0	46.0
Total Split (%)	14.2%	33.3%	20.0%	8.3%	27.5%	20.0%	30.8%	27.5%	38.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	5.0
All-Red Time (s)	0.0	3.0	2.0	0.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	5.0	3.0	6.0	5.0	7.0	5.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
v/c Ratio	1.16	0.92	0.23	0.77	1.02	0.76	0.69	0.46	0.94
Control Delay	134.2	66.8	8.1	55.4	96.6	60.6	30.8	66.7	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	134.2	66.8	8.1	55.4	96.6	60.6	30.8	66.7	50.2
Queue Length 50th (ft)	~232	355	31	71	~346	138	337	36	427
Queue Length 95th (ft)	#417	#555	72	#145	#549	187	419	74	#558
Internal Link Dist (ft)		142			617		152		882
Turn Bay Length (ft)								320	
Base Capacity (vph)	271	512	818	181	411	538	2103	334	1668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.92	0.22	0.77	1.02	0.66	0.69	0.14	0.94

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

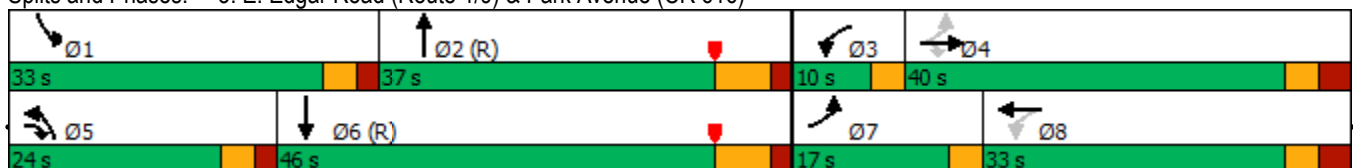
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.























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

Queue shown is maximum after two cycles.

Splits and Phases: 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)



KMC

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	439	170	130	376	16	331	1261	93	44	1231	234
Future Volume (veh/h)	292	439	170	130	376	16	331	1261	93	44	1231	234
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	1856	1826	1841	1856	1856	1856	1856	1826	1826	1515	1811	1811
Adj Flow Rate, veh/h	314	472	183	140	404	17	356	1356	100	47	1324	252
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	5	4	3	3	3	3	5	5	26	6	6
Cap, veh/h	266	517	632	189	398	17	417	2104	155	56	1508	287
Arrive On Green	0.12	0.28	0.28	0.06	0.22	0.22	0.12	0.44	0.44	0.04	0.36	0.36
Sat Flow, veh/h	1767	1826	1560	1767	1768	74	3428	4737	349	1443	4171	794
Grp Volume(v), veh/h	314	472	183	140	0	421	356	951	505	47	1046	530
Grp Sat Flow(s),veh/h/ln	1767	1826	1560	1767	0	1842	1714	1662	1763	1443	1648	1668
Q Serve(g_s), s	14.0	30.0	9.5	7.0	0.0	27.0	12.2	26.8	26.8	3.9	35.6	35.6
Cycle Q Clear(g_c), s	14.0	30.0	9.5	7.0	0.0	27.0	12.2	26.8	26.8	3.9	35.6	35.6
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.20	1.00		0.48
Lane Grp Cap(c), veh/h	266	517	632	189	0	414	417	1476	783	56	1192	603
V/C Ratio(X)	1.18	0.91	0.29	0.74	0.00	1.02	0.85	0.64	0.64	0.83	0.88	0.88
Avail Cap(c_a), veh/h	266	517	632	189	0	414	543	1476	783	337	1192	603
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	41.6	24.1	37.2	0.0	46.5	51.6	26.0	26.0	57.3	35.8	35.8
Incr Delay (d2), s/veh	112.7	20.1	0.1	12.9	0.0	48.2	8.2	2.2	4.1	11.1	9.3	16.5
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	14.4	16.4	3.6	3.9	0.0	17.9	5.6	10.4	11.5	1.6	15.1	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.8	61.7	24.2	50.0	0.0	94.7	59.8	28.1	30.0	68.3	45.1	52.4
LnGrp LOS	F	E	C	D	A	F	E	C	C	E	D	D
Approach Vol, veh/h		969			561			1812			1623	
Approach Delay, s/veh		82.2			83.6			34.9			48.1	
Approach LOS		F			F			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	60.3	10.0	40.0	19.6	50.4	17.0	33.0				
Change Period (Y+Rc), s	5.0	7.0	3.0	6.0	5.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	28.0	30.0	7.0	34.0	19.0	39.0	14.0	27.0				
Max Q Clear Time (g_c+I1), s	5.9	28.8	9.0	32.0	14.2	37.6	16.0	29.0				
Green Ext Time (p_c), s	0.1	0.6	0.0	0.4	0.4	0.7	0.0	0.0				

## Intersection Summary

HCM 6th Ctrl Delay 54.0



















HCM 6th LOS D

## Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Vol, veh/h	843	24	27	914	16	59
Future Vol, veh/h	843	24	27	914	16	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	92	92
Heavy Vehicles, %	4	2	0	4	2	2
Mvmt Flow	937	27	30	1016	17	64
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	964	0	1519	482
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	568	-
Critical Hdwy	-	-	5.3	-	6.29	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	3.1	-	3.67	3.92
Pot Cap-1 Maneuver	-	-	413	-	136	454
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	413	-	113	454
Mov Cap-2 Maneuver	-	-	-	-	113	-
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	514	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.4		23.4		
HCM LOS				C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	276	-	-	413	-	
HCM Lane V/C Ratio	0.295	-	-	0.073	-	
HCM Control Delay (s)	23.4	-	-	14.4	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	67	0	1685	1441	90
Future Vol, veh/h	0	67	0	1685	1441	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	95	95	95	92
Heavy Vehicles, %	0	2	0	0	6	2
Mvmt Flow	0	73	0	1774	1517	98
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	808	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	278	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	278	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	22.5	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	278	-	-		
HCM Lane V/C Ratio	-	0.262	-	-		
HCM Control Delay (s)	-	22.5	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	1	-	-		

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	343	294	170	133	245	299	1274	35	1382
Future Volume (vph)	343	294	170	133	245	299	1274	35	1382
Lane Group Flow (vph)	369	316	183	143	279	322	1437	38	1716
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	23.0	5.0	32.0
Minimum Split (s)	8.0	13.0	10.0	8.0	13.0	10.0	30.0	10.0	39.0
Total Split (s)	21.0	44.0	24.0	10.0	33.0	24.0	42.0	24.0	42.0
Total Split (%)	17.5%	36.7%	20.0%	8.3%	27.5%	20.0%	35.0%	20.0%	35.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	5.0
All-Red Time (s)	0.0	3.0	2.0	0.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	5.0	3.0	6.0	5.0	7.0	5.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
v/c Ratio	1.00	0.62	0.24	0.46	0.83	0.72	0.62	0.36	0.95
Control Delay	78.8	43.1	11.3	31.2	66.3	59.6	27.3	62.5	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.8	43.1	11.3	31.2	66.3	59.6	27.3	62.5	50.1
Queue Length 50th (ft)	219	213	49	73	207	124	320	29	469
Queue Length 95th (ft)	#377	293	84	113	293	169	417	64	#678
Internal Link Dist (ft)		142			617		152		882
Turn Bay Length (ft)								320	
Base Capacity (vph)	368	589	802	311	415	543	2334	277	1804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.54	0.23	0.46	0.67	0.59	0.62	0.14	0.95

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

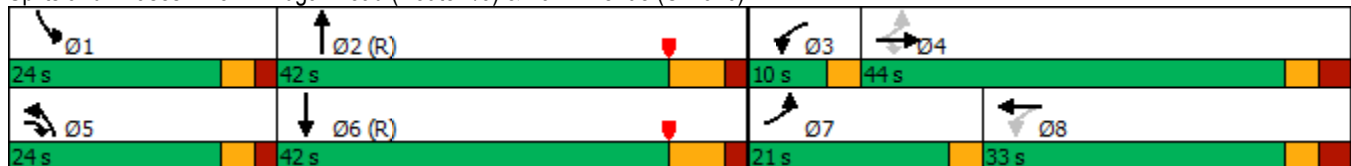
Natural Cycle: 90























Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: E. Edgar Road (Route 1/9) &amp; Park Avenue (CR 616)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	343	294	170	133	245	15	299	1274	62	35	1382	214
Future Volume (veh/h)	343	294	170	133	245	15	299	1274	62	35	1382	214
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	1870	1870	1870	1885	1870	1870	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	369	316	183	143	263	16	322	1370	67	38	1486	230
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	2	2	2	3	3	3	3	3
Cap, veh/h	349	484	587	263	292	18	385	2364	116	53	1754	271
Arrive On Green	0.15	0.26	0.26	0.06	0.17	0.17	0.11	0.48	0.48	0.03	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	1795	1745	106	3456	4947	242	1767	4426	684
Grp Volume(v), veh/h	369	316	183	143	0	279	322	935	502	38	1133	583
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1795	0	1851	1728	1689	1812	1767	1689	1732
Q Serve(g_s), s	18.0	18.1	9.9	7.0	0.0	17.7	11.0	24.0	24.0	2.6	36.6	36.7
Cycle Q Clear(g_c), s	18.0	18.1	9.9	7.0	0.0	17.7	11.0	24.0	24.0	2.6	36.6	36.7
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.13	1.00		0.39
Lane Grp Cap(c), veh/h	349	484	587	263	0	310	385	1614	866	53	1339	687
V/C Ratio(X)	1.06	0.65	0.31	0.54	0.00	0.90	0.84	0.58	0.58	0.72	0.85	0.85
Avail Cap(c_a), veh/h	349	592	678	263	0	417	547	1614	866	280	1339	687
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	39.6	26.9	40.2	0.0	49.0	52.3	22.6	22.6	57.7	32.9	32.9
Incr Delay (d2), s/veh	64.4	1.0	0.1	1.3	0.0	15.4	5.4	1.5	2.8	6.6	6.8	12.4
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	14.7	8.5	3.8	0.5	0.0	9.6	4.9	9.3	10.3	1.2	15.4	16.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.5	40.6	27.0	41.6	0.0	64.4	57.7	24.2	25.5	64.3	39.7	45.3
LnGrp LOS	F	D	C	D	A	E	E	C	C	E	D	D
Approach Vol, veh/h		868			422			1759			1754	
Approach Delay, s/veh		63.2			56.7			30.7			42.1	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	64.3	10.0	37.1	18.4	54.6	21.0	26.1				
Change Period (Y+Rc), s	5.0	7.0	3.0	6.0	5.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	19.0	35.0	7.0	38.0	19.0	35.0	18.0	27.0				
Max Q Clear Time (g_c+I1), s	4.6	26.0	9.0	20.1	13.0	38.7	20.0	19.7				
Green Ext Time (p_c), s	0.0	2.6	0.0	1.0	0.4	0.0	0.0	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			43.0									
HCM 6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												

Intersection

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Vol, veh/h	748	23	27	731	17	59
Future Vol, veh/h	748	23	27	731	17	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	92	93	93	92	92
Heavy Vehicles, %	2	2	0	2	2	2
Mvmt Flow	804	25	29	786	18	64

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	829
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.1
Pot Cap-1 Maneuver	-	-	479
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	479
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	350	-	-	479	-
HCM Lane V/C Ratio	0.236	-	-	0.061	-
HCM Control Delay (s)	18.4	-	-	13	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.9	-	-	0.2	-



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	46	0	1635	1610	75
Future Vol, veh/h	0	46	0	1635	1610	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	94	94	94	92
Heavy Vehicles, %	0	2	0	3	3	2
Mvmt Flow	0	50	0	1739	1713	82
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	898	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	242	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	242	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	23.7	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	242	-	-		
HCM Lane V/C Ratio	-	0.207	-	-		
HCM Control Delay (s)	-	23.7	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	0.8	-	-		



# ***THE DREHER GROUP***

## ***TRAFFIC IMPACT STUDY***

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### **APPENDIX E**

#### **NJDOT LOS SUMMARY TABLES**

# CAPACITY ANALYSIS SUMMARY TABLE

Intersection: Routes 1 & 9 & Park Avenue  
TIME PERIOD: AM PEAK HOUR

Roadway		No-Build Conditions				Build (w/ Optimization) Conditions				Increase in Delay		
Roadway	Lane Group	Lanes	v/c	Delay	LOS	Lanes	v/c	Delay	LOS	Allowed	Computed	Exceeded
Park Avenue (CR 616) (EB/WB)	EB L	1	0.96	99.8	F	1	0.95	83.1	F	0.0	-16.7	NO
	EB T	1	1.00	95.8	F	1	0.96	81.5	F	0.0	-14.3	NO
	EB R	1	0.32	35.0	C	1	0.31	32.9	C	11.3	-2.1	NO
	WB L	1	0.90	90.2	F	1	0.78	61.9	E	0.0	-28.3	NO
	WB T/R	1	0.66	51.0	D	1	0.74	57.0	E	7.3	6.0	NO
Routes 1 & 9 (NB/SB)	NB L	1	0.83	66.9	E	2	0.84	68.1	E	3.3	1.2	NO
	NB T	2	0.57	27.2	C	2	0.60	29.8	C	13.2	2.6	NO
	NB TR	1	0.57	28.5	C	1	0.60	31.2	C	12.9	2.7	NO
	SB L	1	0.80	74.8	E	1	0.80	74.8	E	1.3	0.0	NO
	SB T	2	0.70	34.7	C	2	0.75	38.8	D	11.3	4.1	NO
	SB T/R	1	0.70	37.4	D	1	0.75	42.4	D	10.7	5.0	NO

\* Under 1.20 v/c ratio

\*\* Will Request NJDOT Waiver

# CAPACITY ANALYSIS SUMMARY TABLE

Intersection: Routes 1 & 9 & Park Avenue  
TIME PERIOD: PM PEAK HOUR

Roadway		No-Build Conditions				Build (w/ Optimization) Conditions				Increase in Delay		
Roadway	Lane Group	Lanes	v/c	Delay	LOS	Lanes	v/c	Delay	LOS	Allowed	Computed	Exceeded
Park Avenue (CR 616) (EB/WB)	EB L	1	1.19	154.9	F	1	1.18	146.8	F	0.0	-8.1	NO
	EB T	1	1.06	104.4	F	1	0.91	61.7	E	0.0	-42.7	NO
	EB R	1	0.33	28.1	C	1	0.29	24.2	C	13.0	-3.9	NO
	WB L	1	0.71	40.7	D	1	0.74	50.0	D	9.8	9.3	NO
	WB T/R	1	1.01	95.2	F	1	1.02	94.7	F	0.0	-0.5	NO
Routes 1 & 9 (NB/SB)	NB L	1	0.84	55.4	E	2	0.85	59.8	E	6.2	4.4	NO
	NB T	2	0.61	25.6	C	2	0.64	28.1	C	13.6	2.5	NO
	NB TR	1	0.61	27.1	C	1	0.64	30.0	C	13.2	2.9	NO
	SB L	1	0.83	68.5	E	1	0.83	68.3	E	2.9	-0.2	NO
	SB T	2	0.81	38.4	D	2	0.88	45.1	D	10.4	6.7	NO
	SB T/R	1	0.81	43.4	D	1	0.88	52.4	D	9.2	9.0	NO

\* Under 1.20 v/c ratio

\*\* Will Request NJDOT Waiver

# CAPACITY ANALYSIS SUMMARY TABLE

Intersection: Routes 1 & 9 & Park Avenue  
TIME PERIOD: SATURDAY PEAK HOUR

Roadway		No-Build Conditions				Build (w/ Optimization) Conditions				Increase in Delay		
Roadway	Lane Group	Lanes	v/c	Delay	LOS	Lanes	v/c	Delay	LOS	Allowed	Computed	Exceeded
Park Avenue (CR 616) (EB/WB)	EB L	1	1.18	151.6	F	1	1.06	100.5	F	0.0	-51.1	NO
	EB T	1	0.86	58.1	E	1	0.65	40.6	D	5.5	-17.5	NO
	EB R	1	0.38	33.3	C	1	0.31	27.0	C	11.7	-6.3	NO
	WB L	1	0.60	39.6	D	1	0.54	41.6	D	10.1	2.0	NO
	WB T/R	1	0.89	59.5	E	1	0.90	64.4	E	5.1	4.9	NO
Routes 1 & 9 (NB/SB)	NB L	1	0.83	57.1	E	2	0.84	57.7	E	5.7	0.6	NO
	NB T	2	0.53	20.3	C	2	0.58	24.2	C	14.9	3.9	NO
	NB TR	1	0.53	21.3	C	1	0.58	25.5	C	14.7	4.2	NO
	SB L	1	0.72	64.3	E	1	0.72	64.3	E	3.9	0.0	NO
	SB T	2	0.75	31.6	C	2	0.85	39.7	D	12.1	8.1	NO
	SB T/R	1	0.75	34.9	C	1	0.85	45.3	D	11.3	10.4	NO

\* Under 1.20 v/c ratio

\*\* Will Request NJDOT Waiver