Traffic Impact Study

Windsor Pointe

Block 3, Lots 3 & 3.02
Township of East Windsor, Mercer County, New Jersey

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Prepared For

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MC Project No. 18001982A

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I. INTRODUCTION

The following report has been prepared to determine the traffic impacts associated with a proposed 186-unit multi-family residential development located in the Township of East Windsor, Mercer County, New Jersey. The subject site is located along Old Trenton Road (CR 535), west of its intersection with Princeton Hightstown Road (CR 571), and is designated by Block 3, Lots 3 & 3.02 on the Township of East Windsor Tax Maps. The site location map is included as **Figure 1** in **Appendix A**.

Access to the site is proposed via a full movement driveway along Old Trenton Road (CR 535), opposite Windsor Center Drive. **Figure 2** in **Appendix A** illustrates the proposed Site Plan prepared by Maser Consulting.

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, 10th Edition;
- Trip Distribution and Assignment;
- Forecast of 2022 No Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2022 No-Build Conditions;
- Forecast of the 2022 Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2022 Build Conditions;
- 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

Old Trenton Road (CR 535) is an urban minor arterial under Mercer County jurisdiction with a general east-west orientation. Within the project vicinity, the roadway provides one (1) travel lane in each direction. The posted speed limit is 50 MPH.

Princeton Hightstown Road (CR 571) is an urban principal arterial under Mercer County jurisdiction with a general north-south orientation. Within the project vicinity, the roadway provides two (2) travel lane in each direction. The posted speed limit is 50 MPH.

Windsor Center Drive is a local road under the township of East Windsor jurisdiction with a general north-south orientation. Within the project vicinity, the roadway provides one (1) travel lane in each direction. The posted speed limit is 35 MPH.

Signalized Intersections

Old Trenton Road (CR 535) with Princeton Hightstown Road (CR 571) is a four-phase signalized intersection operating on a 100-second cycle length during the weekday morning and evening peak hours. The eastbound approach of Old Trenton Road (CR 535) provides an exclusive left turn lane, an exclusive through lane, and shared through/right turn lane. The westbound approach of Old Trenton Road (CR 535) provides an exclusive left turn lane, two (2) exclusive through lanes, and a channelized right turn lane. The northbound and southbound approaches of Princeton Hightstown Road (CR 571) provide an exclusive left turn lane, two (2) exclusive through lanes, and a channelized right turn lane.

Unsignalized Intersections

Old Trenton Road (CR 535) with Windsor Center Drive is a T-intersection with the northbound approach of Windsor Center Drive under stop control. The eastbound approach of Old Trenton Road (CR 535) provides a shared through/right turn lane. The westbound approach of Old Trenton Road (CR 535) provides an exclusive left turn lane and an exclusive through lane. The northbound approach of Windsor Center Drive provides an exclusive left turn lane and an exclusive right turn lane.

III. EXISTING TRAFFIC CONDITIONS

Traffic volume data for the roadway network adjacent to the subject property was obtained through manual turning movement counts (MTMC), conducted on Tuesday, May 22, 2018 from 7:00 AM to 9:00 AM and from 2:00 PM to 6:00 PM at the following intersections:

- Old Trenton Road (CR 535) with Princeton Hightstown Road (CR 571); and
- Old Trenton Road (CR 535) with Windsor Center Drive.

The following table details the data collection efforts and peak hours.

Table 1 – Data Collection Efforts and Established Peak Hours

Peak Period	Date Collected	Traffic Count Time Frame	Established Peak Hour
Weekday Morning	Tuesday, May 22, 2018	7:00 AM – 9:00 AM	7:45 AM – 8:45 AM
Weekday Evening		2:00 PM – 6:00 PM	5:00 PM – 6:00 PM

Additionally, Automatic Traffic Recorders ("ATRs") were installed along Old Trenton Road (CR 535), west of Princeton Hightstown Road (CR 571), from Wednesday, May 16, 2018 to Thursday, May 24, 2018.

Figure 3, located in **Appendix A**, details the existing traffic volumes. The MTMC and ATR summary sheets are provided in **Appendix B**.

IV. TRIP GENERATION & DISTRIBUTION

Trip Generation

The ability of any roadway network to serve anticipated traffic volumes is measured by comparing peak hour traffic volumes to roadway capacities. Thus, it is essential to determine the hourly traffic volumes to be generated by the Project and add them to the No Build traffic volumes for the peak hours.

Trip generation estimates for the proposed development of The Project were made utilizing data published under Land Use Code 220 – Multifamily Housing (Low-Rise) in the Institute of Transportation Engineers' (ITE) publication *Trip Generation, Tenth Edition*. This publication sets forth trip generation rates based on traffic counts conducted at research sites throughout the country. **Table 2** details the existing and proposed trips for The Project.

Table 2 – ITE Trip Generation

Site Information		AM Peak Hour			PM Peak Hour		
ITE Land Use / LUC	**Size**	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
220 – Multifamily Housing (Low-Rise)	186 Units	20	66	86	65	38	103

Trip Distribution

Trip distribution methodology is developed based on a variety of factors. These factors include the existing travel patterns within the adjacent roadway network, adjacent land uses, proposed land use, development locations, driveway locations and the proximity of major arterials within the project vicinity. The trip distribution patterns were established upon a review of the existing driveway and roadway volumes.

The following trip distribution patterns were established upon a review of the existing roadway volumes and adjacent land uses:

- To/from Old Trenton Road (CR 535) (East) – 10%
- To/from Old Trenton Road (CR 535) (West) – 20%
- To/from Princeton Hightstown Road (CR 571) (North) – 20%
- To/from Windsor Center Drive (South) – 50%

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

V. FUTURE TRAFFIC CONDITIONS

To determine the traffic impact of the development, an estimation of the traffic operational characteristics at the Build date without the construction of the project (or "No Build" condition) is made. The existing volumes have been projected to the Build year of 2022.

2022 Base Conditions

The NJDOT Annual Background Growth Rate Table recommends a rate of 1.0% for urban minor arterials and 2.0% for urban principal arterials within Mercer County. A conservative rate of 2.0% was utilized. This forecast accounts for general increases in local traffic volumes each year in the study area. The 2022 Base volumes are presented in **Figure 6** of **Appendix A.**

Adjacent Developments

- **Old Trenton Road Development** –it is proposed to construct a 186-unit multi-family residential development just west of the subject site. The subject site is designated as Block 28, Lot 15 on the Township of West Windsor Tax Maps. These volumes are illustrated as **Figure 7 in Appendix A**.

- **Aurobindo Warehouse** – It is proposed to construct a 286,484 SF manufacturing and packaging facility, 276,000 SF warehouse, and 15,468 SF Office (Phase 1) and a 101,250 SF manufacturing and packaging facility, 95,850 SF warehouse, and 5,400 SF Office (Phase 2) along Windsor Center Drive. The subject Site is designated as Block 4, Lot 2 on the Township of East Windsor Tax Maps. A copy of the *Traffic Study* prepared by Harlyn Associates, dated June 22, 2015, was obtained. It is noted Phase 1 has been constructed and was operational during the time of the counts, thus only Phase 2 was considered. These volumes are illustrated as **Figure 8** of **Appendix A**.

2022 No Build Conditions

The 2022 No Build volumes were forecasted by adding the 2022 Base volumes to the Adjacent Development volumes. The 2022 No Build volumes are presented in **Figure 9** in **Appendix A**.

2022 Build Conditions

The 2022 Build volumes were forecasted by adding the site generated traffic from the proposed development to the 2022 No Build traffic volumes within the roadway network. The 2022 Build traffic volumes are summarized as **Figure 10** of **Appendix A**.

VI. 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 3.**

Table 3 – HCM: Signalized and Unsignalized LOS/Delay Criteria

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

The level of services for the 2022 No Build and Build conditions are detailed in **Table 4**.

Table 4 – Level of Service Summary

Intersection	Lane Group		2022 No Build				2022 Build			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Old Trenton Road (CR 535) (EB/WB) & Princeton Hightstown Road (CR 571) (NB/SB)	EB	L	C	32.6	C	33.3	C	33.5	C	33.2
		T	F	127.8	E	61.0	F	131.9	E	61.5
		R	F	129.4	E	66.8	F	133.5	E	67.2
	WB	L	C	34.3	D	51.9	C	34.6	D	52.0
		T	D	42.7	D	43.4	D	43.9	D	45.0
		R	D	40.8	C	34.4	D	41.6	C	34.6
	NB	L	C	33.7	F	77.8	C	34.2	F	78.8
		T	C	23.6	C	21.0	C	23.6	C	21.1
		R	B	19.0	B	19.3	B	19.1	B	19.4
	SB	L	C	20.1	B	15.7	C	20.2	B	15.7
		T	B	18.6	C	32.0	B	18.6	C	32.2
		R	B	16.6	C	21.1	B	16.7	C	21.5
	Overall		**D**	**42.4**	**D**	**38.1**	**D**	**43.4**	**D**	**38.5**
Old Trenton Road (CR 535) (EB/WB) with Site Driveway (SB) & Windsor Center Drive (NB)	EB	L	-	-	-	-	a	9.8	b	10.2
	WB	L	a	9.3	a	8.8	a	9.3	a	8.8
	NB	L	f	75.8	f	175.0	f	339.0	f	620.5
		(T)/R	c	15.9	b	11.8	c	22.7	e	49.2
	SB	L/T/R	-	-	-	-	f	192.6	f	125.2

Note: Uppercase indicates signalized intersection; lowercase indicates unsignalized intersection

The following are discussions pertaining to the intersection analyzed. All capacity analysis calculation worksheets are appended. It should be noted the existing percentage of trucks were used in all analysis. The following is a summary of the findings.

Princeton Hightstown Road (CR 571) & Old Trenton Road (CR 535)

2022 No Build Analysis

Under the No Build condition, all intersection movements will operate at Levels of Service "E" or better, with the exception of the eastbound through and right turn movements which will exceed capacity during the weekday morning peak hour and the northbound left turn movement which will exceed capacity during the weekday evening peak hour. The intersection will operate at overall Levels of Service "D" during both peak hours studied.

2022 Build Analysis

Under the Build condition, all intersection movements will continue to operate at or near No Build levels of service. The intersection will operate at overall Levels of Service "D" during both peak hours studied.

Windsor Center Drive/Site Driveway & Old Trenton Road (CR 535)

2022 No Build Analysis

Under the No Build condition, all intersection movements will operate at Levels of Service "C" or better, with the exception of the northbound left turn movement which will exceed capacity during both peak hours studied.

2022 Build Analysis

Under the Build condition, it is proposed to construct the site driveway as the fourth leg of the intersection. With the construction of the site driveway, the northbound left turn movement and southbound approach of the intersection will exceed capacity during both peak hours studied. In order to mitigate the site generated traffic, it is proposed to install a traffic signal at the intersection. With the proposed mitigation, all intersection movements will operate at Levels of Service "C" or better during both peak hours studied.

Table 5 – Level of Service Summary

Intersection	Lane Group		2022 Build				2022 Build with Mitigation			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Old Trenton Road (CR 535) (EB/WB) with Site Driveway (SB) & Windsor Center Drive (NB)	EB	L	a	9.8	b	10.2	B	13.8	B	10.3
	WB	L	a	9.3	a	8.8	A	7.7	B	15.8
		T/R	-	-	-	-	C	24.9	C	26.0
	NB	L	f	339.0	f	620.5	B	15.0	B	18.4
		(T)/R	c	22.7	e	49.2	B	16.5	B	18.3
	SB	L/T/R	f	192.6	f	125.2	B	15.4	B	17.3
	Overall		-	-	-	-	**B**	**19.2**	**C**	**20.0**

Note: Uppercase indicates signalized intersection; lowercase indicates unsignalized intersection

VII. TRAFFIC SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis was conducted for the intersection of Old Trenton Road (CR 535) with the Site Driveway & Windsor Center Drive. Signal warrant methodology and factors are outlined in *Chapter 4C* of the *Manual on Uniform Traffic Control Devices, 2009 Ed* (MUTCD). Section 4C.01 of the MUTCD states that to warrant a traffic signal:

> *"An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether the installation of a traffic signal is justified at a particular location"*

The traffic control signal investigation is comprised of analyzing several factors related to the operation and safety at the study location. The factors are utilized to determine if the potential signalization will improve traffic operations. The MUTCD outlines multiple traffic signal warrants which are applied to determine if signalization is justified. The applicable warrants for this analysis are as follows:

Table 6 – Traffic Signal Warrant Descriptions

Warrant		Description
1	**8-Hour Vehicular Volume**	This warrant examines any 8 hours within a study period with consideration given to large volumes of traffic interacting at an intersection and/or large queues of traffic along an intersecting minor street.
2	**4-Hour Vehicular Volume**	This warrant examines any 4 hours within a study period with consideration given to intersecting traffic volume as the main consideration.
3	**Peak Hour**	This warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Traffic Control Signal Warrant Results

Based on MUTCD standards, the eight-hour, four-hour, and peak hour traffic signal warrants are **met** for the Build condition for the intersection of Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway, therefore **a traffic signal is warranted**. The following table summarizes the warrant analysis results.

Table 7 – Old Trenton Road (CR 535) with Windsor Center Drive/ Site Driveway Signal Warrant Results

Warrant #	Warrant Description	Minimum Hours	2022 Build	
			Hours Reached	Satisfied
1	Eight-Hour Vehicular Volume	8	10	YES
2	Four-Hour Vehicular Volume	4	7	YES
3	Peak Hour	1	5	YES
TOTAL WARRANTS SATISFIED		**--**	**--**	**3**

VIII. PARKING ASSESSMENT

The Residential Site Improvement Standards, RSIS, Section *§5:21-4.14* sets forth a parking requirement for residential developments. It is noted the RSIS parking requirement is based on the type of housing unit and number of bedrooms. For the proposed 186-unit multi-family residential development, this equates to a parking requirement of 368 spaces. It is proposed to provide 333 spaces, thus requiring a variance for 35 spaces.

Parking estimates for the development of the project were made utilizing data as published under Land Use Code 220 – Multifamily Housing (Low-Rise) in the ITE publication, *Parking Generation,5th Edition*. Based on the ITE published data, the 85th percentile peak period parking demand ratio is 1.52 spaces per dwelling unit, which equates to a total of 283 spaces for the 186-unit multi-family residential development. As previously mentioned, 333 spaces are proposed, therefore, adequate parking will be provided onsite based on the calculated project demand from published industry standards. The following table details the Ordinance and ITE off-street parking requirements for the proposed development.

Table 8 – Off-Street Parking Requirements

Type	Units	Ordinance Requirement	Calculated Ordinance Requirement	ITE 85th Percentile Requirement	Calculated ITE 85th Percentile Requirement	Parking Provided
1-Bedroom Apartment	24	1.8 spaces per unit	43.2 spaces	1.52 spaces per unit	283 spaces	333 spaces
2-Bedroom Apartment	153	2.0 spaces per unit	306 spaces			
3-Bedroom Apartment	9	2.1 spaces per unit	18.9 spaces			
Total	**186**	--	**368 spaces**			

SUMMARY AND CONCLUSIONS

This Traffic Impact Study evaluated the proposed residential development within the Township of East Windsor, Mercer County, New Jersey. The findings of the Traffic Impact Study are summarized as follows:

1. It is proposed to construct a 186-unit residential multi-family residential development.

2. Access to the site is proposed via one (1) full movement driveways along Old Trenton Road (CR 535).

3. Under the Build condition, all movements at the intersection of Old Trenton Road (CR 535) & Princeton Hightstown Road (CR 571) will continue to operate at or near No Build Levels of Service.

4. Under the Build condition, it is proposed to install a traffic signal at the intersection of Old Trenton Road (CR 535) with Winsor Center Drive/Site Driveway. With the proposed mitigation all intersection movements will operate at Levels of Service "C" or better during both peak hours studied.

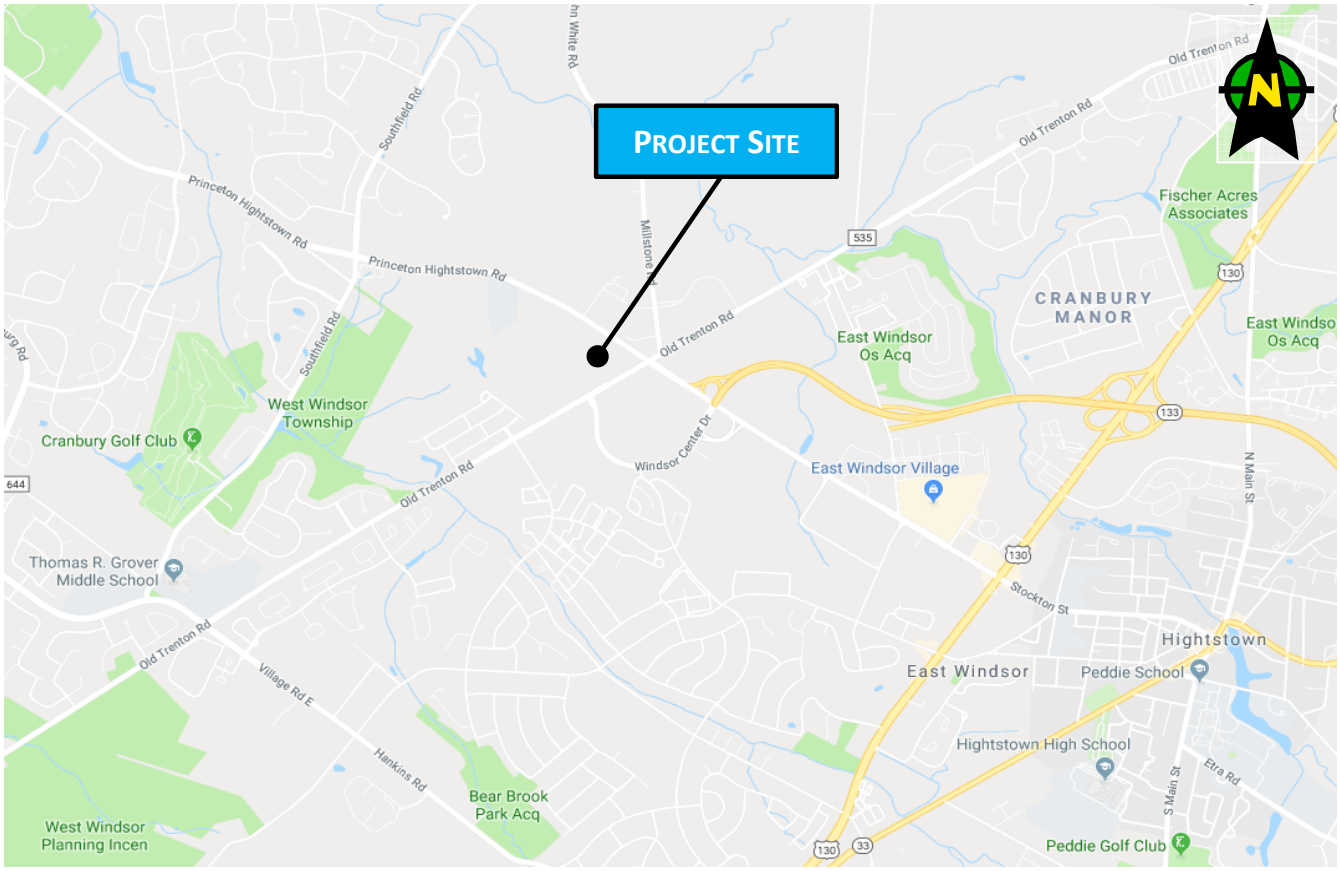
5. Based on the traffic signal warrant analysis conducted at the intersection of Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway under the 2022 Build conditions, a traffic signal is warranted.

6. The proposed parking supply of 333 spaces is sufficient based on published industry standards.

WINDSOR POINTE
TRAFFIC IMPACT STUDY

APPENDIX A

TRAFFIC FIGURES



18001982A	Windsor Pointe	**Figure 1**
	Township of East Windsor, Mercer County, New Jersey	**Site Location Map**

NOTES:

1. THE EMERGENCY ACCESS DRIVE LOCATION REQUIRES RELIEF FROM ORDINANCE NO. 20-1.A.8b.4 SINCE IT IS LOCATED APPROXIMATELY 760 FEET EAST OF THE ENTRY ROAD AND THE ORDINANCE REQUIRES IT TO BE LOCATED APPROXIMATELY 900 FEET WEST OF THE ENTRY ROAD.

2. THE CLUBHOUSE (ACCESSORY BUILDING) REQUIRES RELIEF FROM ORDINANCE NO. 20-11.A.6.e SINCE IT IS 102 FEET FROM THE FUTURE PROPERTY LINE (AFTER ROW DEDICATION) WHERE 125 FEET IS REQUIRED.

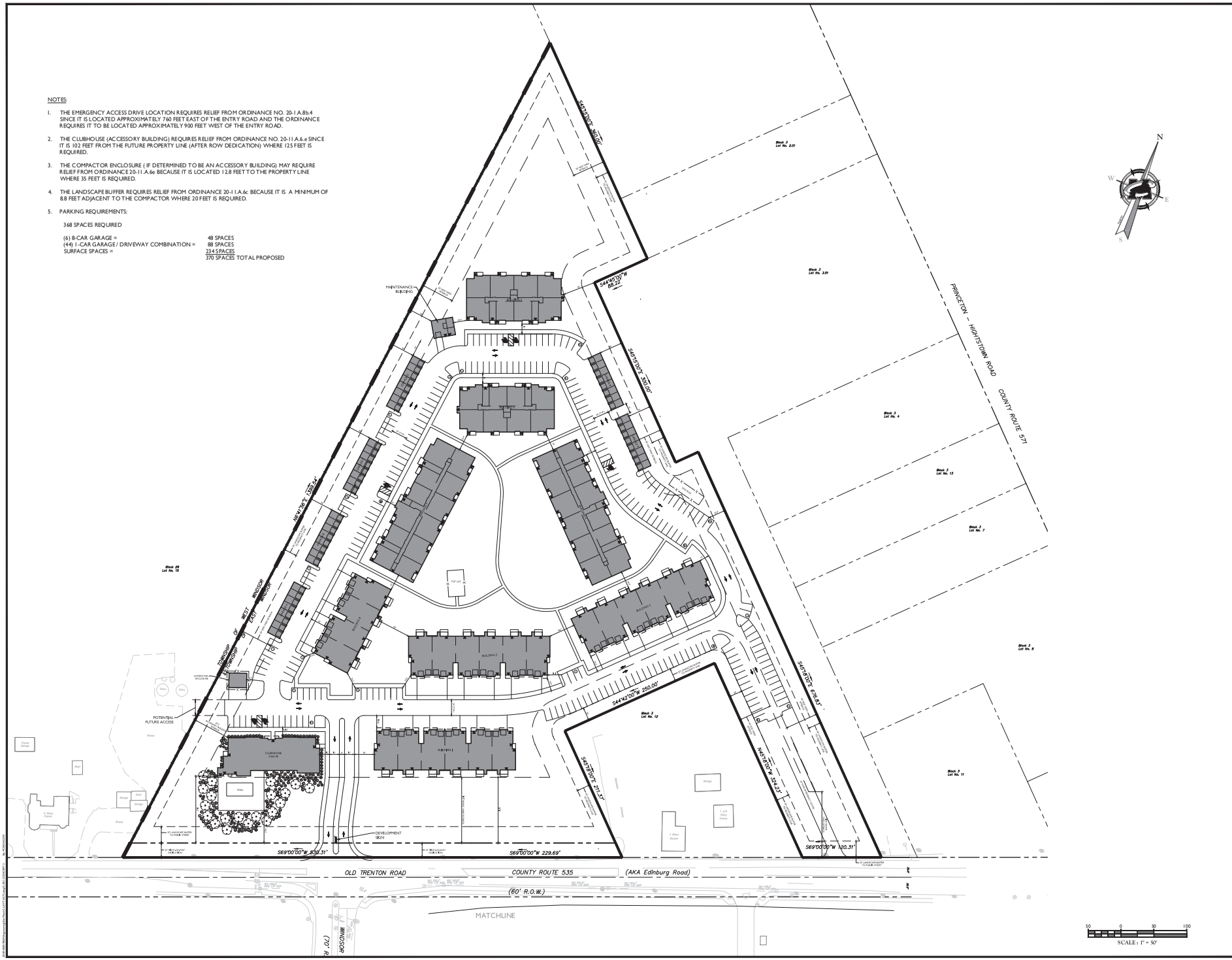
3. THE COMPACTOR ENCLOSURE (IF DETERMINED TO BE AN ACCESSORY BUILDING) MAY REQUIRE RELIEF FROM ORDINANCE 20-11.A.6e BECAUSE IT IS LOCATED 12.8 FEET TO THE PROPERTY LINE WHERE 35 FEET IS REQUIRED.

4. THE LANDSCAPE BUFFER REQUIRES RELIEF FROM ORDINANCE 20-11.A.6c BECAUSE IT IS A MINIMUM OF 8.8 FEET ADJACENT TO THE COMPACTOR WHERE 20 FEET IS REQUIRED.

5. PARKING REQUIREMENTS:

368 SPACES REQUIRED

(6) 8-CAR GARAGE =	48 SPACES
(44) 1-CAR GARAGE / DRIVEWAY COMBINATION =	88 SPACES
SURFACE SPACES =	234 SPACES
	370 SPACES TOTAL PROPOSED



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REV	DATE	DRAWN BY	DESCRIPTION

REV	DATE	DRAWN BY	DESCRIPTION

PRELIMINARY AND FINAL MAJOR SITE PLAN

FOR

OLD TRENTON ROAD

CONCEPT 2

BLOCK 3 LOTS 3 AND 3.02

TOWNSHIP OF EAST WINDSOR
MERCER COUNTY
NEW JERSEY

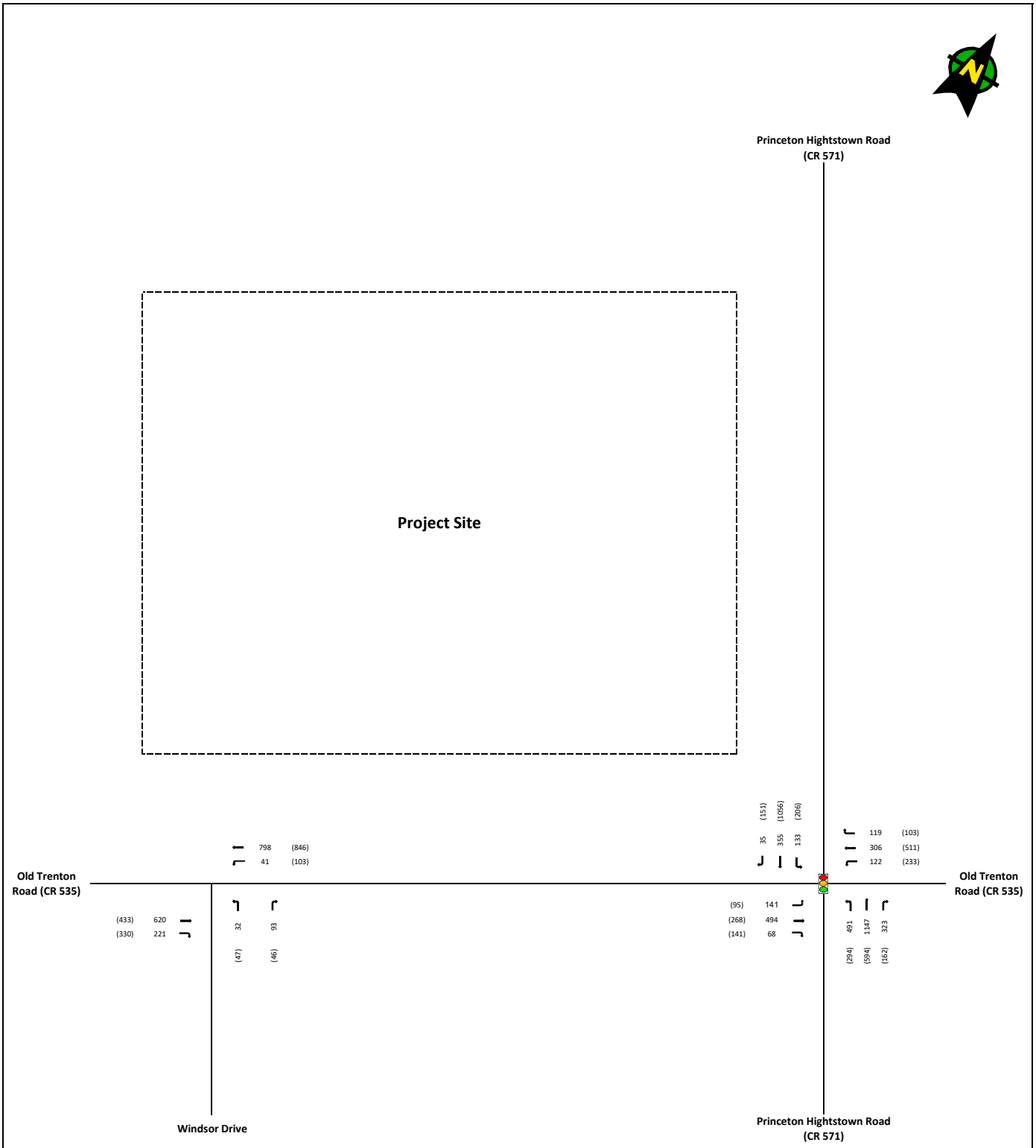
RED BANK OFFICE
Corporate Headquarters
311 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	10.01.18	PCS	LJB

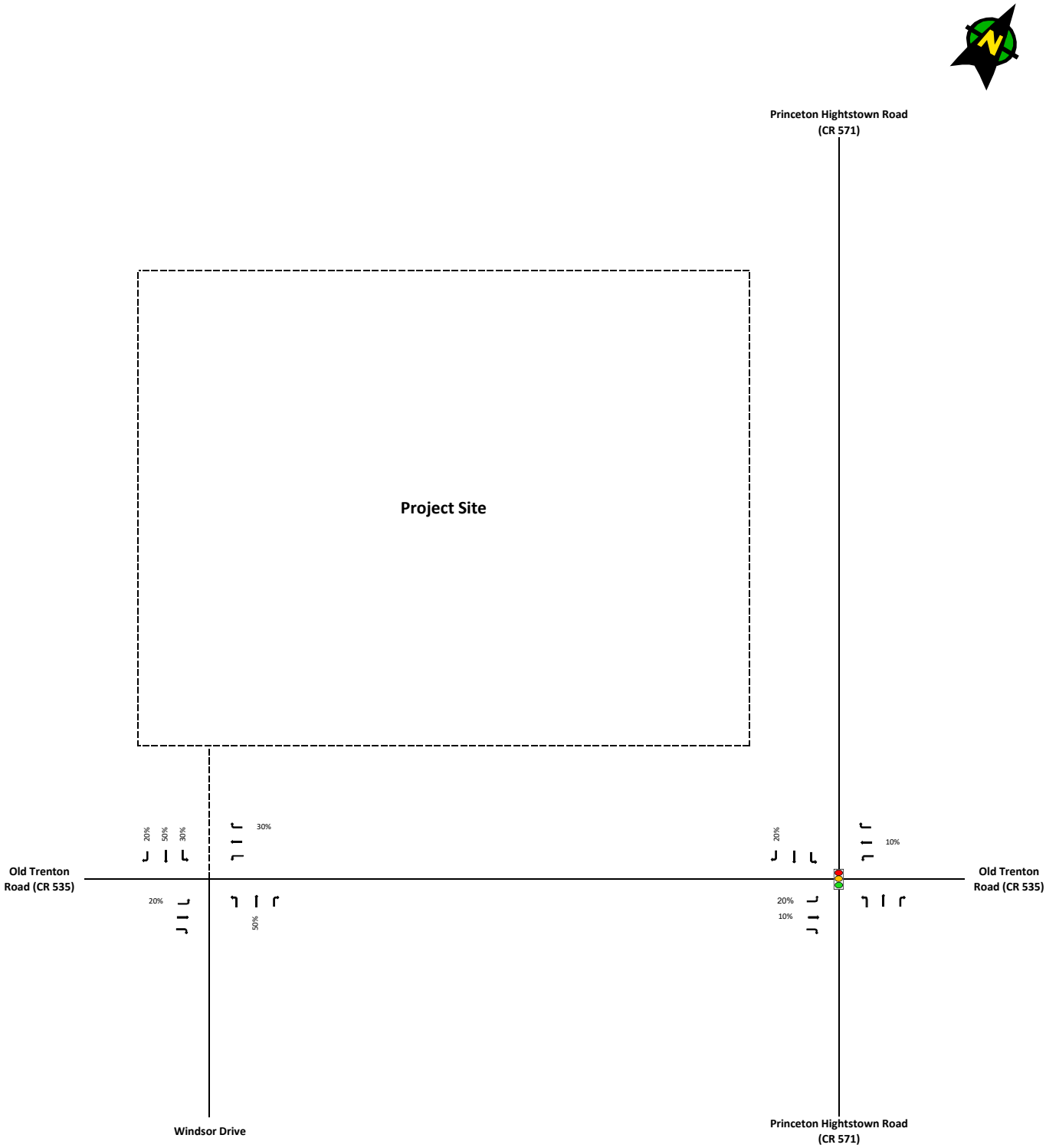
PROJECT NUMBER	DRAWING NAME
1810.19.01A	C-LAYT-ALT3

SHEET TITLE:
LAYOUT EXHIBIT

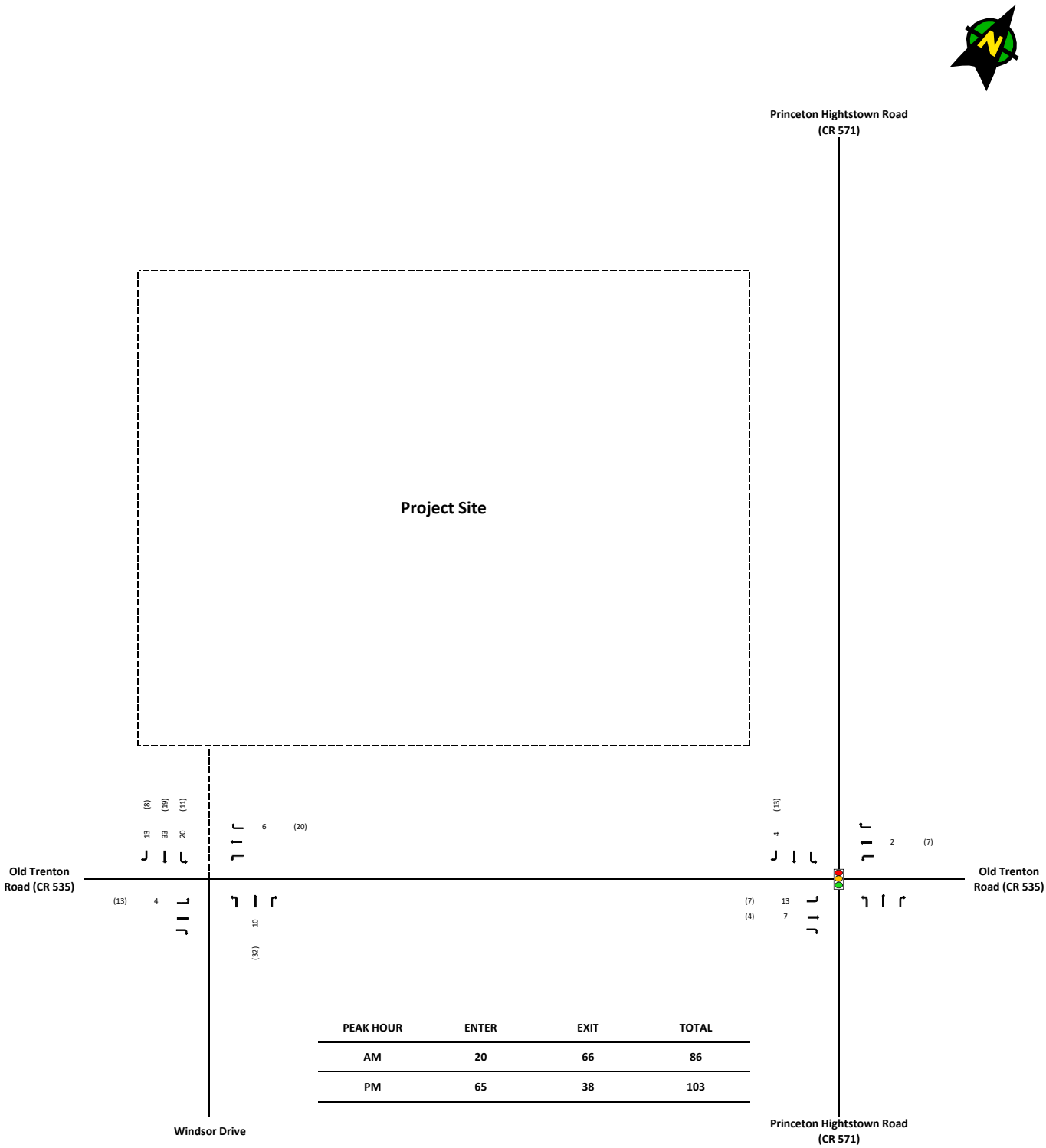
SHEET NUMBER:
1 of 1



Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 3** **Existing Conditions** **AM & PM Peak Hours**	

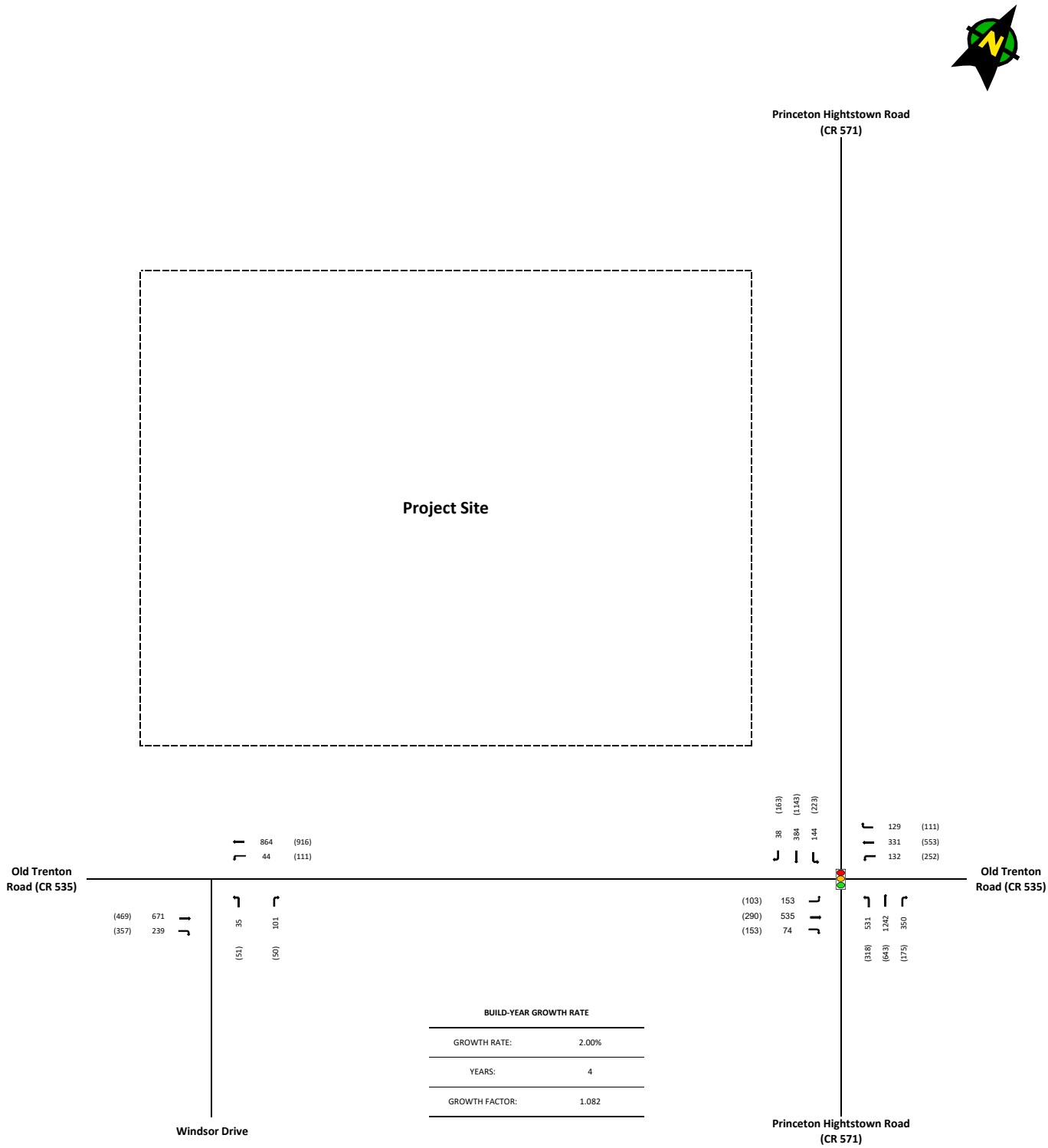


MASER CONSULTING	Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 4** **Trip Distributions** **AM & PM Peak Hours**



PEAK HOUR	ENTER	EXIT	TOTAL
AM	20	66	86
PM	65	38	103

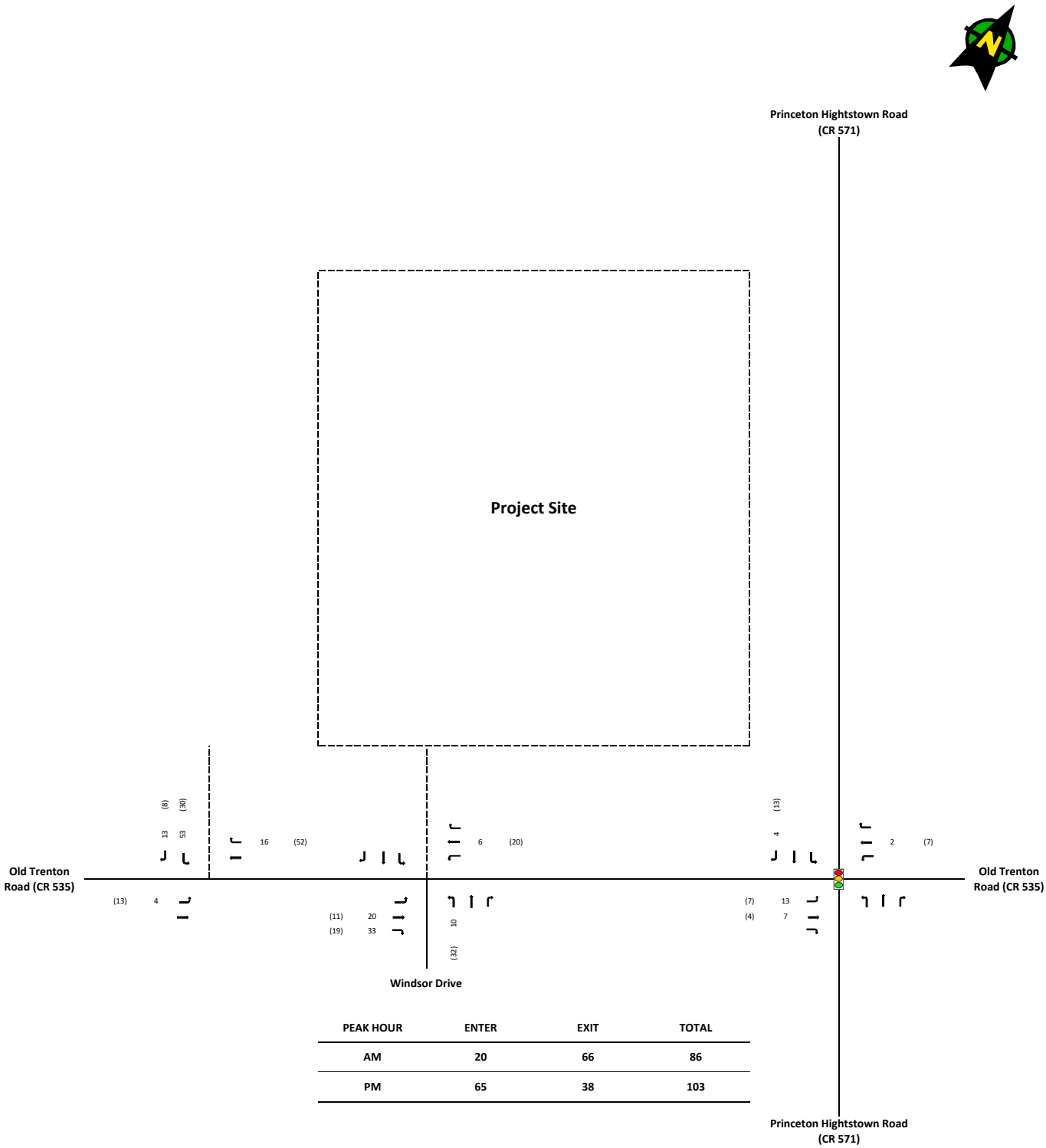
Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 5** **Site Generated Trips** **AM & PM Peak Hours**	



BUILD-YEAR GROWTH RATE

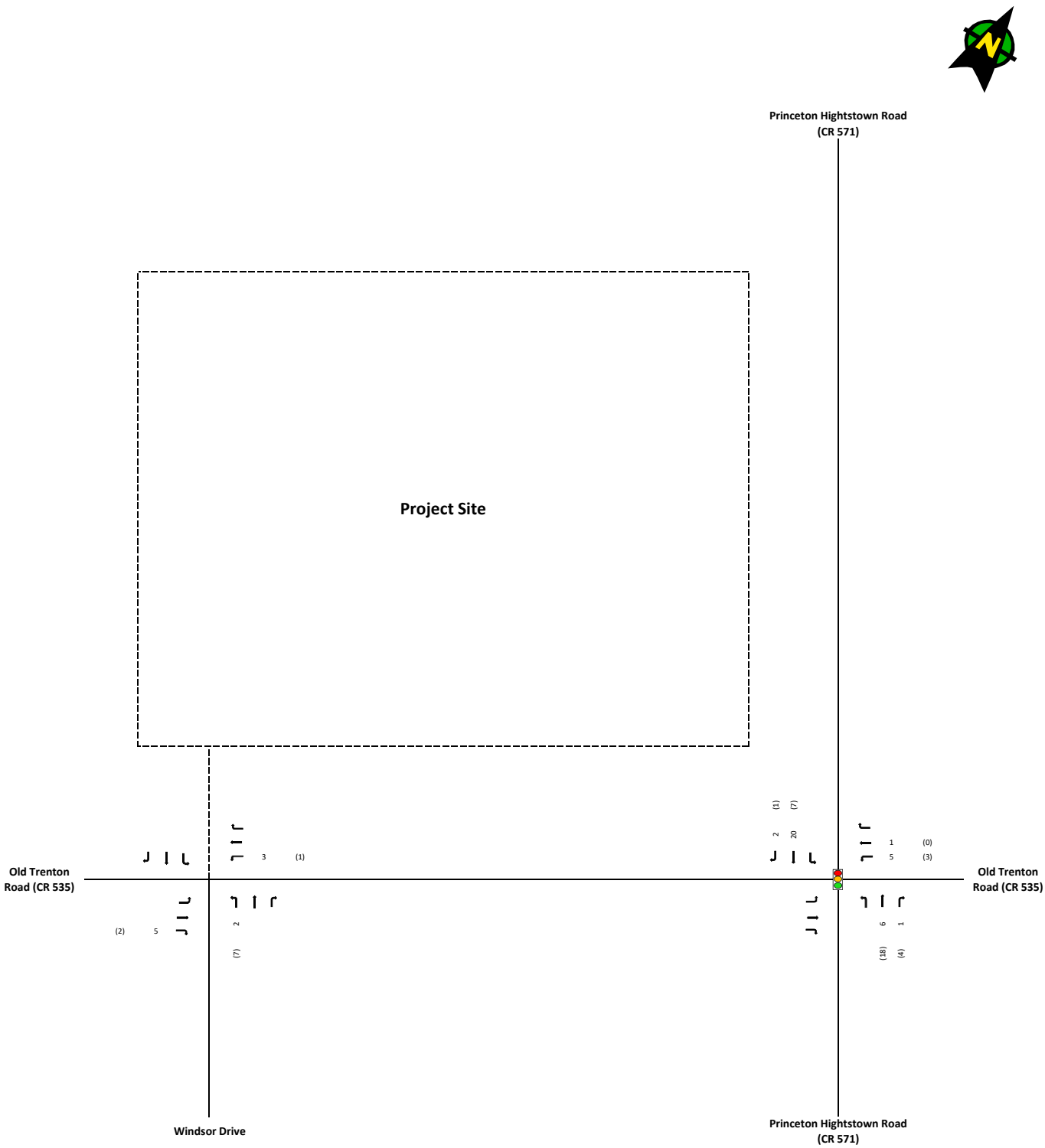
GROWTH RATE:	2.00%
YEARS:	4
GROWTH FACTOR:	1.082

Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 6** **2022 Base Conditions** **AM & PM Peak Hours**	

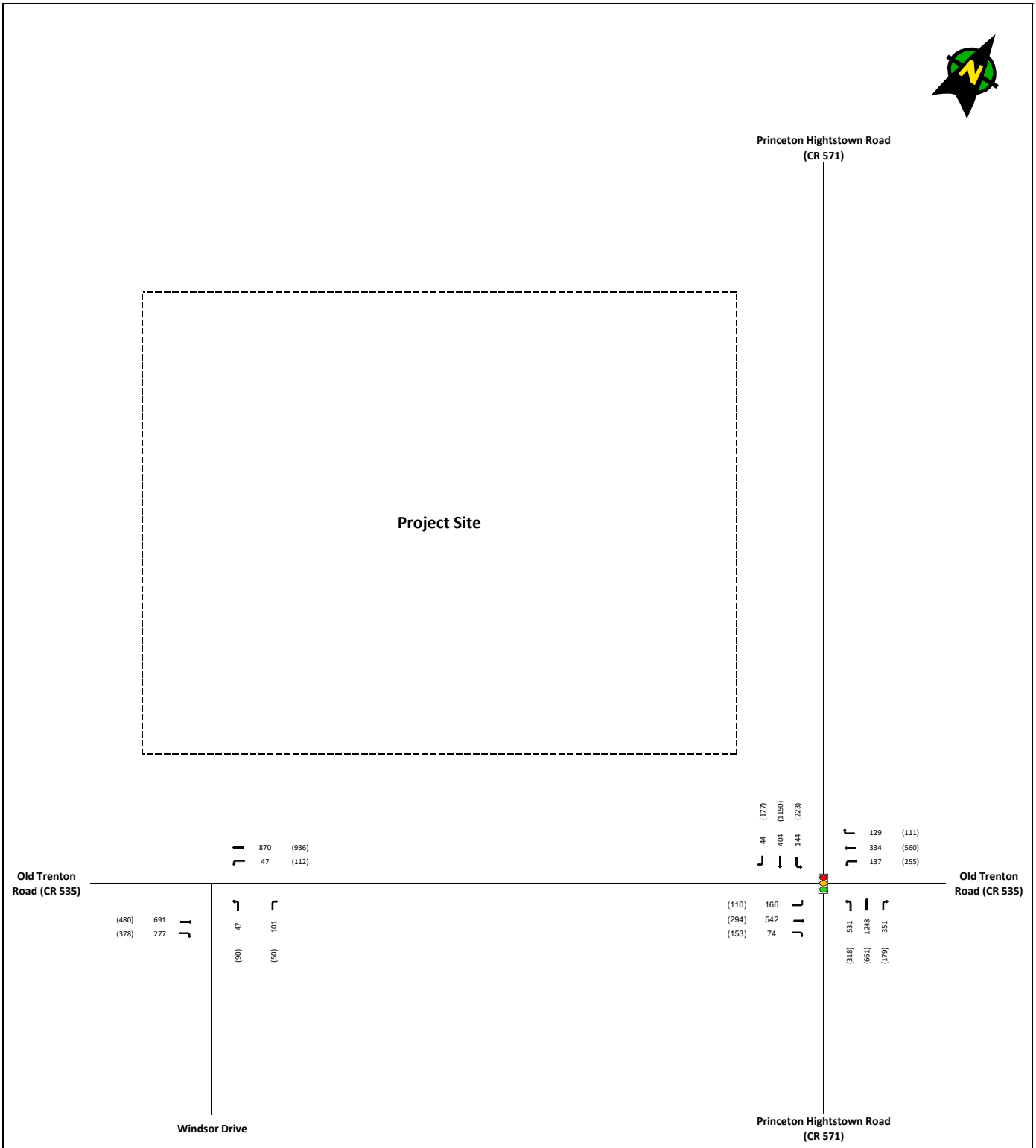


PEAK HOUR	ENTER	EXIT	TOTAL
AM	20	66	86
PM	65	38	103

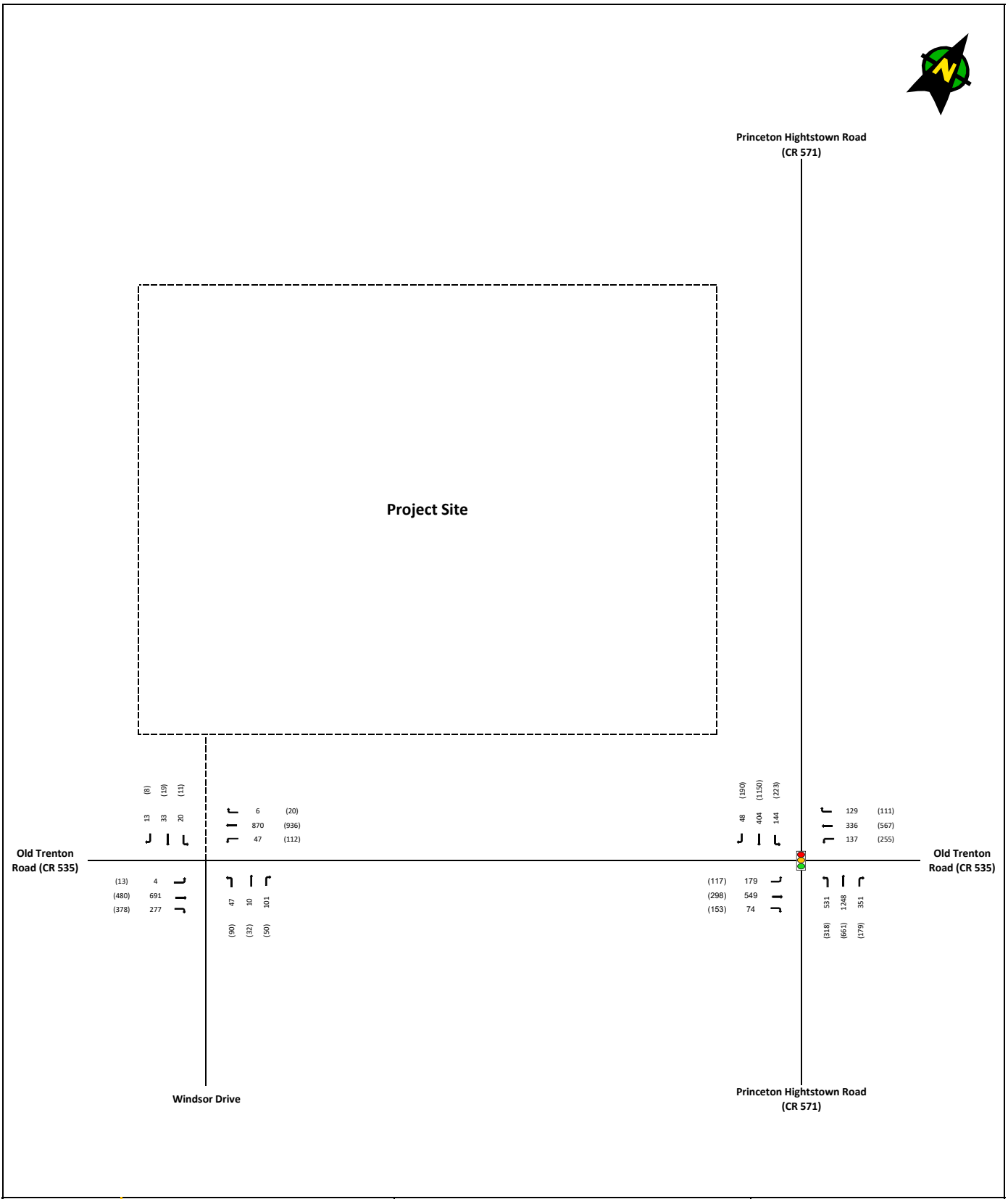
Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 7** **Old Trenton Road Adjacent Development** **AM & PM Peak Hours**	



MASER CONSULTING	Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 8** **Aurobindo Warehouse Adjacent Development** **AM & PM Peak Hours**



Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 9** **2022 No Build Conditions** **AM & PM Peak Hours**	



MASTER	Windsor Pointe MC Project No. 18001982A East Windsor Township, Mercer County, NJ	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement: Signalized Intersection:	**Figure 10** **2022 Build Conditions** **AM & PM Peak Hours**

WINDSOR POINTE
TRAFFIC IMPACT STUDY

APPENDIX B

TRAFFIC COUNT DATA

TRI-STATE TRAFFIC DATA

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East Windsor, NJ
Old Trenton Rd & Hightstown Rd
Tuesday, May 22, 2018
Location: 40.285015, -74.562267

Count Name: Old Trenton Rd-Hightstown Rd
Site Code:
Start Date: 05/22/2018
Page No: 1

Turning Movement Data

Start Time	Hightstown Rd Eastbound							Highstown Rd Westbound							Old Trenton Rd Northbound							Old Trenton Rd Southbound							
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
7:00 AM	20	46	6	2	0	0	74	54	237	68	3	0	0	362	30	87	9	1	0	0	127	16	41	12	12	0	0	81	644
7:15 AM	26	73	6	0	0	0	105	99	247	58	10	0	0	414	26	91	7	3	0	0	127	19	53	9	19	0	0	100	746
7:30 AM	34	92	6	5	0	0	137	106	216	60	15	0	0	397	33	120	17	1	0	0	171	22	61	11	18	0	0	112	817
7:45 AM	45	87	6	2	0	0	140	129	275	74	12	0	0	490	31	144	18	4	0	0	197	29	58	11	18	0	0	116	943
Hourly Total	125	298	24	9	0	0	456	388	975	260	40	0	0	1663	120	442	51	9	0	0	622	86	213	43	67	0	0	409	3150
8:00 AM	32	92	2	2	0	0	128	106	322	74	1	0	0	503	38	119	20	1	0	0	178	30	94	13	19	0	0	156	965
8:15 AM	34	97	9	2	0	0	142	133	272	76	16	0	0	497	37	118	7	1	0	0	163	35	77	14	14	0	0	140	942
8:30 AM	22	79	8	4	0	0	113	123	278	65	5	0	0	471	35	113	16	1	0	0	165	28	77	16	14	0	0	135	884
8:45 AM	25	96	7	4	0	0	132	77	272	51	8	0	0	408	32	104	26	4	0	0	166	32	58	13	15	0	0	118	824
Hourly Total	113	364	26	12	0	0	515	439	1144	266	30	0	0	1879	142	454	69	7	0	0	672	125	306	56	62	0	0	549	3615
9:00 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:00 PM	33	108	14	10	0	0	165	49	113	15	11	0	0	188	13	40	9	16	0	0	78	26	47	15	12	0	0	100	531
2:15 PM	22	93	7	11	0	0	133	59	113	32	7	0	0	211	22	42	12	15	0	0	91	24	48	10	12	0	0	94	529
2:30 PM	31	118	13	4	0	0	166	60	114	15	11	0	0	200	19	75	6	12	0	0	112	28	75	8	8	0	0	119	597
2:45 PM	35	149	14	8	0	0	206	53	115	20	8	0	0	196	22	61	19	18	0	0	120	37	58	6	14	0	0	115	637
Hourly Total	121	468	48	33	0	0	670	221	455	82	37	0	0	795	76	218	46	61	0	0	401	115	228	39	46	0	0	428	2294
3:00 PM	48	151	8	16	0	0	223	59	117	27	9	0	0	212	22	47	14	19	0	0	102	41	66	7	14	0	0	128	665
3:15 PM	33	144	16	3	0	0	196	61	107	21	6	0	0	195	21	55	18	20	0	0	114	38	71	3	14	0	0	126	631
3:30 PM	46	170	18	6	0	0	240	78	95	24	10	0	0	207	17	67	15	15	0	0	114	46	92	5	6	0	0	149	710
3:45 PM	53	174	17	9	0	0	253	72	120	27	4	0	0	223	13	63	17	19	0	0	112	44	88	2	11	0	0	145	733
Hourly Total	180	639	59	34	0	0	912	270	439	99	29	0	0	837	73	232	64	73	0	0	442	169	317	17	45	0	0	548	2739
4:00 PM	41	198	27	11	0	0	277	66	117	15	12	0	0	210	24	56	19	16	0	0	115	49	103	17	10	0	0	179	781
4:15 PM	48	201	18	4	0	0	271	54	119	19	4	0	0	196	15	68	21	15	0	0	119	70	140	11	14	0	0	235	821
4:30 PM	56	211	17	4	0	0	288	71	108	16	11	0	0	206	18	48	15	15	0	0	96	60	104	19	12	0	0	195	785
4:45 PM	54	252	26	12	0	0	344	68	109	15	9	0	0	201	21	59	15	15	0	0	110	43	124	15	12	0	0	194	849
Hourly Total	199	862	88	31	0	0	1180	259	453	65	36	0	0	813	78	231	70	61	0	0	440	222	471	62	48	0	0	803	3236
5:00 PM	55	235	18	9	0	0	317	74	130	23	13	0	0	240	20	61	20	7	0	0	108	70	141	9	18	0	0	238	903
5:15 PM	48	291	32	10	0	0	381	72	148	36	9	0	0	265	17	80	23	14	0	0	134	51	124	6	18	0	0	199	979
5:30 PM	62	274	32	10	0	0	378	70	173	28	11	0	0	282	32	73	27	12	0	0	144	47	120	7	19	0	0	193	997
5:45 PM	41	256	31	9	0	0	337	78	143	36	6	0	0	263	26	54	15	23	0	0	118	65	126	9	17	0	0	217	935
Hourly Total	206	1056	113	38	0	0	1413	294	594	123	39	0	0	1050	95	268	85	56	0	0	504	233	511	31	72	0	0	847	3814
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
Grand Total	944	3687	358	157	0	0	5146	1872	4061	895	211	0	0	7039	584	1845	385	267	0	0	3081	950	2049	248	340	0	0	3587	18853
Approach %	18.3	71.6	7.0	3.1	0.0	-	-	26.6	57.7	12.7	3.0	0.0	-	-	19.0	59.9	12.5	8.7	0.0	-	-	26.5	57.1	6.9	9.5	0.0	-	-	-
Total %	5.0	19.6	1.9	0.8	0.0	-	27.3	9.9	21.5	4.7	1.1	0.0	-	37.3	3.1	9.8	2.0	1.4	0.0	-	16.3	5.0	10.9	1.3	1.8	0.0	-	19.0	-
Lights	919	3621	351	157	0	-	5048	1811	3976	873	204	0	-	6864	572	1798	377	258	0	-	3005	926	1972	241	334	0	-	3473	18390
% Lights	97.4	98.2	98.0	100.0	-	-	98.1	96.7	97.9	97.5	96.7	-	-	97.5	97.9	97.5	97.9	96.6	-	-	97.5	97.5	96.2	97.2	98.2	-	-	96.8	97.5
Buses	8	13	4	0	0	-	25	14	17	3	1	0	-	35	5	20	2	1	0	-	28	5	28	2	2	0	-	37	125
% Buses	0.8	0.4	1.1	0.0	-	-	0.5	0.7	0.4	0.3	0.5	-	-	0.5	0.9	1.1	0.5	0.4	-	-	0.9	0.5	1.4	0.8	0.6	-	-	1.0	0.7
Trucks	17	53	3	0	0	-	73	47	68	19	6	0	-	140	7	27	6	8	0	-	48	19	49	5	4	0	-	77	338
% Trucks	1.8	1.4	0.8	0.0	-	-	1.4	2.5	1.7	2.1	2.8	-	-	2.0	1.2	1.5	1.6	3.0	-	-	1.6	2.0	2.4	2.0	1.2	-	-	2.1	1.8
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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East Windsor, NJ
Old Trenton Rd & Hightstown Rd
Tuesday, May 22, 2018
Location: 40.285015, -74.562267

Count Name: Old Trenton Rd-Hightstown Rd
Site Code:
Start Date: 05/22/2018

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Hightstown Rd Eastbound							Highstown Rd Westbound							Old Trenton Rd Northbound							Old Trenton Rd Southbound							
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
7:45 AM	45	87	6	2	0	0	140	129	275	74	12	0	0	490	31	144	18	4	0	0	197	29	58	11	18	0	0	116	943
8:00 AM	32	92	2	2	0	0	128	106	322	74	1	0	0	503	38	119	20	1	0	0	178	30	94	13	19	0	0	156	965
8:15 AM	34	97	9	2	0	0	142	133	272	76	16	0	0	497	37	118	7	1	0	0	163	35	77	14	14	0	0	140	942
8:30 AM	22	79	8	4	0	0	113	123	278	65	5	0	0	471	35	113	16	1	0	0	165	28	77	16	14	0	0	135	884
Total	133	355	25	10	0	0	523	491	1147	289	34	0	0	1961	141	494	61	7	0	0	703	122	306	54	65	0	0	547	3734
Approach %	25.4	67.9	4.8	1.9	0.0	-	-	25.0	58.5	14.7	1.7	0.0	-	-	20.1	70.3	8.7	1.0	0.0	-	-	22.3	55.9	9.9	11.9	0.0	-	-	-
Total %	3.6	9.5	0.7	0.3	0.0	-	14.0	13.1	30.7	7.7	0.9	0.0	-	52.5	3.8	13.2	1.6	0.2	0.0	-	18.8	3.3	8.2	1.4	1.7	0.0	-	14.6	-
PHF	0.739	0.915	0.694	0.625	0.000	-	0.921	0.923	0.891	0.951	0.531	0.000	-	0.975	0.928	0.858	0.763	0.438	0.000	-	0.892	0.871	0.814	0.844	0.855	0.000	-	0.877	0.967
Lights	128	341	25	10	0	-	504	477	1116	280	32	0	-	1905	138	482	61	5	0	-	686	118	292	54	65	0	-	529	3624
% Lights	96.2	96.1	100.0	100.0	-	-	96.4	97.1	97.3	96.9	94.1	-	-	97.1	97.9	97.6	100.0	71.4	-	-	97.6	96.7	95.4	100.0	100.0	-	-	96.7	97.1
Buses	1	3	0	0	0	-	4	3	3	1	0	0	-	7	0	3	0	0	0	-	3	1	7	0	0	0	-	8	22
% Buses	0.8	0.8	0.0	0.0	-	-	0.8	0.6	0.3	0.3	0.0	-	-	0.4	0.0	0.6	0.0	0.0	-	-	0.4	0.8	2.3	0.0	0.0	-	-	1.5	0.6
Trucks	4	11	0	0	0	-	15	11	28	8	2	0	-	49	3	9	0	2	0	-	14	3	7	0	0	0	-	10	88
% Trucks	3.0	3.1	0.0	0.0	-	-	2.9	2.2	2.4	2.8	5.9	-	-	2.5	2.1	1.8	0.0	28.6	-	-	2.0	2.5	2.3	0.0	0.0	-	-	1.8	2.4
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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East Windsor, NJ
Old Trenton Rd & Hightstown Rd
Tuesday, May 22, 2018
Location: 40.285015, -74.562267

Count Name: Old Trenton Rd-Hightstown Rd
Site Code:
Start Date: 05/22/2018

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Hightstown Rd Eastbound							Highstown Rd Westbound							Old Trenton Rd Northbound							Old Trenton Rd Southbound							
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
5:00 PM	55	235	18	9	0	0	317	74	130	23	13	0	0	240	20	61	20	7	0	0	108	70	141	9	18	0	0	238	903
5:15 PM	48	291	32	10	0	0	381	72	148	36	9	0	0	265	17	80	23	14	0	0	134	51	124	6	18	0	0	199	979
5:30 PM	62	274	32	10	0	0	378	70	173	28	11	0	0	282	32	73	27	12	0	0	144	47	120	7	19	0	0	193	997
5:45 PM	41	256	31	9	0	0	337	78	143	36	6	0	0	263	26	54	15	23	0	0	118	65	126	9	17	0	0	217	935
Total	206	1056	113	38	0	0	1413	294	594	123	39	0	0	1050	95	268	85	56	0	0	504	233	511	31	72	0	0	847	3814
Approach %	14.6	74.7	8.0	2.7	0.0	-	-	28.0	56.6	11.7	3.7	0.0	-	-	18.8	53.2	16.9	11.1	0.0	-	-	27.5	60.3	3.7	8.5	0.0	-	-	-
Total %	5.4	27.7	3.0	1.0	0.0	-	37.0	7.7	15.6	3.2	1.0	0.0	-	27.5	2.5	7.0	2.2	1.5	0.0	-	13.2	6.1	13.4	0.8	1.9	0.0	-	22.2	-
PHF	0.831	0.907	0.883	0.950	0.000	-	0.927	0.942	0.858	0.854	0.750	0.000	-	0.931	0.742	0.838	0.787	0.609	0.000	-	0.875	0.832	0.906	0.861	0.947	0.000	-	0.890	0.956
Lights	205	1053	112	38	0	-	1408	287	587	122	38	0	-	1034	95	265	85	55	0	-	500	230	504	31	71	0	-	836	3778
% Lights	99.5	99.7	99.1	100.0	-	-	99.6	97.6	98.8	99.2	97.4	-	-	98.5	100.0	98.9	100.0	98.2	-	-	99.2	98.7	98.6	100.0	98.6	-	-	98.7	99.1
Buses	0	0	0	0	0	-	0	0	3	0	0	0	-	3	0	0	0	0	0	-	0	0	1	0	0	0	-	1	4
% Buses	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	0.0	-	-	0.1	0.1
Trucks	1	3	1	0	0	-	5	7	4	1	1	0	-	13	0	3	0	1	0	-	4	3	6	0	1	0	-	10	32
% Trucks	0.5	0.3	0.9	0.0	-	-	0.4	2.4	0.7	0.8	2.6	-	-	1.2	0.0	1.1	0.0	1.8	-	-	0.8	1.3	1.2	0.0	1.4	-	-	1.2	0.8
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

East Windsor, NJ
Old Trenton Rd & Windsor Center Rd
Tuesday, May 22, 2018
Location: 40.283081, -74.566376

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Count Name: Old Trenton Rd-Windsor Center Dr
Site Code:
Start Date: 05/22/2018
Page No: 1

Turning Movement Data

Start Time	Windsor Center Dr Westbound					Old Trenton Rd Northbound					Old Trenton Rd Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	2	16	0	0	18	111	63	0	0	174	13	92	0	0	105	297
7:15 AM	6	19	0	0	25	124	44	0	0	168	6	153	0	0	159	352
7:30 AM	13	18	0	0	31	153	58	0	0	211	5	170	0	0	175	417
7:45 AM	13	22	0	0	35	162	62	0	0	224	10	186	0	0	196	455
Hourly Total	34	75	0	0	109	550	227	0	0	777	34	601	0	0	635	1521
8:00 AM	7	28	0	0	35	156	61	0	0	217	11	187	0	0	198	450
8:15 AM	8	24	0	0	32	145	59	0	0	204	10	219	0	0	229	465
8:30 AM	4	19	0	0	23	157	39	0	0	196	10	206	0	0	216	435
8:45 AM	2	23	0	0	25	142	41	0	0	183	10	137	0	0	147	355
Hourly Total	21	94	0	0	115	600	200	0	0	800	41	749	0	0	790	1705
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
2:00 PM	0	9	0	0	9	69	22	0	0	91	12	103	0	0	115	215
2:15 PM	6	6	1	0	13	91	24	0	0	115	7	121	0	0	128	256
2:30 PM	6	13	0	0	19	96	38	0	0	134	8	139	0	0	147	300
2:45 PM	11	8	0	0	19	108	47	0	0	155	15	127	0	0	142	316
Hourly Total	23	36	1	0	60	364	131	0	0	495	42	490	0	0	532	1087
3:00 PM	3	11	0	0	14	91	41	0	0	132	10	139	1	0	150	296
3:15 PM	5	4	0	0	9	112	61	0	0	173	12	136	0	0	148	330
3:30 PM	3	5	0	0	8	104	34	0	0	138	12	182	0	0	194	340
3:45 PM	8	7	0	0	15	117	56	0	0	173	17	175	0	0	192	380
Hourly Total	19	27	0	0	46	424	192	0	0	616	51	632	1	0	684	1346
4:00 PM	3	7	0	0	10	105	50	0	0	155	21	184	0	0	205	370
4:15 PM	5	7	0	0	12	102	57	0	0	159	22	198	0	0	220	391
4:30 PM	12	9	0	0	21	89	42	0	0	131	13	188	0	0	201	353
4:45 PM	10	14	0	0	24	96	72	0	0	168	19	201	0	0	220	412
Hourly Total	30	37	0	0	67	392	221	0	0	613	75	771	0	0	846	1526
5:00 PM	20	12	0	0	32	96	76	0	0	172	17	222	0	0	239	443
5:15 PM	11	10	0	0	21	112	96	1	0	209	26	212	0	0	238	468
5:30 PM	6	18	0	0	24	119	84	0	0	203	29	202	0	0	231	458
5:45 PM	10	6	0	0	16	106	74	0	0	180	31	210	0	0	241	437
Hourly Total	47	46	0	0	93	433	330	1	0	764	103	846	0	0	949	1806
6:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Grand Total	174	316	1	0	491	2763	1301	1	0	4065	346	4090	1	0	4437	8993
Approach %	35.4	64.4	0.2	-	-	68.0	32.0	0.0	-	-	7.8	92.2	0.0	-	-	-
Total %	1.9	3.5	0.0	-	5.5	30.7	14.5	0.0	-	45.2	3.8	45.5	0.0	-	49.3	-
Lights	173	310	1	-	484	2684	1271	1	-	3956	341	3950	1	-	4292	8732
% Lights	99.4	98.1	100.0	-	98.6	97.1	97.7	100.0	-	97.3	98.6	96.6	100.0	-	96.7	97.1
Buses	0	1	0	-	1	26	13	0	-	39	2	43	0	-	45	85
% Buses	0.0	0.3	0.0	-	0.2	0.9	1.0	0.0	-	1.0	0.6	1.1	0.0	-	1.0	0.9
Trucks	1	5	0	-	6	53	17	0	-	70	3	97	0	-	100	176
% Trucks	0.6	1.6	0.0	-	1.2	1.9	1.3	0.0	-	1.7	0.9	2.4	0.0	-	2.3	2.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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184 Baker Rd

Coatesville, Pennsylvania, United States 19320
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East Windsor, NJ
Old Trenton Rd & Windsor Center Rd
Tuesday, May 22, 2018
Location: 40.283081, -74.566376

Count Name: Old Trenton Rd-Windsor Center Dr
Site Code:
Start Date: 05/22/2018

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Windsor Center Dr Westbound					Old Trenton Rd Northbound					Old Trenton Rd Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:45 AM	13	22	0	0	35	162	62	0	0	224	10	186	0	0	196	455
8:00 AM	7	28	0	0	35	156	61	0	0	217	11	187	0	0	198	450
8:15 AM	8	24	0	0	32	145	59	0	0	204	10	219	0	0	229	465
8:30 AM	4	19	0	0	23	157	39	0	0	196	10	206	0	0	216	435
Total	32	93	0	0	125	620	221	0	0	841	41	798	0	0	839	1805
Approach %	25.6	74.4	0.0	-	-	73.7	26.3	0.0	-	-	4.9	95.1	0.0	-	-	-
Total %	1.8	5.2	0.0	-	6.9	34.3	12.2	0.0	-	46.6	2.3	44.2	0.0	-	46.5	-
PHF	0.615	0.830	0.000	-	0.893	0.957	0.891	0.000	-	0.939	0.932	0.911	0.000	-	0.916	0.970
Lights	32	92	0	-	124	597	217	0	-	814	40	771	0	-	811	1749
% Lights	100.0	98.9	-	-	99.2	96.3	98.2	-	-	96.8	97.6	96.6	-	-	96.7	96.9
Buses	0	0	0	-	0	3	3	0	-	6	0	8	0	-	8	14
% Buses	0.0	0.0	-	-	0.0	0.5	1.4	-	-	0.7	0.0	1.0	-	-	1.0	0.8
Trucks	0	1	0	-	1	20	1	0	-	21	1	19	0	-	20	42
% Trucks	0.0	1.1	-	-	0.8	3.2	0.5	-	-	2.5	2.4	2.4	-	-	2.4	2.3
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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East Windsor, NJ
Old Trenton Rd & Windsor Center Rd
Tuesday, May 22, 2018
Location: 40.283081, -74.566376

Count Name: Old Trenton Rd-Windsor Center Dr
Site Code:
Start Date: 05/22/2018

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Windsor Center Dr Westbound					Old Trenton Rd Northbound					Old Trenton Rd Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
5:00 PM	20	12	0	0	32	96	76	0	0	172	17	222	0	0	239	443
5:15 PM	11	10	0	0	21	112	96	1	0	209	26	212	0	0	238	468
5:30 PM	6	18	0	0	24	119	84	0	0	203	29	202	0	0	231	458
5:45 PM	10	6	0	0	16	106	74	0	0	180	31	210	0	0	241	437
Total	47	46	0	0	93	433	330	1	0	764	103	846	0	0	949	1806
Approach %	50.5	49.5	0.0	-	-	56.7	43.2	0.1	-	-	10.9	89.1	0.0	-	-	-
Total %	2.6	2.5	0.0	-	5.1	24.0	18.3	0.1	-	42.3	5.7	46.8	0.0	-	52.5	-
PHF	0.588	0.639	0.000	-	0.727	0.910	0.859	0.250	-	0.914	0.831	0.953	0.000	-	0.984	0.965
Lights	47	46	0	-	93	429	327	1	-	757	102	830	0	-	932	1782
% Lights	100.0	100.0	-	-	100.0	99.1	99.1	100.0	-	99.1	99.0	98.1	-	-	98.2	98.7
Buses	0	0	0	-	0	0	0	0	-	0	0	3	0	-	3	3
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.4	-	-	0.3	0.2
Trucks	0	0	0	-	0	4	3	0	-	7	1	13	0	-	14	21
% Trucks	0.0	0.0	-	-	0.0	0.9	0.9	0.0	-	0.9	1.0	1.5	-	-	1.5	1.2
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

WINDSOR POINTE
TRAFFIC IMPACT STUDY

APPENDIX C

TRIP GENERATION CALCULATIONS

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Old Trenton Rd
Location: 450 ft W of Princeton-Hightstown Rd
Counter: 22460 & 22620

Site Code: 1
Station ID:

Latitude: 40' 28404.0000 North

Start	5/14/2018		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	*	*	63	112	72	111	68	112	100	143	96	100
01:00	*	*	*	*	*	*	13	41	11	37	12	39	42	58	36	56
02:00	*	*	*	*	*	*	18	23	16	25	17	24	30	37	13	39
03:00	*	*	*	*	*	*	15	23	14	22	14	22	15	18	16	21
04:00	*	*	*	*	*	*	79	41	62	54	70	48	55	43	35	41
05:00	*	*	*	*	*	*	181	64	192	79	186	72	93	52	39	26
06:00	*	*	*	*	*	*	478	221	492	229	485	225	137	96	99	69
07:00	*	*	*	*	*	*	683	684	671	**663**	677	674	174	201	110	118
08:00	*	*	*	*	*	*	**707**	**827**	**740**	663	**724**	**745**	279	298	185	208
09:00	*	*	*	*	*	*	477	514	438	458	458	486	314	375	276	451
10:00	*	*	*	*	*	*	369	396	366	340	368	368	356	495	354	**588**
11:00	*	*	*	*	*	*	368	457	339	392	354	424	**405**	**615**	**429**	474
12:00 PM	*	*	*	*	*	*	377	449	366	589	372	519	388	501	406	460
01:00	*	*	*	*	*	*	388	439	474	587	431	513	399	511	393	568
02:00	*	*	*	*	*	*	444	479	**567**	628	506	554	372	504	**459**	499
03:00	*	*	*	*	*	*	500	723	535	777	518	750	**489**	**531**	401	**640**
04:00	*	*	*	*	*	*	460	898	500	917	480	908	357	491	410	488
05:00	*	*	*	*	*	*	**534**	**962**	526	**961**	**530**	**962**	315	446	302	425
06:00	*	*	*	*	**444**	**622**	469	742	474	746	462	703	305	415	317	390
07:00	*	*	*	*	279	531	313	530	305	528	299	530	262	414	374	447
08:00	*	*	*	*	221	360	288	408	249	379	253	382	179	313	286	326
09:00	*	*	*	*	171	408	186	452	216	429	191	430	220	352	215	307
10:00	*	*	*	*	108	208	133	212	146	295	129	238	174	252	134	152
11:00	*	*	*	*	181	160	180	126	217	208	193	165	183	179	137	95
Total	0	0	0	0	1404	2289	7723	9823	7988	10117	7797	9893	5643	7340	5522	6988
Day	0		0		3693		17546		18105		17690		12983		12510	
AM Peak	-	-	-	-	-	-	08:00	08:00	08:00	07:00	08:00	08:00	11:00	11:00	11:00	10:00
Vol.	-	-	-	-	-	-	707	827	740	663	724	745	405	615	429	588
PM Peak	-	-	-	-	18:00	18:00	17:00	17:00	14:00	17:00	17:00	17:00	15:00	15:00	14:00	15:00
Vol.	-	-	-	-	444	622	534	962	567	961	530	962	489	531	459	640

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Old Trenton Rd
Location: 450 ft W of Princeton-Hightstown Rd
Counter: 22460 & 22620

Site Code: 1
Station ID:

Latitude: 40' 28404.0000 North

Start	5/21/2018		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	57	49	0	103	0	112	0	117	*	*	14	95	*	*	*	*
01:00	8	14	0	32	0	41	0	44	*	*	2	33	*	*	*	*
02:00	12	16	0	28	0	35	0	29	*	*	3	27	*	*	*	*
03:00	22	11	0	28	0	21	0	22	*	*	6	20	*	*	*	*
04:00	61	34	0	51	0	41	0	42	*	*	15	42	*	*	*	*
05:00	179	88	0	88	0	73	0	73	*	*	45	80	*	*	*	*
06:00	487	210	0	245	0	243	0	238	*	*	122	234	*	*	*	*
07:00	667	677	0	652	0	717	0	691	*	*	167	684	*	*	*	*
08:00	**711**	**775**	0	**792**	0	**781**	0	**837**	*	*	**178**	**796**	*	*	*	*
09:00	472	440	0	486	0	483	0	462	*	*	118	468	*	*	*	*
10:00	350	356	0	347	0	427	0	385	*	*	88	379	*	*	*	*
11:00	90	385	0	417	0	447	*	*	*	*	30	416	*	*	*	*
12:00 PM	0	468	0	529	0	537	*	*	*	*	0	511	*	*	*	*
01:00	0	429	0	455	0	460	*	*	*	*	0	448	*	*	*	*
02:00	0	542	0	543	0	560	*	*	*	*	0	548	*	*	*	*
03:00	0	723	0	694	0	743	*	*	*	*	0	720	*	*	*	*
04:00	0	845	0	880	0	912	*	*	*	*	0	879	*	*	*	*
05:00	0	**998**	0	**962**	0	**1021**	*	*	*	*	0	**994**	*	*	*	*
06:00	0	843	0	819	0	819	*	*	*	*	0	827	*	*	*	*
07:00	0	590	0	479	0	583	*	*	*	*	0	551	*	*	*	*
08:00	0	383	0	323	0	424	*	*	*	*	0	377	*	*	*	*
09:00	0	338	0	379	0	402	*	*	*	*	0	373	*	*	*	*
10:00	0	200	0	187	0	215	*	*	*	*	0	201	*	*	*	*
11:00	0	126	0	128	0	148	*	*	*	*	0	134	*	*	*	*
Total	3116	9540	0	9647	0	10245	0	2940	0	0	788	9837	0	0	0	0
Day	12656		9647		10245		2940		0		10625		0		0	
AM Peak	08:00	08:00	-	08:00	-	08:00	-	08:00	-	-	08:00	08:00	-	-	-	-
Vol.	711	775	-	792	-	781	-	837	-	-	178	796	-	-	-	-
PM Peak	-	17:00	-	17:00	-	17:00	-	-	-	-	-	17:00	-	-	-	-
Vol.	-	998	-	962	-	1021	-	-	-	-	-	994	-	-	-	-

Comb. Total	12656	9647	13938	20486	18105	28315	12983	12510

ADT ADT 13,290 AADT 13,290

Multifamily Housing (Low-Rise)

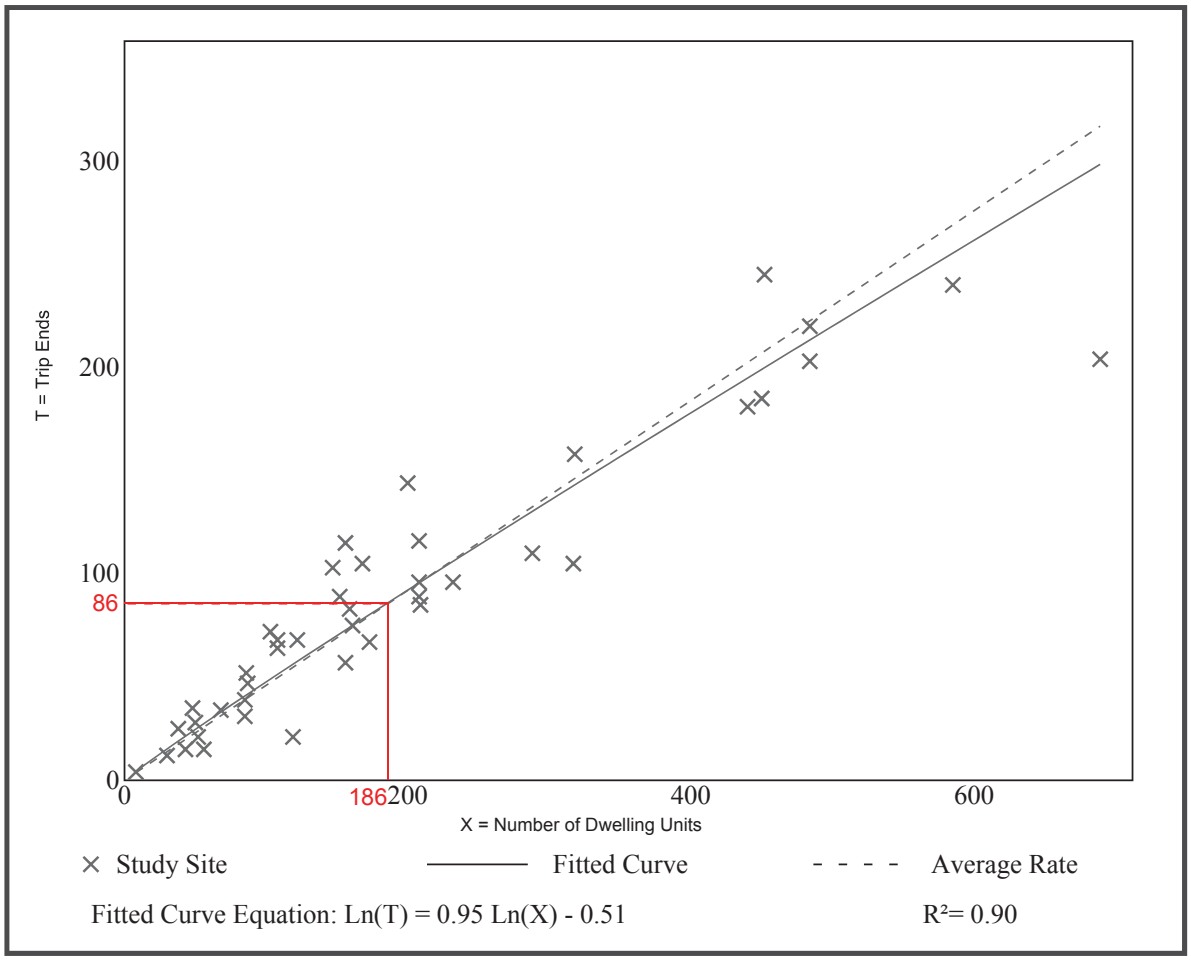
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	42
Avg. Num. of Dwelling Units:	199
Directional Distribution:	23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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Multifamily Housing (Low-Rise)

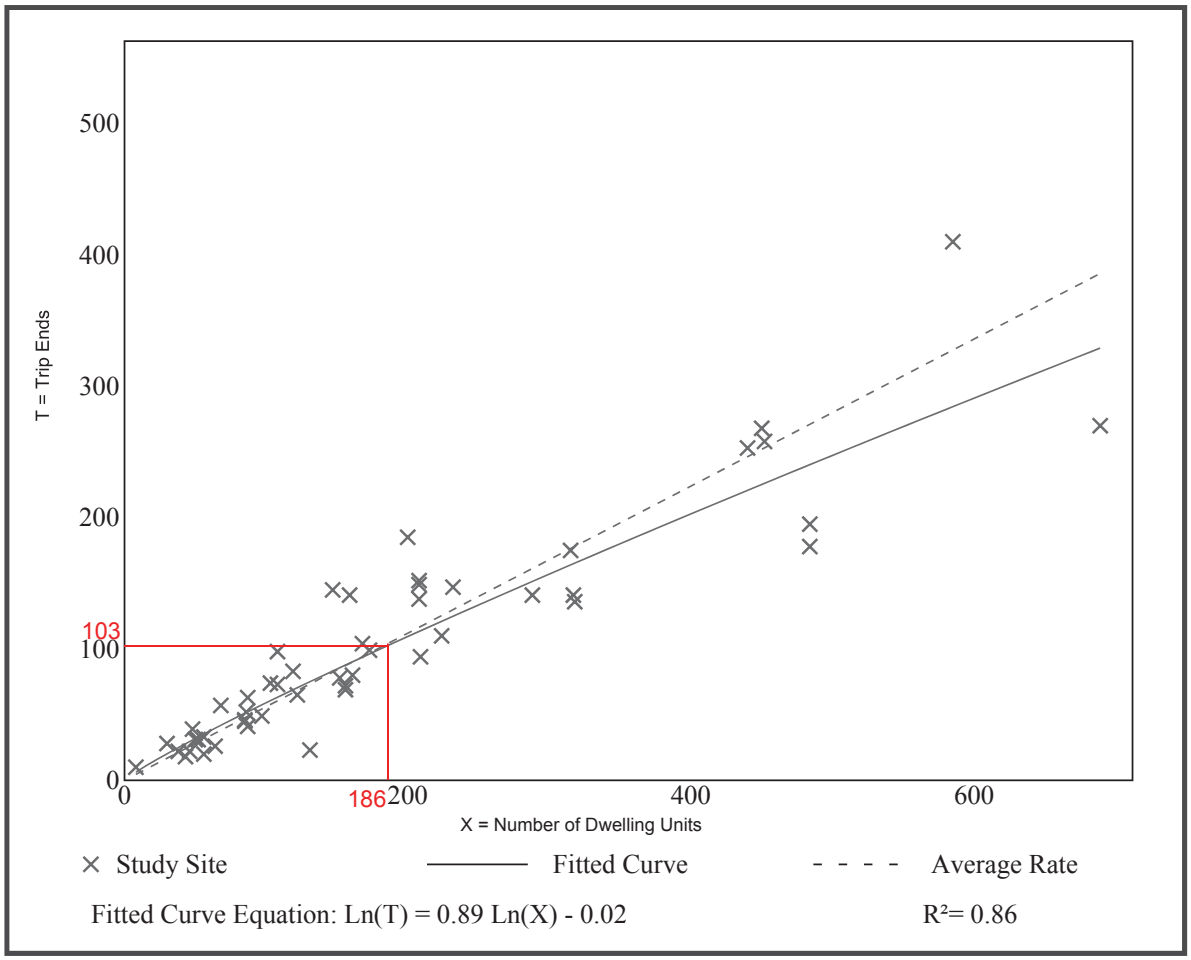
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	50
Avg. Num. of Dwelling Units:	187
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



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WINDSOR POINTE
TRAFFIC IMPACT STUDY

APPENDIX D

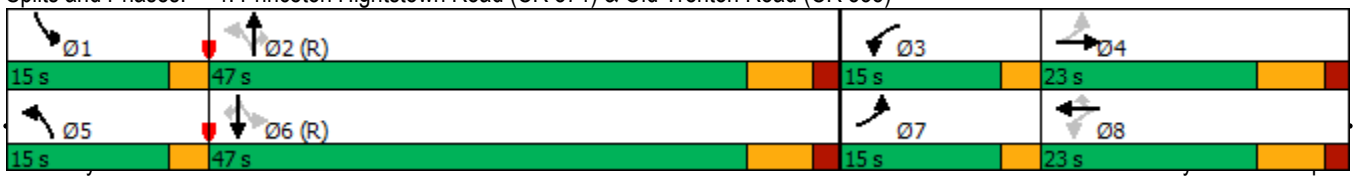
SYNCHRO HCM CAPACITY ANALYSIS SUMMARY SHEETS

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	166	542	137	334	129	531	1248	351	144	404	44
Future Volume (vph)	166	542	137	334	129	531	1248	351	144	404	44
Lane Group Flow (vph)	171	635	141	344	133	547	1287	362	148	416	45
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	8.0	6.0	8.0	8.0	6.0	40.0	40.0	6.0	40.0	40.0
Minimum Split (s)	9.0	15.0	9.0	15.0	15.0	9.0	47.0	47.0	9.0	47.0	47.0
Total Split (s)	15.0	23.0	15.0	23.0	23.0	15.0	47.0	47.0	15.0	47.0	47.0
Total Split (%)	15.0%	23.0%	15.0%	23.0%	23.0%	15.0%	47.0%	47.0%	15.0%	47.0%	47.0%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	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	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.46	0.99	0.54	0.57	0.34	0.91	0.85	0.48	0.64	0.30	0.06
Control Delay	27.8	74.5	31.3	42.5	9.3	37.6	32.7	15.7	27.0	21.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	74.5	31.3	42.5	9.3	37.6	32.7	15.7	27.0	21.2	0.2
Queue Length 50th (ft)	78	~213	63	107	0	194	374	99	39	93	0
Queue Length 95th (ft)	131	#359	110	156	51	#400	#544	194	94	130	0
Internal Link Dist (ft)		1275		2279			1471			1357	
Turn Bay Length (ft)	800		150		225	225		75	225		75
Base Capacity (vph)	397	642	299	604	393	600	1515	750	288	1388	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.99	0.47	0.57	0.34	0.91	0.85	0.48	0.51	0.30	0.06

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 45 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
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: 4: Princeton Hightstown Road (CR 571) & Old Trenton Road (CR 535)



KMC

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	542	74	137	334	129	531	1248	351	144	404	44
Future Volume (veh/h)	166	542	74	137	334	129	531	1248	351	144	404	44
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	1856	1826	1900	1856	1856	1856	1841	1841	1900
Adj Flow Rate, veh/h	171	559	76	141	344	133	547	1287	362	148	416	45
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	5	0	3	3	3	4	4	0
Cap, veh/h	297	503	68	223	507	235	615	1723	769	245	1520	700
Arrive On Green	0.10	0.16	0.16	0.09	0.15	0.15	0.12	0.49	0.49	0.07	0.43	0.43
Sat Flow, veh/h	1781	3144	426	1767	3469	1610	1767	3526	1572	1753	3497	1610
Grp Volume(v), veh/h	171	315	320	141	344	133	547	1287	362	148	416	45
Grp Sat Flow(s),veh/h/ln	1781	1777	1794	1767	1735	1610	1767	1763	1572	1753	1749	1610
Q Serve(g_s), s	8.0	16.0	16.0	6.7	9.4	7.7	12.0	29.4	15.3	4.6	7.6	1.6
Cycle Q Clear(g_c), s	8.0	16.0	16.0	6.7	9.4	7.7	12.0	29.4	15.3	4.6	7.6	1.6
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	284	287	223	507	235	615	1723	769	245	1520	700
V/C Ratio(X)	0.58	1.11	1.11	0.63	0.68	0.57	0.89	0.75	0.47	0.60	0.27	0.06
Avail Cap(c_a), veh/h	334	284	287	284	555	258	615	1723	769	341	1520	700
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	42.0	42.0	33.2	40.5	39.7	19.2	20.6	17.0	19.2	18.1	16.4
Incr Delay (d2), s/veh	0.9	85.8	87.4	1.1	2.2	1.1	14.5	3.0	2.1	0.9	0.4	0.2
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	3.3	13.4	13.6	2.8	4.0	3.0	6.9	11.3	5.3	1.7	2.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	127.8	129.4	34.3	42.7	40.8	33.7	23.6	19.0	20.1	18.6	16.6
LnGrp LOS	C	F	F	C	D	D	C	C	B	C	B	B
Approach Vol, veh/h		806			618			2196			609	
Approach Delay, s/veh		108.2			40.4			25.4			18.8	
Approach LOS		F			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	55.9	11.5	23.0	15.0	50.5	12.9	21.6
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0
Max Green Setting (Gmax), s	12.0	40.0	12.0	16.0	12.0	40.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	6.6	31.4	8.7	18.0	14.0	9.6	10.0	11.4
Green Ext Time (p_c), s	0.1	4.2	0.0	0.0	0.0	1.6	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	691	277	47	870	47	101
Future Vol, veh/h	691	277	47	870	47	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	200	150	-	325	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	4	2	2	3	0	1
Mvmt Flow	712	286	48	897	48	104

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	712	0	1705	712
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	993	-
Critical Hdwy	-	-	4.12	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.309
Pot Cap-1 Maneuver	-	0	888	-	102	434
Stage 1	-	0	-	-	490	-
Stage 2	-	0	-	-	362	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	888	-	96	434
Mov Cap-2 Maneuver	-	-	-	-	96	-
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	362	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	34.9
HCM LOS			D

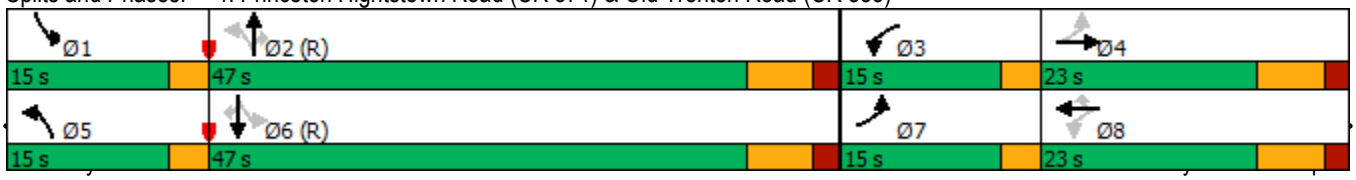
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	96	434	-	888	-
HCM Lane V/C Ratio	0.505	0.24	-	0.055	-
HCM Control Delay (s)	75.8	15.9	-	9.3	-
HCM Lane LOS	F	C	-	A	-
HCM 95th %tile Q(veh)	2.2	0.9	-	0.2	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	294	255	560	111	318	661	179	223	1150	177
Future Volume (vph)	110	294	255	560	111	318	661	179	223	1150	177
Lane Group Flow (vph)	115	465	266	583	116	331	689	186	232	1198	184
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	8.0	6.0	8.0	8.0	6.0	40.0	40.0	6.0	40.0	40.0
Minimum Split (s)	9.0	15.0	9.0	15.0	15.0	9.0	47.0	47.0	9.0	47.0	47.0
Total Split (s)	15.0	23.0	15.0	23.0	23.0	15.0	47.0	47.0	15.0	47.0	47.0
Total Split (%)	15.0%	23.0%	15.0%	23.0%	23.0%	15.0%	47.0%	47.0%	15.0%	47.0%	47.0%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	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	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.45	0.76	0.83	0.86	0.29	1.13	0.46	0.25	0.51	0.84	0.26
Control Delay	28.7	42.1	49.6	54.0	9.2	117.4	22.6	8.3	14.0	33.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	42.1	49.6	54.0	9.2	117.4	22.6	8.3	14.0	33.6	9.6
Queue Length 50th (ft)	50	125	128	190	0	~190	164	24	65	355	30
Queue Length 95th (ft)	92	#183	#238	#317	48	#369	221	70	104	447	75
Internal Link Dist (ft)		1275		2279			1471			1357	
Turn Bay Length (ft)	800		150		225	225		75	225		75
Base Capacity (vph)	312	614	321	679	398	294	1493	740	489	1429	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.76	0.83	0.86	0.29	1.13	0.46	0.25	0.47	0.84	0.26

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 45 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
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: 4: Princeton Hightstown Road (CR 571) & Old Trenton Road (CR 535)



KMC

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	294	153	255	560	111	318	661	179	223	1150	177
Future Volume (veh/h)	110	294	153	255	560	111	318	661	179	223	1150	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1885	1885	1885	1870	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	115	306	159	266	583	116	331	689	186	232	1198	184
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	1	2	1	1	1	1	1
Cap, veh/h	237	356	180	307	733	327	327	1542	688	431	1452	648
Arrive On Green	0.07	0.15	0.15	0.12	0.20	0.20	0.12	0.43	0.43	0.09	0.41	0.41
Sat Flow, veh/h	1810	2300	1167	1795	3582	1598	1781	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	115	237	228	266	583	116	331	689	186	232	1198	184
Grp Sat Flow(s),veh/h/ln	1810	1791	1675	1795	1791	1598	1781	1791	1598	1795	1791	1598
Q Serve(g_s), s	5.3	12.9	13.3	12.0	15.5	6.2	12.0	13.6	7.5	7.4	29.9	7.7
Cycle Q Clear(g_c), s	5.3	12.9	13.3	12.0	15.5	6.2	12.0	13.6	7.5	7.4	29.9	7.7
Prop In Lane	1.00		0.70	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	277	259	307	733	327	327	1542	688	431	1452	648
V/C Ratio(X)	0.49	0.85	0.88	0.87	0.80	0.35	1.01	0.45	0.27	0.54	0.83	0.28
Avail Cap(c_a), veh/h	327	287	268	307	733	327	327	1542	688	476	1452	648
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	41.2	41.4	30.9	37.8	34.1	25.3	20.1	18.4	15.3	26.6	20.0
Incr Delay (d2), s/veh	0.6	19.9	25.4	21.0	5.6	0.2	52.5	0.9	1.0	0.4	5.5	1.1
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	2.2	6.9	7.0	6.7	6.9	2.3	9.2	5.3	2.7	2.7	12.6	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	61.0	66.8	51.9	43.4	34.4	77.8	21.0	19.3	15.7	32.0	21.1
LnGrp LOS	C	E	E	D	D	C	F	C	B	B	C	C
Approach Vol, veh/h		580			965			1206			1614	
Approach Delay, s/veh		57.8			44.7			36.3			28.4	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	50.0	15.0	22.5	15.0	47.5	10.0	27.5
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0
Max Green Setting (Gmax), s	12.0	40.0	12.0	16.0	12.0	40.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	9.4	15.6	14.0	15.3	14.0	31.9	7.3	17.5
Green Ext Time (p_c), s	0.1	3.0	0.0	0.1	0.0	3.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	10.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	480	378	112	936	90	50
Future Vol, veh/h	480	378	112	936	90	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	200	150	-	325	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	2	0	0
Mvmt Flow	495	390	115	965	93	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	495	0	1690	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	1195	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	1074	-	104	579
Stage 1	-	0	-	-	617	-
Stage 2	-	0	-	-	290	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1074	-	93	579
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	290	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	116.7
HCM LOS			F

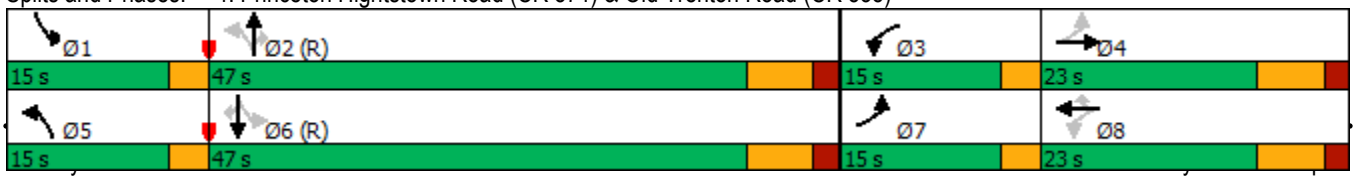
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	93	579	-	1074	-
HCM Lane V/C Ratio	0.998	0.089	-	0.108	-
HCM Control Delay (s)	175	11.8	-	8.8	-
HCM Lane LOS	F	B	-	A	-
HCM 95th %tile Q(veh)	5.9	0.3	-	0.4	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	179	549	137	336	129	531	1248	351	144	404	48
Future Volume (vph)	179	549	137	336	129	531	1248	351	144	404	48
Lane Group Flow (vph)	185	642	141	346	133	547	1287	362	148	416	49
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	8.0	6.0	8.0	8.0	6.0	40.0	40.0	6.0	40.0	40.0
Minimum Split (s)	9.0	15.0	9.0	15.0	15.0	9.0	47.0	47.0	9.0	47.0	47.0
Total Split (s)	15.0	23.0	15.0	23.0	23.0	15.0	47.0	47.0	15.0	47.0	47.0
Total Split (%)	15.0%	23.0%	15.0%	23.0%	23.0%	15.0%	47.0%	47.0%	15.0%	47.0%	47.0%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	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	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.49	1.00	0.54	0.58	0.34	0.91	0.85	0.48	0.64	0.30	0.07
Control Delay	28.7	77.4	31.3	43.0	9.4	37.6	32.7	15.7	27.0	21.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	77.4	31.3	43.0	9.4	37.6	32.7	15.7	27.0	21.2	0.2
Queue Length 50th (ft)	85	~219	63	109	0	194	374	99	39	93	0
Queue Length 95th (ft)	140	#365	110	157	51	#400	#544	194	94	130	0
Internal Link Dist (ft)		1275		2279			1471			1357	
Turn Bay Length (ft)	800		150		225	225		75	225		75
Base Capacity (vph)	393	642	299	594	389	600	1515	750	288	1388	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.00	0.47	0.58	0.34	0.91	0.85	0.48	0.51	0.30	0.07

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 45 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
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: 4: Princeton Hightstown Road (CR 571) & Old Trenton Road (CR 535)



KMC

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	549	74	137	336	129	531	1248	351	144	404	48
Future Volume (veh/h)	179	549	74	137	336	129	531	1248	351	144	404	48
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	1856	1826	1900	1856	1856	1856	1841	1841	1900
Adj Flow Rate, veh/h	185	566	76	141	346	133	547	1287	362	148	416	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	5	0	3	3	3	4	4	0
Cap, veh/h	302	504	67	224	485	225	613	1722	768	245	1518	699
Arrive On Green	0.11	0.16	0.16	0.09	0.14	0.14	0.12	0.49	0.49	0.07	0.43	0.43
Sat Flow, veh/h	1781	3150	422	1767	3469	1610	1767	3526	1572	1753	3497	1610
Grp Volume(v), veh/h	185	319	323	141	346	133	547	1287	362	148	416	49
Grp Sat Flow(s),veh/h/ln	1781	1777	1794	1767	1735	1610	1767	1763	1572	1753	1749	1610
Q Serve(g_s), s	8.6	16.0	16.0	6.7	9.5	7.7	12.0	29.4	15.3	4.6	7.6	1.8
Cycle Q Clear(g_c), s	8.6	16.0	16.0	6.7	9.5	7.7	12.0	29.4	15.3	4.6	7.6	1.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	284	287	224	485	225	613	1722	768	245	1518	699
V/C Ratio(X)	0.61	1.12	1.13	0.63	0.71	0.59	0.89	0.75	0.47	0.60	0.27	0.07
Avail Cap(c_a), veh/h	327	284	287	284	555	258	613	1722	768	340	1518	699
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	42.0	42.0	33.5	41.1	40.3	19.3	20.6	17.0	19.3	18.2	16.5
Incr Delay (d2), s/veh	1.9	89.9	91.5	1.1	2.8	1.3	14.9	3.0	2.1	0.9	0.4	0.2
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	3.6	13.7	14.0	2.8	4.1	3.0	7.0	11.3	5.3	1.7	2.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	131.9	133.5	34.6	43.9	41.6	34.2	23.6	19.1	20.2	18.6	16.7
LnGrp LOS	C	F	F	C	D	D	C	C	B	C	B	B
Approach Vol, veh/h		827			620			2196			613	
Approach Delay, s/veh		110.5			41.3			25.5			18.8	
Approach LOS		F			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	55.8	11.6	23.0	15.0	50.4	13.6	21.0
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0
Max Green Setting (Gmax), s	12.0	40.0	12.0	16.0	12.0	40.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	6.6	31.4	8.7	18.0	14.0	9.6	10.6	11.5
Green Ext Time (p_c), s	0.1	4.2	0.0	0.0	0.0	1.6	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	17.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	691	277	47	870	6	47	10	101	20	33	13
Future Vol, veh/h	4	691	277	47	870	6	47	10	101	20	33	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	150	-	-	325	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	92	92	92
Heavy Vehicles, %	2	4	2	2	3	2	0	2	1	2	2	2
Mvmt Flow	4	712	286	48	897	6	48	10	104	22	36	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	903	0	-	712	0	0	1741	1719	712	1773	1716	900
Stage 1	-	-	-	-	-	-	720	720	-	996	996	-
Stage 2	-	-	-	-	-	-	1021	999	-	777	720	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.52	6.21	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	753	-	0	888	-	-	69	90	434	65	90	337
Stage 1	-	-	0	-	-	-	422	432	-	294	322	-
Stage 2	-	-	0	-	-	-	288	321	-	390	432	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	753	-	-	888	-	-	~ 42	84	434	43	84	337
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 42	84	-	43	84	-
Stage 1	-	-	-	-	-	-	418	428	-	291	305	-
Stage 2	-	-	-	-	-	-	230	304	-	287	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	116.8	192.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	42	316	753	-	888	-	-	74
HCM Lane V/C Ratio	1.154	0.362	0.005	-	0.055	-	-	0.969
HCM Control Delay (s)	$ 339	22.7	9.8	0	9.3	-	-	192.6
HCM Lane LOS	F	C	A	A	A	-	-	F
HCM 95th %tile Q(veh)	4.7	1.6	0	-	0.2	-	-	5

Notes

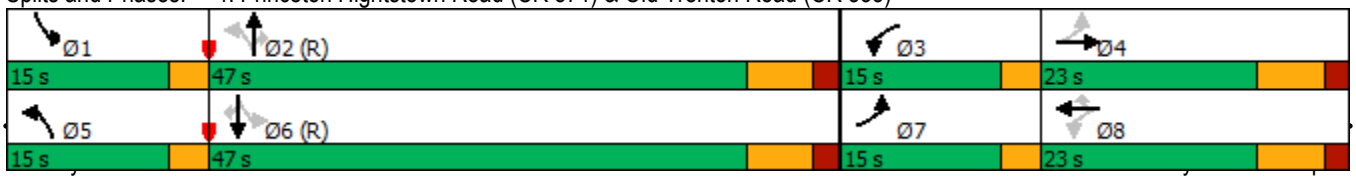
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	298	255	567	111	318	661	179	223	1150	190
Future Volume (vph)	117	298	255	567	111	318	661	179	223	1150	190
Lane Group Flow (vph)	122	469	266	591	116	331	689	186	232	1198	198
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	8.0	6.0	8.0	8.0	6.0	40.0	40.0	6.0	40.0	40.0
Minimum Split (s)	9.0	15.0	9.0	15.0	15.0	9.0	47.0	47.0	9.0	47.0	47.0
Total Split (s)	15.0	23.0	15.0	23.0	23.0	15.0	47.0	47.0	15.0	47.0	47.0
Total Split (%)	15.0%	23.0%	15.0%	23.0%	23.0%	15.0%	47.0%	47.0%	15.0%	47.0%	47.0%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	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	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.47	0.77	0.84	0.88	0.29	1.13	0.46	0.25	0.51	0.84	0.28
Control Delay	29.3	42.8	50.6	56.0	9.3	117.9	22.6	8.3	14.0	33.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	42.8	50.6	56.0	9.3	117.9	22.6	8.3	14.0	33.6	10.3
Queue Length 50th (ft)	54	127	128	194	0	~190	164	24	65	355	35
Queue Length 95th (ft)	96	#188	#241	#324	48	#369	221	70	104	447	84
Internal Link Dist (ft)		1275		2279			1471			1357	
Turn Bay Length (ft)	800		150		225	225		75	225		75
Base Capacity (vph)	311	612	318	674	396	293	1493	739	489	1429	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.77	0.84	0.88	0.29	1.13	0.46	0.25	0.47	0.84	0.28

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 45 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
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: 4: Princeton Hightstown Road (CR 571) & Old Trenton Road (CR 535)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	298	153	255	567	111	318	661	179	223	1150	190
Future Volume (veh/h)	117	298	153	255	567	111	318	661	179	223	1150	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1885	1885	1885	1870	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	122	310	159	266	591	116	331	689	186	232	1198	198
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	1	2	1	1	1	1	1
Cap, veh/h	239	359	180	307	723	323	326	1538	686	430	1449	646
Arrive On Green	0.07	0.16	0.16	0.12	0.20	0.20	0.12	0.43	0.43	0.09	0.40	0.40
Sat Flow, veh/h	1810	2310	1158	1795	3582	1598	1781	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	122	239	230	266	591	116	331	689	186	232	1198	198
Grp Sat Flow(s),veh/h/ln	1810	1791	1677	1795	1791	1598	1781	1791	1598	1795	1791	1598
Q Serve(g_s), s	5.6	13.0	13.4	12.0	15.8	6.2	12.0	13.6	7.5	7.4	29.9	8.4
Cycle Q Clear(g_c), s	5.6	13.0	13.4	12.0	15.8	6.2	12.0	13.6	7.5	7.4	29.9	8.4
Prop In Lane	1.00		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	279	261	307	723	323	326	1538	686	430	1449	646
V/C Ratio(X)	0.51	0.86	0.88	0.87	0.82	0.36	1.01	0.45	0.27	0.54	0.83	0.31
Avail Cap(c_a), veh/h	322	287	268	307	723	323	326	1538	686	475	1449	646
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	41.1	41.3	30.8	38.1	34.3	25.4	20.2	18.4	15.4	26.6	20.2
Incr Delay (d2), s/veh	0.6	20.3	25.8	21.2	6.8	0.3	53.4	0.9	1.0	0.4	5.5	1.2
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	2.3	7.0	7.1	6.7	7.2	2.3	9.3	5.4	2.7	2.7	12.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	61.5	67.2	52.0	45.0	34.6	78.8	21.1	19.4	15.7	32.2	21.5
LnGrp LOS	C	E	E	D	D	C	F	C	B	B	C	C
Approach Vol, veh/h		591			973			1206			1628	
Approach Delay, s/veh		57.9			45.6			36.7			28.5	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	49.9	15.0	22.6	15.0	47.4	10.4	27.2
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0
Max Green Setting (Gmax), s	12.0	40.0	12.0	16.0	12.0	40.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	9.4	15.6	14.0	15.4	14.0	31.9	7.6	17.8
Green Ext Time (p_c), s	0.1	3.0	0.0	0.1	0.0	3.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.5
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	37.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	480	378	112	936	20	90	32	50	11	19	8
Future Vol, veh/h	13	480	378	112	936	20	90	32	50	11	19	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	150	-	-	325	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	92	92	92
Heavy Vehicles, %	2	1	1	1	2	2	0	2	0	2	2	2
Mvmt Flow	13	495	390	115	965	21	93	33	52	12	21	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	986	0	-	495	0	0	1742	1737	495	1770	1727	976
Stage 1	-	-	-	-	-	-	521	521	-	1206	1206	-
Stage 2	-	-	-	-	-	-	1221	1216	-	564	521	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	701	-	0	1074	-	-	~ 69	87	579	65	89	305
Stage 1	-	-	0	-	-	-	542	532	-	224	257	-
Stage 2	-	-	0	-	-	-	222	254	-	510	532	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	701	-	-	1074	-	-	~ 48	76	579	36	77	305
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 48	76	-	36	77	-
Stage 1	-	-	-	-	-	-	528	518	-	218	230	-
Stage 2	-	-	-	-	-	-	175	227	-	424	518	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	$ 348.1	125.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	48	162	701	-	1074	-	-	66
HCM Lane V/C Ratio	1.933	0.522	0.019	-	0.108	-	-	0.626
HCM Control Delay (s)	$ 620.5	49.2	10.2	0	8.8	-	-	125.2
HCM Lane LOS	F	E	B	A	A	-	-	F
HCM 95th %tile Q(veh)	9.3	2.6	0.1	-	0.4	-	-	2.7

Notes

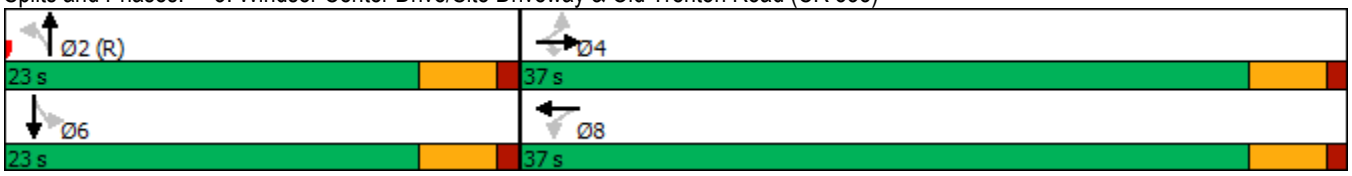
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	691	277	47	870	47	10	20	33
Future Volume (vph)	4	691	277	47	870	47	10	20	33
Lane Group Flow (vph)	0	716	286	48	903	48	114	0	72
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4			8		2		6
Permitted Phases	4		4	8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag									
Lead-Lag Optimize?									
v/c Ratio		0.73	0.29	0.21	0.90	0.12	0.20		0.14
Control Delay		15.8	1.9	10.0	27.8	15.9	5.6		13.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		15.8	1.9	10.0	27.8	15.9	5.6		13.6
Queue Length 50th (ft)		177	0	8	264	12	3		15
Queue Length 95th (ft)		298	28	26	#516	33	32		40
Internal Link Dist (ft)		1521			1275		1202		291
Turn Bay Length (ft)			200	150		325			
Base Capacity (vph)		985	988	230	998	415	572		519
Starvation Cap Reductn		0	0	0	0	0	0		0
Spillback Cap Reductn		0	0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0	0		0
Reduced v/c Ratio		0.73	0.29	0.21	0.90	0.12	0.20		0.14

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Windsor Center Drive/Site Driveway & Old Trenton Road (CR 535)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	691	277	47	870	6	47	10	101	20	33	13
Future Volume (veh/h)	4	691	277	47	870	6	47	10	101	20	33	13
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	1841	1841	1870	1870	1856	1856	1900	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	712	0	48	897	6	48	10	104	22	36	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	2	2	3	3	0	2	2	2	2	2
Cap, veh/h	61	994		418	997	7	557	43	452	193	293	98
Arrive On Green	0.54	0.54	0.00	0.54	0.54	0.54	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	2	1835	1585	738	1841	12	1376	141	1466	371	952	319
Grp Volume(v), veh/h	716	0	0	48	0	903	48	0	114	72	0	0
Grp Sat Flow(s),veh/h/ln	1837	0	1585	738	0	1853	1376	0	1607	1641	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	26.1	0.0	0.0	3.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.5	0.0	0.0	3.9	0.0	26.1	1.1	0.0	3.2	1.7	0.0	0.0
Prop In Lane	0.01		1.00	1.00		0.01	1.00		0.91	0.31		0.19
Lane Grp Cap(c), veh/h	1055	0		418	0	1004	557	0	495	584	0	0
V/C Ratio(X)	0.68	0.00		0.11	0.00	0.90	0.09	0.00	0.23	0.12	0.00	0.00
Avail Cap(c_a), veh/h	1055	0		418	0	1004	557	0	495	584	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	0.0	0.0	7.2	0.0	12.3	14.7	0.0	15.4	14.9	0.0	0.0
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.6	0.0	12.6	0.3	0.0	1.1	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	0.0	0.3	0.0	10.3	0.5	0.0	1.2	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	0.0	0.0	7.7	0.0	24.9	15.0	0.0	16.5	15.4	0.0	0.0
LnGrp LOS	B	A		A	A	C	B	A	B	B	A	A
Approach Vol, veh/h		716	A		951			162			72	
Approach Delay, s/veh		13.8			24.0			16.1			15.4	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	23.0	37.0	23.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	32.5	18.5	32.5
Max Q Clear Time (g_c+I1), s	5.2	19.5	3.7	28.1
Green Ext Time (p_c), s	0.6	3.6	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

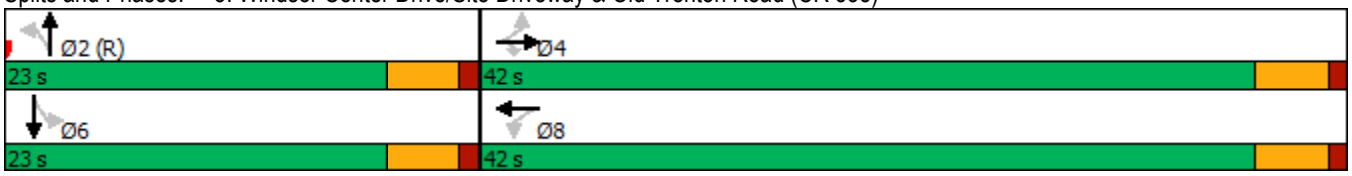
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	13	480	378	112	936	90	32	11	19
Future Volume (vph)	13	480	378	112	936	90	32	11	19
Lane Group Flow (vph)	0	508	390	115	986	93	85	0	42
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4			8		2		6
Permitted Phases	4		4	8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	42.0	23.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag									
Lead-Lag Optimize?									
v/c Ratio		0.58	0.36	0.27	0.92	0.24	0.16		0.09
Control Delay		12.1	1.8	9.0	28.5	19.9	9.8		15.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		12.1	1.8	9.0	28.5	19.9	9.8		15.0
Queue Length 50th (ft)		114	0	20	313	28	10		10
Queue Length 95th (ft)		198	30	47	#595	62	38		30
Internal Link Dist (ft)		1521			1275		1202		144
Turn Bay Length (ft)			200	150		325			
Base Capacity (vph)		873	1087	429	1072	394	524		487
Starvation Cap Reductn		0	0	0	0	0	0		0
Spillback Cap Reductn		0	0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0	0		0
Reduced v/c Ratio		0.58	0.36	0.27	0.92	0.24	0.16		0.09

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Windsor Center Drive/Site Driveway & Old Trenton Road (CR 535)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	480	378	112	936	20	90	32	50	11	19	8
Future Volume (veh/h)	13	480	378	112	936	20	90	32	50	11	19	8
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	1885	1885	1885	1885	1870	1870	1900	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	495	0	115	965	21	93	33	52	12	21	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	2	2	0	2	2	2	2	2
Cap, veh/h	61	914		288	1052	23	517	186	293	168	274	101
Arrive On Green	0.58	0.58	0.00	0.58	0.58	0.58	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	8	1584	1598	909	1824	40	1401	654	1031	342	963	356
Grp Volume(v), veh/h	508	0	0	115	0	986	93	0	85	42	0	0
Grp Sat Flow(s),veh/h/ln	1592	0	1598	909	0	1863	1401	0	1685	1661	0	0
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	30.9	1.8	0.0	2.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	33.1	0.0	0.0	28.1	0.0	30.9	3.0	0.0	2.5	1.1	0.0	0.0
Prop In Lane	0.03		1.00	1.00		0.02	1.00		0.61	0.29		0.21
Lane Grp Cap(c), veh/h	976	0		288	0	1075	517	0	480	544	0	0
V/C Ratio(X)	0.52	0.00		0.40	0.00	0.92	0.18	0.00	0.18	0.08	0.00	0.00
Avail Cap(c_a), veh/h	976	0		288	0	1075	517	0	480	544	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	0.0	11.8	0.0	12.4	17.6	0.0	17.5	17.0	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	4.1	0.0	13.6	0.8	0.0	0.8	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	1.2	0.0	12.1	1.1	0.0	1.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	0.0	0.0	15.8	0.0	26.0	18.4	0.0	18.3	17.3	0.0	0.0
LnGrp LOS	B	A		B	A	C	B	A	B	B	A	A
Approach Vol, veh/h		508	A		1101			178			42	
Approach Delay, s/veh		10.3			24.9			18.4			17.3	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	23.0	42.0	23.0	42.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	37.5	18.5	37.5
Max Q Clear Time (g_c+I1), s	5.0	35.1	3.1	32.9
Green Ext Time (p_c), s	0.5	0.7	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

WINDSOR POINTE
TRAFFIC IMPACT STUDY

APPENDIX E

WARRANTS ANALYSIS SUMMARY SHEETS

Warrant 1: Eight-hour Vehicular Volume

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

Intersection Information

Major Street Name:	Old Tenton Road (CR 535)
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	10 Hours met (8 required)
Condition B Met?	No	6 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
06:00 to 07:00	**490**		**50**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (70)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (56)?**	No				
07:00 to 08:00	**1,266**		**141**		Yes*	Yes*	Yes*	Yes*
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	Yes				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	Yes				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes				
08:00 to 09:00	**1,381**		**165**		Yes*	Yes*	Yes*	Yes*
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	Yes				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	Yes				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes				

Warrant 1: Eight-hour Vehicular Volume

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

09:00 to 10:00	**1,004**		**69**		No	No		No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	No					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
10:00 to 11:00	**753**		**72**		No	Yes*		No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
11:00 to 12:00	**733**		**95**		No	Yes*		No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
12:00 to 13:00	**824**		**118**		No	Yes*		Yes*	Yes*
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	Yes					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
13:00 to 14:00	**814**		**75**		No	Yes*		No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					

Warrant 1: Eight-hour Vehicular Volume

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

14:00 to 15:00	**937**		**91**		No	Yes*		No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
15:00 to 16:00	**1,188**		**114**		No	Yes*		Yes*	Yes*
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	Yes					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
16:00 to 17:00	**1,478**		**118**		No	Yes*		Yes*	Yes*
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	Yes					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					
17:00 to 18:00	**1,558**		**180**		Yes*	Yes*		Yes*	Yes*
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	Yes					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	Yes					
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (70)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (56)?**	Yes					

Warrant 2: Four-hour Vehicular Volume

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

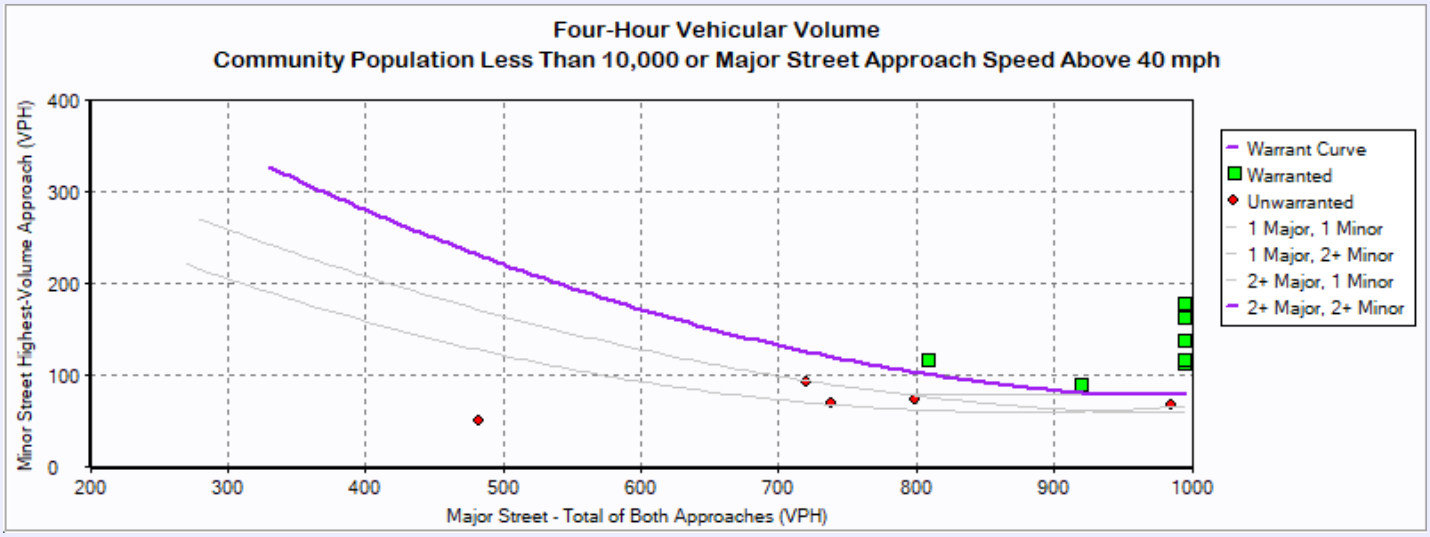
Intersection Information

	Major Street	Minor Street
Street Name	Old Tenton Road (CR 535)	Site Driveway
Direction	EB/WB	NB/SB
Number of Lanes	2	2
Approch Speed	50	35

Warrant 2 Met? **Yes**

Details:

Notes	7 Hours met (4 required)
Low population	No



Warrant 2: Four-hour Vehicular Volume

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

Hourly Volumes

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00:00 - 01:00:00	0	0
01:00:00 - 02:00:00	0	0
02:00:00 - 03:00:00	0	0
03:00:00 - 04:00:00	0	0
04:00:00 - 05:00:00	0	0
05:00:00 - 06:00:00	0	0
06:00:00 - 07:00:00	490	50
07:00:00 - 08:00:00	1,266	141
08:00:00 - 09:00:00	1,381	165
09:00:00 - 10:00:00	1,004	69
10:00:00 - 11:00:00	753	72
11:00:00 - 12:00:00	733	95
12:00:00 - 13:00:00	824	118
13:00:00 - 14:00:00	814	75
14:00:00 - 15:00:00	937	91
15:00:00 - 16:00:00	1,188	114
16:00:00 - 17:00:00	1,478	118
17:00:00 - 18:00:00	1,558	180
18:00:00 - 19:00:00	0	0
19:00:00 - 20:00:00	0	0
20:00:00 - 21:00:00	0	0
21:00:00 - 22:00:00	0	0
22:00:00 - 23:00:00	0	0

23:00:00 - 00:00:00	0	0

Warranted Hours

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
07:00:00 - 08:00:00	1,266.00	141.00
08:00:00 - 09:00:00	1,381.00	165.00
12:00:00 - 13:00:00	824.00	118.00
14:00:00 - 15:00:00	937.00	91.00
15:00:00 - 16:00:00	1,188.00	114.00
16:00:00 - 17:00:00	1,478.00	118.00
17:00:00 - 18:00:00	1,558.00	180.00

Note: Only data of hours warranted is represented in the above table.

Warrant 3: Peak Hour

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

Intersection Information

	Major Street	Minor Street
Street Name	Old Tenton Road (CR 535)	Site Driveway
Direction	EB/WB	NB/SB
Number of Lanes	2	2
Approch Speed	50	35

Warrant 3 Met? Yes

Details

Low Population? No

Condition A Met? No

Notes 0 Hours met (1 required)

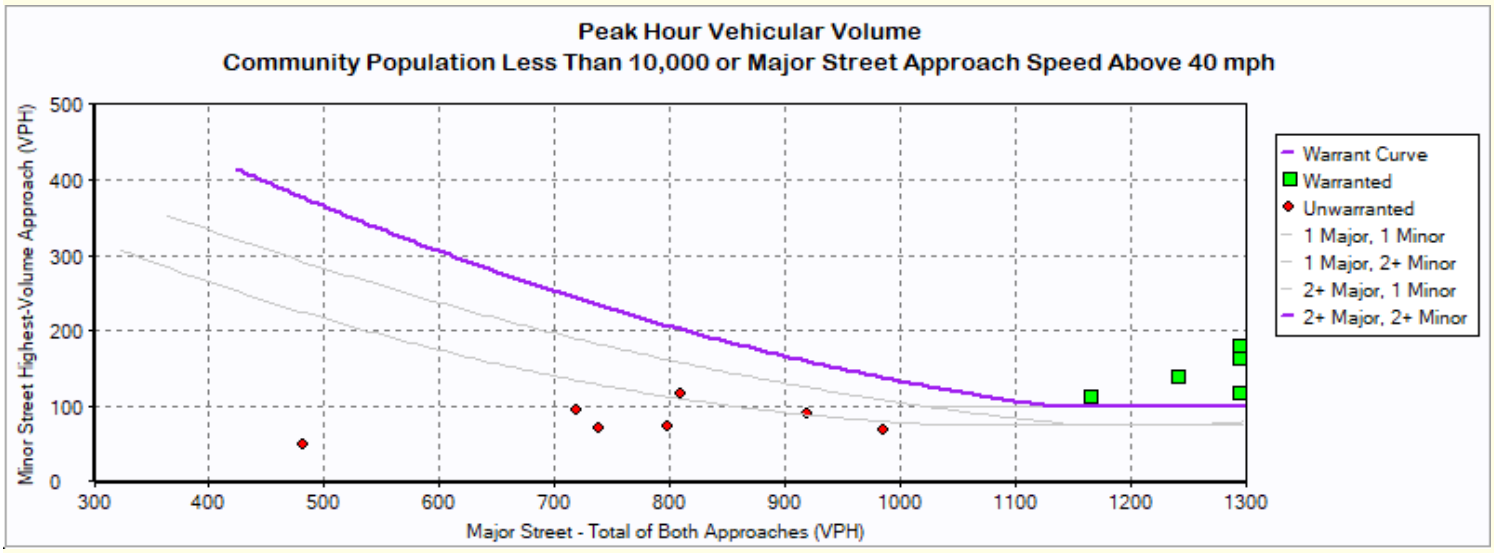
Condition B Met? Yes

Notes 5 Hours met (1 required)

Minor Approach Time Delay Condition Met? Not Met

Minor Approach Volume Condition Met? Met

Total Entering Intersection Volume Condition Met? Not Met



Warrant 3: Peak Hour

1: Old Trenton Road (CR 535) with Windsor Center Drive/Site Driveway

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
6:00	490	50
7:00	1,266	141
8:00	1,381	165
9:00	1,004	69
10:00	753	72
11:00	733	95
12:00	824	118
13:00	814	75
14:00	937	91
15:00	1,188	114
16:00	1,478	118
17:00	1,558	180