

TRAFFIC IMPACT ANALYSIS

for

L'ORÉAL

Proposed Distribution Facility Expansion

Block 86.01, Lot 10.30

Block 86.03, Lot 10.32

100 Commerce Drive

Franklin Township

Somerset County, New Jersey



JOHN R. HARTER
Professional Engineer
N.J. License No. 41033



JERRID M. DINNEN
Professional Engineer
N.J. License No. 46962

N.J. P.E. Cert. of Authorization No. 24GA27957900

October 20, 2021

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Atlantic Traffic & Design Engineering, LLC (ATDE) has prepared this Traffic Impact Analysis to support the application to Franklin Township for the proposed 248,040 square foot expansion of the existing 305,200 square foot L'Oréal facility located at a 36-acre site at 100 Commerce Drive in Franklin Township, Somerset County, New Jersey. **Figure 1** in the **Appendix** provides the Site Location Map.

CURRENT CONDITION

The subject property consists of 2 lots located at 100 Commerce Drive in Franklin Township and is located at the terminus of Commerce Drive. The existing L'Oréal facility consists of a 305,200 square foot building that is located on Lot 10.32 in Block 86.03 north of Commerce Drive.

The adjacent satellite lot consists of a 135-stall parking lot located on Lot 10.30 in Block 86.01, south of Commerce Drive. Access to the site is currently provided via 4 full-movement driveways along Commerce Drive in which 3 driveways provide direct access to the property and the remaining driveway to the west provides access to a satellite parking lot opposite the subject property. The existing easternmost driveway currently accommodates tractor trailers. Currently, the truck driveway provides 1 ingress and egress lane.

PROPOSED CONDITION

The proposal includes an 248,040 square foot building expansion broken up into 2 phases distributed between 2 building additions as well as a proposed emergency access driveway connecting Commerce Drive and Dahmer Road with permitted access only to emergency vehicles or first responders.

Under proposed conditions, the easternmost driveway would be widened to allow 3 ingress lanes and 1 egress lane with a raised curb striped boulevard between the ingress and egress lanes.

SCOPE OF STUDY

This study has been performed to evaluate traffic impacts associated with the construction of the proposed building expansion. Accordingly, this analysis includes the following:

- A review of existing roadway and traffic conditions in the vicinity of the site, including roadway geometrics and traffic volumes;
- Projection of the volume of traffic expected to be generated by the proposed building expansion;
- An analysis of future roadway and site driveway operations;
- An evaluation of the Site Plan focusing on access, parking and circulation; and
- Recommendations and conclusions.

EXISTING TRAFFIC CONDITIONS

SUBJECT PROPERTY

The site of the proposed building expansion on Lot 10.30 in Block 86.01 is located on Commerce Drive in Franklin Township, Somerset County, New Jersey. The subject property has the following characteristics:

- ▶ Located in the B-I (Business Industry) zone, where manufacturing facilities are a permitted use.
- ▶ Land uses within the immediate vicinity of the site are industrial to the east and residential to the west.
- ▶ The subject property is occupied by an existing 305,200 square foot L'Oréal distribution facility.

ROADWAY NETWORK

The subject property has frontage along Commerce Drive. The following is a description of the adjacent roadway network:

NJ Route 27

- ▶ Classified as an Urban Principal Arterial under New Jersey Department of Transportation (NJDOT) jurisdiction.
- ▶ Designated as a north/south roadway within the vicinity of the subject property.
- ▶ Provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- ▶ Has a posted speed limit of 40 miles per hour in the immediate vicinity.
- ▶ Shoulders are provided along either side of the roadway, however, sidewalks are not provided.
- ▶ Experiences an Average Annual Daily Traffic (AADT) of approximately 22,300 vehicles according to NJDOT data collected in 2017.

Hamilton Street (CR 514)

- › Classified as an Urban Minor Arterial under Somerset County jurisdiction.
- › Designated as an east/west roadway within the vicinity of the subject property.
- › Generally provides 2 lanes to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- › Has a posted speed limit of 45 miles per hour in the immediate site vicinity.
- › Shoulders are not provided along either side of the roadway and sidewalks are provided along the westbound roadway.

Clyde Road/John F. Kennedy Boulevard

- › Designated as an Urban Minor Arterial under Franklin Township jurisdiction.
- › Designated as a north/south roadway within the vicinity of the subject property.
- › Generally provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- › Has a posted speed limit of 40 miles per hour within the vicinity of the site.
- › Shoulders are provided along either side of the roadway, however, sidewalks are not provided along the property frontage.
- › Experiences an AADT of approximately 14,150 vehicles according to NJDOT data collected in 2019.

Bennetts Lane

- › Classified as an Urban Minor Arterial under Franklin Township Jurisdiction.
- › Provides 1 lane to accommodate each direction of travel within the vicinity of the subject property.

- › Has a posted speed limit of 35 miles per hour within the vicinity of the site.
- › Has a posted 4-ton vehicle weight restriction located south of Commerce Drive.
- › Experiences an AADT of approximately 7,350 vehicles according to NJDOT data collected in 2019.

Commerce Drive

- › Classified as a local roadway under Franklin Township jurisdiction.
- › Designated as an east/west roadway within the vicinity of the subject property.
- › Provides 1 lane to accommodate each direction of travel.
- › Has a posted speed limit of 35 miles per hour in the immediate site vicinity.
- › Shoulders are not provided along either side of the roadway and sidewalks are not provided along the property frontage.

EXISTING TRAFFIC VOLUMES

To examine the existing traffic demand at the project site, traffic volume counts were conducted during the weekday morning and weekday evening peak periods at the following intersections:

1. NJ Route 27 & Bennetts Lane
2. Hamilton Street (CR 514) & Clyde Road/John F. Kennedy Boulevard
3. Commerce Drive & Clyde Road
4. L'Oréal Driveways along Commerce Drive

The manual turning movement count summary is contained in the **Appendix**.

ATDE had requested the timing directives for each of the signalized intersections located within the study network but only the intersection of Hamilton Street (CR 514) and John F. Kennedy Boulevard/Clyde Road was

obtained. The timing directive associated with the intersection of NJ Route 27 and Bennetts Lane was based on field timing observations. The timing directive associated with the signalized intersection of Hamilton Street (CR 514) and John F. Kennedy Boulevard/Clyde Road is provided in the **Appendix**.

PEAK HOURS

The results of the traffic counts indicate there are distinct hours during the periods of study when traffic experiences its highest levels. Based on the traffic count information, the weekday morning peak hour occurred from 7:45 am to 8:45 am and the weekday evening peak hour occurred from 4:45 pm to 5:45 pm. The existing weekday morning and weekday evening peak hour traffic volumes are summarized on **Figure 2** in the **Appendix**.

ATDE had conducted Automatic Traffic Recorder (ATR) counts along Bennetts Lane and compared them with the NJDOT counts along Bennetts Lane that were conducted in 2019. **Table 1** was developed in order to determine if a Covid19 factor would be necessary to apply to the existing roadway network.

Table 1
Comparison of Pre-Covid19 and Covid19 Peak Hour Traffic Volum

Source	Peak Hour	Bennetts Lane		Total
		NB	SB	
NJDOT 2019 Volumes	AM	434	230	664
	PM	261	447	708
Volumes Grown to 2021	AM	443	235	678
	PM	266	456	722
Existing ATR 2021 Volumes	AM	347	297	644
	PM	291	437	728
% Difference	AM	128%	79%	105%
	PM	91%	104%	99%
Covid19 Correction Factor	AM			1.05
	PM			1.00

This comparison found that the existing traffic volumes are within 95% of the grown 2019 volumes provided by NJDOT. Therefore, due to the minimal deviation of these 2 data sets, a Covid19 adjustment factor was not found to

be necessary. The NJDOT 2019 counts and the ATDE ATR counts are contained in the **Appendix**.

PROPOSED DEVELOPMENT TRAFFIC CHARACTERISTICS

TRIP GENERATION

The next step in the analysis procedure is to project the volume of future traffic that would be generated as a result of the proposed building expansion. For the purpose of this analysis, complete project approval, construction, and occupancy are assumed to occur within 3 years.

Traffic projections for the proposed building expansion have been prepared utilizing observed trip generation at the existing L'Oréal facility based on the 305,200 square foot building area of the site. ATDE developed trip generation rates for the existing facility and compared it to the trip generation rates provided by the Institute of Transportation Engineers (ITE) in the 11th Edition of *Trip Generation*, 2021, utilizing Land Use Code 150: "Warehousing." The ITE Trip Generation printouts are contained in the **Appendix. Table 2** provides the comparison between the observed L'Oréal trip generation and that of the 35 to 50 warehouse sites that the ITE had researched.

Table 2
Observed L'Oreal Trip Generation vs. ITE Trip Generation

Peak Hour	Vehicle Type	Observed L'Oreal Trip Generation			Trip Generation Rate per 1,000 SF
		Enter	Exit	Total	
AM	Autos	48	14	62	0.23
	Trucks	5	2	7	
	Total	53	16	69	
PM	Autos	4	34	38	0.18
	Trucks	4	12	16	
	Total	8	46	54	
Peak Hour	Vehicle Type	ITE LUC 150: "Warehousing" Trip Generation			Trip Generation Rate per 1,000 SF
		Enter	Exit	Total	
AM	Autos	37	9	46	0.17
	Trucks	3	3	6	
	Total	40	12	52	
PM	Autos	10	36	46	0.18
	Trucks	5	4	9	
	Total	15	40	55	

The comparison between these 2 methods of developing a trip generation rate show that the data is very similar. The rates of the observed L'Oréal traffic were found to be higher than the ITE during the weekday morning peak hour and equivalent during the weekday evening peak hour. In order to develop a conservative analysis, the rates of the observed L'Oréal traffic will be utilized when projecting the traffic of the proposed expansion.

As previously mentioned, the proposed expansion is anticipated to occur in 2 phases. This report analyzed the full build-out expansion of the L'Oréal facility. Utilizing the rates developed by the observed traffic, **Table 3** provides the calculated trip generation for the proposed expansion.

Table 3
Trip Generation Based on Building Area Rates
Proposed Trip Generation for L'Oreal Expansion

Peak Hour	Existing L'Oreal Trip Generation		
	Enter	Exit	Total
AM	53	16	69
PM	8	46	54
Peak Hour	Additional L'Oreal Trip Generation		
	Enter	Exit	Total
AM	48	15	63
PM	7	43	50
Peak Hour	Total Proposed L'Oreal Trip Generation		
	Enter	Exit	Total
AM	101	31	132
PM	15	89	104

TRIP DISTRIBUTION

The trip generation associated with the proposed building expansion has been assigned to the adjacent roadways based on existing travel patterns identified from the traffic counts of the site driveways. The distribution of additional site traffic is shown on **Figure 3** in the **Appendix**. The total site traffic volumes are illustrated on **Figure 4** in the **Appendix**.

FUTURE BASE TRAFFIC VOLUMES

It is recognized traffic routinely fluctuates along various County roadways as well as local streets and varies not only day-to-day but also on a monthly and yearly basis. It is anticipated that both phases of the proposed development will be completed within 3 years of this study. As a result, the background traffic growth within this timeframe is expected to be minimal.

However, in order to provide a conservative analysis, the existing observed traffic volumes were increased by a nominal annual growth rate of 1.00% in accordance with the published NJDOT background growth rates for Urban Principal Arterials in Somerset County. This nominal ambient growth rate was applied directly to the existing traffic volumes to generate the future No-Build volumes, thereby taking into account potential traffic growth in the general vicinity of the subject site. The future No-Build traffic volumes are summarized on **Figure 5** in the **Appendix**.

Other Area Developments

The Franklin Township Planning Department was contacted to determine if there are any proposed or planned developments in the vicinity of the site which could impact traffic conditions on the adjacent roadway network. According to the Township, there are no approved developments expected to generate traffic along the adjacent roadway network in the vicinity of the subject property.

FUTURE BUILD TRAFFIC VOLUMES

The future Build traffic volumes were established by adding the total site-generated traffic volumes to the future No-Build traffic volumes. The resulting Build traffic volumes are shown on appended **Figure 6** in the **Appendix**.

ANALYSIS OF FUTURE TRAFFIC VOLUMES

A Level of Service and Volume/Capacity Analysis¹ of the study intersections was conducted for the future No-Build and Build conditions in the weekday morning and weekday evening peak hours using Synchro 10 software. This type of analysis is performed to gauge the operational state of traffic activity and to identify any areas of excessive delay or congestion that may result from a project. The Synchro analysis results and the Level of Service summary tables are contained in the **Appendix**.

NJ Route 27 & Bennetts Lane

Under the No-Build condition, movements at the signalized intersection of NJ Route 27 and Bennetts Lane are calculated to operate at a Level of Service D or better with the exception of the northbound left-turn movement and eastbound approach during the weekday evening peak hour. Under Build conditions, Levels of Service are generally maintained, with the exception of the eastbound approach during the evening peak hour, which was found to operate a Level of Service F.

The proposed mitigation included reallocating 4 seconds of green time from the NJ Route 27 right-of-way and providing 1 second of green time to the Bennetts Lane right-of-way and 3 seconds of green time to the NJ Route 27 lead left-turn phase to be necessary to mitigate the weekday evening peak hour. As a result of the mitigation, all movements at the traffic signal are calculated to operate at a Level of Service E or better during each of the study peak hours. This minor timing mitigation resulted in the eastbound approach operating better than during No-Build conditions.

Hamilton Street (CR 514) & John F. Kennedy Boulevard/Clyde Road

Under the No-Build condition, movements at the signalized intersection of Hamilton Street (CR 514) and John F. Kennedy Boulevard/Clyde Road are calculated to operate at a Level of Service E or better with the exception of

¹ See the **Appendix** for Volume/Capacity and Level of Service description.

the southbound left-turn movement, which is calculated to operate at a Level of Service F during the weekday morning peak hour. Under Build conditions, Levels of Service are generally maintained, and the delay associated with the southbound left-turn movement is calculated to increase by 2.8 seconds during the weekday morning peak hour.

Traffic signal timing mitigation for the intersection of Hamilton Street (CR 514) and John F. Kennedy Boulevard/Clyde Road was evaluated for the weekday morning peak hour. It was found that a reallocation of 1 second of green time from the Hamilton Street (CR 514) right-of-way to the John F Kennedy Boulevard/Clyde Road right-of-way would be necessary to mitigate the weekday morning peak hour. This minor timing mitigation was calculated to have all movements operate at a Level of Service E or better.

Commerce Drive & Clyde Road

Under the No-Build condition, movements at the intersection of Commerce Drive and Clyde Road are calculated to operate at a Level of Service D or better during each of the study peak hours. A Level of Service D translates to a 95th percentile queue of approximately 3 vehicles which can be accommodated along Commerce Drive without impact to any adjacent driveways.

Commerce Drive & L'Oréal Driveways

Under the No-Build conditions, movements at the L'Oréal site driveways along Commerce Avenue are calculated to operate at a Level of Service of A during the weekday morning and evening peak hours. Under Build conditions, movements at the driveways are calculated to operate at similar Levels of Service during the weekday morning peak hour and some movements are anticipated to operate at an acceptable Level of Service B or better during the weekday evening peak hour. A Level of Service B translates to a 95th percentile queue of approximately 1 vehicle and can easily be accommodated without any impact to on-site circulation.

SITE ACCESS AND CIRCULATION

An evaluation has been made of the Overall Site Layout Plan for the proposed building expansion, prepared by Bohler, dated October 20, 2021. In particular, the evaluation focuses on site access, circulation, and parking. The following items are noted:

Site Access

- The development proposal includes the construction of a 248,040 square foot building expansion as well as modifications the existing eastern tractor trailer driveway to provide 3 ingress lanes and 1 egress lane with a raised curb striped boulevard.
- An emergency access driveway connecting Commerce Drive and Dahmer Road is proposed with permitted access only to emergency vehicles or first responders.
- All other driveways will be maintained as is.

Site Circulation

- Site circulation for the development will continue to operate via the existing two-way circulation aisle.
- The proposed road connection between Commerce Drive and Dahmer Road will be gated and only emergency vehicles will be allowed to utilize this connection.
- The proposed layout provides ample geometry to accommodate passenger vehicle and truck access to the site, allowing for efficient site circulation and parking activity.

Parking

- The Township requires 2 parking stalls per 2,000 square feet of gross floor area for the first 5,000 square feet, then 1 parking stall per 2,500 square feet of gross floor area. Therefore, 228 parking stalls are required for the proposed development according to the Township.

- The site currently provides 220 parking stalls on Lot 10.32 and 135 parking stalls on Lot 10.30.
- The Site Plan proposes 99 additional parking stalls, creating a total of 454 parking stalls between Lot 10.32 and 10.30 for the proposed development, which exceeds the Township requirement.
- The number of parking stalls that exist on Lot 10.30 are proposed to be maintained.
- The parking stalls are required to be 9 feet in width and 18 feet in depth, served by a two-way drive aisle of 26 feet. The parking stalls are proposed to be 9 feet in width and 18 feet in depth, meeting Township requirements, and the two-way drive aisle is proposed to remain at 30 feet which exceeds the Township requirement.

In summary, it has been determined from the conduct of detailed traffic counts and analyses that the proposed L'Oréal expansion will not significantly impact traffic conditions after minor traffic signal timing mitigation.

Site access is proposed to be improved by widening the easternmost site access along Commerce to better accommodate truck access. The primary driveway serving employees of the facility will be the westernmost site access point with additional access being the central site access driveway.

The Site Plan proposed 454 parking stalls which is expected to adequately accommodate the proposed expansion associated with the proposed L'Oréal facility. The proposed parking supply exceeds the Township requirements. The site circulation and parking stall dimensions have been designed in accordance with Township requirements and accepted traffic engineering design standards.

Technical Appendix

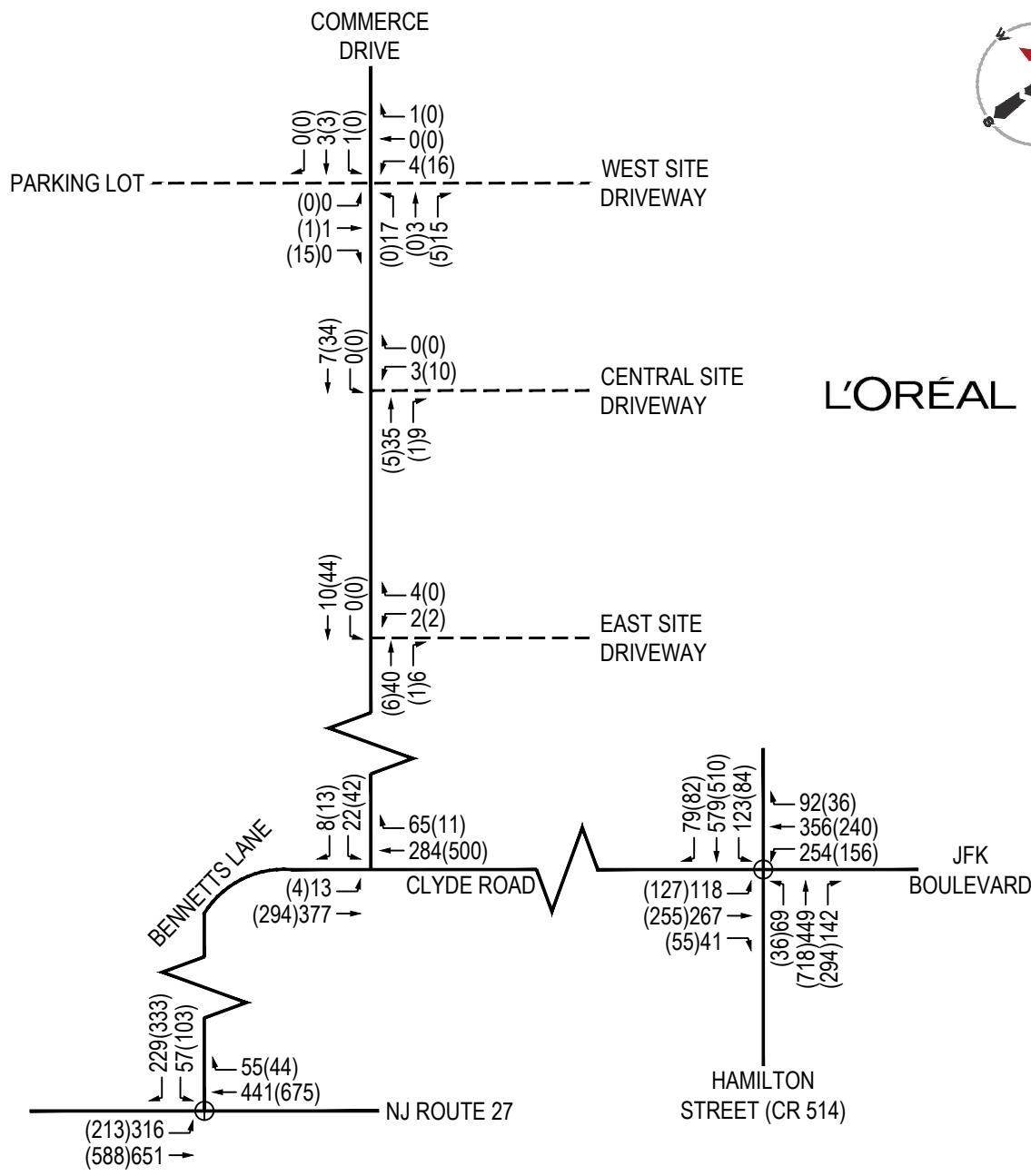
Proposed L'Oreal Distribution Facility Expansion
Franklin Township
Somerset County, New Jersey

Site Location Map



Proposed L'Oreal Distribution Facility Expansion
Franklin Township
Somerset County, New Jersey

Existing Traffic Volumes



LEGEND

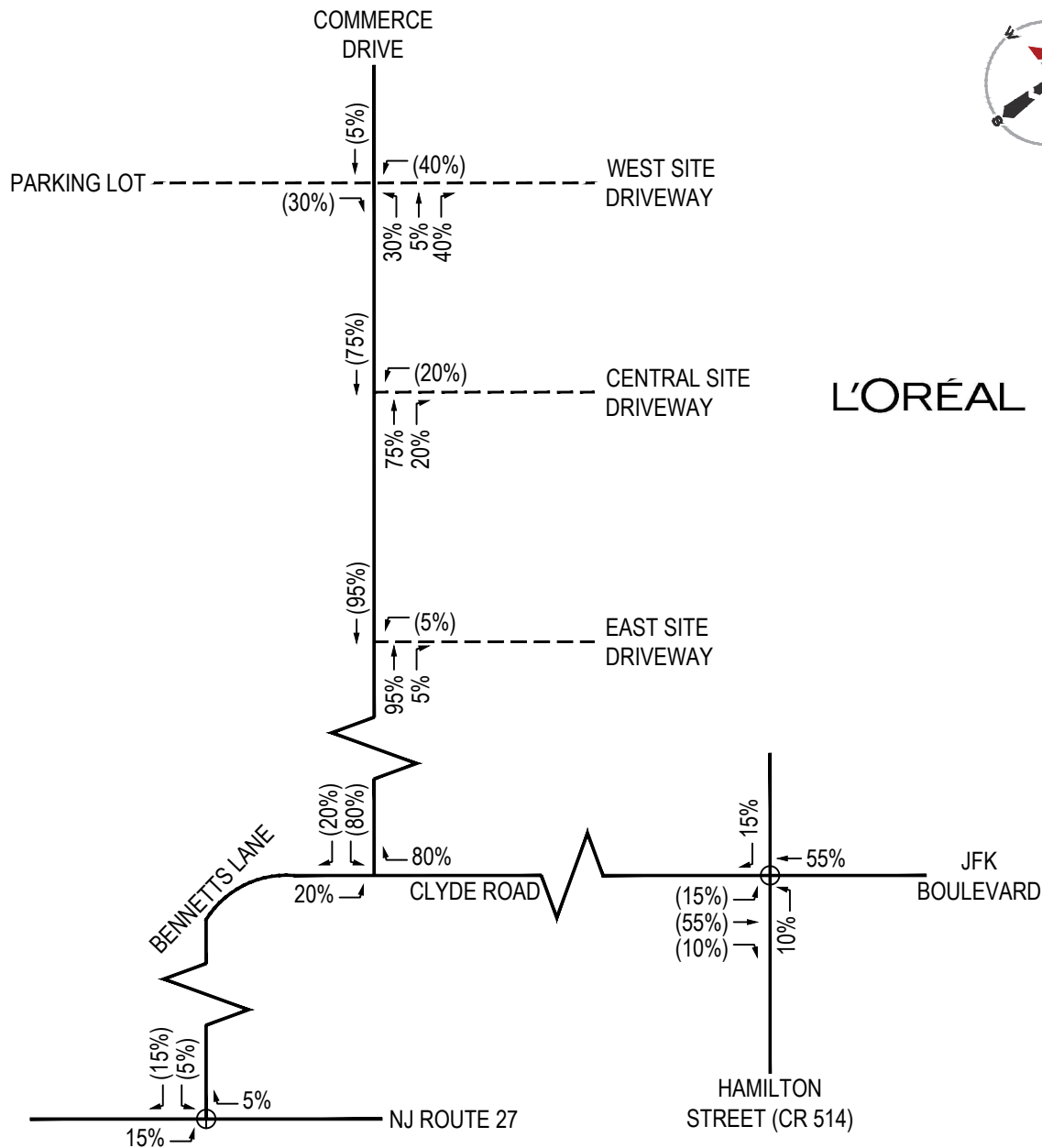
- AA(BB) AM(PM) PEAK HOUR VOLUMES
- EXISTING ROADWAY
- EXISTING DRIVEWAY
- ⊕ EXISTING TRAFFIC SIGNAL

PEAK HOUR	ENTER	EXIT	TOTAL
AM	53	16	69
PM	8	46	54

K:\2021\AN21092\ANALYSIS-PERMITTING\DATA-TRAFFIC\FIGURES\AN21092 FIGURES-->LAYOUT: EXISTING TRAFFIC VOLUMES

Proposed L'Oreal Distribution Facility Expansion
Franklin Township
Somerset County, New Jersey

Distribution of New Project-Generated Trips



L'ORÉAL

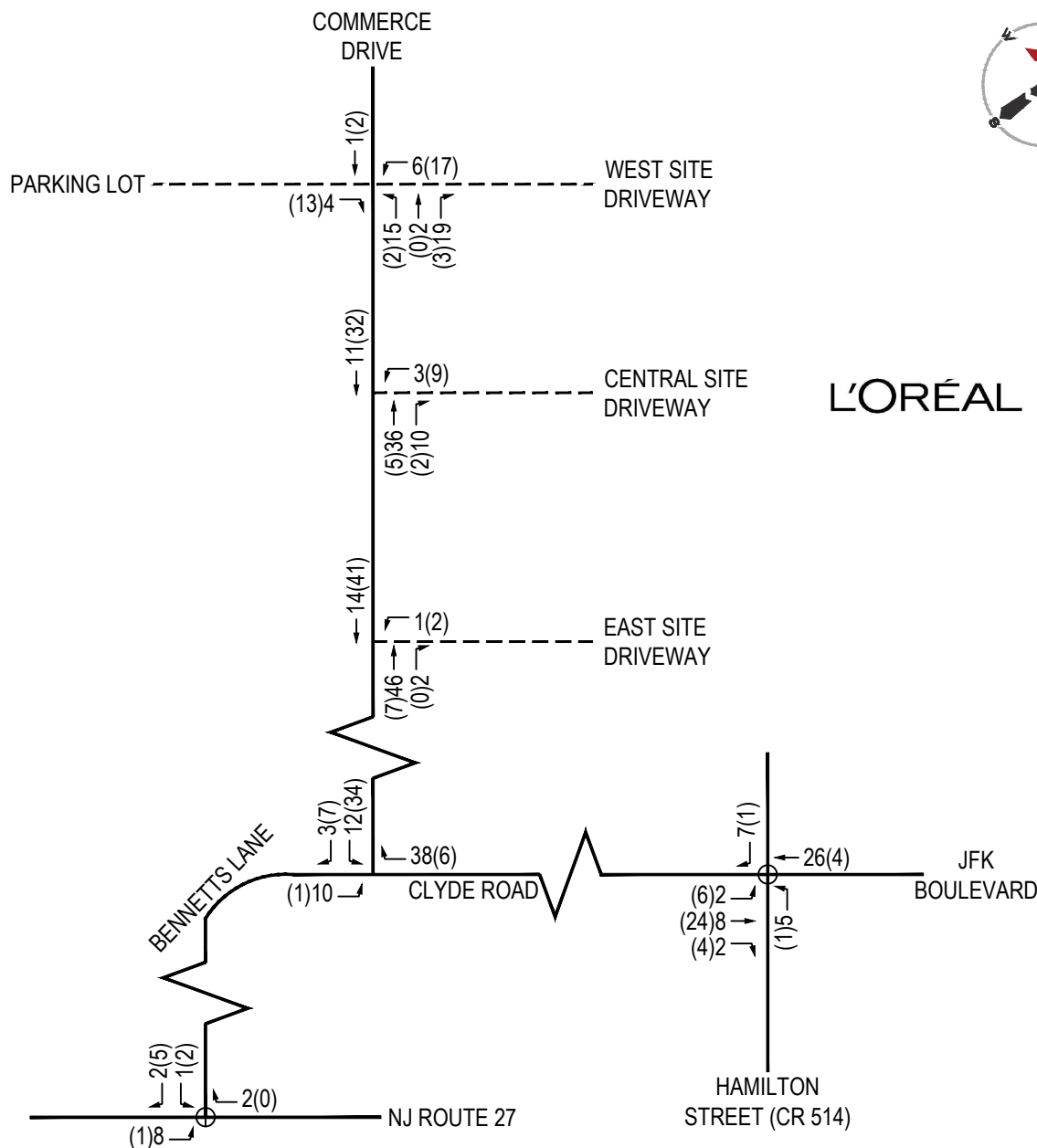
LEGEND

- AA(BB) ENTER(EXIT) TRIP DISTRIBUTION
- EXISTING ROADWAY
- - - EXISTING DRIVEWAY
- ⊕ EXISTING TRAFFIC SIGNAL
- PROPOSED DRIVEWAY
- ⊕ PROPOSED TRAFFIC SIGNAL

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Proposed L'Oreal Distribution Facility Expansion
Franklin Township
Somerset County, New Jersey

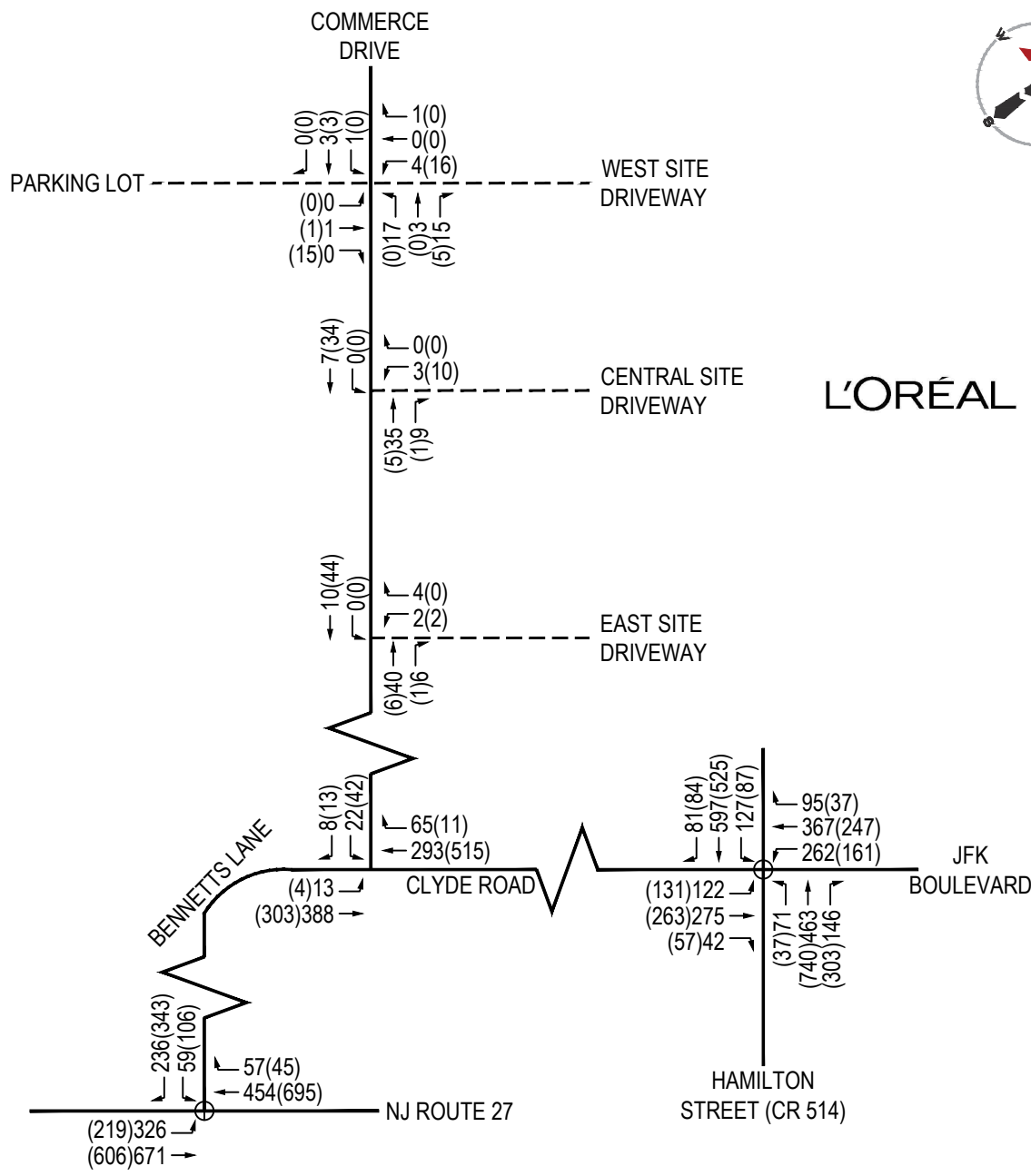
Total Project-Generated Traffic Volumes



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Proposed L'Oreal Distribution Facility Expansion
Franklin Township
Somerset County, New Jersey

Future No-Build Traffic Volumes



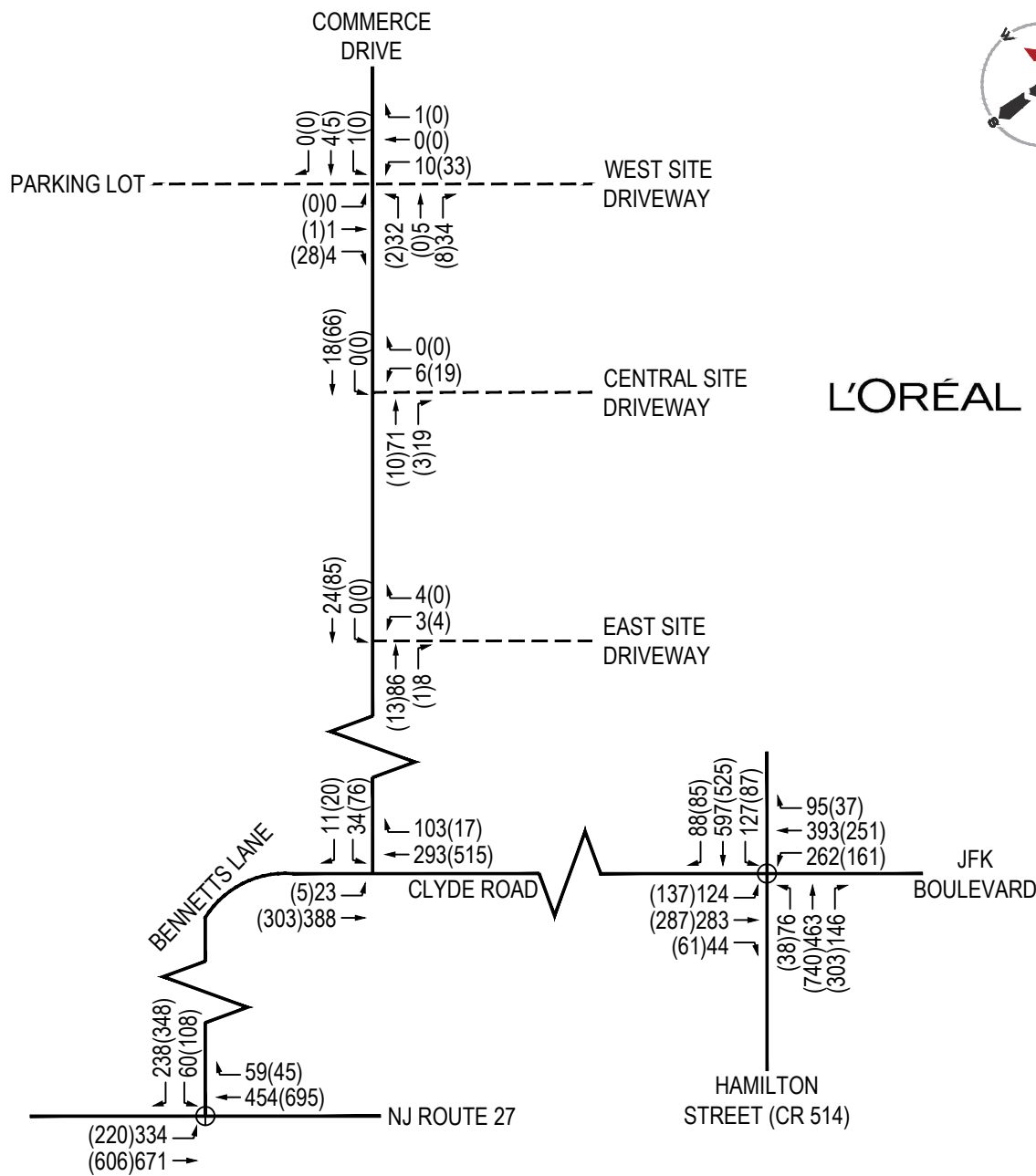
LEGEND

- AA(BB) AM(PM) PEAK HOUR VOLUMES
- EXISTING ROADWAY
- - - EXISTING DRIVEWAY
- ⊕ EXISTING TRAFFIC SIGNAL

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Proposed L'Oreal Distribution Facility Expansion
Franklin Township
Somerset County, New Jersey

Future Build Traffic Volumes



LEGEND

- AA(BB) AM(PM) PEAK HOUR VOLUMES
- EXISTING ROADWAY
- - - EXISTING DRIVEWAY
- ⊕ EXISTING TRAFFIC SIGNAL
- - - PROPOSED DRIVEWAY
- ⊕ PROPOSED TRAFFIC SIGNAL

PEAK HOUR	ENTER	EXIT	TOTAL
AM	101	31	132
PM	15	89	104

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**B | Hamilton Street (CR 514) &
JFK Boulevard/Clyde Road Timing Directive**

Hamilton Street & John F. Kennedy Blvd./Clyde Road
Franklin Township

TIMING SCHEDULE
WITH PEDESTRIAN ACTUATION

PHASE	INDICATION #							TIMING	
	<u>1,2</u>	<u>3,4,5</u>	<u>6,7,8</u>	<u>9,10</u>	<u>11,12,15</u>	<u>13,14,16,17</u>	<u>P1 - P4</u>	<u>P5 - P6</u>	<u>MAX 1</u>
A HAMILTON STREET EB/WB LEAD LEFTS	R	R	R	R/G→	R	←G/R	DW	DW	7
CHANGE	R	R	R	R/Y→	R	←Y/R	DW	DW	3
CLEARANCE	R	R	R	R	R	R	DW	DW	1
B HAMILTON STREET ROW	R	R	R	R	G	G	W	DW	7
PEDESTRIAN CLEARANCE	R	R	R	R	G	G	FDW	DW	26
CHANGE	R	R	R	R	Y	Y	DW	DW	4.5
CLEARANCE	R	R	R	R	R	R	DW	DW	2
C JFK BLVD/CLYDE ROAD NB/SB LEAD LEFTS	←G/R	R	←G/R	R	R	R	DW	DW	7
CHANGE	←Y/R	R	←Y/R	R	R	R	DW	DW	3
CLEARANCE	R	R	R	R	R	R	DW	DW	1
D JFK BLVD/CLYDE ROAD ROW	G	G	G	G	R	R	DW	W	7
PEDESTRIAN CLEARANCE	G	G	G	G	R	R	DW	FDW	16
CHANGE	Y	Y	Y	Y	R	R	DW	DW	4
CLEARANCE	R	R	R	R	R	R	DW	DW	2
EMERGENCY FLASH	R	R	R	R	Y	Y	BLANK	BLANK	

SIGNAL SEQUENCE NOTES

1. Manual control and memory circuits shall be disconnected.
2. Vehicle extension is to be set at 2 seconds.
3. The following phases may be omitted in the absence of demand.
 - a. Phase A - Hamilton Road EB/WB Lead Lefts
 - a. Phase C - JFK Blvd/Clyde Road NB/SB Lead Lefts
4. Signal shall rest during Phase B - Hamilton Street ROW.
5. Phase A shall only follow Phase D. Phase C shall only follow Phase B.
6. Phase D must follow Phase C if actuated. Phase B must follow Phase A if actuated.

HOURS OF OPERATION

MAX 1 TO OPERATE AT ALL TIMES

C | Turning Movement Count Summary



30 Independence Boulevard, Suite 110
 Warren, New Jersey 07059
 908-769-5588
www.atlantictraffic.com

L'Oreal
 100 Commerce Drive
 Borough of Franklin
 Sussex County, New Jersey

ATDE Project No. ANJ21092

Tuesday, October 5, 2021

TURNING MOVEMENT COUNTS

Weekday Morning

		Hamilton St (CR 514) & Clyde Rd/John F Kennedy Blvd												15-Min
Interval	Start	NB			EB			SB			WB			Sum
		L	T	R	L	T	R	L	T	R	L	T	R	
1	7:00 AM	29	62	14	11	136	13	53	53	19	20	142	30	582
2	7:15 AM	36	55	11	12	151	13	34	42	16	12	120	41	543
3	7:30 AM	33	65	17	28	174	19	43	60	26	15	98	37	615
4	7:45 AM	33	69	11	42	174	24	68	99	35	22	128	38	743
5	8:00 AM	27	74	13	37	174	24	65	92	18	15	110	36	685
6	8:15 AM	27	45	6	22	128	14	46	62	15	13	103	29	510
7	8:30 AM	31	79	11	22	103	17	75	103	24	19	108	39	631
8	8:45 AM	40	49	9	22	128	15	59	70	20	8	81	32	533

		Peak Hour Summary											
		NB			EB			SB			WB		
		L	T	R	L	T	R	L	T	R	L	T	R
Peak Hour Volume		118	267	41	123	579	79	254	356	92	69	449	142
% Heavy Vehicles		4%	4%	7%	2%	5%	4%	6%	3%	2%	13%	11%	15%
Peak Hour Factor		0.88			0.81			0.87			0.88		

		Commerce Dr & Clyde Rd						NJ Rt 27 & Bennetts Ln						15-Min
Interval	Start	NB		EB		SB		NB		EB		SB		Sum
		L	T	L	R	T	R	L	T	L	R	T	R	
1	7:00 AM	6	85	6	7	33	7	77	115	11	28	106	10	491
2	7:15 AM	3	110	11	4	49	1	83	141	13	38	78	13	544
3	7:30 AM	5	115	3	1	58	11	89	140	12	55	91	11	591
4	7:45 AM	2	98	3	1	69	9	83	141	14	59	101	16	596
5	8:00 AM	1	100	3	2	73	20	85	171	16	60	118	14	663
6	8:15 AM	7	85	6	2	66	16	68	155	10	50	121	12	598
7	8:30 AM	3	94	10	3	76	20	80	184	17	60	101	13	661
8	8:45 AM	3	102	3	0	47	9	74	169	14	64	138	22	645

		Peak Hour Summary											
		NB		EB		SB		NB		EB		SB	
		L	T	L	R	T	R	L	T	L	R	T	R
Peak Hour Volume		13	377	22	8	284	65	316	651	57	229	441	55
% Heavy Vehicles		0%	3%	45%	0%	3%	23%	3%	4%	4%	5%	9%	0%
Peak Hour Factor		0.97		0.58		0.91		0.92		0.93		0.93	

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30 Independence Boulevard, Suite 110
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L'Oreal
 100 Commerce Drive
 Borough of Franklin
 Sussex County, New Jersey

ATDE Project No. ANJ21092

TURNING MOVEMENT COUNTS

Weekday Morning

Tuesday, October 5, 2021

		Commerce Dr & L'Oreal North Driveway/Parking Lot												Commerce Dr & L'Oreal Central Driveway			Commerce Dr & L'Oreal South Driveway			15-Min	Hour		
		NB			EB			SB			WB			EB	SB		WB	EB	SB		WB	Sum	Sum
Interval	Start	L	T	R	L	T	R	L	T	R	L	T	R	L	L	R	R	L	L	R	R		
1	7:00 AM	0	0	3	0	1	0	7	0	0	1	1	4	2	5	0	3	0	0	0	0	27	4770
2	7:15 AM	0	0	1	0	3	0	4	0	0	1	0	0	0	4	0	1	0	0	0	14	5037	
3	7:30 AM	0	0	2	0	1	0	0	0	0	2	0	4	0	0	0	4	0	0	1	14	5064	
4	7:45 AM	0	1	0	0	2	0	1	0	0	1	0	2	0	0	0	1	0	0	0	10	5156	
5	8:00 AM	0	0	0	1	1	0	0	0	1	4	1	4	0	1	0	2	0	1	1	2	19	4995
6	8:15 AM	0	0	0	0	0	0	2	0	0	4	1	5	0	1	0	3	0	1	3	0	20	
7	8:30 AM	0	0	0	0	0	0	1	0	0	8	1	4	0	1	0	3	0	0	0	2	20	
8	8:45 AM	0	0	0	0	0	0	1	0	0	2	0	2	0	1	0	1	0	1	1	1	10	

		Peak Hour Summary																		Total			
		NB			EB			SB			WB			EB	SB		WB	EB	SB		WB	Enter	Exit
		L	T	R	L	T	R	L	T	R	L	T	R	L	L	R	R	L	L	R	R		
Peak Hour Volume		0	1	0	1	3	0	4	0	1	17	3	15	0	3	0	9	0	2	4	6	53	16
% Heavy Vehicles		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	83%		
Peak Hour Factor		0.25			0.50			0.63			0.67			No Data	0.75		0.75	No Data	0.38		0.75		



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ATDE Project No. ANJ21092

Tuesday, October 5, 2021

TURNING MOVEMENT COUNTS

Weekday Evening

		Hamilton St (CR 514) & Clyde Rd/John F Kennedy Blvd												15-Min
Interval	Start	NB			EB			SB			WB			Sum
		L	T	R	L	T	R	L	T	R	L	T	R	
1	4:00 PM	36	72	10	18	114	22	47	50	19	5	130	75	598
2	4:15 PM	30	56	12	20	159	22	35	59	14	14	156	66	643
3	4:30 PM	29	45	13	20	124	14	45	61	16	12	155	66	600
4	4:45 PM	27	70	15	24	123	23	44	54	10	14	185	69	658
5	5:00 PM	44	73	18	24	104	22	39	61	5	6	182	87	665
6	5:15 PM	31	62	13	21	137	24	43	60	7	9	179	75	661
7	5:30 PM	25	50	9	15	146	13	30	65	14	7	172	63	609
8	5:45 PM	22	56	11	16	129	23	27	45	14	12	159	58	572
9	6:00 PM	15	49	15	21	130	20	26	50	14	14	131	62	547
10	6:15 PM	22	42	14	21	128	17	37	49	9	5	121	55	520
11	6:30 PM	20	51	6	23	113	15	31	45	13	11	113	46	487
12	6:45 PM	28	34	8	15	92	22	29	35	11	8	119	38	439

Peak Hour Summary												
	NB			EB			SB			WB		
	L	T	R	L	T	R	L	T	R	L	T	R
Peak Hour Volume	127	255	55	84	510	82	156	240	36	36	718	294
% Heavy Vehicles	1%	5%	2%	15%	1%	0%	2%	3%	8%	3%	0%	1%
Peak Hour Factor	0.81			0.93			0.98			0.95		

		Commerce Dr & Clyde Rd						NJ Rt 27 & Bennetts Ln						15-Min
Interval	Start	NB		EB		SB		NB		EB		SB		Sum
		L	T	L	R	L	R	L	T	L	R	T	R	
1	4:00 PM	2	79	11	3	108	2	55	160	28	87	171	26	732
2	4:15 PM	0	82	4	2	98	4	45	170	24	68	181	11	689
3	4:30 PM	0	59	7	3	103	3	54	124	20	81	177	8	639
4	4:45 PM	1	80	11	2	112	0	59	123	27	77	154	15	661
5	5:00 PM	0	73	15	6	132	4	46	187	26	98	192	9	788
6	5:15 PM	3	74	10	3	140	4	62	161	24	79	157	10	727
7	5:30 PM	0	67	6	2	116	3	46	117	26	79	172	10	644
8	5:45 PM	0	55	8	3	89	2	42	144	20	117	177	9	666
9	6:00 PM	1	64	11	0	91	3	56	155	22	86	149	3	641
10	6:15 PM	2	63	9	1	77	0	49	153	18	80	183	12	647
11	6:30 PM	2	75	7	1	80	1	53	145	14	64	180	11	633
12	6:45 PM	1	65	4	1	72	3	55	136	12	71	153	4	577

Peak Hour Summary												
	NB		EB		SB		NB		EB		SB	
	L	T	L	R	T	R	L	T	L	R	T	R
Peak Hour Volume	4	294	42	13	500	11	213	588	103	333	675	44
% Heavy Vehicles	0%	2%	7%	0%	3%	36%	3%	4%	0%	2%	1%	5%
Peak Hour Factor	0.92		0.65		0.89		0.86		0.88		0.89	

K:\2021\ANJ21092\FieldWork\Summarized\ANJ21092 TMC Summary.xlsx



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ATDE Project No. ANJ21092

TURNING MOVEMENT COUNTS

Weekday Evening

Tuesday, October 5, 2021

Interval	Start	Commerce Dr & L'Oreal North Driveway/Parking Lot												Commerce Dr & L'Oreal Central Driveway			Commerce Dr & L'Oreal South Driveway			15-Min Sum	Hour Sum		
		NB			EB			SB			WB			EB	SB		WB						
		L	T	R	L	T	R	L	T	R	L	T	R		L	R		L	R				
1	4:00 PM	0	0	4	0	0	0	0	0	1	0	0	1	1	2	0	0	0	2	0	0	11	5257
2	4:15 PM	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	1	0	0	0	1	6	5388
3	4:30 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	1	0	2	0	0	0	0	9	5453
4	4:45 PM	0	0	5	0	1	0	2	0	0	0	0	0	0	2	0	0	0	1	0	0	11	5467
5	5:00 PM	0	0	2	0	2	0	7	0	0	0	0	2	0	6	0	0	0	0	0	0	19	5385
6	5:15 PM	0	0	3	0	0	0	5	0	0	0	0	3	0	2	0	1	0	0	0	1	15	5113
7	5:30 PM	0	1	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	9	4881
8	5:45 PM	0	0	1	0	1	0	3	0	0	0	0	1	0	4	0	0	0	0	0	0	10	4744
9	6:00 PM	0	0	1	0	2	0	1	0	0	0	0	0	0	5	0	1	0	1	0	1	12	4514
10	6:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	
11	6:30 PM	0	0	0	0	0	0	2	0	0	0	1	0	0	2	0	0	0	0	0	0	5	
12	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	

	Peak Hour Summary															Total						
	NB			EB			SB			WB			EB	SB		WB	Enter	Exit				
	L	T	R	L	T	R	L	T	R	L	T	R		L	R				L	R		
Peak Hour Volume	0	1	15	0	3	0	16	0	0	0	0	5	0	10	0	1	0	2	0	1	8	46
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	100%	0%	100%	0%	100%	0%	100%		
Peak Hour Factor	0.67			0.38			0.57			0.42			No Data	0.42		0.25	No Data	0.50				0.25

D | NJDOT ATDE Count Summary

New Jersey Department of Transportation

Short-term Hourly Traffic Volume for 06/24/2019 to 06/26/2019

Site names: c18463,BENNETTS LN-0.86,18081409__
 County: SOMERSET
 Funct Class: Urban Minor Arterial
 Location: BET 27 & SHANNON CT

Seasonal Factor Grp: rg3_4U
 Daily Factor Grp: rg3_4U
 Axle Factor Grp: rg3_4U
 Growth Factor Grp: rg3_4U

	Sun, Jun 23, 2019			Mon, Jun 24, 2019			Tue, Jun 25, 2019			Wed, Jun 26, 2019			Thu, Jun 27, 2019			Fri, Jun 28, 2019			Sat, Jun 29, 2019		
	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S
00:00							47	20	27	65	29	36									
01:00							32	13	19	33	10	23									
02:00							9	5	4	19	6	13									
03:00							29	17	12	33	17	16									
04:00							59	30	29	58	34	24									
05:00							134	83	51	135	78	57									
06:00							363	240	123	380	239	141									
07:00							661	427	234	664	429	235									
08:00							661	447	214	665	420	245									
09:00							488	255	233	475	256	219									
10:00							346	197	149	408	222	186									
11:00							365	182	183	376	197	179									
12:00				448	213	235	386	193	193												
13:00				438	220	218	468	213	255												
14:00				441	208	233	500	236	264												
15:00				549	227	322	531	204	327												
16:00				635	247	388	678	246	432												
17:00				658	229	429	708	261	447												
18:00				588	211	377	624	235	389												
19:00				405	165	240	410	164	246												
20:00				317	144	173	309	123	186												
21:00				231	107	124	299	139	160												
22:00				156	68	88	177	90	87												
23:00				117	39	78	133	49	84												
Total				4,983	2,078	2,905	8,417	4,069	4,348	3,311	1,937	1,374									
AM Peak Vol				0	0	0	675	460	256	685	434	260									
AM Peak Fct							.922	.885	.865	.957	.897	.867									
AM Peak Hr				0: 00	0: 00	0: 00	7: 45	7: 45	7: 15	7: 45	7: 45	7: 15									
PM Peak Vol				676	262	447	710	261	460	0	0	0									
PM Peak Fct				.904	.862	.84	.949	.906	.92												
PM Peak Hr				16: 30	15: 15	16: 30	16: 45	17: 00	16: 45	0: 00	0: 00	0: 00									
Seasonal Fct				.945	.945	.945	.945	.945	.945	.945	.945	.945									
Daily Fct				.981	.981	.981	.943	.943	.943	.945	.945	.945									
Axle Fct				.488	.488	.488	.488	.488	.488	.488	.488	.488									
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000									



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ATDE Project No. ANJ21092

Table 1
Tuesday, September 21, 2021 ATR Traffic Counts
Bennetts Lane between NJ Route 27 & Clyde Road

Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total
12:00 AM	8	5	41	8:00 AM	74	73	644	4:00 PM	120	70	672
12:15 AM	8	5	39	8:15 AM	70	102	626	4:15 PM	97	65	676
12:30 AM	8	4	30	8:30 AM	70	86	561	4:30 PM	104	61	710
12:45 AM	3	0	22	8:45 AM	83	86	523	4:45 PM	96	59	715
1:00 AM	6	5	22	9:00 AM	54	75	458	5:00 PM	120	74	728
1:15 AM	2	2	15	9:15 AM	51	56	430	5:15 PM	112	84	691
1:30 AM	2	2	16	9:30 AM	56	62	410	5:30 PM	104	66	631
1:45 AM	2	1	15	9:45 AM	48	56	395	5:45 PM	101	67	602
2:00 AM	2	2	17	10:00 AM	41	60	382	6:00 PM	99	58	554
2:15 AM	4	1	23	10:15 AM	39	48	393	6:15 PM	78	58	512
2:30 AM	0	3	21	10:30 AM	52	51	389	6:30 PM	77	64	477
2:45 AM	5	0	26	10:45 AM	53	38	383	6:45 PM	79	41	430
3:00 AM	4	6	34	11:00 AM	54	58	406	7:00 PM	64	51	408
3:15 AM	1	2	38	11:15 AM	31	52	398	7:15 PM	54	47	386
3:30 AM	4	4	43	11:30 AM	49	48	433	7:30 PM	56	38	380
3:45 AM	5	8	54	11:45 AM	56	58	467	7:45 PM	53	45	353
4:00 AM	5	9	64	12:00 PM	42	62	475	8:00 PM	62	31	304
4:15 AM	1	7	76	12:15 PM	62	56	452	8:15 PM	54	41	249
4:30 AM	6	13	92	12:30 PM	60	71	459	8:30 PM	29	38	200
4:45 AM	6	17	123	12:45 PM	55	67	442	8:45 PM	28	21	191
5:00 AM	11	15	155	1:00 PM	38	43	430	9:00 PM	18	20	180
5:15 AM	5	19	189	1:15 PM	54	71	479	9:15 PM	30	16	178
5:30 AM	22	28	240	1:30 PM	47	67	484	9:30 PM	26	32	178
5:45 AM	21	34	303	1:45 PM	49	61	522	9:45 PM	26	12	170
6:00 AM	29	31	389	2:00 PM	55	75	546	10:00 PM	15	21	162
6:15 AM	30	45	460	2:15 PM	60	70	577	10:15 PM	23	23	162
6:30 AM	23	90	543	2:30 PM	78	74	611	10:30 PM	19	31	145
6:45 AM	41	100	599	2:45 PM	78	56	638	10:45 PM	14	16	125
7:00 AM	40	91	642	3:00 PM	98	63	678	11:00 PM	26	10	120
7:15 AM	60	98	658	3:15 PM	95	69	707	11:15 PM	20	9	Daily Total
7:30 AM	54	115	672	3:30 PM	108	71	705	11:30 PM	23	7	
7:45 AM	87	97	659	3:45 PM	100	74	691	11:45 PM	17	8	
											8,511



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Table 2
Wednesday, September 22, 2021 ATR Traffic Counts
Bennetts Lane between NJ Route 27 & Clyde Road

Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total
12:00 AM	9	3	41	8:00 AM	78	94	666	4:00 PM	104	76	701
12:15 AM	4	3	31	8:15 AM	71	90	620	4:15 PM	94	69	696
12:30 AM	4	3	29	8:30 AM	72	94	551	4:30 PM	94	66	733
12:45 AM	7	8	25	8:45 AM	68	99	499	4:45 PM	116	82	752
1:00 AM	1	1	11	9:00 AM	56	70	436	5:00 PM	117	58	703
1:15 AM	1	4	10	9:15 AM	42	50	417	5:15 PM	128	72	690
1:30 AM	3	0	9	9:30 AM	58	56	436	5:30 PM	116	63	645
1:45 AM	0	1	12	9:45 AM	50	54	423	5:45 PM	96	53	614
2:00 AM	0	1	15	10:00 AM	44	63	416	6:00 PM	98	64	602
2:15 AM	3	1	19	10:15 AM	50	61	406	6:15 PM	92	63	556
2:30 AM	3	3	20	10:30 AM	48	53	393	6:30 PM	78	70	513
2:45 AM	4	0	22	10:45 AM	44	53	380	6:45 PM	73	64	465
3:00 AM	2	3	33	11:00 AM	46	51	373	7:00 PM	58	58	423
3:15 AM	0	5	36	11:15 AM	48	50	379	7:15 PM	67	45	379
3:30 AM	2	6	44	11:30 AM	48	40	381	7:30 PM	58	42	334
3:45 AM	6	9	50	11:45 AM	42	48	383	7:45 PM	45	50	305
4:00 AM	4	4	55	12:00 PM	59	44	395	8:00 PM	43	29	259
4:15 AM	5	8	68	12:15 PM	54	46	394	8:15 PM	41	26	234
4:30 AM	3	11	86	12:30 PM	35	55	393	8:30 PM	28	43	205
4:45 AM	5	15	121	12:45 PM	52	50	421	8:45 PM	29	20	179
5:00 AM	6	15	154	1:00 PM	62	40	439	9:00 PM	23	24	164
5:15 AM	12	19	188	1:15 PM	54	45	454	9:15 PM	22	16	150
5:30 AM	16	33	233	1:30 PM	64	54	482	9:30 PM	26	19	151
5:45 AM	22	31	296	1:45 PM	56	64	546	9:45 PM	18	16	136
6:00 AM	24	31	378	2:00 PM	54	63	582	10:00 PM	17	16	137
6:15 AM	30	46	451	2:15 PM	56	71	627	10:15 PM	17	22	144
6:30 AM	28	84	527	2:30 PM	89	93	664	10:30 PM	15	15	146
6:45 AM	42	93	577	2:45 PM	84	72	642	10:45 PM	14	21	139
7:00 AM	36	92	625	3:00 PM	95	67	663	11:00 PM	29	11	124
7:15 AM	58	94	669	3:15 PM	87	77	681	11:15 PM	31	10	Daily Total
7:30 AM	60	102	678	3:30 PM	86	74	680	11:30 PM	18	5	
7:45 AM	68	115	682	3:45 PM	98	79	680	11:45 PM	13	7	
											8,395



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Table 3
Thursday, September 23, 2021 ATR Traffic Counts
Bennetts Lane between NJ Route 27 & Clyde Road

Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total
12:00 AM	12	12	51	8:00 AM	60	68	588	4:00 PM	111	63	665
12:15 AM	7	4	33	8:15 AM	57	102	609	4:15 PM	86	85	639
12:30 AM	4	1	29	8:30 AM	64	88	540	4:30 PM	117	48	630
12:45 AM	9	2	26	8:45 AM	61	88	492	4:45 PM	94	61	596
1:00 AM	2	4	22	9:00 AM	62	87	451	5:00 PM	90	58	567
1:15 AM	3	4	17	9:15 AM	36	54	409	5:15 PM	93	69	532
1:30 AM	1	1	10	9:30 AM	50	54	412	5:30 PM	63	68	470
1:45 AM	4	3	13	9:45 AM	47	61	393	5:45 PM	70	56	424
2:00 AM	1	0	10	10:00 AM	54	53	391	6:00 PM	74	39	382
2:15 AM	0	0	13	10:15 AM	39	54	365	6:15 PM	55	45	352
2:30 AM	1	4	16	10:30 AM	40	45	383	6:30 PM	45	40	318
2:45 AM	3	1	20	10:45 AM	46	60	377	6:45 PM	38	46	295
3:00 AM	0	4	32	11:00 AM	38	43	363	7:00 PM	43	40	282
3:15 AM	1	2	37	11:15 AM	55	56	403	7:15 PM	37	29	251
3:30 AM	4	5	42	11:30 AM	31	48	390	7:30 PM	31	31	224
3:45 AM	6	10	47	11:45 AM	48	44	417	7:45 PM	43	28	208
4:00 AM	3	6	55	12:00 PM	68	53	456	8:00 PM	28	24	194
4:15 AM	1	7	70	12:15 PM	48	50	458	8:15 PM	14	25	187
4:30 AM	4	10	92	12:30 PM	48	58	469	8:30 PM	25	21	183
4:45 AM	8	16	116	12:45 PM	83	48	483	8:45 PM	31	26	169
5:00 AM	7	17	141	1:00 PM	52	71	481	9:00 PM	18	27	146
5:15 AM	10	20	177	1:15 PM	55	54	485	9:15 PM	19	16	118
5:30 AM	12	26	223	1:30 PM	57	63	523	9:30 PM	15	17	122
5:45 AM	21	28	303	1:45 PM	65	64	562	9:45 PM	21	13	137
6:00 AM	18	42	386	2:00 PM	47	80	598	10:00 PM	7	10	144
6:15 AM	27	49	471	2:15 PM	67	80	637	10:15 PM	24	15	154
6:30 AM	32	86	563	2:30 PM	88	71	623	10:30 PM	23	24	138
6:45 AM	38	94	611	2:45 PM	95	70	648	10:45 PM	25	16	106
7:00 AM	44	101	652	3:00 PM	99	67	634	11:00 PM	17	10	85
7:15 AM	62	106	635	3:15 PM	68	65	642	11:15 PM	15	8	Daily Total
7:30 AM	48	118	626	3:30 PM	104	80	680	11:30 PM	9	6	
7:45 AM	73	100	612	3:45 PM	82	69	661	11:45 PM	6	14	7,776



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Table 4
Average Weekday ATR Traffic Counts
Bennetts Lane between NJ Route 27 & Clyde Road

Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total	Start Time	SB	NB	Hour Total
12:00 AM	10	7	44	8:00 AM	71	78	633	4:00 PM	112	70	679
12:15 AM	6	4	33	8:15 AM	66	98	618	4:15 PM	92	73	669
12:30 AM	5	3	28	8:30 AM	69	89	550	4:30 PM	105	58	690
12:45 AM	6	3	23	8:45 AM	71	91	504	4:45 PM	102	67	687
1:00 AM	3	3	18	9:00 AM	57	77	447	5:00 PM	109	63	666
1:15 AM	2	3	14	9:15 AM	43	53	418	5:15 PM	111	75	638
1:30 AM	2	1	12	9:30 AM	55	57	419	5:30 PM	94	66	582
1:45 AM	2	2	13	9:45 AM	48	57	404	5:45 PM	89	59	547
2:00 AM	1	1	13	10:00 AM	46	59	397	6:00 PM	90	54	512
2:15 AM	2	1	17	10:15 AM	43	54	389	6:15 PM	75	55	473
2:30 AM	1	3	18	10:30 AM	47	50	390	6:30 PM	67	58	436
2:45 AM	4	0	22	10:45 AM	48	50	381	6:45 PM	63	50	396
3:00 AM	2	4	33	11:00 AM	46	51	382	7:00 PM	55	50	371
3:15 AM	1	3	37	11:15 AM	45	53	394	7:15 PM	53	40	338
3:30 AM	3	5	42	11:30 AM	43	45	402	7:30 PM	48	37	312
3:45 AM	6	9	49	11:45 AM	49	50	423	7:45 PM	47	41	288
4:00 AM	4	6	56	12:00 PM	56	53	442	8:00 PM	44	28	251
4:15 AM	2	7	70	12:15 PM	55	51	435	8:15 PM	36	31	223
4:30 AM	4	11	89	12:30 PM	48	61	440	8:30 PM	27	34	196
4:45 AM	6	16	120	12:45 PM	63	55	448	8:45 PM	29	22	180
5:00 AM	8	16	150	1:00 PM	51	51	450	9:00 PM	20	24	165
5:15 AM	9	19	185	1:15 PM	54	57	473	9:15 PM	24	16	150
5:30 AM	17	29	233	1:30 PM	56	61	497	9:30 PM	22	23	151
5:45 AM	21	31	302	1:45 PM	57	63	544	9:45 PM	22	14	148
6:00 AM	24	35	386	2:00 PM	52	73	576	10:00 PM	13	16	148
6:15 AM	29	47	462	2:15 PM	61	74	614	10:15 PM	21	20	153
6:30 AM	28	87	545	2:30 PM	85	79	632	10:30 PM	19	23	143
6:45 AM	40	96	596	2:45 PM	86	66	642	10:45 PM	18	18	124
7:00 AM	40	95	640	3:00 PM	97	66	657	11:00 PM	24	10	110
7:15 AM	60	99	654	3:15 PM	83	70	676	11:15 PM	22	9	Daily Total
7:30 AM	54	112	659	3:30 PM	99	75	688	11:30 PM	17	6	
7:45 AM	76	104	651	3:45 PM	93	74	677	11:45 PM	12	10	8,226

F | ITE Trip Generation Printouts

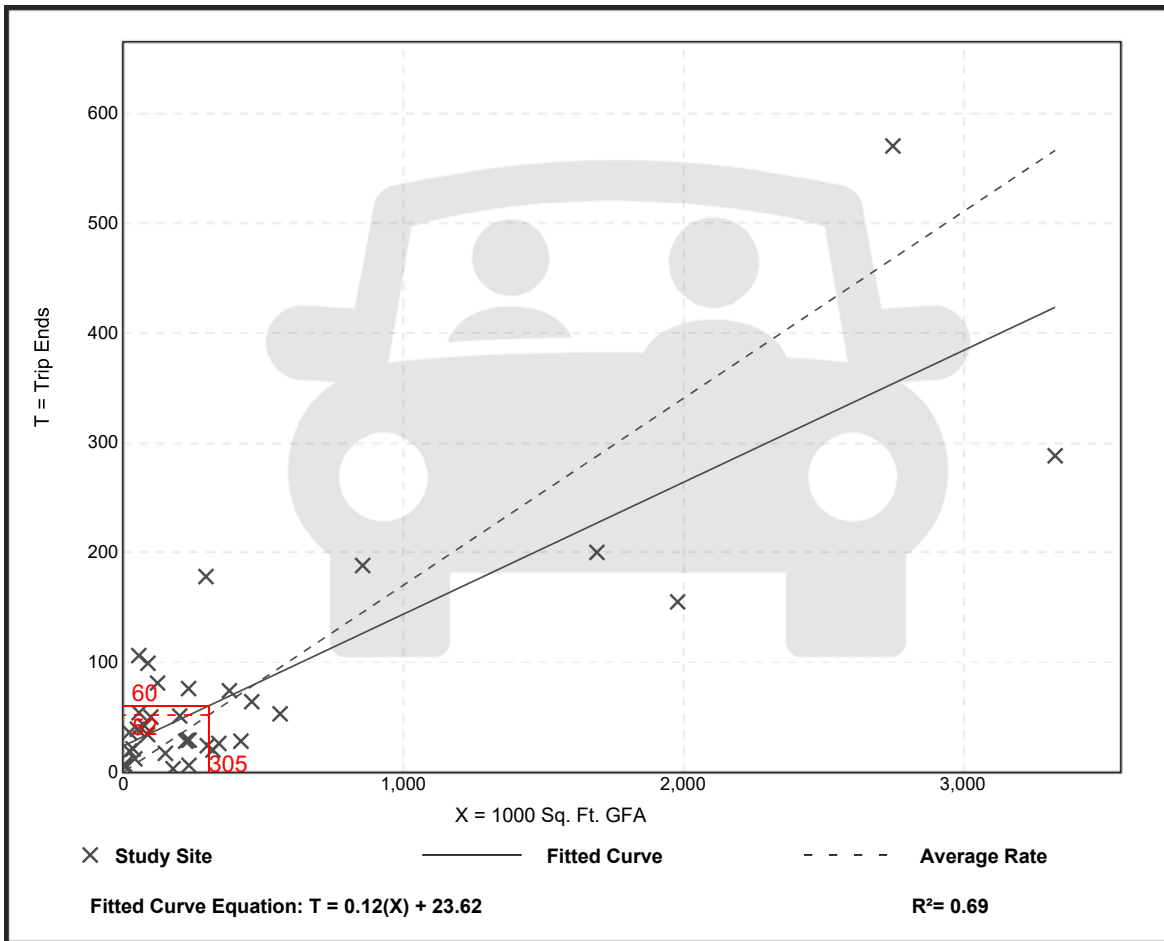
Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 36
 Avg. 1000 Sq. Ft. GFA: 448
 Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.19

Data Plot and Equation



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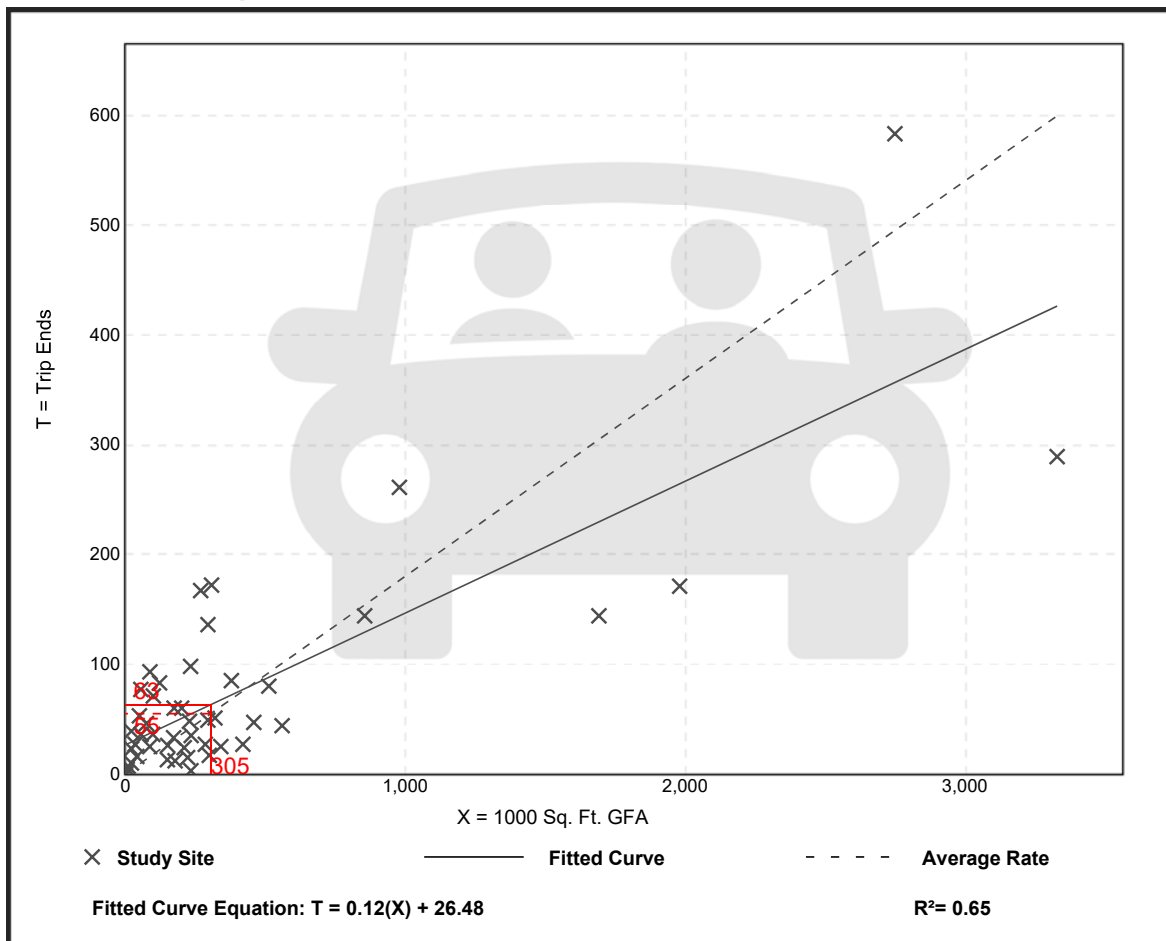
Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 49
 Avg. 1000 Sq. Ft. GFA: 400
 Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

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

Data Plot and Equation



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G | Level of Service Descriptions

Table 1
Level of Service and Average Delay
For Unsignalized Intersections

Level of Service	Average Delay (seconds/vehicle)
A	Up to 10 seconds
B	More than 10 seconds; up to 15 seconds
C	More than 15 seconds; up to 25 seconds
D	More than 25 seconds; up to 35 seconds
E	More than 35 seconds; up to 50 seconds
F	More than 50 seconds

Table 2
Level of Service and Average Delay
For Signalized Intersections

Level of Service	Average Delay (seconds/vehicle)	Description
A	Up to 10 seconds	Very short delay, good progression; most vehicles do not stop at intersection.
B	More than 10 seconds Up to 20 seconds	Generally good signal progression and/or short cycle length; more vehicles stop at intersection than Level of Service A.
C	More than 20 seconds Up to 35 seconds	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection.
D	More than 35 seconds Up to 55 seconds	Congestion becomes noticeable; individual cycle failures; longer delays from unfavorable progression, long cycle length; or high volume/capacity ratios; most vehicles stop at intersection.
E	More than 55 seconds Up to 80 seconds	Usually considered limit of acceptable delay indicative of poor progression long cycle length, or high volume/capacity ratio; frequent individual cycle failures.
F	More than 80 seconds	Could be considered excessive delay in some areas, frequently an indication of over-saturation (i.e., arrival flows exceed capacity), or very long cycle lengths with minimal side street green time. Capacity is not necessarily exceeded under this Level of Service.

Reference: *Highway Capacity Manual*, (HCM2010), 2010, Transportation Research Board, Washington, D.C.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	236	326	671	454	57
Future Volume (vph)	59	236	326	671	454	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-1%	1%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.892				0.985	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1524	0	1702	1775	1724	0
Flt Permitted	0.990		0.345			
Satd. Flow (perm)	1524	0	618	1775	1724	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	181				9	
Link Speed (mph)	40			40	40	
Link Distance (ft)	7003			362	291	
Travel Time (s)	119.4			6.2	5.0	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.93	0.93
Heavy Vehicles (%)	4%	5%	3%	4%	9%	0%
Adj. Flow (vph)	63	254	354	729	488	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	317	0	354	729	549	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	67.0	51.0	
Minimum Split (s)	13.0		10.0	74.0	58.0	
Total Split (s)	26.0		16.0	74.0	58.0	
Total Split (%)	26.0%		16.0%	74.0%	58.0%	
Yellow Time (s)	4.0		3.0	5.0	5.0	
All-Red Time (s)	2.0		0.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		3.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	Max	Max	
Act Effect Green (s)	14.2		71.2	67.2	53.3	
Actuated g/C Ratio	0.15		0.75	0.71	0.56	
v/c Ratio	0.83		0.60	0.58	0.56	
Control Delay	35.2		8.8	9.8	17.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	35.2		8.8	9.8	17.2	
LOS	D		A	A	B	
Approach Delay	35.2			9.4	17.2	

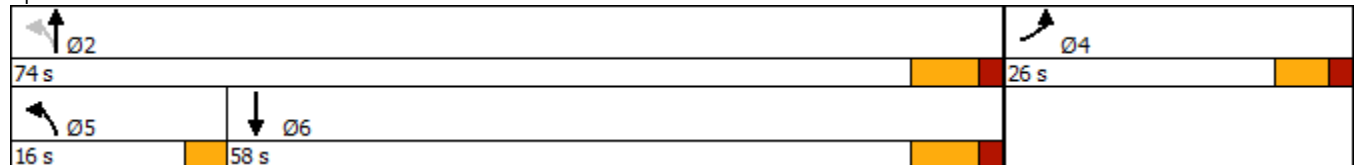


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	D		A		B	
Queue Length 50th (ft)	79		55	188	200	
Queue Length 95th (ft)	180		109	339	349	
Internal Link Dist (ft)	6923			282	211	
Turn Bay Length (ft)			75			
Base Capacity (vph)	466		615	1263	976	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.68		0.58	0.58	0.56	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	94.4
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	15.8
Intersection LOS:	B
Intersection Capacity Utilization:	92.5%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 1: NJ Route 27 & Bennetts Lane



ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

No-Build
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	597	81	71	463	146	122	275	42	262	367	95
Future Volume (vph)	127	597	81	71	463	146	122	275	42	262	367	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	14	10	12	11	11	11	14
Grade (%)		1%			-1%			0%				-1%
Storage Length (ft)	145		0	125		245	185		0	200		200
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	35			55			25			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1702	3251	0	1552	3160	1505	1620	1827	1459	1654	1792	1697
Flt Permitted	0.389			0.237			0.179			0.356		
Satd. Flow (perm)	697	3251	0	387	3160	1505	305	1827	1459	620	1792	1697
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		18				166			139			
Link Speed (mph)		45			45			40				40
Link Distance (ft)		878			470			881				408
Travel Time (s)		13.3			7.1			15.0				7.0
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.88	0.88	0.88	0.87	0.87	0.87
Heavy Vehicles (%)	2%	5%	4%	13%	11%	15%	4%	4%	7%	6%	3%	2%
Adj. Flow (vph)	157	737	100	81	526	166	139	313	48	301	422	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	837	0	81	526	166	139	313	48	301	422	109
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4		3	8	5
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	33.0		7.0	33.0	33.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	13.0	13.0	11.0	13.0	11.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	11.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	12.2%
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
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)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Act Effect Green (s)	43.3	35.3		42.5	33.0	33.0	31.4	22.4	22.4	31.4	22.4	35.4
Actuated g/C Ratio	0.48	0.39		0.47	0.37	0.37	0.35	0.25	0.25	0.35	0.25	0.39
v/c Ratio	0.38	0.65		0.30	0.45	0.25	0.67	0.69	0.10	1.01	0.95	0.16
Control Delay	14.8	25.7		14.4	23.3	4.4	36.1	39.4	0.4	83.4	65.8	18.4
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	14.8	25.7		14.4	23.3	4.4	36.1	39.4	0.4	83.4	65.8	18.4
LOS	B	C		B	C	A	D	D	A	F	E	B
Approach Delay		23.9			18.3			34.8			66.0	

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

No-Build
 AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B			C			E	
Queue Length 50th (ft)	46	207		23	118	0	51	161	0	-125	236	39
Queue Length 95th (ft)	71	236		45	160	38	#98	245	0	#277	#390	72
Internal Link Dist (ft)		798			390			801			328	
Turn Bay Length (ft)	145			125			245			200		200
Base Capacity (vph)	414	1285		273	1160		208	467	476	297	458	668
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.65		0.30	0.45	0.25	0.67	0.67	0.10	1.01	0.92	0.16

Intersection Summary

Area Type: Other
 Cycle Length: 90.5
 Actuated Cycle Length: 89.9
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 35.6
 Intersection LOS: D
 Intersection Capacity Utilization 80.6%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ 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: 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Ø1	Ø2	Ø3	Ø4
11 s	39.5 s	11 s	29 s
Ø5	Ø6	Ø7	Ø8
11 s	39.5 s	11 s	29 s

Intersection

Int Delay, s/veh 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	4	13	388	293	65
Future Vol, veh/h	22	4	13	388	293	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	1	1	-
Peak Hour Factor	65	65	97	97	91	91
Heavy Vehicles, %	45	0	0	3	3	23
Mvmt Flow	34	6	13	400	322	71

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	784	358	393	0	-	0
Stage 1	358	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	7.25	6.4	4.1	-	-	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.905	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	282	677	1177	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	279	677	1177	-	-	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	550	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1177	-	307	-	-
HCM Lane V/C Ratio	0.011	-	0.13	-	-
HCM Control Delay (s)	8.1	-	18.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	10	40	6	2	4
Future Vol, veh/h	0	10	40	6	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	2	-	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	83	100	0
Mvmt Flow	0	11	43	7	2	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	50	0	0	58	47
Stage 1	-	-	-	47	-
Stage 2	-	-	-	11	-
Critical Hdwy	4.1	-	-	7.2	6.1
Critical Hdwy Stg 1	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	6.2	-
Follow-up Hdwy	2.2	-	-	4.4	3.3
Pot Cap-1 Maneuver	1570	-	-	755	1029
Stage 1	-	-	-	776	-
Stage 2	-	-	-	808	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1570	-	-	755	1029
Mov Cap-2 Maneuver	-	-	-	755	-
Stage 1	-	-	-	776	-
Stage 2	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1570	-	-	-	918
HCM Lane V/C Ratio	-	-	-	-	0.007
HCM Control Delay (s)	0	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection

Int Delay, s/veh 0.5

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	7	35	9	3	0
Future Vol, veh/h	0	7	35	9	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	1	-	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	38	10	3	0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	48	0	-	0	51	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	8	-
Critical Hdwy	4.1	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1572	-	-	-	968	1036
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1572	-	-	-	968	1036
Mov Cap-2 Maneuver	-	-	-	-	968	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	1021	-

Approach EB WB SB

HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1572	-	-	-	968
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	0	17	3	15	0	1	0	4	0	1
Future Vol, veh/h	1	3	0	17	3	15	0	1	0	4	0	1
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	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-1	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	3	0	18	3	16	0	1	0	4	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	19	0	0	3	0	0	53	60	3	53	52	11
Stage 1	-	-	-	-	-	-	5	5	-	47	47	-
Stage 2	-	-	-	-	-	-	48	55	-	6	5	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.9	6.3	6.1	6.5	5.9	5.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.3	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.3	-	5.5	4.9	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1611	-	-	1632	-	-	953	838	1087	959	851	1077
Stage 1	-	-	-	-	-	-	1023	896	-	979	866	-
Stage 2	-	-	-	-	-	-	973	856	-	1022	896	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1611	-	-	1632	-	-	943	828	1087	949	841	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	943	828	-	949	841	-
Stage 1	-	-	-	-	-	-	1022	895	-	978	856	-
Stage 2	-	-	-	-	-	-	961	847	-	1020	895	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.8			3.5			9.4			8.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	828	1611	-	-	1632	-	-	972
HCM Lane V/C Ratio	0.001	0.001	-	-	0.011	-	-	0.006
HCM Control Delay (s)	9.4	7.2	0	-	7.2	0	-	8.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	106	343	219	606	695	45
Future Volume (vph)	106	343	219	606	695	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-1%	1%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897				0.992	
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1579	0	1702	1775	1852	0
Flt Permitted	0.988		0.114			
Satd. Flow (perm)	1579	0	204	1775	1852	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	154				5	
Link Speed (mph)	40			40	40	
Link Distance (ft)	7003			362	291	
Travel Time (s)	119.4			6.2	5.0	
Peak Hour Factor	0.88	0.88	0.86	0.86	0.89	0.89
Heavy Vehicles (%)	0%	2%	3%	4%	1%	5%
Adj. Flow (vph)	120	390	255	705	781	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	510	0	255	705	832	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	63.0	52.0	
Minimum Split (s)	13.0		10.0	70.0	59.0	
Total Split (s)	30.0		11.0	70.0	59.0	
Total Split (%)	30.0%		11.0%	70.0%	59.0%	
Yellow Time (s)	4.0		3.0	5.0	5.0	
All-Red Time (s)	2.0		0.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		3.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	Max	Max	
Act Effect Green (s)	24.0		67.0	63.0	52.0	
Actuated g/C Ratio	0.24		0.67	0.63	0.52	
v/c Ratio	1.03		1.00	0.63	0.86	
Control Delay	75.5		73.8	14.6	31.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	75.5		73.8	14.6	31.9	
LOS	E		E	B	C	
Approach Delay	75.5			30.3	31.9	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	E			C	C	
Queue Length 50th (ft)	~269		81	252	438	
Queue Length 95th (ft)	#452		#155	338	#681	
Internal Link Dist (ft)	6923			282	211	
Turn Bay Length (ft)			75			
Base Capacity (vph)	496		256	1118	965	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.03		1.00	0.63	0.86	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Natural Cycle: 95
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 40.9
 Intersection LOS: D
 Intersection Capacity Utilization 96.6%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ 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: 1: NJ Route 27 & Bennetts Lane

Ø2 70 s		Ø4 30 s	
Ø5 11 s	Ø6 59 s		

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

No-Build
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	525	84	37	740	303	131	263	57	161	247	37
Future Volume (vph)	87	525	84	37	740	303	131	263	57	161	247	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	14	10	12	11	11	11	14
Grade (%)		1%			-1%			0%				-1%
Storage Length (ft)	145		0	125		245	185		0	200		200
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	35			55			25			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1510	3370	0	1702	3507	1714	1668	1810	1531	1719	1792	1603
Flt Permitted	0.256			0.357			0.442			0.295		
Satd. Flow (perm)	407	3370	0	640	3507	1714	776	1810	1531	534	1792	1603
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		22				319			139			
Link Speed (mph)		45			45			40				40
Link Distance (ft)		878			470			881				408
Travel Time (s)		13.3			7.1			15.0				7.0
Peak Hour Factor	0.93	0.93	0.93	0.95	0.95	0.95	0.81	0.81	0.81	0.98	0.98	0.98
Heavy Vehicles (%)	15%	1%	0%	3%	0%	1%	1%	5%	2%	2%	3%	8%
Adj. Flow (vph)	94	565	90	39	779	319	162	325	70	164	252	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	655	0	39	779	319	162	325	70	164	252	38
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4		3	8	5
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	33.0		7.0	33.0	33.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	13.0	13.0	11.0	13.0	11.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	11.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	12.2%
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
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)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Act Effect Green (s)	42.1	35.6		41.3	33.4	33.4	27.5	18.4	18.4	27.5	18.4	31.6
Actuated g/C Ratio	0.50	0.42		0.49	0.40	0.40	0.33	0.22	0.22	0.33	0.22	0.38
v/c Ratio	0.32	0.45		0.10	0.56	0.37	0.49	0.82	0.16	0.60	0.64	0.06
Control Delay	14.0	19.7		11.3	23.0	3.8	24.7	48.9	0.8	29.1	38.2	17.5
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	14.0	19.7		11.3	23.0	3.8	24.7	48.9	0.8	29.1	38.2	17.5
LOS	B	B		B	C	A	C	D	A	C	D	B
Approach Delay		19.0			17.2			35.8			33.2	

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

No-Build
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			B			D			C	
Queue Length 50th (ft)	24	138		10	177	0	60	169	0	61	125	13
Queue Length 95th (ft)	53	201		26	250	53	93	230	0	107	202	33
Internal Link Dist (ft)		798			390			801			328	
Turn Bay Length (ft)	145			125		245	185			200		200
Base Capacity (vph)	296	1440		403	1393	873	329	501	524	275	496	602
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	0.32	0.45		0.10	0.56	0.37	0.49	0.65	0.13	0.60	0.51	0.06

Intersection Summary

Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	84
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	23.7
Intersection LOS:	C
Intersection Capacity Utilization	73.2%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Ø1	Ø2	Ø3	Ø4
11 s	39.5 s	11 s	29 s
Ø5	Ø6	Ø7	Ø8
11 s	39.5 s	11 s	29 s

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	13	4	303	515	11
Future Vol, veh/h	42	13	4	303	515	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	1	1	-
Peak Hour Factor	65	65	92	92	89	89
Heavy Vehicles, %	7	0	0	2	3	36
Mvmt Flow	65	20	4	329	579	12

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	922	585	591	0	0
Stage 1	585	-	-	-	-
Stage 2	337	-	-	-	-
Critical Hdwy	6.87	6.4	4.1	-	-
Critical Hdwy Stg 1	5.87	-	-	-	-
Critical Hdwy Stg 2	5.87	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-
Pot Cap-1 Maneuver	265	498	995	-	-
Stage 1	513	-	-	-	-
Stage 2	686	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	264	498	995	-	-
Mov Cap-2 Maneuver	264	-	-	-	-
Stage 1	511	-	-	-	-
Stage 2	686	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.9	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	995	-	297	-	-
HCM Lane V/C Ratio	0.004	-	0.285	-	-
HCM Control Delay (s)	8.6	-	21.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Intersection

Int Delay, s/veh 0.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	44	6	1	2	0
Future Vol, veh/h	0	44	6	1	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	2	-	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	100	100	0
Mvmt Flow	0	48	7	1	2	0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	8	0	-	0	56	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	4.1	-	-	-	7.2	6.1
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.2	-	-	-	4.4	3.3
Pot Cap-1 Maneuver	1625	-	-	-	757	1080
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	776	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1625	-	-	-	757	1080
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	776	-

Approach EB WB SB

HCM Control Delay, s 0 0 9.8
HCM LOS A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1625	-	-	-	757
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	34	5	1	10	0
Future Vol, veh/h	0	34	5	1	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	1	-	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	100	100	0
Mvmt Flow	0	37	5	1	11	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	6	0	-	0	43
Stage 1	-	-	-	-	6
Stage 2	-	-	-	-	37
Critical Hdwy	4.1	-	-	-	7
Critical Hdwy Stg 1	-	-	-	-	6
Critical Hdwy Stg 2	-	-	-	-	6
Follow-up Hdwy	2.2	-	-	-	4.4
Pot Cap-1 Maneuver	1628	-	-	-	773
Stage 1	-	-	-	-	813
Stage 2	-	-	-	-	787
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1628	-	-	-	773
Mov Cap-2 Maneuver	-	-	-	-	773
Stage 1	-	-	-	-	813
Stage 2	-	-	-	-	787

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1628	-	-	-	773
HCM Lane V/C Ratio	-	-	-	-	0.014
HCM Control Delay (s)	0	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	0	0	0	5	0	1	15	16	0	0
Future Vol, veh/h	0	3	0	0	0	5	0	1	15	16	0	0
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	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-1	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	40	0	0	0	0	0	0
Mvmt Flow	0	3	0	0	0	5	0	1	16	17	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5	0	0	3	0	0	6	8	3	15	6	3
Stage 1	-	-	-	-	-	-	3	3	-	3	3	-
Stage 2	-	-	-	-	-	-	3	5	-	12	3	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.9	6.3	6.1	6.5	5.9	5.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.3	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.3	-	5.5	4.9	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1630	-	-	1632	-	-	1020	891	1087	1008	894	1087
Stage 1	-	-	-	-	-	-	1025	898	-	1025	898	-
Stage 2	-	-	-	-	-	-	1025	896	-	1016	898	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1630	-	-	1632	-	-	1020	891	1087	992	894	1087
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	891	-	992	894	-
Stage 1	-	-	-	-	-	-	1025	898	-	1025	898	-
Stage 2	-	-	-	-	-	-	1025	896	-	1000	898	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.4			8.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1072	1630	-	-	1632	-	-	992
HCM Lane V/C Ratio	0.016	-	-	-	-	-	-	0.018
HCM Control Delay (s)	8.4	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	238	334	671	454	59
Future Volume (vph)	60	238	334	671	454	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-1%	1%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.892				0.985	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1524	0	1702	1775	1725	0
Flt Permitted	0.990		0.341			
Satd. Flow (perm)	1524	0	611	1775	1725	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	177				9	
Link Speed (mph)	40			40	40	
Link Distance (ft)	7003			362	291	
Travel Time (s)	119.4			6.2	5.0	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.93	0.93
Heavy Vehicles (%)	4%	5%	3%	4%	9%	0%
Adj. Flow (vph)	65	256	363	729	488	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	0	363	729	551	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	67.0	51.0	
Minimum Split (s)	13.0		10.0	74.0	58.0	
Total Split (s)	26.0		16.0	74.0	58.0	
Total Split (%)	26.0%		16.0%	74.0%	58.0%	
Yellow Time (s)	4.0		3.0	5.0	5.0	
All-Red Time (s)	2.0		0.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		3.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	Max	Max	
Act Effect Green (s)	14.6		71.2	67.2	53.1	
Actuated g/C Ratio	0.15		0.75	0.71	0.56	
v/c Ratio	0.84		0.62	0.58	0.57	
Control Delay	36.4		9.3	10.0	17.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	36.4		9.3	10.0	17.6	
LOS	D		A	A	B	
Approach Delay	36.4			9.8	17.6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	D		A		B	
Queue Length 50th (ft)	84		60	195	208	
Queue Length 95th (ft)	#189		112	339	351	
Internal Link Dist (ft)	6923			282	211	
Turn Bay Length (ft)			75			
Base Capacity (vph)	461		608	1257	970	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.70		0.60	0.58	0.57	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 94.8
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 16.3
 Intersection LOS: B
 Intersection Capacity Utilization 93.2%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: NJ Route 27 & Bennetts Lane

Ø2 74 s	Ø4 26 s
Ø5 16 s	Ø6 58 s

ANJ21092 L'Oreal Franklin
2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	597	88	76	463	146	124	283	44	262	393	95
Future Volume (vph)	127	597	88	76	463	146	124	283	44	262	393	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	14	10	12	11	11	11	14
Grade (%)		1%			-1%			0%				-1%
Storage Length (ft)	145		0	125		245	185		0	200		200
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	35			55			25			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1702	3248	0	1552	3160	1505	1620	1827	1459	1654	1792	1697
Flt Permitted	0.387			0.230			0.174			0.347		
Satd. Flow (perm)	693	3248	0	376	3160	1505	297	1827	1459	604	1792	1697
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		20				166			139			
Link Speed (mph)		45			45			40				40
Link Distance (ft)		878			470			881				408
Travel Time (s)		13.3			7.1			15.0				7.0
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.88	0.88	0.88	0.87	0.87	0.87
Heavy Vehicles (%)	2%	5%	4%	13%	11%	15%	4%	4%	7%	6%	3%	2%
Adj. Flow (vph)	157	737	109	86	526	166	141	322	50	301	452	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	846	0	86	526	166	141	322	50	301	452	109
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4		3	8	5
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	33.0		7.0	33.0	33.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	13.0	13.0	11.0	13.0	11.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	11.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	12.2%
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
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)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Act Effect Green (s)	43.3	35.2		42.5	33.0	33.0	32.0	23.0	23.0	32.0	23.0	36.0
Actuated g/C Ratio	0.48	0.39		0.47	0.36	0.36	0.35	0.25	0.25	0.35	0.25	0.40
v/c Ratio	0.38	0.66		0.32	0.46	0.25	0.68	0.69	0.11	1.02	0.99	0.16
Control Delay	15.0	26.0		14.9	23.5	4.4	37.3	39.6	0.5	86.2	76.3	18.4
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	15.0	26.0		14.9	23.5	4.4	37.3	39.6	0.5	86.2	76.3	18.4
LOS	B	C		B	C	A	D	D	A	F	E	B
Approach Delay		24.3			18.5			35.2			72.4	

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C		B				D		E			
Queue Length 50th (ft)	46	209		24	118	0	52	167	0	-128	258	39
Queue Length 95th (ft)	71	239		47	160	38	#103	253	0	#281	#431	72
Internal Link Dist (ft)	798		390				801		328			
Turn Bay Length (ft)	145			125		245	185			200		200
Base Capacity (vph)	409	1275		267	1152	654	207	464	474	294	455	675
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	0.38	0.66		0.32	0.46	0.25	0.68	0.69	0.11	1.02	0.99	0.16

Intersection Summary

Area Type: Other
 Cycle Length: 90.5
 Actuated Cycle Length: 90.5
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 37.8
 Intersection LOS: D
 Intersection Capacity Utilization 81.0%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ 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: 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Ø1	Ø2	Ø3	Ø4
11 s	39.5 s	11 s	29 s
Ø5	Ø6	Ø7	Ø8
11 s	39.5 s	11 s	29 s

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	11	23	388	293	103
Future Vol, veh/h	34	11	23	388	293	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	1	1	-
Peak Hour Factor	65	65	97	97	91	91
Heavy Vehicles, %	45	0	0	3	3	23
Mvmt Flow	52	17	24	400	322	113

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	827	379	435	0	-	0
Stage 1	379	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Critical Hdwy	7.25	6.4	4.1	-	-	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.905	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	264	658	1135	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	258	658	1135	-	-	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	535	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1135	-	303	-	-
HCM Lane V/C Ratio	0.021	-	0.228	-	-
HCM Control Delay (s)	8.2	-	20.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

ANJ21092 L'Oreal Franklin
4: Commerce Drive & L'Oreal East Driveway

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Intersection

Int Delay, s/veh 0.5

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	24	86	8	3	4
Future Vol, veh/h	0	24	86	8	3	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	2	-	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	83	100	0
Mvmt Flow	0	26	93	9	3	4

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	102	0	-	0	124	98
Stage 1	-	-	-	-	98	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.1	-	-	-	7.2	6.1
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.2	-	-	-	4.4	3.3
Pot Cap-1 Maneuver	1503	-	-	-	688	966
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1503	-	-	-	688	966
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	795	-

Approach EB WB SB

HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1503	-	-	-	823
HCM Lane V/C Ratio	-	-	-	-	0.009
HCM Control Delay (s)	0	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

ANJ21092 L'Oreal Franklin
 5: Commerce Drive & L'Oreal Center Driveway

Build
 AM

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	18	71	19	6	0
Future Vol, veh/h	0	18	71	19	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	1	-	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	20	77	21	7	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	98	0	0	108	88
Stage 1	-	-	-	88	-
Stage 2	-	-	-	20	-
Critical Hdwy	4.1	-	-	6	6
Critical Hdwy Stg 1	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	5	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1508	-	-	905	981
Stage 1	-	-	-	950	-
Stage 2	-	-	-	1010	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1508	-	-	905	981
Mov Cap-2 Maneuver	-	-	-	905	-
Stage 1	-	-	-	950	-
Stage 2	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1508	-	-	-	905
HCM Lane V/C Ratio	-	-	-	-	0.007
HCM Control Delay (s)	0	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

ANJ21092 L'Oreal Franklin
6: Satellite Lot/L'Oreal West Driveway & Commerce Drive

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Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	4	0	32	5	34	0	1	4	10	0	1
Future Vol, veh/h	1	4	0	32	5	34	0	1	4	10	0	1
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	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-1	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	4	0	35	5	37	0	1	4	11	0	1

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	42	0	0	4	0	0	100	118	4	103	100	24
Stage 1	-	-	-	-	-	-	6	6	-	94	94	-
Stage 2	-	-	-	-	-	-	94	112	-	9	6	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.9	6.3	6.1	6.5	5.9	5.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.3	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.3	-	5.5	4.9	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1580	-	-	1631	-	-	891	781	1086	897	807	1060
Stage 1	-	-	-	-	-	-	1021	895	-	932	834	-
Stage 2	-	-	-	-	-	-	923	812	-	1019	896	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1580	-	-	1631	-	-	874	763	1086	876	788	1060
Mov Cap-2 Maneuver	-	-	-	-	-	-	874	763	-	876	788	-
Stage 1	-	-	-	-	-	-	1020	894	-	931	816	-
Stage 2	-	-	-	-	-	-	902	794	-	1013	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	3.3	8.6	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1001	1580	-	-	1631	-	-	890
HCM Lane V/C Ratio	0.005	0.001	-	-	0.021	-	-	0.013
HCM Control Delay (s)	8.6	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	108	348	220	606	695	45
Future Volume (vph)	108	348	220	606	695	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-1%	1%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897				0.992	
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1579	0	1702	1775	1852	0
Flt Permitted	0.988		0.114			
Satd. Flow (perm)	1579	0	204	1775	1852	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	152				5	
Link Speed (mph)	40			40	40	
Link Distance (ft)	7003			362	291	
Travel Time (s)	119.4			6.2	5.0	
Peak Hour Factor	0.88	0.88	0.86	0.86	0.89	0.89
Heavy Vehicles (%)	0%	2%	3%	4%	1%	5%
Adj. Flow (vph)	123	395	256	705	781	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	518	0	256	705	832	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	63.0	52.0	
Minimum Split (s)	13.0		10.0	70.0	59.0	
Total Split (s)	30.0		11.0	70.0	59.0	
Total Split (%)	30.0%		11.0%	70.0%	59.0%	
Yellow Time (s)	4.0		3.0	5.0	5.0	
All-Red Time (s)	2.0		0.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		3.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	Max	Max	
Act Effect Green (s)	24.0		67.0	63.0	52.0	
Actuated g/C Ratio	0.24		0.67	0.63	0.52	
v/c Ratio	1.05		1.00	0.63	0.86	
Control Delay	81.5		74.9	14.6	31.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	81.5		74.9	14.6	31.9	
LOS	F		E	B	C	
Approach Delay	81.5			30.6	31.9	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	F			C	C	
Queue Length 50th (ft)	~282		82	252	438	
Queue Length 95th (ft)	#467		#156	338	#681	
Internal Link Dist (ft)	6923			282	211	
Turn Bay Length (ft)			75			
Base Capacity (vph)	494		256	1118	965	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.05		1.00	0.63	0.86	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Natural Cycle: 105
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 42.5
 Intersection LOS: D
 Intersection Capacity Utilization 97.1%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ 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: 1: NJ Route 27 & Bennetts Lane

Ø2 70 s	Ø4 30 s
Ø5 11 s	Ø6 59 s

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Build
 PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	525	85	38	740	303	137	287	61	161	251	37
Future Volume (vph)	87	525	85	38	740	303	137	287	61	161	251	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	14	10	12	11	11	11	14
Grade (%)		1%			-1%			0%				-1%
Storage Length (ft)	145		0	125		245	185		0	200		200
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	35			55			25			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1510	3370	0	1702	3507	1714	1668	1810	1531	1719	1792	1603
Flt Permitted	0.253			0.351			0.444			0.257		
Satd. Flow (perm)	402	3370	0	629	3507	1714	780	1810	1531	465	1792	1603
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		22				319			139			
Link Speed (mph)		45			45			40				40
Link Distance (ft)		878			470			881				408
Travel Time (s)		13.3			7.1			15.0				7.0
Peak Hour Factor	0.93	0.93	0.93	0.95	0.95	0.95	0.81	0.81	0.81	0.98	0.98	0.98
Heavy Vehicles (%)	15%	1%	0%	3%	0%	1%	1%	5%	2%	2%	3%	8%
Adj. Flow (vph)	94	565	91	40	779	319	169	354	75	164	256	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	656	0	40	779	319	169	354	75	164	256	38
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4		3	8	5
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	33.0		7.0	33.0	33.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	13.0	13.0	11.0	13.0	11.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	11.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	12.2%
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
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)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Act Effect Green (s)	42.0	35.6		41.3	33.4	33.4	28.7	19.6	19.6	28.7	19.6	32.8
Actuated g/C Ratio	0.49	0.42		0.48	0.39	0.39	0.34	0.23	0.23	0.34	0.23	0.38
v/c Ratio	0.32	0.46		0.10	0.57	0.37	0.50	0.85	0.16	0.63	0.62	0.06
Control Delay	14.4	20.2		11.5	23.6	3.8	24.8	51.5	1.2	31.1	37.0	17.4
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	14.4	20.2		11.5	23.6	3.8	24.8	51.5	1.2	31.1	37.0	17.4
LOS	B	C		B	C	A	C	D	A	C	D	B
Approach Delay		19.5			17.6			37.7			33.2	

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Build
 PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			B			D			C	
Queue Length 50th (ft)	26	145		11	185	0	63	188	0	61	128	13
Queue Length 95th (ft)	53	201		27	250	53	97	252	0	#110	206	33
Internal Link Dist (ft)		798			390			801			328	
Turn Bay Length (ft)	145			125		245	185			200		200
Base Capacity (vph)	290	1418		393	1373	865	337	494	518	261	489	617
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	0.32	0.46		0.10	0.57	0.37	0.50	0.72	0.14	0.63	0.52	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 90.5
 Actuated Cycle Length: 85.2
 Natural Cycle: 80
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 24.6
 Intersection LOS: C
 Intersection Capacity Utilization 74.4%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Ø1	Ø2	Ø3	Ø4
11 s	39.5 s	11 s	29 s
Ø5	Ø6	Ø7	Ø8
11 s	39.5 s	11 s	29 s

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	20	5	303	515	17
Future Vol, veh/h	76	20	5	303	515	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	1	1	-
Peak Hour Factor	65	65	92	92	89	89
Heavy Vehicles, %	7	0	0	2	3	36
Mvmt Flow	117	31	5	329	579	19

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	928	589	598	0	-	0
Stage 1	589	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Critical Hdwy	6.87	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.87	-	-	-	-	-
Critical Hdwy Stg 2	5.87	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	263	495	989	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	262	495	989	-	-	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	684	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.6	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	989	-	290	-	-
HCM Lane V/C Ratio	0.005	-	0.509	-	-
HCM Control Delay (s)	8.7	-	29.6	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0	-	2.7	-	-

Intersection

Int Delay, s/veh 0.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	85	13	1	4	0
Future Vol, veh/h	0	85	13	1	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	2	-	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	100	100	0
Mvmt Flow	0	92	14	1	4	0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	15	0	-	0	107	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	4.1	-	-	-	7.2	6.1
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.2	-	-	-	4.4	3.3
Pot Cap-1 Maneuver	1616	-	-	-	705	1071
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1616	-	-	-	705	1071
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	738	-

Approach EB WB SB

HCM Control Delay, s 0 0 10.1
 HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1616	-	-	-	705
HCM Lane V/C Ratio	-	-	-	-	0.006
HCM Control Delay (s)	0	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	66	10	3	19	0
Future Vol, veh/h	0	66	10	3	19	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	1	-	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	100	100	0
Mvmt Flow	0	72	11	3	21	0

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	14	0	0	85	13
Stage 1	-	-	-	13	-
Stage 2	-	-	-	72	-
Critical Hdwy	4.1	-	-	7	6
Critical Hdwy Stg 1	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	6	-
Follow-up Hdwy	2.2	-	-	4.4	3.3
Pot Cap-1 Maneuver	1617	-	-	730	1074
Stage 1	-	-	-	807	-
Stage 2	-	-	-	758	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1617	-	-	730	1074
Mov Cap-2 Maneuver	-	-	-	730	-
Stage 1	-	-	-	807	-
Stage 2	-	-	-	758	-

Approach

	EB	WB	SB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1617	-	-	-	730
HCM Lane V/C Ratio	-	-	-	-	0.028
HCM Control Delay (s)	0	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

ANJ21092 L'Oreal Franklin
6: Satellite Lot/L'Oreal West Driveway & Commerce Drive

Build
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Intersection

Int Delay, s/veh 7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	0	2	0	8	0	1	28	33	0	0
Future Vol, veh/h	0	5	0	2	0	8	0	1	28	33	0	0
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	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-1	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	40	0	0	0	0	0	0
Mvmt Flow	0	5	0	2	0	9	0	1	30	36	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	9	0	0	5
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	1624	-	-	1630
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1624	-	-	1630
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	8.5	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1075	1624	-	-	1630	-	-	959
HCM Lane V/C Ratio	0.029	-	-	-	0.001	-	-	0.037
HCM Control Delay (s)	8.5	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

ANJ21092 L'Oreal Franklin
2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Build with Mitigation
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	597	88	76	463	146	124	283	44	262	393	95
Future Volume (vph)	127	597	88	76	463	146	124	283	44	262	393	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	14	10	12	11	11	11	14
Grade (%)		1%			-1%			0%				-1%
Storage Length (ft)	145		0	125		245	185		0	200		200
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	35			55			25			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1702	3248	0	1552	3160	1505	1620	1827	1459	1654	1792	1697
Flt Permitted	0.384			0.224			0.169			0.359		
Satd. Flow (perm)	688	3248	0	366	3160	1505	288	1827	1459	625	1792	1697
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		20				166			139			
Link Speed (mph)		45			45			40				40
Link Distance (ft)		878			470			881				408
Travel Time (s)		13.3			7.1			15.0				7.0
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.88	0.88	0.88	0.87	0.87	0.87
Heavy Vehicles (%)	2%	5%	4%	13%	11%	15%	4%	4%	7%	6%	3%	2%
Adj. Flow (vph)	157	737	109	86	526	166	141	322	50	301	452	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	846	0	86	526	166	141	322	50	301	452	109
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4		3	8	5
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	32.0		7.0	32.0	32.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	38.5		11.0	38.5	38.5	11.0	13.0	13.0	11.0	13.0	11.0
Total Split (s)	11.0	38.5		11.0	38.5	38.5	11.0	30.0	30.0	11.0	30.0	11.0
Total Split (%)	12.2%	42.5%		12.2%	42.5%	42.5%	12.2%	33.1%	33.1%	12.2%	33.1%	12.2%
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
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)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Act Effect Green (s)	42.3	34.2		41.5	32.0	32.0	32.7	23.7	23.7	32.7	23.7	36.7
Actuated g/C Ratio	0.47	0.38		0.46	0.35	0.35	0.36	0.26	0.26	0.36	0.26	0.41
v/c Ratio	0.39	0.68		0.33	0.47	0.26	0.68	0.67	0.10	0.98	0.96	0.16
Control Delay	15.7	27.0		15.6	24.3	4.6	36.4	37.8	0.4	74.5	67.5	17.7
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	15.7	27.0		15.6	24.3	4.6	36.4	37.8	0.4	74.5	67.5	17.7
LOS	B	C		B	C	A	D	D	A	E	E	B
Approach Delay		25.2			19.1			33.8			63.7	

ANJ21092 L'Oreal Franklin
 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Build with Mitigation
 AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			C			E		
Queue Length 50th (ft)	47	213		25	121	0	51	164	0	122	254	38
Queue Length 95th (ft)	73	244		48	164	38	#102	249	0	#267	#419	70
Internal Link Dist (ft)	798			390			801			328		
Turn Bay Length (ft)	145			125			185			200		
Base Capacity (vph)	401	1245		260	1121	641	208	486	490	306	477	689
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	0.68		0.33	0.47	0.26	0.68	0.66	0.10	0.98	0.95	0.16

Intersection Summary

Area Type: Other
 Cycle Length: 90.5
 Actuated Cycle Length: 90.2
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 35.6
 Intersection LOS: D
 Intersection Capacity Utilization 80.2%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Clyde Road/JFK Boulevard & Hamilton Street (CR 514)

Ø1	Ø2	Ø3	Ø4
11 s	38.5 s	11 s	30 s
Ø5	Ø6	Ø7	Ø8
11 s	38.5 s	11 s	30 s



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	108	348	220	606	695	45
Future Volume (vph)	108	348	220	606	695	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-1%	1%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897				0.992	
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1579	0	1702	1775	1852	0
Flt Permitted	0.988		0.078			
Satd. Flow (perm)	1579	0	140	1775	1852	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	154				5	
Link Speed (mph)	40			40	40	
Link Distance (ft)	7003			362	291	
Travel Time (s)	119.4			6.2	5.0	
Peak Hour Factor	0.88	0.88	0.86	0.86	0.89	0.89
Heavy Vehicles (%)	0%	2%	3%	4%	1%	5%
Adj. Flow (vph)	123	395	256	705	781	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	518	0	256	705	832	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	62.0	48.0	
Minimum Split (s)	13.0		10.0	69.0	55.0	
Total Split (s)	31.0		14.0	69.0	55.0	
Total Split (%)	31.0%		14.0%	69.0%	55.0%	
Yellow Time (s)	4.0		3.0	5.0	5.0	
All-Red Time (s)	2.0		0.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		3.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	Max	Max	
Act Effect Green (s)	25.0		66.0	62.0	48.0	
Actuated g/C Ratio	0.25		0.66	0.62	0.48	
v/c Ratio	1.02		0.97	0.64	0.93	
Control Delay	71.5		74.2	15.4	43.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	71.5		74.2	15.4	43.5	
LOS	E		E	B	D	
Approach Delay	71.5			31.1	43.5	

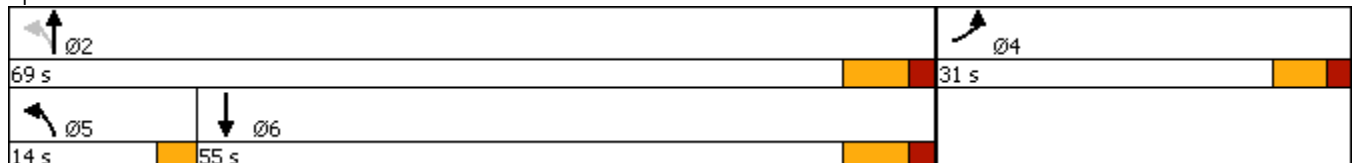


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	E			C	D	
Queue Length 50th (ft)	~258		111	260	479	
Queue Length 95th (ft)	#456		#248	349	#732	
Internal Link Dist (ft)	6923			282	211	
Turn Bay Length (ft)			75			
Base Capacity (vph)	510		264	1100	891	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.02		0.97	0.64	0.93	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Natural Cycle: 95
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 44.6
 Intersection LOS: D
 Intersection Capacity Utilization 93.8%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ 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: 1: NJ Route 27 & Bennetts Lane



I | Level of Service Summary Tables

Proposed L'Oreal Distribution Facility Expansion
100 Commerce Drive
Franklin Township
Sussex County, New Jersey

ATDE Job No. ANJ21092

TABLE A
LEVEL OF SERVICE AND DELAY SUMMARY
WEEKDAY MORNING PEAK HOUR

Intersection	Lane Group	No-Build	Build	Mitigation
NJ Route 27 & Bennetts Lane	EB L/R	D(35.2)	D(36.4)	-
	NB L	A(8.8)	A(9.3)	-
	NB T	A(9.8)	A(10.0)	-
	SB T/R	B(17.2)	B(17.6)	-
	Overall Intersection	B(15.8)	B(16.3)	-
Hamilton Street (CR 514) & JFK Boulevard/Clyde Road	EB L	B(14.8)	B(15.0)	B(15.7)
	EB T/R	C(25.7)	C(26.0)	C(27.0)
	WB L	B(14.4)	B(14.9)	B(15.6)
	WB T	C(23.3)	C(23.5)	C(24.3)
	WB R	A(4.4)	A(4.4)	A(4.6)
	NB L	D(36.1)	D(37.3)	D(36.4)
	NB T	D(39.4)	D(39.6)	D(37.8)
	NB R	A(0.4)	A(0.5)	A(0.4)
	SB L	F(83.4)	F(86.2)	E(74.5)
	SB T	E(65.8)	E(76.3)	E(67.5)
SB R	B(18.4)	B(18.4)	B(17.7)	
	Overall Intersection	D(35.6)	D(37.8)	D(35.6)
Clyde Road & Commerce Drive	EB L/R	C(18.5)	C(20.4)	-
	NB L	A(8.1)	A(8.2)	-
	Overall Intersection	A(1.0)	A(1.7)	-
Commerce Drive & L'Oreal East Driveway	EB L/T	A(0.0)	A(0.0)	-
	SB L/R	A(9.0)	A(9.4)	-
	Overall Intersection	A(0.9)	A(0.5)	-
Commerce Drive & L'Oreal Central Driveway	EB L/T	A(0.0)	A(0.0)	-
	SB L/R	A(8.7)	A(9.0)	-
	Overall Intersection	A(0.5)	A(0.5)	-
Commerce Drive & L'Oreal West Driveway/Satellite Lot	EB L/T/R	A(7.2)	A(7.3)	-
	WB L/T/R	A(7.2)	A(7.3)	-
	NB L/T/R	A(9.4)	A(8.6)	-
	SB L/T/R	A(8.7)	A(9.1)	-
	Overall Intersection	A(4.1)	A(4.2)	-

- Delay shown in seconds.

Proposed L'Oreal Distribution Facility Expansion
100 Commerce Drive
Franklin Township
Sussex County, New Jersey

ATDE Job No. ANJ21092

TABLE B
LEVEL OF SERVICE AND DELAY SUMMARY
WEEKDAY EVENING PEAK HOUR

Intersection	Lane Group	No-Build	Build	Mitigation	
NJ Route 27 & Bennetts Lane	EB L/R	E(75.5)	F(81.5)	E(71.5)	
	NB L	E(73.8)	E(74.9)	E(74.2)	
		T	B(14.6)	B(14.6)	B(15.4)
	SB T/R	C(31.9)	C(31.9)	D(43.5)	
	Overall Intersection	D(40.9)	D(42.5)	D(44.6)	
Hamilton Street (CR 514) & JFK Boulevard/Clyde Road	EB L	B(14.0)	B(14.4)	-	
		T/R	B(19.7)	C(20.2)	-
	WB L	B(11.3)	B(11.5)	-	
		T	C(23.0)	C(23.6)	-
		R	A(3.8)	A(3.8)	-
	NB L	C(24.7)	C(24.8)	-	
		T	D(48.9)	D(51.5)	-
		R	A(0.8)	A(1.2)	-
	SB L	C(29.1)	C(31.1)	-	
		T	D(38.2)	D(37.0)	-
R		B(17.5)	B(17.4)	-	
	Overall Intersection	C(23.7)	C(24.6)	-	
Clyde Road & Commerce Drive	EB L/R	C(21.9)	D(29.6)	-	
	NB L	A(8.6)	A(8.7)	-	
	Overall Intersection	A(1.9)	A(4.1)	-	
Commerce Drive & L'Oreal East Driveway	EB L/T	A(0.0)	A(0.0)	-	
	SB L/R	A(9.8)	B(10.1)	-	
	Overall Intersection	A(0.4)	A(0.4)	-	
Commerce Drive & L'Oreal Central Driveway	EB L/T	A(0.0)	A(0.0)	-	
	SB L/R	A(9.7)	B(10.1)	-	
	Overall Intersection	A(1.9)	A(2.0)	-	
Commerce Drive & L'Oreal West Driveway/Satellite Lot	EB L/T/R	A(0.0)	A(0.0)	-	
	WB L/T/R	A(0.0)	A(7.2)	-	
	NB L/T/R	A(8.4)	A(8.5)	-	
	SB L/T/R	A(8.7)	A(8.9)	-	
	Overall Intersection	A(6.8)	A(7.2)	-	

- Delay shown in seconds.