

January 18, 2023 (Revision #1)



Davidson Drive Holdings LLC c/o ez develop, inc.
Israel Vanchozker
Joseph Herskovitz
412 N. Main St
Monroe, NY

RE: Traffic Impact Study for Proposed Light Industrial Development, Lake Station Road, Town of Chester, Orange County, New York; CM Project No. 121-204

Dear Sirs:

As requested, Creighton Manning Engineering, LLP (CM) has completed a revised Traffic Impact Study for the proposed industrial development located on Lake Station Road in the Town of Chester, Orange County, NY. The revisions made to this study were made in consideration of comments raised by the Town of Chester Planning Board and members of the public during the January 4, 2023 public meeting. This study is based on traffic engineering industry standards and the Preliminary Concept Plan prepared by Arden Consulting Engineering, PLLC, last revised September 16, 2021 which is included under Attachment A.

1.0 Project Description

The subject site is defined on the Orange County Tax Map as Section 17, Block 1, Lots 22.1 through 22.8, and is currently undeveloped. The proposed project will construct a new 166,024-square-foot light industrial use building which includes a 4,000-square-foot office space and be supported by 76 parking spaces inclusive of four ADA-accessible spaces for passenger vehicles and 13 parking spaces for tractor trailers. Vehicular access is proposed via Davidson Drive, currently an unbuilt public paper street that will be terminated by a break-away gate north of the subject site's access driveways that will allow for emergency access. The site will provide two full movement driveways; one of the driveways will be fully dedicated for tractor trailers accessing the site. It is anticipated that the industrial building will have one shift from 8:00 AM to 6:00PM and it will consist of 45 employees. The proposed project is expected to be completed and operational by 2024. A map illustrating the site location in relation to the Davidson Drive right-of-way is shown in Exhibit 1.



Exhibit 1 – Site Location

2.0 Existing Conditions

Roadways Serving the Site

- **Lake Station Road** is classified as an Urban Local road and is under the jurisdiction of Town of Chester Highway Department. The roadway runs primarily east-west from Bellvale Road (CR 82) in the Town of Chester to Kings Highway (CR 13) in the Town of Warwick. In the vicinity of the project, Lake Station Road provides one 12-foot-wide travel lane in each direction. Turn lanes are not provided at intersections or driveways. The posted speed limit is 30 miles per hour. There are no sidewalks provided along the roadway.
- **Bellvale Road (County Road 82)** is classified as an Urban Major Collector roadway and is under the jurisdiction of the Orange County Department of Public Works (OCDPW). The roadway runs primarily north-south from County Road 13 to Gibson Hill Road. In the vicinity of the project, Bellvale Road provides one 12-foot-wide travel lane in each direction with four-foot-wide shoulders. Turns lanes are not provided at intersections or driveways. The posted speed limit is 45 miles per hour. There are no sidewalks provided along the roadway.
- **Kings Highway (County Road 13)** is classified as an Urban Minor Collector road and is under the jurisdiction of the OCDPW. The roadway runs primarily north-south from NYS Route 17M to the Village of Warwick. In the vicinity of the project, Kings Highway provides one 11-foot wide travel lane in each direction with variable width shoulders. Turn lanes are typically not provided at intersections or driveways. The posted speed limit is 55 miles per hour. There are no sidewalks provided along the roadway.
- **Paradise Lane:** is classified as Urban Local roadway and is under the jurisdiction of Town of Chester Highway Department. The roadway runs north-south from Lake Station Road to the dead end and serves residential homes. The roadway is approximately 38 feet wide. There is no posted speed limit and there are no sidewalks provided along the roadway.

Study Intersections

- **Lake Station Road/Paradise Lane:** This is a three-leg unsignalized intersection. The eastbound Lake Station Road approach is uncontrolled and provides one shared lane for through/right-turn movements. The westbound Lake Station Road approach is uncontrolled and provides one shared lane for left-turn/through movements. The northbound Paradise Lane is stop-controlled and provides one shared lane for left-turn/right-turn movements onto Lake Station Road. Exhibit 2 is a Nearmap image that shows the study intersection.



Exhibit 2 – Lake Station Road/Paradise Lane

- **Lake Station Road/Bellvale Road:** This is a three-leg unsignalized intersection. The eastbound Lake Station Road approach is stop-controlled and provides one shared lane for left-turn/right-turn movements onto Bellvale Road. The northbound Bellvale Road approach is uncontrolled and provides one shared lane for left-turns/through movements. The southbound Bevalle Road provides one shared lane for through/right-turn movements. Exhibit 3 is a Nearmap image that shows the study intersection.



Exhibit 3 – Lake Station Road/Bellvale Road

- **Lake Station Road/Kings Highway:** This is a three-leg unsignalized intersection. The westbound Lake Station Road approach is stopped-controlled and provides one shared lane for left-turn/right-turn movements onto Kings Highway. The northbound Kings Highway approach is uncontrolled and provides one shared lane for through/right-turn movements. The southbound Kings Highway approach is uncontrolled and provides one shared lane for left-turn/through movements. Railroad crossing is located xx-feet east of the intersection. Exhibit 4 is a Nearmap image that shows the study intersection.



Exhibit 4 – Lake Station Road/Kings Highway

- **NYS Route 17M/Kings Highway/Lehigh Avenue:** This is a four-leg signalized intersection operating under actuated-uncoordinated traffic signal control. The northbound and southbound legs of the intersection are offset by approximately 250 feet. The eastbound NYS Route 17M approach provides one shared left-turn/through lane and one exclusive right turn lane. The westbound NYS Route 17M approach provides one shared left-turn/through/right-turn lane. The northbound Kings Highway approach provides one exclusive left-turn lane and one channelized right-turn lane that serves as the de facto through lane to Lehigh Avenue and operates under yield control. The southbound Lehigh Avenue approach provides a shared left-turn/through/right-turn lane. Exhibit 5 depicts the intersection.



Exhibit 5 – NYS Route 17M/Kings Hwy/Lehigh Avenue Intersection

Town of Chester Truck Route Restrictions

The Town of Chester code does not identify Kings Highway as having a weight limit. However, there is existing signage indicating that there is a 10-ton weight limit on the roadway from Kings Highway Bypass to Bellvale Road. The weight limits prohibit most heavy vehicles including tractor-trailers from traversing this section of Kings Highway. It is important to note that the truck traffic related to the proposed project will be using the route identified on the truck routing map submitted with the Access Highway Designation Request to the NYSDOT on January 19, 2022 and approved by the NYSDOT on April 7, 2022. This approved route is also the optimal path as it is 0.2 miles shorter than if passing through the Hamlet of Sugar Loaf where Kings Highway also bears a lower speed limit. For these reasons, it is anticipated that traffic, especially truck traffic, will not have a significant adverse impact on the Hamlet of Sugar Loaf. Exhibit 6 shows the location of the weight limit signs, roadway segment with the weight restriction and the route that the trucks of the proposed project will be utilizing.



Exhibit 6 – Truck Route Restrictions

Data Collection

Turning Movement Counts (TMCs) were conducted at the intersections of Lake Station Road/Kings Highway and Lake Station Road/Bellville Road on Thursday, July 22, 2021, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. TMCs were conducted at the intersection of NYS Route 17M/Kings Highway/Lehigh Avenue on Thursday, March 10, 2022, during the same study periods. These periods coincide with the anticipated peak-hour operation times of the proposed use as well as the adjacent street traffic. The observed peak hours were 8:00 AM to 9:00 AM and 4:15 PM to 5:15 PM. During 15-minute spot counts conducted at the intersection of Lake Station Road/Paradise Lane there were no vehicles observed entering or exiting Paradise Lane. Therefore, CM used the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition, to estimate trips entering and exiting based on the seven residential dwelling located along Paradise Lane and those trips being evenly distributed at the intersection of Lake Station Road/Paradise Lane.¹

¹ Estimates were determined using LUC 210 – "Single-Family Detached Housing"

It is important to note that the Novel Coronavirus/COVID-19 pandemic was anticipated to have an effect on the turning movement counts. CM cited historical traffic data published by the NYSDOT on the Traffic Data Viewer to compare the observed counts on Kings Highway/Lake Station Road intersection. The comparison showed that the observed AM volumes were lower than historical data, and observed PM volumes were higher than historical data. A calibration factor was applied to the AM volumes to develop pre-pandemic traffic volumes. Figure 1-1 shows the 2021 Existing traffic volumes for the study area.² The raw TMC data is included under Attachment B.

3.0 Traffic Assessment

Trip Generation

Trip generation determines the quantity of traffic expected to travel to/from a given site. The Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition, is the industry-standard resource used for estimating trip generation for proposed land uses based on data collected at similar uses. Upon review of the *Trip Generation Manual*, Land Use Code (LUC) 110 "General Light Industrial" was applied for the proposed development. It should be noted that the ITE description for LUC 110 states that the study sites are typically inclusive of minimal office space. Table 1 summarizes the trip generation estimate for the weekday AM peak hour and weekday PM peak hour for passenger vehicles (PV) and trucks.³

Table 1 – Peak-Hour Trip Generation Summary for Proposed Use

Land Use	Independent Variable	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
General Light Industrial – LUC 110 PV	166,024 SF	102	13	115	7	49	56
General Light Industrial – LUC 110 Trucks	166,024 SF	1	1	2	1	1	2
Total Site-Generated Trips		103	14	117	8	50	58

Table 1 shows that the project is expected to generate 117 total trips during weekday AM peak hour and 58 trips during the weekday PM peak hour. It is important to note that there is no "pass-by" component of the traffic associated with the proposed development. Table 1A summarizes the daily truck trips for this the proposed development.

Table 1A – Daily Truck Trips Summary for Proposed Use

Land Use	Independent Variable	Weekday Truck Trips		
		Enter	Exit	Total
General Light Industrial	166,024 SF	21	21	42

Table 1A shows that the project is expected to generate 42 total truck trips during a typical weekday. All the truck traffic will be entering/exiting via Bellvale Road. The TMCs conducted at the study intersections differentiated between vehicle types. During the weekday AM study period (7:00 AM to 9:00 AM), there were six heavy vehicles observed traversing Lake Station Road.⁴ During the weekday PM study period (4:00 PM to 6:00 PM), there were two heavy vehicles traversing Lake Station Road. Based on the TMCs and field observations, it is evident that heavy vehicles currently utilize Lake Station Road.

² AM Calibration Factor = 1.1 | PM Calibration Factor = 1.0

³ The Fitted Curve results were utilized in accordance with the ITE guidance to use those results when there are more than 20 studies for the land use.

⁴ "Heavy Vehicles" include single-unit and articulated trucks (aka tractor-trailers).

Future Traffic Volumes

To evaluate the impact of the proposed project, traffic projections were prepared for the anticipated year of completion – 2024. A review of historical traffic volume data collected by NYSDOT ATR Station 838149 on Bellvale Road and published on the NYSDOT Traffic Data Viewer indicates that traffic volumes have grown annually at +0.78%. To conservatively forecast the 2024 traffic volume, a +1.0% growth rate was applied to the existing traffic volumes and compounded annually for three years. Additionally, CM identified other development projects that, if approved and constructed, could potentially increase traffic within the study area. Table 2 summarizes the other planned and completed development projects that are considered in this analysis.

Table 2 – Other Planned Development Project¹

Project	Type	Location	Source of Trip Generation	Trips Generated in Study Area by Projects	
				Weekday AM Peak Hour	Weekday PM Peak Hour
Pomegranate Solutions	Light Industrial	Davidson Drive	Maser Consulting	80	73
1251 Kings Highway	Industrial	Kings Highway & Bellvale Road	ITE	56	62
The Greens at Chester	Residential	NYS Route 94	John Meyer Consulting	27	20
Trestle Tree	Industrial	NYS Route 17 and Trestle Tree Lane	Maser Consulting	15	4
208 Business Center	Retail	NYS Route 208	CME	9	18
Craigville Road	Industrial	Craigville Road	CME	28	30

¹ Used Clothes Collection Center – Based on discussion with the Planning Board Chairman, the traffic associated with this development will be minimal. Therefore, it is assumed that the background growth rate of 1.0% captures traffic volumes associated with this development.

The volumes generated by the other developments are shown in Figure 1-2. These volumes are then added to the grown 2024 volumes to present the 2024 No-Build Conditions which are shown in Figure 2 represent the traffic volumes *without* the proposed project.

Traffic generated by the project was distributed on the adjacent roadway based on existing observed travel patterns in the project area and the probable travel routes of truck drivers and employees. The proximity of the site to NYS Route 17 is expected to influence trip-making behavior of the truck drivers. The analysis assumes that all truck trips (100%) will be drawn to and from Exits 127 and 126 on NYS Route 17. Therefore, truck drivers will utilize the Bellvale Road and Lake Station Road intersection to gain access to and from the site. There will be a right-turn egress restriction for trucks at the driveway exit to prohibit turn onto Davison Drive for westbound travel. This restriction will force trucks to Bellvale Road. No trucks associated with the project are anticipated to turn onto King Highway from Lake Station Road. The distribution of employee vehicles is expected to be more balanced between Kings Highway and Bellvale Road. In general, all site-generated traffic is expected to ingress and egress the site via the new Davidson Drive connection to Lake Station Road.

The primary trip distribution pattern for the proposed development is shown on Figure 3 for passenger vehicles and Figure 5 for trucks. The associated site-generated traffic volumes are shown on Figures 4 for passenger vehicles and Figure 6 for trucks. The site-generated trips were then added to the 2023 No-Build traffic volumes, resulting in the 2023 Build traffic volumes shown on Figure 7.

Traffic Operations

Intersection Level of Service (LOS) and capacity analysis relate traffic volumes to the physical characteristics of an intersection. Intersection evaluations were made using Synchro Version 11 software, which automates the procedures contained in the Highway Capacity Manual. Table 2 summarizes the results of the level of service calculations for the Existing, No-Build, and Build conditions during the weekday AM peak hour and weekday PM peak hour. The detailed level of service analyses are included under Attachment C.

Table 2 – Level of Service Summary

Intersection	Control	Weekday AM Peak Hour			Weekday PM Peak Hour		
		2021 Existing	2024 No-Build	2024 Build	2021 Existing	2024 No-Build	2024 Build
Kings Highway/Lake Station Road	U						
Lake Station Road, WB LR Kings Highway, SB LT		C (16.6) A (8.0)	C (18.3) A (8.1)	C (20.2) A (8.3)	B (14.6) A (7.8)	C (15.7) A (7.9)	C (16.7) A (7.9)
Lake Station Road/Paradise Lane/Davidson Drive	U						
Lake Station Road, EB [L]TR		--	--	A (7.6)	--	--	A (7.4)
Lake Station Road, WB LT[R]		A (7.4)	A (7.4)	A (7.4)	A (7.4)	A (7.4)	A (7.4)
Paradise Lane, NB [L]T[R] [Davidson Drive, SB] [L]TR		A (8.8) --	A (8.9) --	A (9.3) B (10.5)	A (8.9) --	A (8.9) --	A (9.0) A (9.9)
Lake Station Road/Bellvale Road	U						
Lake Station Road, EB LR Bellvale Road, NB LT		A (9.3) A (7.4)	A (9.4) A (7.4)	A (9.9) A (7.6)	A (9.4) A (7.5)	A (9.5) A (7.5)	B (10.0) A (7.6)
NYS Route 17M/Kings Hwy/Lehigh Ave ¹							
NYS Route 17M, EB T		D (32.3)	D (35.3)	D (35.9)	D (37.7)	D (38.8)	D (38.8)
R		C (29.9)	C (32.3)	C (33.1)	C (37.1)	C (37.8)	C (37.9)
NYS Route 17M, WB LTR		C (31.8)	C (34.9)	C (36.1)	D (44.5)	D (47.8)	D (47.9)
Kings Highway, NB L		D (39.0)	D (47.9)	D (51.0)	D (48.7)	E (57.3)	E (59.4)
TR		D (28.5)	D (32.6)	D (33.9)	D (37.7)	D (39.6)	D (39.9)
Lehigh Avenue, SB LTR		D (37.7)	D (37.4)	D (37.2)	D (36.6)	D (36.4)	D (36.4)

U = Unsignalized intersection

S = Signalized intersection

EB, WB, NB, SB = Eastbound, Westbound, Northbound, and Southbound intersection approaches

L, T, R = Left-turn, Through, and/or Right-turn movements

X (Y.Y) = Level of service (Average delay in seconds per vehicle)

¹ There is no overall LOS provided for this intersection as it was evaluated as two separate intersections due to its operation as a clustered intersection.

The impact of the project can be described by comparing the analysis of the No-Build and Build operating conditions. The following observations are evident from the analysis:

- **Kings Highway/Lake Station Road:** The level of service analysis indicates that the minor street approach of the three-leg intersection will operate at an acceptable LOS of C or better in the Build condition, which is consistent with the anticipated LOS for the intersection in the No-Build condition. The maximum increase in delay of 1.9 seconds indicates that the proposed development is not anticipated to have a significant adverse impact on the operations of this intersection.
- **Lake Station Road/Paradise Lane:** The level of service indicates that the northbound and southbound minor approaches of the intersection will operate at an acceptable LOS of A or better in the Build condition, which is consistent with the anticipated LOS of the intersection in the No-Build condition. The maximum increase in delay of 0.4 seconds indicates that the proposed development is not anticipated to have a significant adverse impact on the operations of this intersection.
- **Lake Station Road/Bellvale Road:** The level of service analysis indicates that the minor street approach of the three-leg intersection will operate at an acceptable LOS of A or better in the Build condition, which is consistent with the anticipated LOS for the intersection in the No-Build condition. The maximum increase in

delay of 0.5 seconds indicates that the proposed development is not anticipated to have a significant adverse impact on the operations of this intersection.

- **NYS Route 17M/Kings Highway/Lehigh Avenue:** The level of service analysis indicates that in the Build conditions the intersection will operate at levels of service commensurate to those in the No-Build conditions. The maximum increase in delay of 2.1 seconds indicates that the proposed development is not anticipated to have a significant adverse impact on the operations of this intersection.

4.0 Site Access, Circulation, and Parking

CM reviewed the site access, site circulation and parking layout as shown on the Site Plan prepared by Arden Consulting Engineers, PLLC, last revised September 16, 2021. Vehicular access is proposed via Davidson Drive, currently an unbuilt public paper street. Davidson Drive will provide access to the site via two driveways located approximately 380 and 980 feet north of Lake Station Road and connect to the already built portion of Davidson Drive to the north. However, all site-generated traffic is expected to use Lake Station Road for ingress and egress. The southerly site access is a 26-foot-wide driveway dedicated for passenger vehicles only. The northerly site access is a 30-foot-wide driveway designated for passenger vehicles and trucks; the truck parking area is 152 feet in width, which will allow these vehicles to turn around completely within the confines of the site as necessary. The site will be supported by a total of 76 off-street parking spaces inclusive of four ADA-accessible spaces and 13 parking spaces for trucks. The proposed number of off-street parking for passenger vehicles meets the Town of Chester zoning requirements for the combined total of the office use component (1 space/200SF) and the industrial use component (2 spaces/3 employees).

5.0 Kings Highway Intersection Review

CM performed a desktop review of Kings Highway in the vicinity of its intersection with Lake Station Road. Currently, there is a flashing yellow signal spanning the Kings Highway/Wickham Drive intersection, which is approximately 130-ft south of the Kings Highway/Lake Station Road intersection. Approaching these intersections, there are “Intersection Ahead” (W2-2) signs. Exhibits 7, 8, and 9 show these existing mitigation measures.

Based on feedback from the public regarding safety concerns at this intersection, consideration could be given to the existing “Intersection Ahead” (W2-2) signs be replaced with “Intersection Ahead – Offset” (W2-7L/R) signs as shown in Exhibit 10. These signs would better depict the intersection configuration drivers are approaching. These improvements would be subject to review and approval by the OCDPW since Kings Highway is a County Road.



Exhibit 7 – Kings Highway Facing North at Wickham Drive



Exhibit 9 – Kings Highway Facing South



Exhibit 8 – Kings Highway Facing North



Exhibit 10 – MUTCD Compliant W2-7L/R Signs

6.0 Conclusion

The subject site is located on the parcel defined as Section 17, Block 1, Lots 22.1 through 22.8 on the Orange County Map. The proposed project will construct a new 166,024-square-foot light industrial use building which includes a 4,000-square-foot office space. It is anticipated that the largest shift will consist of 45 employees. The following is noted regarding the proposed project:

- Turning movement counts were conducted on Thursday July 22, 2021, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. The morning peak hour occurred from 8:00 AM to 9:00 AM, and evening peak hour occurred from 4:15 PM to 5:15 PM.
- Trips generated by the seven residential dwellings located on Paradise Lane were estimated using ITE LUC 210 – “Single-Family Detached Housing” and then evenly distributed onto Lake Station Road.
- The site is expected to generate 117 total trips during the weekday morning peak hour and 58 total trips during the weekday evening peak hour.
- The level of service analysis indicates that the Build condition of the study intersections, Kings Highway/Lake Station Road, Lake Station Road/Davidson Drive/Paradise Lane, Bellvale Road/Lake Station Road, and NYS Route 17M/Kings Hwy/Lehigh Ave will operate at the level of service consistent with the No-Build conditions.

The negligible increase in delay indicate that the proposed project is not anticipated to have a significant adverse impact on traffic.

Please do not hesitate to call our office if you have any questions or comments, or require additional information.

Respectfully submitted,
Creighton Manning Engineering, LLP



Frank A. Filiciotto, PE
Associate

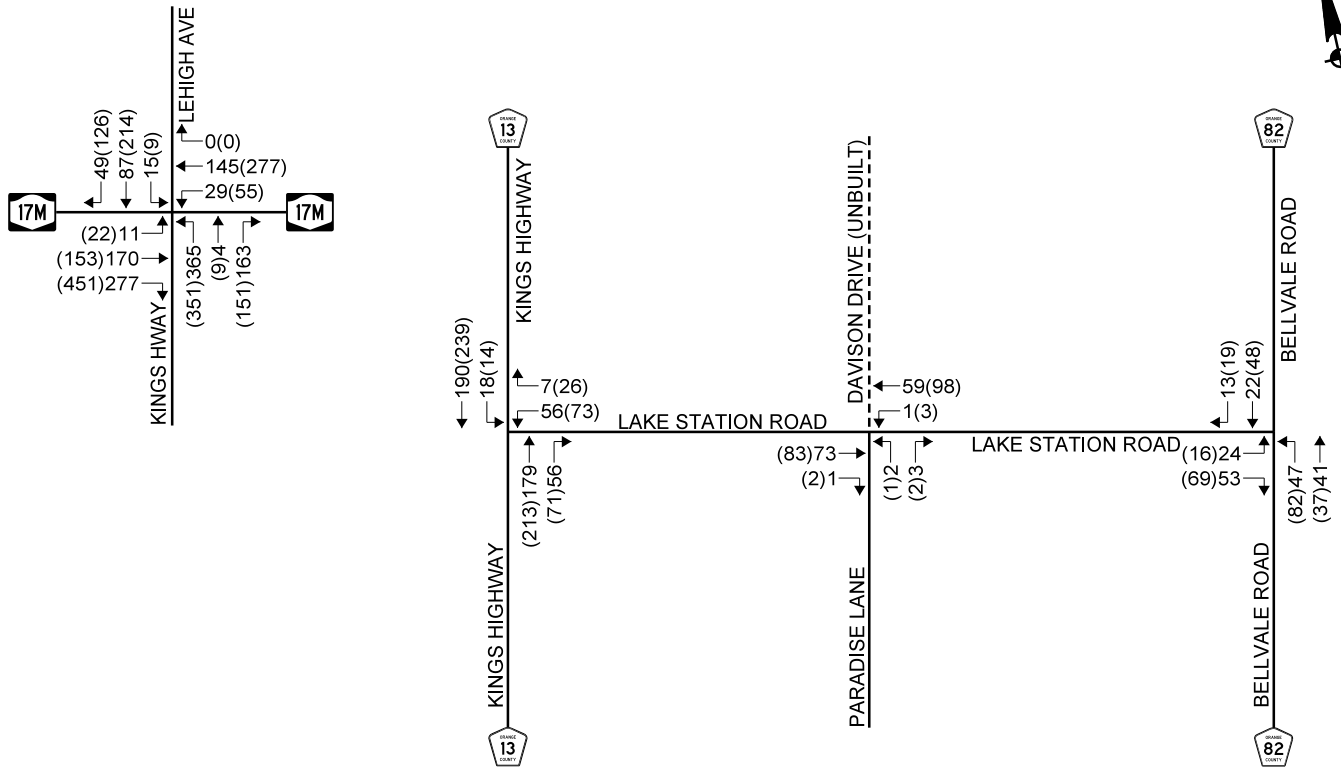
cc: Michael A. Morgante, PE



Starke W. Hipp, PE
Project Engineer

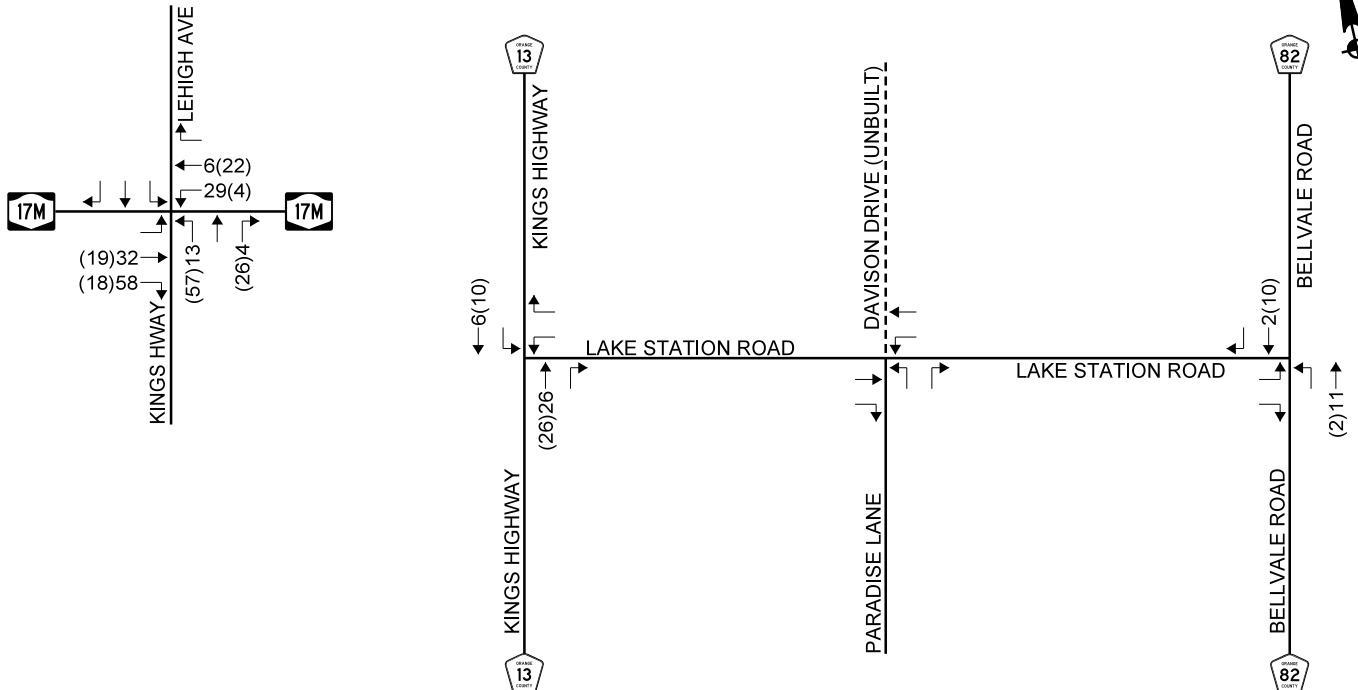
①

2021 EXISTING TRAFFIC VOLUMES



②

OTHER DEVELOPMENT TRAFFIC VOLUMES



LEGEND:
AM (PM)

2021 EXISTING AND OTHER DEVELOPMENT
TRAFFIC VOLUMES

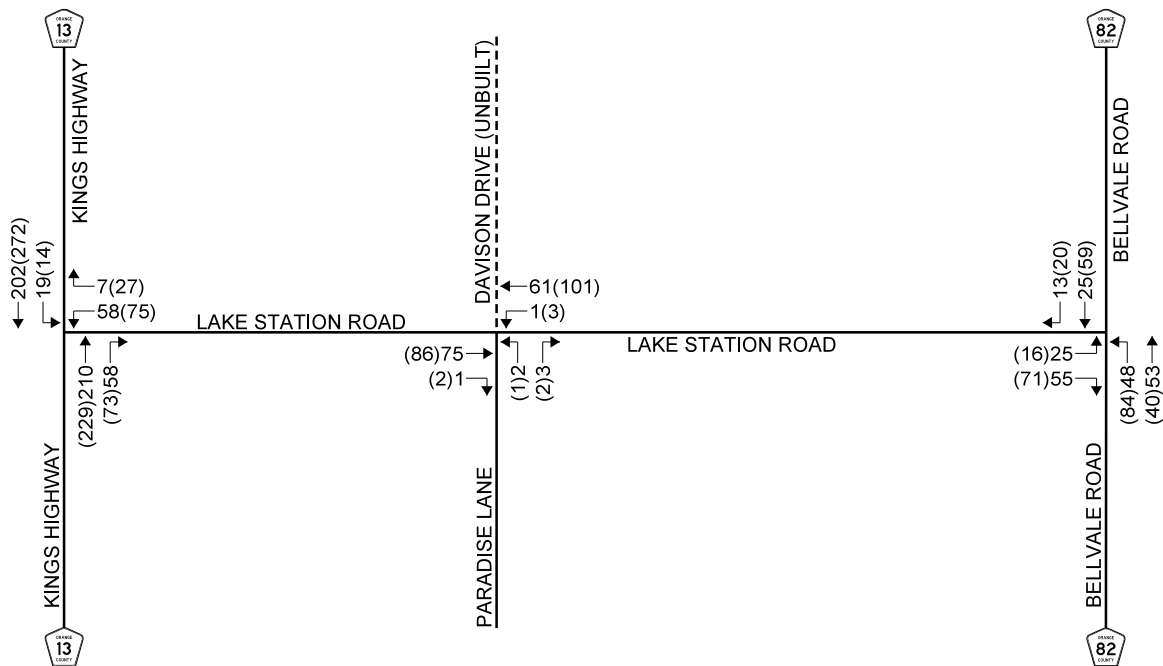
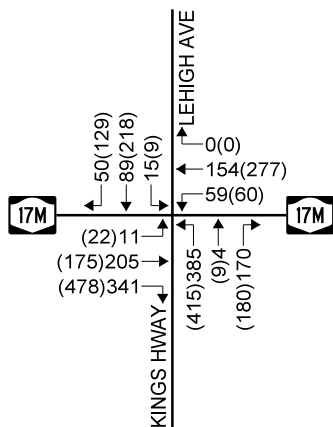
DAVIDSON DRIVE HOLDINGS, LLC
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK



PROJECT: 121-204 DATE: 01/2023 FIGURE: 1

①

2024 NO-BUILD TRAFFIC VOLUMES



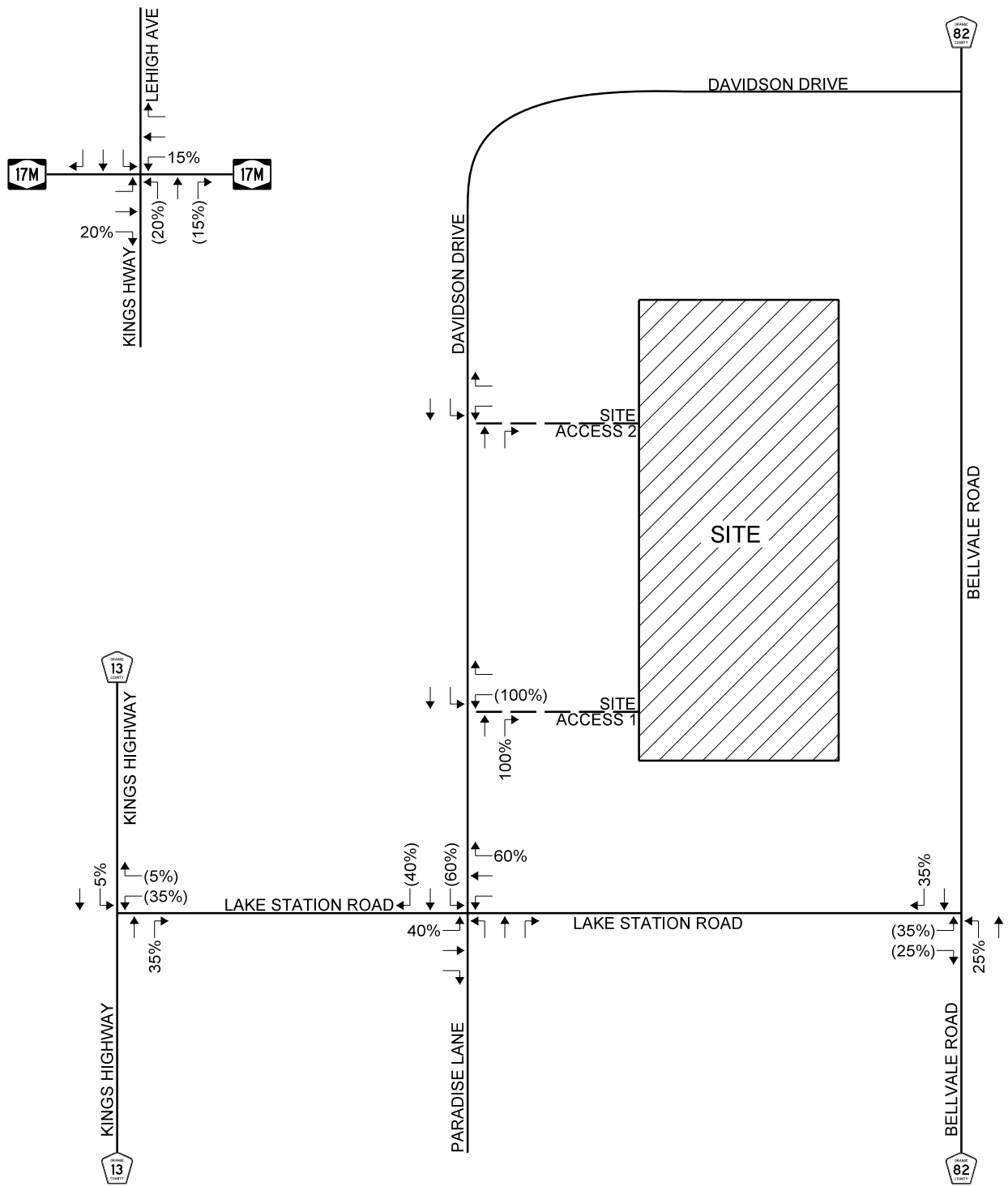
LEGEND:
AM (PM)

2024 NO-BUILD TRAFFIC VOLUMES

DAVIDSON DRIVE HOLDINGS, LLC
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK



PROJECT: 121-204 DATE: 01/2023 FIGURE: 2



LEGEND:
AM (PM)

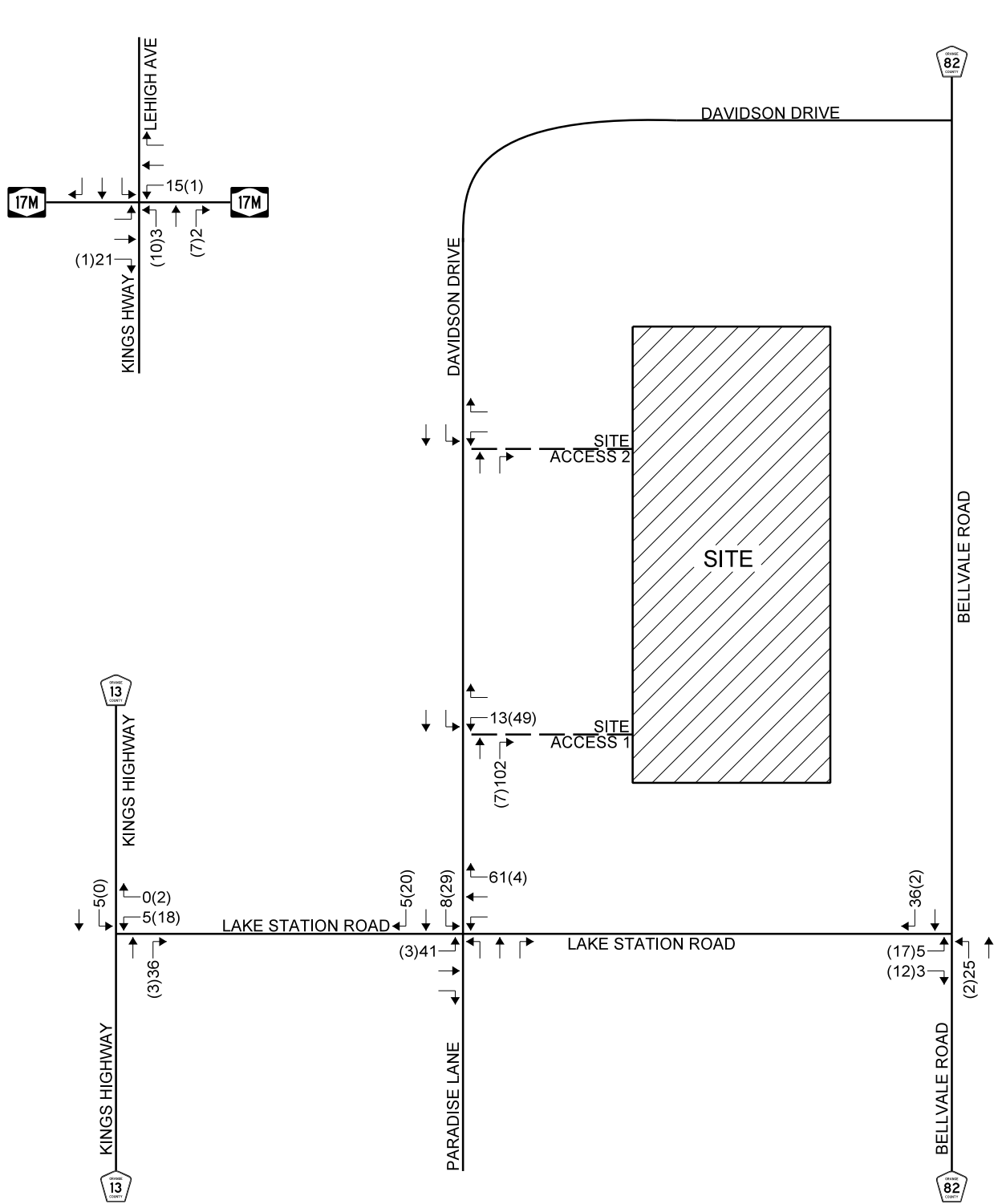
PASSENGER VEHICLE - TRIP DISTRIBUTION

DAVIDSON DRIVE HOLDINGS, LLC
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK



PROJECT: 121-204 DATE: 01/2023 FIGURE: 3

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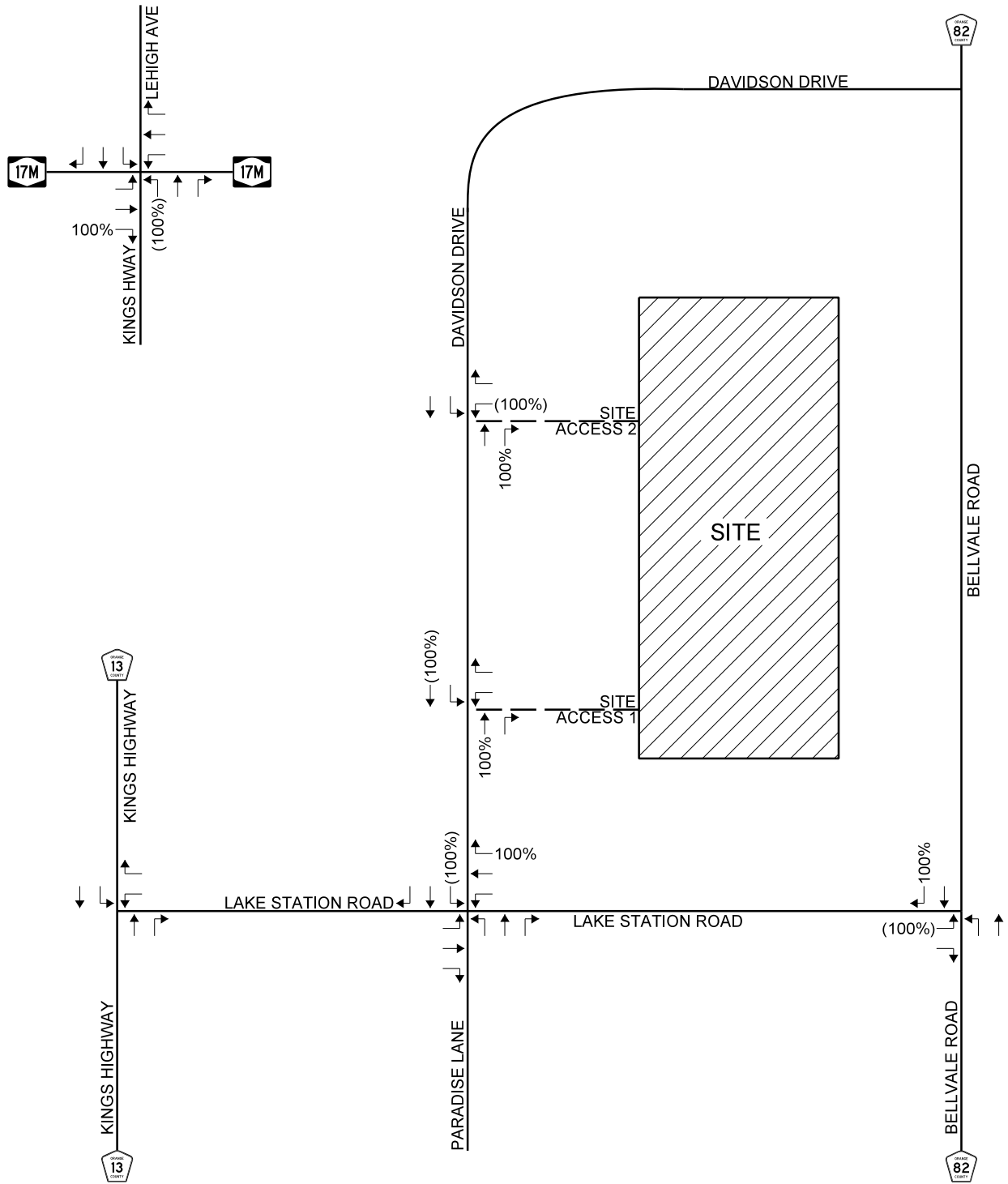


PASSENGER VEHICLE - TRIP ASSIGNMENT

DAVIDSON DRIVE HOLDINGS, LLC
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK



PROJECT: 121-204 DATE: 01/2023 FIGURE: 4



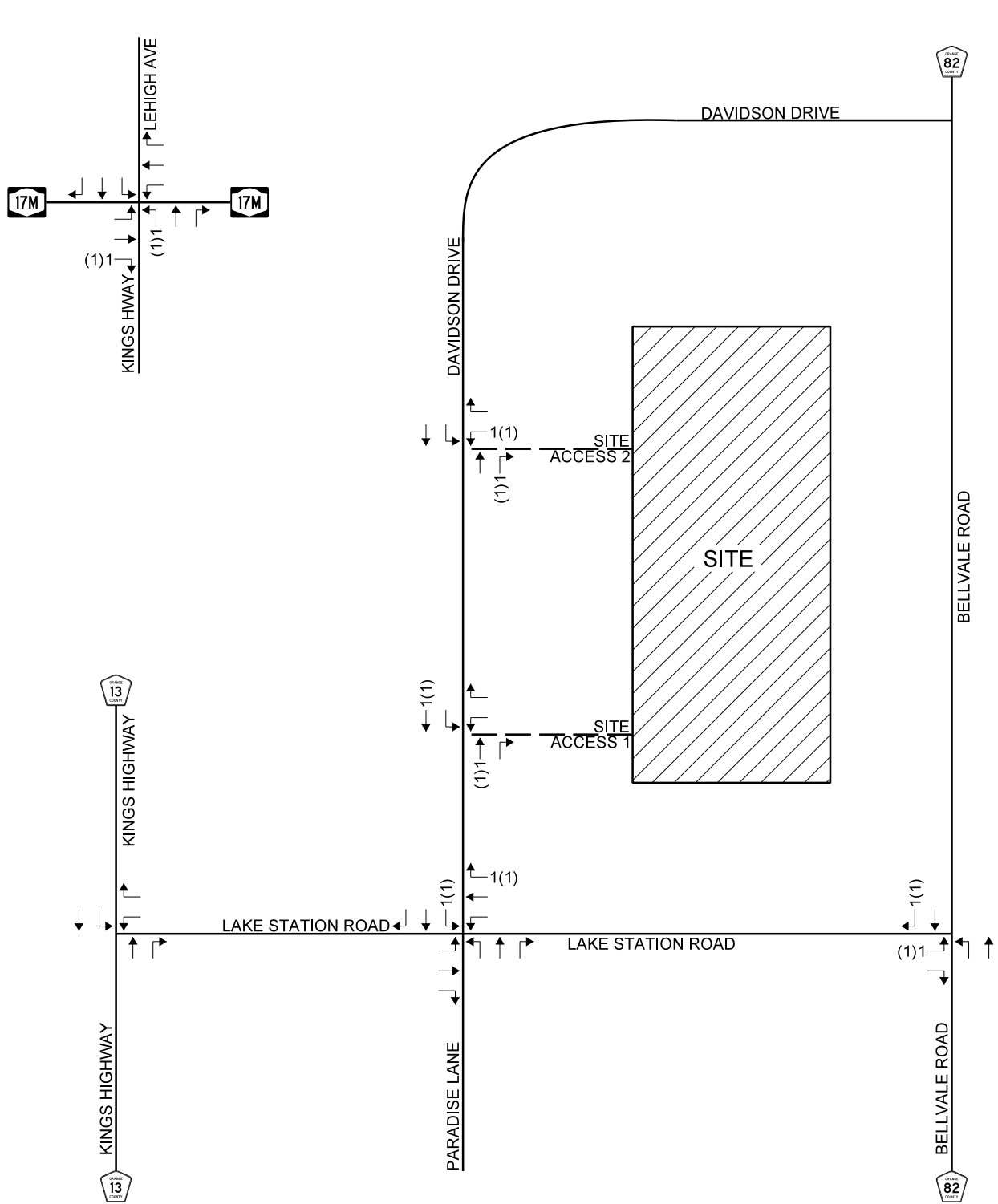
LEGEND:
ENTERING (EXITING)

TRUCK - TRIP DISTRIBUTION

DAVIDSON DRIVE HOLDINGS, LLC
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK



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LEGEND:
AM (PM)

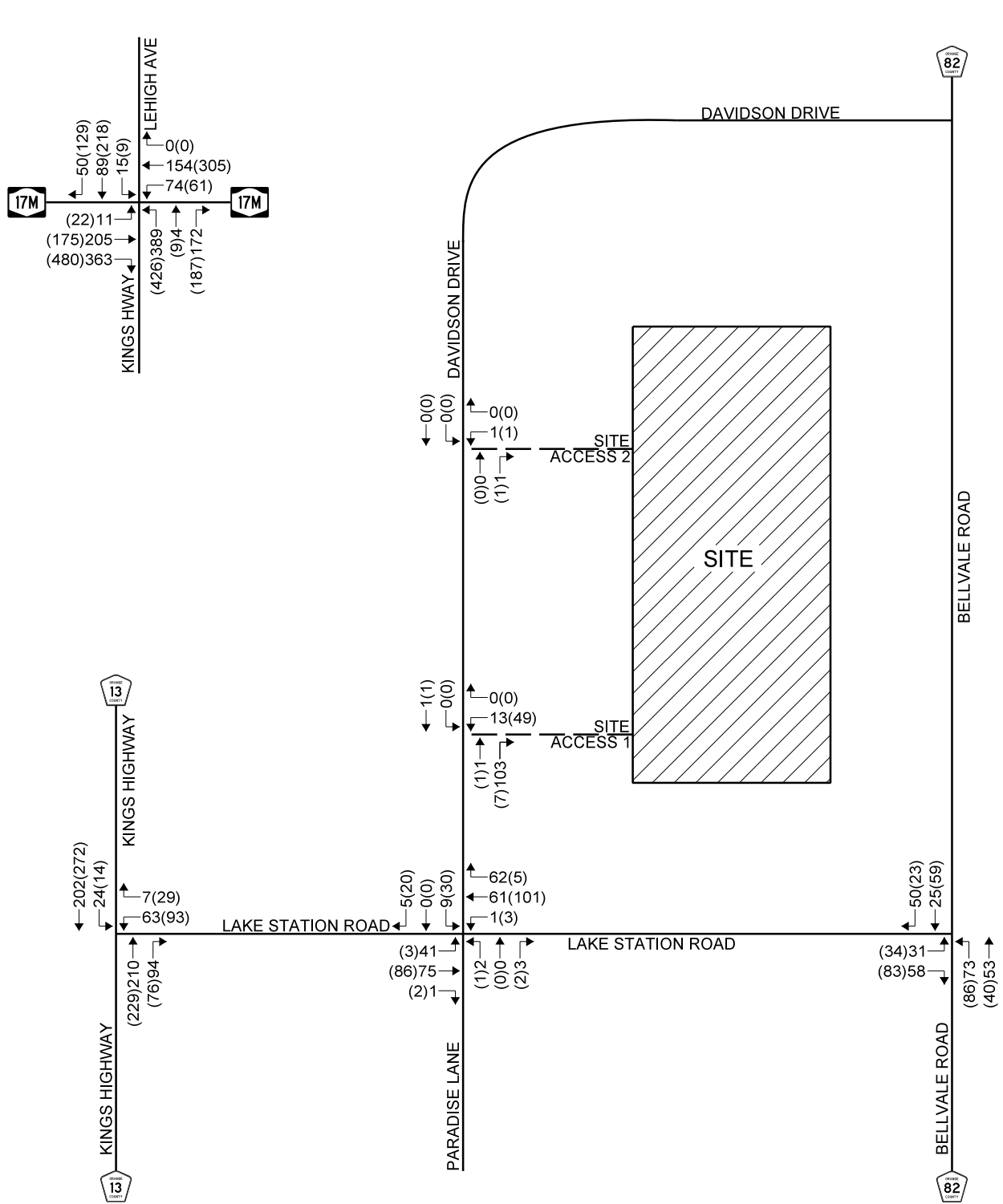
TRUCK - TRIP ASSIGNMENT

DAVIDSON DRIVE HOLDINGS, LLC
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK



PROJECT:	121-204	DATE:	01/2023	FIGURE:	6
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ATTACHMENT A
SITE PLAN

PROPOSED LIGHT INDUSTRIAL DEVELOPMENT
LAKE STATION ROAD
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK

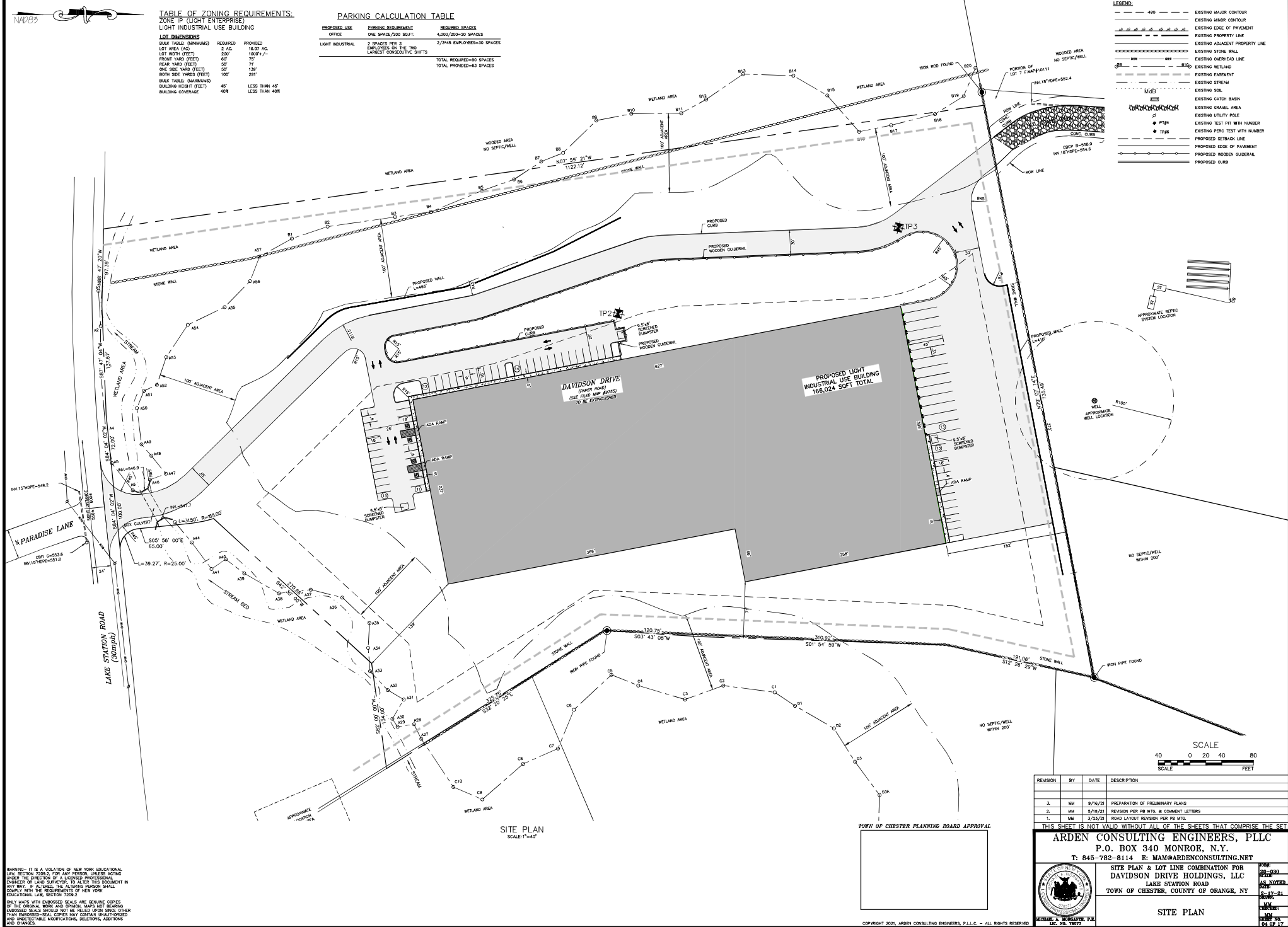
TABLE OF ZONING REQUIREMENTS:
ZONE IP (LIGHT ENTERPRISE)
LIGHT INDUSTRIAL USE BUILDING

LOT DIMENSIONS

BLANK TABLE (N/A)	REQUIRED	PROVIDED
LOT AREA (AC)	2 AC	16.87 AC
LOT WIDTH (FEET)	200	1000' +/-
FRONT YARD (FEET)	50'	75'
REAR YARD (FEET)	50'	75'
ONE SIDE YARD (FEET)	50'	130'
BOTH SIDE YARDS (FEET)	100'	285'
BLANK TABLE (N/A)	45'	LESS THAN 45'
BUILDING HEIGHT (FEET)	40'	LESS THAN 40'
BUILDING COVERAGE		

PARKING CALCULATION TABLE

PROPOSED USE	PARKING REQUIREMENT	REQUIRED SPACES
OFFICE	ONE SPACE/200 SQ. FT.	4,000/200=20 SPACES
LIGHT INDUSTRIAL	2 SPACES PER 3 EMPLOYEES ON THE TWO LARGEST CONNECTING SHIFTS	2,294/3=765 SPACES
		TOTAL REQUIRED=785 SPACES
		TOTAL PROVIDED=43 SPACES



WARNING - IT IS A VIOLATION OF NEW YORK EDUCATIONAL LAW, SECTION 7202.2, FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OF LAND SURVEYING TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7202.2.

ONLY PLANS WITH EMBOSSED SEALS ARE GENUINE COPIES OF THE ORIGINAL WORK AND ORIGINAL MAPS NOT BEARING EMBOSSED SEALS SHOULD NOT BE RELIED UPON SINCE OTHER THAN EMBOSSED SEALS COPIES MAY CONTAIN UNAUTHORIZED AND UNRELIABLE MODIFICATIONS, ALTERATIONS, ADDITIONS AND CHANGES.

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REVISION	BY	DATE	DESCRIPTION
1.	MM	3/23/21	ROAD LAYOUT REVISION PER PS MTD.
2.	MM	5/7/21	REVISION PER PS MTD & COMMENT LETTERS
3.	MM	9/16/21	PREPARATION OF PRELIMINARY PLANS

THIS SHEET IS NOT VALID WITHOUT ALL OF THE SHEETS THAT COMPOSE THE SET

ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340 MONROE, N.Y.
T: 845-782-8114 E: MAM@ARDENCONSULTING.NET

SITE PLAN & LOT LINE COMBINATION FOR
DAVIDSON DRIVE HOLDINGS, LLC
LAKE STATION ROAD
TOWN OF CHESTER, COUNTY OF ORANGE, NY

SITE PLAN

04 OF 17

ATTACHMENT B
TURNING MOVEMENT COUNTS

PROPOSED LIGHT INDUSTRIAL DEVELOPMENT
LAKE STATION ROAD
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK

121-204 Bellvale Rd/Lake Station Rd - AM - TMC

Thu Jul 22, 2021

Full Length (7 AM-9 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857862, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

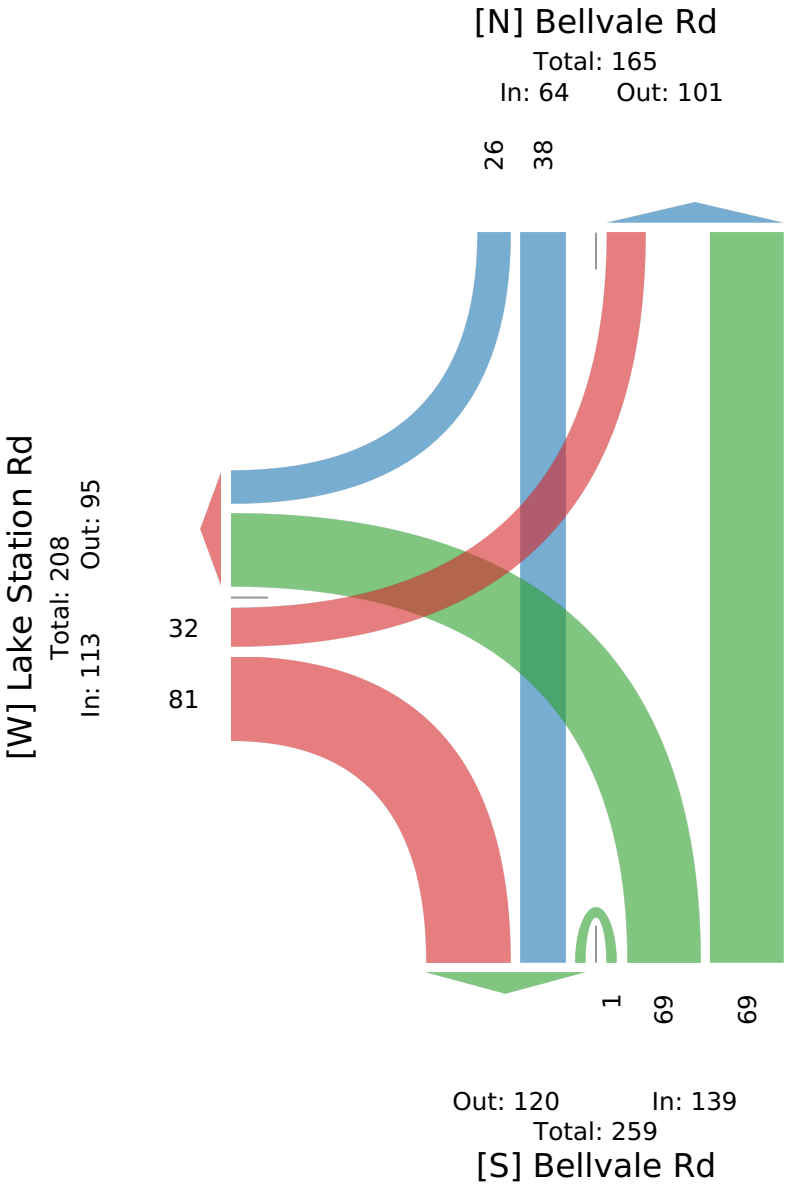
Leg Direction	Lake Station Rd Eastbound				Bellvale Rd Northbound				Bellvale Rd Southbound				
Time	L	R	U	App	L	T	U	App	T	R	U	App	Int
2021-07-22 7:00AM	1	6	0	7	9	7	0	16	1	6	0	7	30
7:15AM	6	6	0	12	5	13	0	18	2	4	0	6	36
7:30AM	3	13	0	16	6	6	0	12	10	1	0	11	39
7:45AM	1	11	0	12	9	6	0	15	5	4	0	9	36
Hourly Total	11	36	0	47	29	32	0	61	18	15	0	33	141
8:00AM	5	10	0	15	7	9	0	16	5	3	0	8	39
8:15AM	3	11	0	14	9	7	0	16	4	2	0	6	36
8:30AM	6	16	0	22	8	9	0	17	3	3	0	6	45
8:45AM	7	8	0	15	16	12	1	29	8	3	0	11	55
Hourly Total	21	45	0	66	40	37	1	78	20	11	0	31	175
9:00AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	32	81	0	113	69	69	1	139	38	26	0	64	316
% Approach	28.3%	71.7%	0%	-	49.6%	49.6%	0.7%	-	59.4%	40.6%	0%	-	-
% Total	10.1%	25.6%	0%	35.8%	21.8%	21.8%	0.3%	44.0%	12.0%	8.2%	0%	20.3%	-
Lights	29	78	0	107	67	62	0	129	33	25	0	58	294
% Lights	90.6%	96.3%	0%	94.7%	97.1%	89.9%	0%	92.8%	86.8%	96.2%	0%	90.6%	93.0%
Articulated Trucks and Single-Unit Trucks	1	3	0	4	1	5	1	7	5	1	0	6	17
% Articulated Trucks and Single-Unit Trucks	3.1%	3.7%	0%	3.5%	1.4%	7.2%	100%	5.0%	13.2%	3.8%	0%	9.4%	5.4%
Buses	2	0	0	2	1	2	0	3	0	0	0	0	5
% Buses	6.3%	0%	0%	1.8%	1.4%	2.9%	0%	2.2%	0%	0%	0%	0%	1.6%

*L: Left, R: Right, T: Thru, U: U-Turn

121-204 Bellvale Rd/Lake Station Rd - AM - TMC
Thu Jul 22, 2021
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857862, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Bellvale Rd/Lake Station Rd - AM - TMC

Thu Jul 22, 2021

AM Peak (8 AM - 9 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857862, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

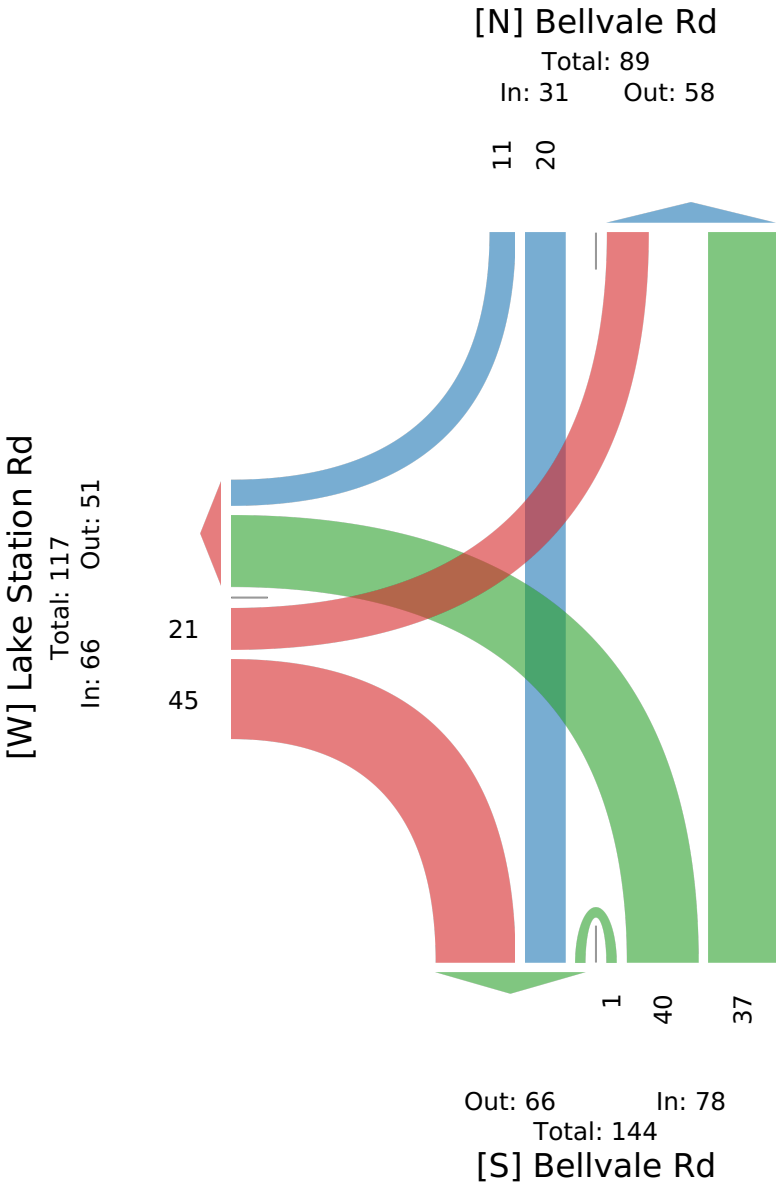
Leg Direction	Lake Station Rd Eastbound				Bellvale Rd Northbound				Bellvale Rd Southbound				
Time	L	R	U	App	L	T	U	App	T	R	U	App	Int
2021-07-22 8:00AM	5	10	0	15	7	9	0	16	5	3	0	8	39
8:15AM	3	11	0	14	9	7	0	16	4	2	0	6	36
8:30AM	6	16	0	22	8	9	0	17	3	3	0	6	45
8:45AM	7	8	0	15	16	12	1	29	8	3	0	11	55
Total	21	45	0	66	40	37	1	78	20	11	0	31	175
% Approach	31.8%	68.2%	0%	-	51.3%	47.4%	1.3%	-	64.5%	35.5%	0%	-	-
% Total	12.0%	25.7%	0%	37.7%	22.9%	21.1%	0.6%	44.6%	11.4%	6.3%	0%	17.7%	-
PHF	0.750	0.703	-	0.750	0.625	0.771	0.250	0.672	0.625	0.917	-	0.705	0.795
Lights	19	44	0	63	38	35	0	73	17	11	0	28	164
% Lights	90.5%	97.8%	0%	95.5%	95.0%	94.6%	0%	93.6%	85.0%	100%	0%	90.3%	93.7%
Articulated Trucks and Single-Unit Trucks	1	1	0	2	1	1	1	3	3	0	0	3	8
% Articulated Trucks and Single-Unit Trucks	4.8%	2.2%	0%	3.0%	2.5%	2.7%	100%	3.8%	15.0%	0%	0%	9.7%	4.6%
Buses	1	0	0	1	1	1	0	2	0	0	0	0	3
% Buses	4.8%	0%	0%	1.5%	2.5%	2.7%	0%	2.6%	0%	0%	0%	0%	1.7%

* L: Left, R: Right, T: Thru, U: U-Turn

121-204 Bellvale Rd/Lake Station Rd - AM - TMC
Thu Jul 22, 2021
AM Peak (8 AM - 9 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857862, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Kings Hwy/Lake Station Rd - AM - TMC

Thu Jul 22, 2021

Full Length (7 AM-9 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857857, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

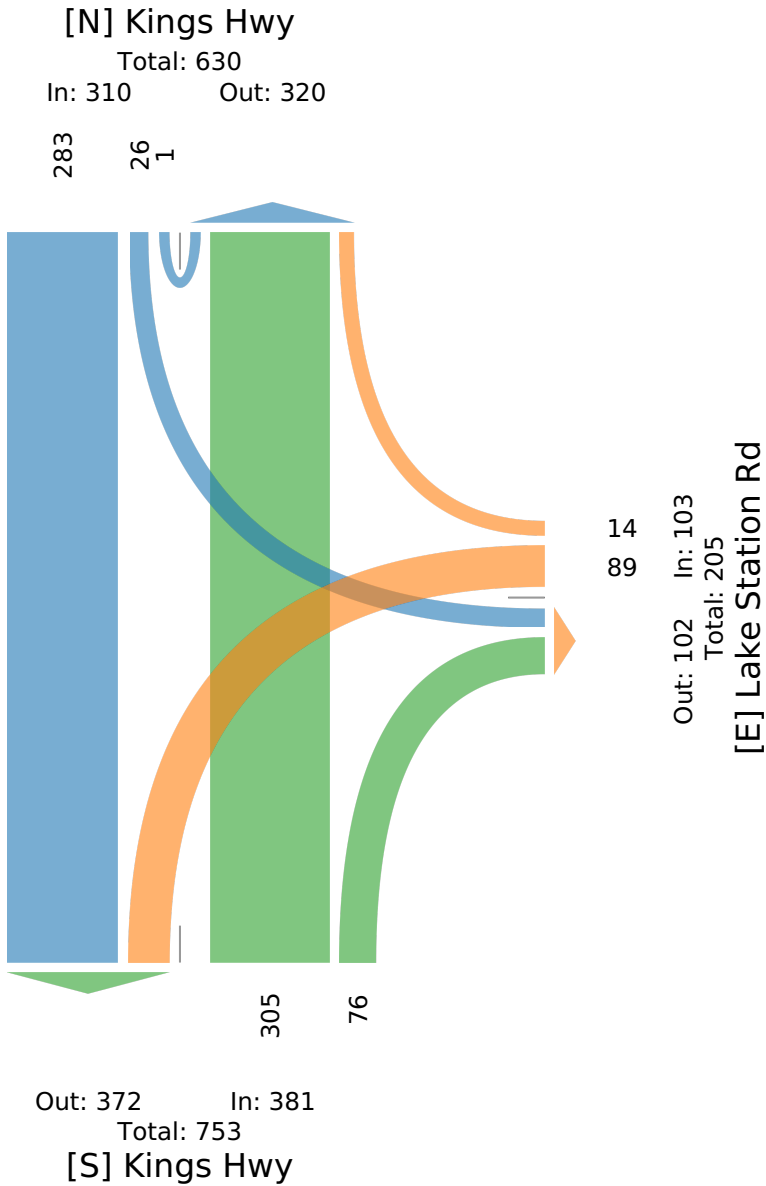
Leg Direction	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2021-07-22 7:00AM	7	3	0	10	25	3	0	28	2	16	0	18	56
7:15AM	7	2	0	9	33	8	0	41	3	27	0	30	80
7:30AM	11	2	0	13	37	9	0	46	3	37	0	40	99
7:45AM	13	1	0	14	47	9	0	56	3	30	0	33	103
Hourly Total	38	8	0	46	142	29	0	171	11	110	0	121	338
8:00AM	10	0	0	10	27	12	0	39	4	36	0	40	89
8:15AM	14	1	0	15	40	15	0	55	3	30	0	33	103
8:30AM	11	4	0	15	40	13	0	53	3	42	0	45	113
8:45AM	16	1	0	17	56	7	0	63	5	65	1	71	151
Hourly Total	51	6	0	57	163	47	0	210	15	173	1	189	456
9:00AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	89	14	0	103	305	76	0	381	26	283	1	310	794
% Approach	86.4%	13.6%	0%	-	80.1%	19.9%	0%	-	8.4%	91.3%	0.3%	-	-
% Total	11.2%	1.8%	0%	13.0%	38.4%	9.6%	0%	48.0%	3.3%	35.6%	0.1%	39.0%	-
Lights	85	13	0	98	283	71	0	354	24	266	1	291	743
% Lights	95.5%	92.9%	0%	95.1%	92.8%	93.4%	0%	92.9%	92.3%	94.0%	100%	93.9%	93.6%
Articulated Trucks and Single-Unit Trucks	3	0	0	3	17	3	0	20	1	13	0	14	37
% Articulated Trucks and Single-Unit Trucks	3.4%	0%	0%	2.9%	5.6%	3.9%	0%	5.2%	3.8%	4.6%	0%	4.5%	4.7%
Buses	1	1	0	2	5	2	0	7	1	4	0	5	14
% Buses	1.1%	7.1%	0%	1.9%	1.6%	2.6%	0%	1.8%	3.8%	1.4%	0%	1.6%	1.8%

*L: Left, R: Right, T: Thru, U: U-Turn

121-204 Kings Hwy/Lake Station Rd - AM - TMC
Thu Jul 22, 2021
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857857, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Kings Hwy/Lake Station Rd - AM - TMC

Thu Jul 22, 2021

AM Peak (8 AM - 9 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857857, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

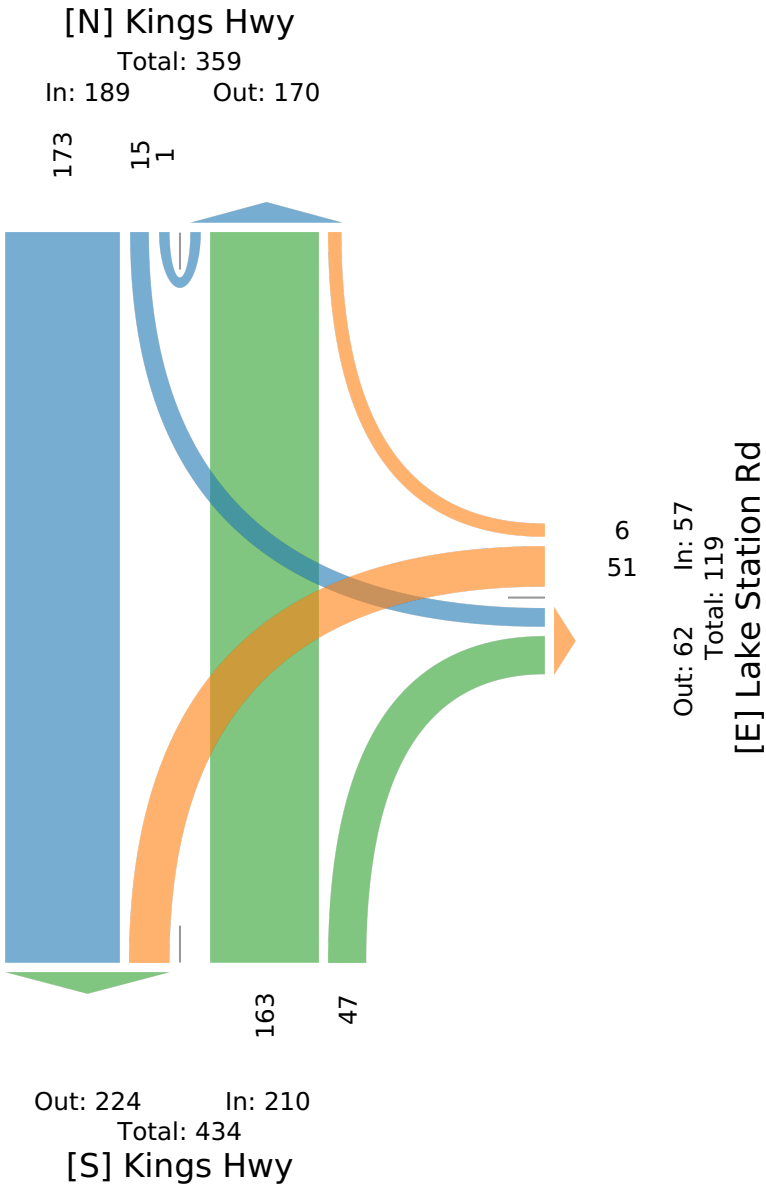
Leg Direction	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2021-07-22 8:00AM	10	0	0	10	27	12	0	39	4	36	0	40	89
8:15AM	14	1	0	15	40	15	0	55	3	30	0	33	103
8:30AM	11	4	0	15	40	13	0	53	3	42	0	45	113
8:45AM	16	1	0	17	56	7	0	63	5	65	1	71	151
Total	51	6	0	57	163	47	0	210	15	173	1	189	456
% Approach	89.5%	10.5%	0%	-	77.6%	22.4%	0%	-	7.9%	91.5%	0.5%	-	-
% Total	11.2%	1.3%	0%	12.5%	35.7%	10.3%	0%	46.1%	3.3%	37.9%	0.2%	41.4%	-
PHF	0.797	0.375	-	0.838	0.728	0.783	-	0.833	0.750	0.665	0.250	0.665	0.755
Lights	48	6	0	54	153	44	0	197	14	162	1	177	428
% Lights	94.1%	100%	0%	94.7%	93.9%	93.6%	0%	93.8%	93.3%	93.6%	100%	93.7%	93.9%
Articulated Trucks and Single-Unit Trucks	2	0	0	2	9	2	0	11	1	8	0	9	22
% Articulated Trucks and Single-Unit Trucks	3.9%	0%	0%	3.5%	5.5%	4.3%	0%	5.2%	6.7%	4.6%	0%	4.8%	4.8%
Buses	1	0	0	1	1	1	0	2	0	3	0	3	6
% Buses	2.0%	0%	0%	1.8%	0.6%	2.1%	0%	1.0%	0%	1.7%	0%	1.6%	1.3%

* L: Left, R: Right, T: Thru, U: U-Turn

121-204 Kings Hwy/Lake Station Rd - AM - TMC
Thu Jul 22, 2021
AM Peak (8 AM - 9 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857857, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Bellvale Rd/Lake Station Rd - PM - TMC

Thu Jul 22, 2021

Full Length (4 PM-6 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857863, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

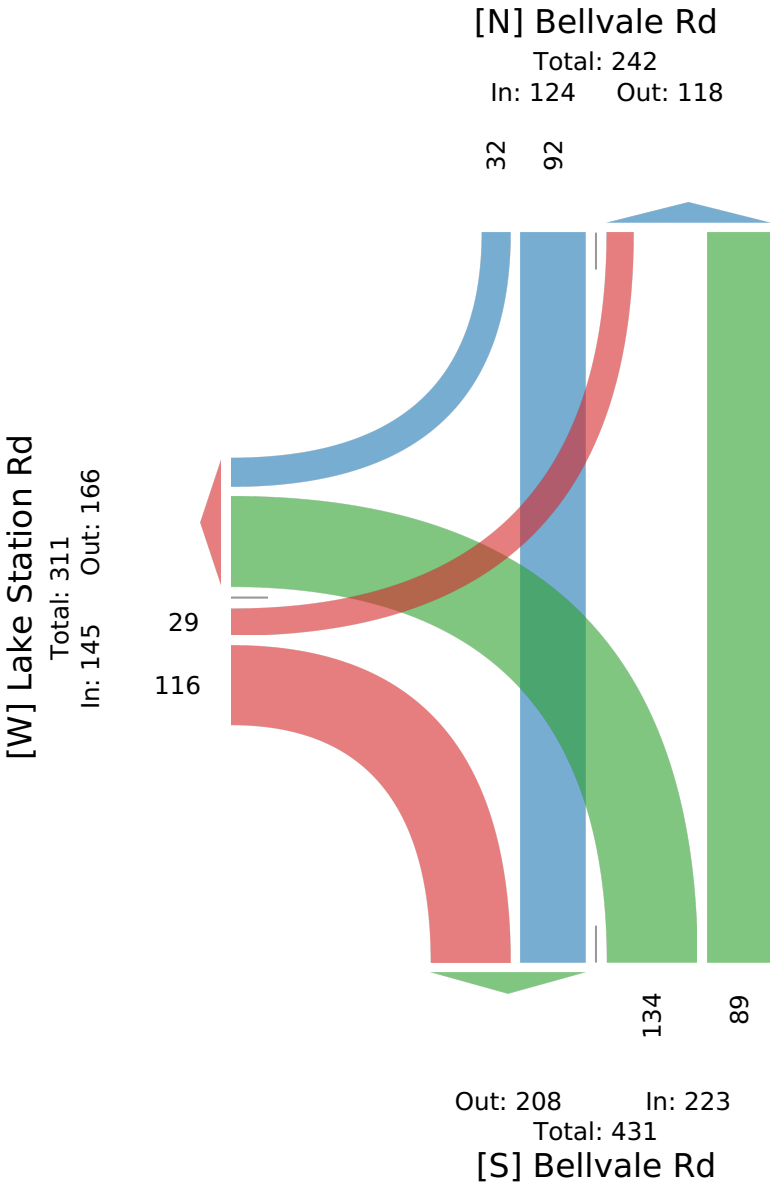
Leg Direction	Lake Station Rd Eastbound				Bellvale Rd Northbound				Bellvale Rd Southbound				
Time	L	R	U	App	L	T	U	App	T	R	U	App	Int
2021-07-22 4:00PM	5	14	0	19	16	12	0	28	7	5	0	12	59
4:15PM	5	26	0	31	20	8	0	28	10	3	0	13	72
4:30PM	6	15	0	21	22	6	0	28	8	6	0	14	63
4:45PM	2	13	0	15	13	10	0	23	15	3	0	18	56
Hourly Total	18	68	0	86	71	36	0	107	40	17	0	57	250
5:00PM	3	12	0	15	15	13	0	28	15	4	0	19	62
5:15PM	2	11	0	13	16	13	0	29	11	5	0	16	58
5:30PM	3	16	0	19	16	12	0	28	13	3	0	16	63
5:45PM	3	9	0	12	16	15	0	31	13	3	0	16	59
Hourly Total	11	48	0	59	63	53	0	116	52	15	0	67	242
6:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	29	116	0	145	134	89	0	223	92	32	0	124	492
% Approach	20.0%	80.0%	0%	-	60.1%	39.9%	0%	-	74.2%	25.8%	0%	-	-
% Total	5.9%	23.6%	0%	29.5%	27.2%	18.1%	0%	45.3%	18.7%	6.5%	0%	25.2%	-
Lights	29	114	0	143	132	87	0	219	90	32	0	122	484
% Lights	100%	98.3%	0%	98.6%	98.5%	97.8%	0%	98.2%	97.8%	100%	0%	98.4%	98.4%
Articulated Trucks and Single-Unit Trucks	0	1	0	1	1	2	0	3	2	0	0	2	6
% Articulated Trucks and Single-Unit Trucks	0%	0.9%	0%	0.7%	0.7%	2.2%	0%	1.3%	2.2%	0%	0%	1.6%	1.2%
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
% Buses	0%	0.9%	0%	0.7%	0.7%	0%	0%	0.4%	0%	0%	0%	0%	0.4%

*L: Left, R: Right, T: Thru, U: U-Turn

121-204 Bellvale Rd/Lake Station Rd - PM - TMC
Thu Jul 22, 2021
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857863, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Bellvale Rd/Lake Station Rd - PM - TMC

Thu Jul 22, 2021

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857863, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

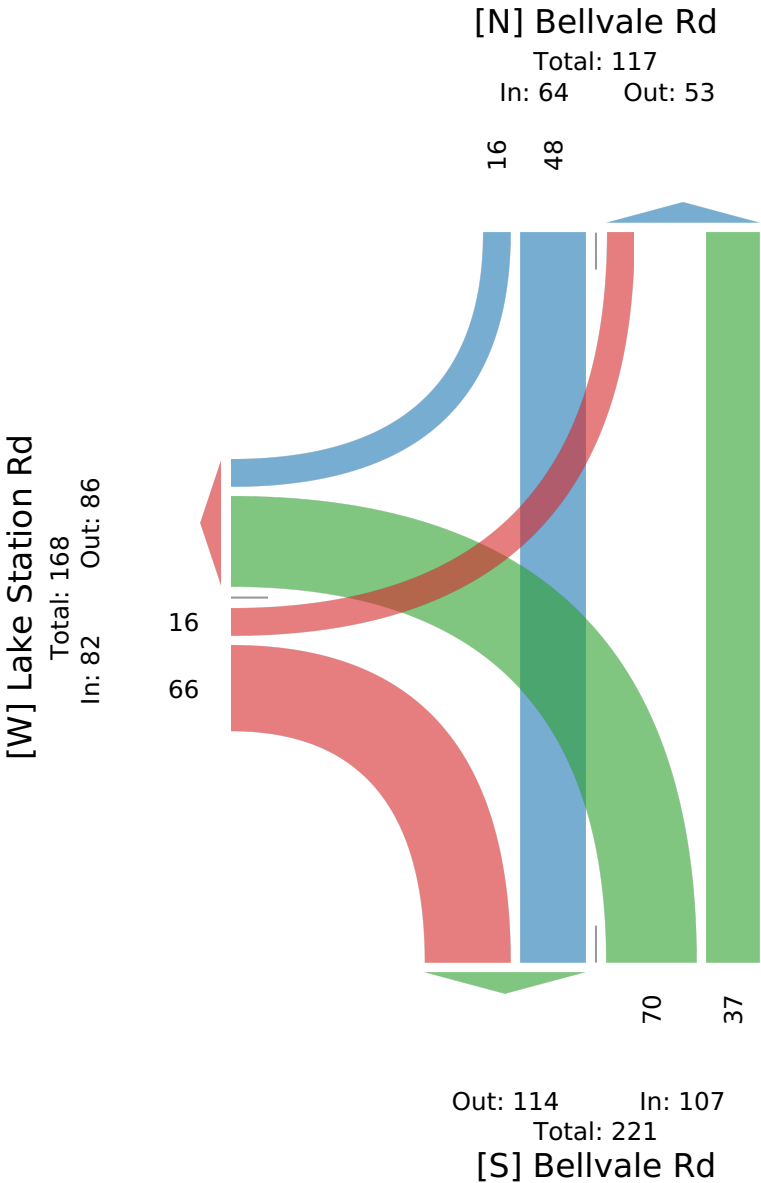
Leg Direction	Lake Station Rd Eastbound				Bellvale Rd Northbound				Bellvale Rd Southbound				
Time	L	R	U	App	L	T	U	App	T	R	U	App	Int
2021-07-22 4:15PM	5	26	0	31	20	8	0	28	10	3	0	13	72
4:30PM	6	15	0	21	22	6	0	28	8	6	0	14	63
4:45PM	2	13	0	15	13	10	0	23	15	3	0	18	56
5:00PM	3	12	0	15	15	13	0	28	15	4	0	19	62
Total	16	66	0	82	70	37	0	107	48	16	0	64	253
% Approach	19.5%	80.5%	0%	-	65.4%	34.6%	0%	-	75.0%	25.0%	0%	-	-
% Total	6.3%	26.1%	0%	32.4%	27.7%	14.6%	0%	42.3%	19.0%	6.3%	0%	25.3%	-
PHF	0.667	0.635	-	0.661	0.795	0.712	-	0.955	0.800	0.667	-	0.842	0.878
Lights	16	64	0	80	69	36	0	105	46	16	0	62	247
% Lights	100%	97.0%	0%	97.6%	98.6%	97.3%	0%	98.1%	95.8%	100%	0%	96.9%	97.6%
Articulated Trucks and Single-Unit Trucks	0	1	0	1	0	1	0	1	2	0	0	2	4
% Articulated Trucks and Single-Unit Trucks	0%	1.5%	0%	1.2%	0%	2.7%	0%	0.9%	4.2%	0%	0%	3.1%	1.6%
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
% Buses	0%	1.5%	0%	1.2%	1.4%	0%	0%	0.9%	0%	0%	0%	0%	0.8%

* L: Left, R: Right, T: Thru, U: U-Turn

121-204 Bellvale Rd/Lake Station Rd - PM - TMC
Thu Jul 22, 2021
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857863, Location: 41.29903, -74.277448



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Kings Hwy/Lake Station Rd - PM - TMC

Thu Jul 22, 2021

Full Length (4 PM-6 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857858, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

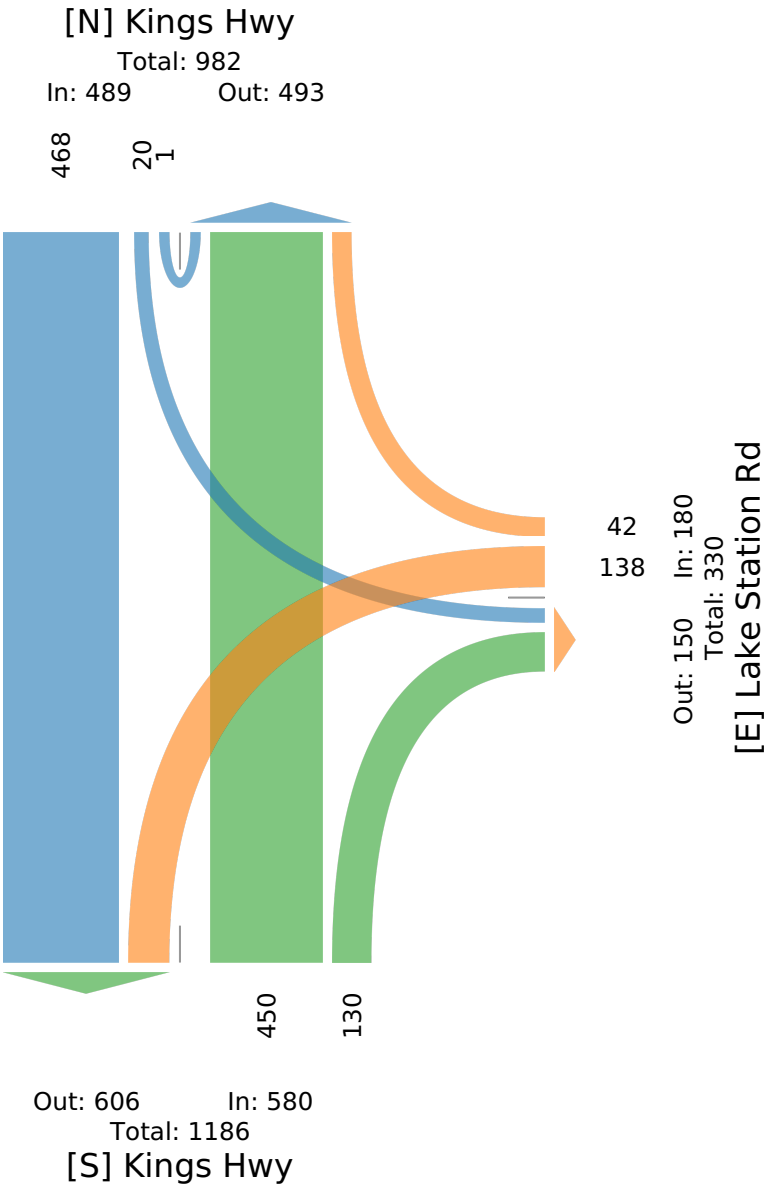
Leg Direction	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2021-07-22 4:00PM	21	6	0	27	57	15	0	72	1	50	0	51	150
4:15PM	17	5	0	22	56	25	0	81	1	55	0	56	159
4:30PM	22	11	0	33	47	19	0	66	5	53	0	58	157
4:45PM	12	4	0	16	56	14	0	70	4	70	0	74	160
Hourly Total	72	26	0	98	216	73	0	289	11	228	0	239	626
5:00PM	22	6	0	28	54	13	0	67	4	61	0	65	160
5:15PM	12	3	0	15	71	19	0	90	0	62	1	63	168
5:30PM	12	5	0	17	49	14	0	63	1	52	0	53	133
5:45PM	20	2	0	22	60	11	0	71	4	65	0	69	162
Hourly Total	66	16	0	82	234	57	0	291	9	240	1	250	623
6:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	138	42	0	180	450	130	0	580	20	468	1	489	1249
% Approach	76.7%	23.3%	0%	-	77.6%	22.4%	0%	-	4.1%	95.7%	0.2%	-	-
% Total	11.0%	3.4%	0%	14.4%	36.0%	10.4%	0%	46.4%	1.6%	37.5%	0.1%	39.2%	-
Lights	138	38	0	176	442	126	0	568	20	462	1	483	1227
% Lights	100%	90.5%	0%	97.8%	98.2%	96.9%	0%	97.9%	100%	98.7%	100%	98.8%	98.2%
Articulated Trucks and Single-Unit Trucks	0	2	0	2	6	3	0	9	0	5	0	5	16
% Articulated Trucks and Single-Unit Trucks	0%	4.8%	0%	1.1%	1.3%	2.3%	0%	1.6%	0%	1.1%	0%	1.0%	1.3%
Buses	0	2	0	2	2	1	0	3	0	1	0	1	6
% Buses	0%	4.8%	0%	1.1%	0.4%	0.8%	0%	0.5%	0%	0.2%	0%	0.2%	0.5%

*L: Left, R: Right, T: Thru, U: U-Turn

121-204 Kings Hwy/Lake Station Rd - PM - TMC
Thu Jul 22, 2021
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857858, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



121-204 Kings Hwy/Lake Station Rd - PM - TMC

Thu Jul 22, 2021

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 857858, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

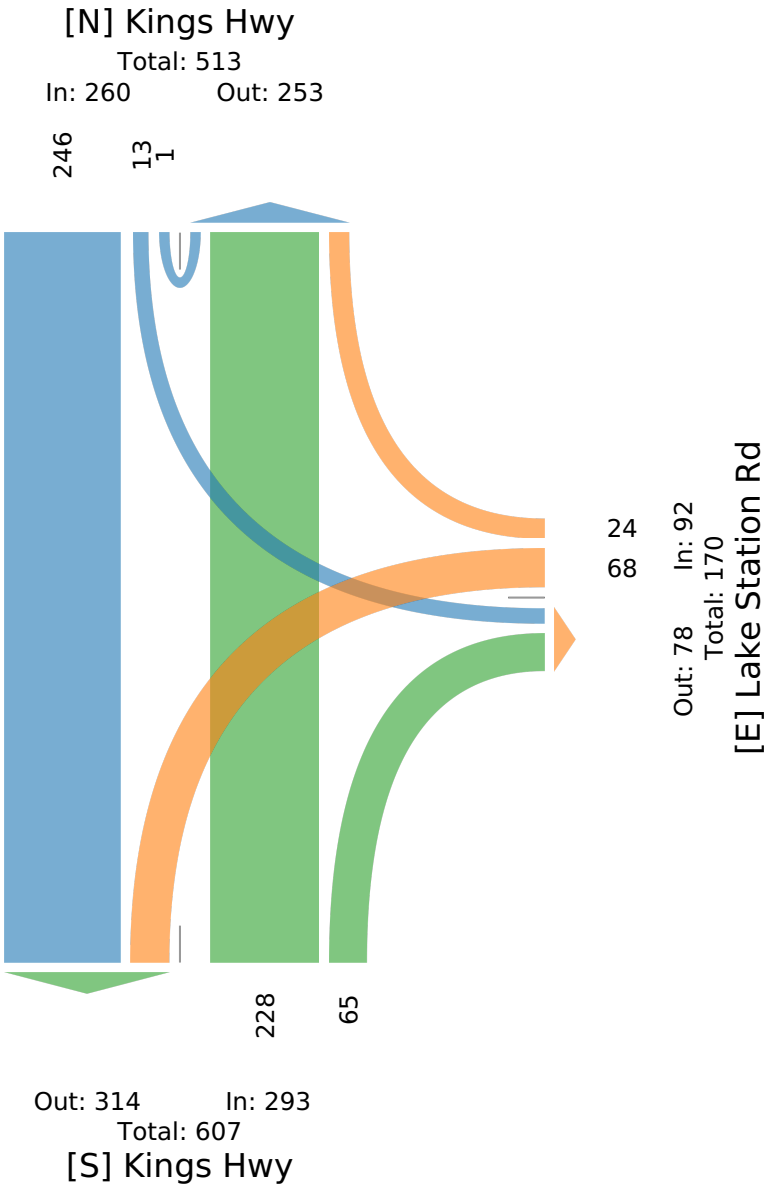
Leg Direction	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2021-07-22 4:30PM	22	11	0	33	47	19	0	66	5	53	0	58	157
4:45PM	12	4	0	16	56	14	0	70	4	70	0	74	160
5:00PM	22	6	0	28	54	13	0	67	4	61	0	65	160
5:15PM	12	3	0	15	71	19	0	90	0	62	1	63	168
Total	68	24	0	92	228	65	0	293	13	246	1	260	645
% Approach	73.9%	26.1%	0%	-	77.8%	22.2%	0%	-	5.0%	94.6%	0.4%	-	-
% Total	10.5%	3.7%	0%	14.3%	35.3%	10.1%	0%	45.4%	2.0%	38.1%	0.2%	40.3%	-
PHF	0.773	0.545	-	0.697	0.803	0.855	-	0.814	0.650	0.879	0.250	0.878	0.960
Lights	68	23	0	91	224	64	0	288	13	242	1	256	635
% Lights	100%	95.8%	0%	98.9%	98.2%	98.5%	0%	98.3%	100%	98.4%	100%	98.5%	98.4%
Articulated Trucks and Single-Unit Trucks	0	1	0	1	3	0	0	3	0	3	0	3	7
% Articulated Trucks and Single-Unit Trucks	0%	4.2%	0%	1.1%	1.3%	0%	0%	1.0%	0%	1.2%	0%	1.2%	1.1%
Buses	0	0	0	0	1	1	0	2	0	1	0	1	3
% Buses	0%	0%	0%	0%	0.4%	1.5%	0%	0.7%	0%	0.4%	0%	0.4%	0.5%

* L: Left, R: Right, T: Thru, U: U-Turn

121-204 Kings Hwy/Lake Station Rd - PM - TMC
Thu Jul 22, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)
All Movements
ID: 857858, Location: 41.295737, -74.291344



Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US



National Data & Surveying Services Intersection Turning Movement Count

Location: Kings Hwy/Lehigh Ave & NYS Rte 17M
City: Chester
Control: Signalized

Project ID: 22-380005-005
Date: 3/10/2022

Data - Total

NS/EW Streets:	Kings Hwy/Lehigh Ave				Kings Hwy/Lehigh Ave				NYS Rte 17M				NYS Rte 17M				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
7:00 AM	65	0	58	0	1	21	16	0	8	35	43	0	1	25	0	0	273
7:15 AM	95	1	60	0	2	15	8	0	6	56	41	0	7	33	1	0	325
7:30 AM	87	1	38	0	3	19	11	0	0	44	63	0	2	28	0	0	296
7:45 AM	105	0	42	0	0	33	12	0	1	52	79	0	5	45	0	0	374
8:00 AM	95	1	39	0	3	19	13	0	3	39	57	0	7	31	0	0	307
8:15 AM	77	0	39	0	3	16	16	0	2	33	70	0	10	30	0	0	296
8:30 AM	88	3	43	0	0	19	8	0	5	46	71	0	7	39	0	0	329
8:45 AM	84	4	43	0	3	45	10	0	6	43	66	0	8	39	0	0	351
TOTAL VOLUMES :	NL 696	NT 10	NR 362	NU 0	SL 15	ST 187	SR 94	SU 0	EL 31	ET 348	ER 490	EU 0	WL 47	WT 270	WR 1	WU 0	TOTAL 2551
APPROACH %'s :	65.17%	0.94%	33.90%	0.00%	5.07%	63.18%	31.76%	0.00%	3.57%	40.05%	56.39%	0.00%	14.78%	84.91%	0.31%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	365	4	163	0	6	87	49	0	11	170	277	0	29	145	0	0	1306
PEAK HR FACTOR :	0.869	0.333	0.948	0.000	0.500	0.659	0.766	0.000	0.550	0.817	0.877	0.000	0.725	0.806	0.000	0.000	0.873
	0.905				0.789				0.867				0.870				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	94	1	37	0	2	46	31	0	8	25	84	0	10	57	1	0	396
4:15 PM	110	2	30	0	3	50	30	0	0	37	95	0	9	56	0	0	422
4:30 PM	94	1	33	0	0	49	36	0	3	32	140	0	8	45	0	0	441
4:45 PM	76	3	39	0	5	59	32	0	7	36	116	0	13	73	0	0	459
5:00 PM	91	3	48	0	0	42	29	0	4	47	96	0	13	80	0	0	453
5:15 PM	90	2	31	0	4	64	29	0	8	38	98	0	21	79	0	0	464
5:30 PM	92	5	25	0	1	55	27	0	6	40	99	0	14	47	0	0	411
5:45 PM	87	1	32	0	0	41	28	0	11	27	106	0	12	48	0	0	393
TOTAL VOLUMES :	NL 734	NT 18	NR 275	NU 0	SL 15	ST 406	SR 242	SU 0	EL 47	ET 282	ER 834	EU 0	WL 100	WT 485	WR 1	WU 0	TOTAL 3439
APPROACH %'s :	71.47%	1.75%	26.78%	0.00%	2.26%	61.24%	36.50%	0.00%	4.04%	24.25%	71.71%	0.00%	17.06%	82.76%	0.17%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	351	9	151	0	9	214	126	0	22	153	450	0	55	277	0	0	1817
PEAK HR FACTOR :	0.934	0.750	0.786	0.000	0.450	0.836	0.875	0.000	0.688	0.814	0.804	0.000	0.655	0.866	0.000	0.000	0.979
	0.900				0.899				0.893				0.830				

National Data & Surveying Services Intersection Turning Movement Count

Location: Kings Hwy/Lehigh Ave & NYS Rte 17M
City: Chester
Control: Signalized

Project ID: 22-380005-005
Date: 3/10/2022

Data - Cars

NS/EW Streets:	Kings Hwy/Lehigh Ave				Kings Hwy/Lehigh Ave				NYS Rte 17M				NYS Rte 17M				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
7:00 AM	62	0	53	0	1	16	10	0	6	33	37	0	1	21	0	0	240
7:15 AM	89	1	56	0	2	11	7	0	6	52	38	0	6	30	1	0	299
7:30 AM	83	1	33	0	3	14	9	0	0	38	59	0	2	26	0	0	268
7:45 AM	100	0	39	0	0	28	10	0	1	44	72	0	3	44	0	0	341
8:00 AM	90	0	37	0	3	17	10	0	2	38	50	0	7	31	0	0	285
8:15 AM	74	0	37	0	3	13	15	0	1	30	64	0	9	27	0	0	273
8:30 AM	82	3	40	0	0	15	8	0	5	45	70	0	6	35	0	0	309
8:45 AM	83	2	37	0	3	37	9	0	6	42	63	0	6	34	0	0	322
TOTAL VOLUMES :	NL 663	NT 7	NR 332	NU 0	SL 15	ST 151	SR 78	SU 0	EL 27	ET 322	ER 453	EU 0	WL 40	WT 248	WR 1	WU 0	TOTAL 2337
APPROACH %'s :	66.17%	0.70%	33.13%	0.00%	6.15%	61.89%	31.97%	0.00%	3.37%	40.15%	56.48%	0.00%	13.84%	85.81%	0.35%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	346	3	153	0	6	73	43	0	9	157	256	0	25	137	0	0	1208
PEAK HR FACTOR :	0.865	0.250	0.956	0.000	0.500	0.652	0.717	0.000	0.450	0.872	0.889	0.000	0.694	0.778	0.000	0.000	0.886
	0.903				0.803				0.879				0.862				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	90	1	34	0	2	43	30	0	8	25	79	0	10	54	1	0	377
4:15 PM	104	2	27	0	3	45	30	0	0	35	92	0	8	55	0	0	401
4:30 PM	88	1	31	0	0	45	35	0	3	31	134	0	8	43	0	0	419
4:45 PM	74	3	39	0	5	50	32	0	6	36	115	0	11	71	0	0	442
5:00 PM	88	3	45	0	0	39	28	0	4	43	95	0	13	75	0	0	433
5:15 PM	89	2	31	0	4	58	27	0	8	36	96	0	20	76	0	0	447
5:30 PM	87	4	23	0	1	54	27	0	6	39	99	0	13	47	0	0	400
5:45 PM	84	1	28	0	0	37	28	0	11	26	105	0	11	47	0	0	378
TOTAL VOLUMES :	NL 704	NT 17	NR 258	NU 0	SL 15	ST 371	SR 237	SU 0	EL 46	ET 271	ER 815	EU 0	WL 94	WT 468	WR 1	WU 0	TOTAL 3297
APPROACH %'s :	71.91%	1.74%	26.35%	0.00%	2.41%	59.55%	38.04%	0.00%	4.06%	23.94%	72.00%	0.00%	16.70%	83.13%	0.18%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	339	9	146	0	9	192	122	0	21	146	440	0	52	265	0	0	1741
PEAK HR FACTOR :	0.952	0.750	0.811	0.000	0.450	0.828	0.871	0.000	0.656	0.849	0.821	0.000	0.650	0.872	0.000	0.000	0.974
	0.908				0.907				0.903				0.826				

National Data & Surveying Services Intersection Turning Movement Count

Location: Kings Hwy/Lehigh Ave & NYS Rte 17M
City: Chester
Control: Signalized

Project ID: 22-380005-005
Date: 3/10/2022

Data - HT

NS/EW Streets:	Kings Hwy/Lehigh Ave				Kings Hwy/Lehigh Ave				NYS Rte 17M				NYS Rte 17M				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
7:00 AM	3	0	5	0	0	5	6	0	2	2	6	0	0	4	0	0	33
7:15 AM	6	0	4	0	0	4	1	0	0	4	3	0	1	3	0	0	26
7:30 AM	4	0	5	0	0	5	2	0	0	6	4	0	0	2	0	0	28
7:45 AM	5	0	3	0	0	5	2	0	0	8	7	0	2	1	0	0	33
8:00 AM	5	1	2	0	0	2	3	0	1	1	7	0	0	0	0	0	22
8:15 AM	3	0	2	0	0	3	1	0	1	3	6	0	1	3	0	0	23
8:30 AM	6	0	3	0	0	4	0	0	0	1	1	0	1	4	0	0	20
8:45 AM	1	2	6	0	0	8	1	0	0	1	3	0	2	5	0	0	29
TOTAL VOLUMES :	NL 33	NT 3	NR 30	NU 0	SL 0	ST 36	SR 16	SU 0	EL 4	ET 26	ER 37	EU 0	WL 7	WT 22	WR 0	WU 0	TOTAL 214
APPROACH %'s :	50.00%	4.55%	45.45%	0.00%	0.00%	69.23%	30.77%	0.00%	5.97%	38.81%	55.22%	0.00%	24.14%	75.86%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	19	1	10	0	0	14	6	0	2	13	21	0	4	8	0	0	98
PEAK HR FACTOR :	0.792	0.250	0.833	0.000	0.000	0.700	0.500	0.000	0.500	0.406	0.750	0.000	0.500	0.500	0.000	0.000	0.742
	0.833				0.714				0.600				0.600				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	4	0	3	0	0	3	1	0	0	0	5	0	0	3	0	0	19
4:15 PM	6	0	3	0	0	5	0	0	0	2	3	0	1	1	0	0	21
4:30 PM	6	0	2	0	0	4	1	0	0	1	6	0	0	2	0	0	22
4:45 PM	2	0	0	0	0	9	0	0	1	0	1	0	2	2	0	0	17
5:00 PM	3	0	3	0	0	3	1	0	0	4	1	0	0	5	0	0	20
5:15 PM	1	0	0	0	0	6	2	0	0	2	2	0	1	3	0	0	17
5:30 PM	5	1	2	0	0	1	0	0	0	1	0	0	1	0	0	0	11
5:45 PM	3	0	4	0	0	4	0	0	0	1	1	0	1	1	0	0	15
TOTAL VOLUMES :	NL 30	NT 1	NR 17	NU 0	SL 0	ST 35	SR 5	SU 0	EL 1	ET 11	ER 19	EU 0	WL 6	WT 17	WR 0	WU 0	TOTAL 142
APPROACH %'s :	62.50%	2.08%	35.42%	0.00%	0.00%	87.50%	12.50%	0.00%	3.23%	35.48%	61.29%	0.00%	26.09%	73.91%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	12	0	5	0	0	22	4	0	1	7	10	0	3	12	0	0	76
PEAK HR FACTOR :	0.500	0.000	0.417	0.000	0.000	0.611	0.500	0.000	0.250	0.438	0.417	0.000	0.375	0.600	0.000	0.000	0.864
	0.531				0.722				0.643				0.750				

National Data & Surveying ServicesIntersection Turning Movement Count

Location: Kings Hwy/Lehigh Ave & NYS Rte 17M

City: Chester

Control: Signalized

Project ID: 22-380005-005

Date: 3/10/2022

Data - Bikes

[illegible][illegible]

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kings Hwy/Lehigh Ave & NYS Rte 17M **Project ID:** 22-380005-005

Location: Kings Hwy/Lehigh Ave & NYS Rte 17M

City: Chester

Project ID: 22-380005-005

Date: 3/10/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Kings Hwy/Lehigh Ave		Kings Hwy/Lehigh Ave		NYS Rte 17M		NYS Rte 17M		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
	7:00 AM	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	
TOTAL VOLUMES : APPROACH %'s :	EB 0	WB 0	EB 0	WB 0	NB 0	SB 0	NB 0	SB 0	TOTAL 0
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL : PEAK HR FACTOR :	0 0		0	0	0	0	0	0	0

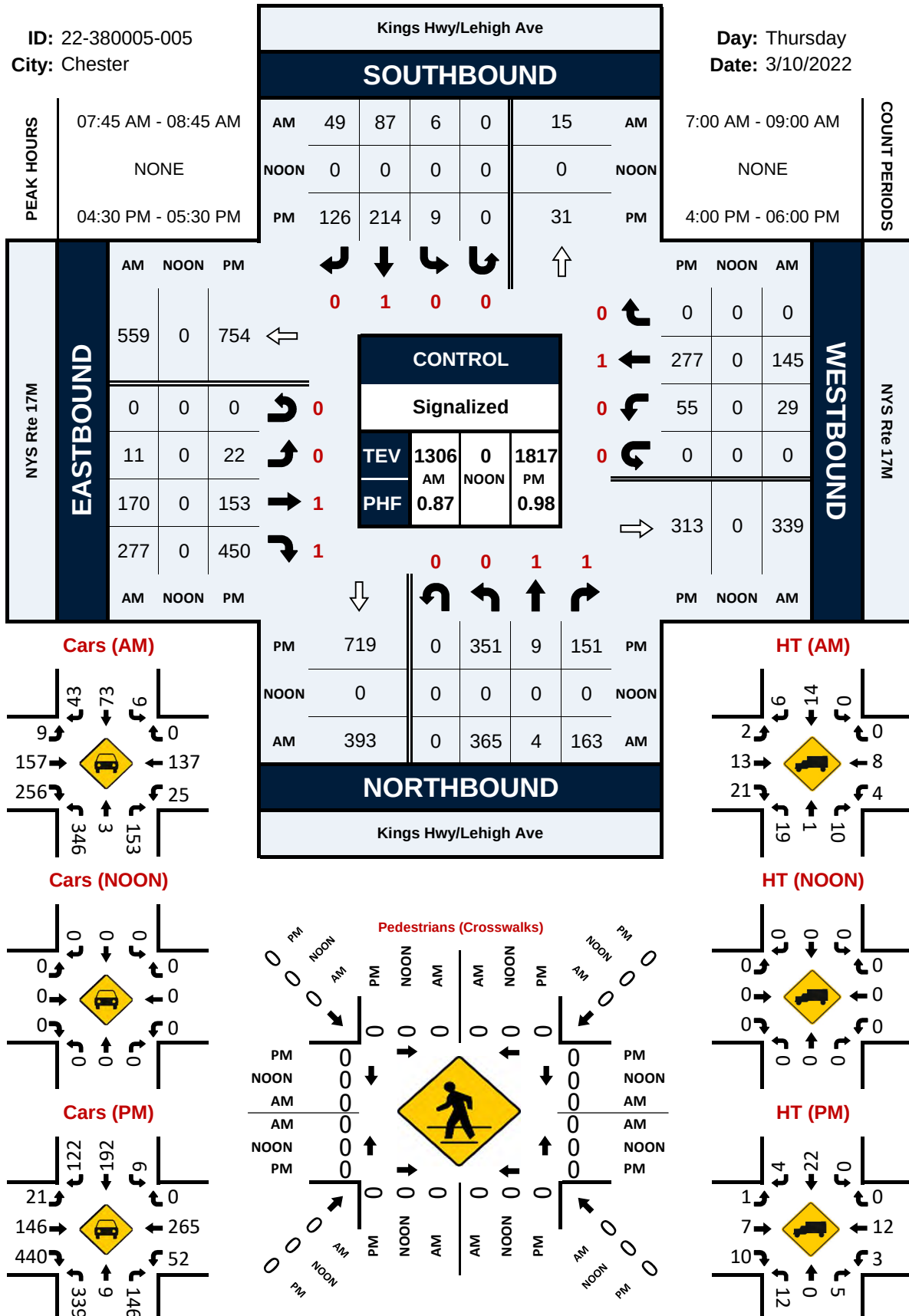
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Kings Hwy/Lehigh Ave & NYS Rte 17M

Peak Hour Turning Movement Count

ID: 22-380005-005
City: Chester

Day: Thursday
Date: 3/10/2022



ATTACHMENT C
LEVEL OF SERVICE ANALYSIS

PROPOSED LIGHT INDUSTRIAL DEVELOPMENT
LAKE STATION ROAD
TOWN OF CHESTER
ORANGE COUNTY, NEW YORK

Intersection

Int Delay, s/veh 2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	7	179	56	18	190
Future Vol, veh/h	56	7	179	56	18	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	7	-	4	-	-	3
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	6	0	6	6	7	6
Mvmt Flow	74	9	236	74	24	250

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	571	273	0
Stage 1	273	-	-
Stage 2	298	-	-
Critical Hdwy	7.86	6.9	-
Critical Hdwy Stg 1	6.86	-	-
Critical Hdwy Stg 2	6.86	-	-
Follow-up Hdwy	3.554	3.3	-
Pot Cap-1 Maneuver	381	731	-
Stage 1	687	-	-
Stage 2	663	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	372	731	-
Mov Cap-2 Maneuver	372	-	-
Stage 1	687	-	-
Stage 2	648	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	0.7
HCM LOS	C		

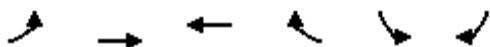
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	393	1223
HCM Lane V/C Ratio	-	-	0.211	0.019
HCM Control Delay (s)	-	-	16.6	8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	73	1	1	59	2	3
Future Vol, veh/h	73	1	1	59	2	3
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, %	1	-	-	-5	-7	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	0	0	4	0	0
Mvmt Flow	91	1	1	74	3	4
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	92	0	168	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	-	-	4.1	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1515	-	883	988
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1515	-	882	988
Mov Cap-2 Maneuver	-	-	-	-	882	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	980	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	943	-	-	1515	-	
HCM Lane V/C Ratio	0.007	-	-	0.001	-	
HCM Control Delay (s)	8.8	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	53	47	41	22	13
Future Vol, veh/h	24	53	47	41	22	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	10	2	5	5	15	0
Mvmt Flow	30	66	59	51	28	16
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	205	36	44	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	6.1	6.02	4.15	-	-	-
Critical Hdwy Stg 1	5.1	-	-	-	-	-
Critical Hdwy Stg 2	5.1	-	-	-	-	-
Follow-up Hdwy	3.59	3.318	2.245	-	-	-
Pot Cap-1 Maneuver	783	1039	1545	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	752	1039	1545	-	-	-
Mov Cap-2 Maneuver	752	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.3	4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1545	-	929	-	-	
HCM Lane V/C Ratio	0.038	-	0.104	-	-	
HCM Control Delay (s)	7.4	0	9.3	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

HCM Signalized Intersection Capacity Analysis
121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
Existing_AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	333	174	0	15	136
Future Volume (vph)	15	333	174	0	15	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.88	
Flt Protected		1.00	1.00		1.00	
Satd. Flow (prot)		1763	1810		1463	
Flt Permitted		0.99	1.00		1.00	
Satd. Flow (perm)		1741	1810		1463	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	383	200	0	17	156
RTOR Reduction (vph)	0	0	0	0	124	0
Lane Group Flow (vph)	0	400	200	0	49	0
Heavy Vehicles (%)	20%	7%	5%	0%	0%	15%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		1 2	1		3	
Permitted Phases	1 2					
Actuated Green, G (s)		81.4	35.9		23.9	
Effective Green, g (s)		81.4	35.9		23.9	
Actuated g/C Ratio		0.71	0.31		0.21	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1229	563		303	
v/s Ratio Prot			c0.11		c0.03	
v/s Ratio Perm		c0.23				
v/c Ratio		0.33	0.36		0.16	
Uniform Delay, d1		6.5	30.7		37.5	
Progression Factor		0.15	1.00		1.00	
Incremental Delay, d2		0.4	1.1		0.3	
Delay (s)		1.4	31.8		37.7	
Level of Service		A	C		D	
Approach Delay (s)		1.4	31.8		37.7	
Approach LOS		A	C		D	
Intersection Summary						
HCM 2000 Control Delay			17.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.31			
Actuated Cycle Length (s)			115.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			47.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Kings Hwy (CR 13) & NYS 17M/NYS Route 17M 121-204; Davidson Drive Holdings, LLC Existing_AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	181	277	116	194	365	167
Future Volume (vph)	181	277	116	194	365	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1759	1495		1690	1703	1509
Flt Permitted	1.00	1.00		0.80	0.95	1.00
Satd. Flow (perm)	1759	1495		1374	1703	1509
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	208	318	133	223	420	192
RTOR Reduction (vph)	0	219	0	0	0	34
Lane Group Flow (vph)	208	99	0	356	420	158
Heavy Vehicles (%)	8%	8%	16%	7%	6%	7%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	1			1 3	2	
Permitted Phases		1	1 3			2
Actuated Green, G (s)	35.9	35.9		64.8	40.5	40.5
Effective Green, g (s)	35.9	35.9		64.8	40.5	40.5
Actuated g/C Ratio	0.31	0.31		0.56	0.35	0.35
Clearance Time (s)	5.0	5.0			5.0	5.0
Vehicle Extension (s)	6.0	6.0			3.0	3.0
Lane Grp Cap (vph)	547	465		772	598	530
v/s Ratio Prot	0.12				0.25	
v/s Ratio Perm		0.07		0.26		0.10
v/c Ratio	0.38	0.21		0.46	0.70	0.30
Uniform Delay, d1	31.0	29.3		14.9	32.2	27.1
Progression Factor	1.00	1.00		0.43	1.00	1.00
Incremental Delay, d2	1.2	0.6		1.2	6.8	1.4
Delay (s)	32.3	29.9		7.5	39.0	28.5
Level of Service	C	C		A	D	C
Approach Delay (s)	30.8			7.5	35.7	
Approach LOS	C			A	D	
Intersection Summary						
HCM 2000 Control Delay			27.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			115.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			59.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	26	213	71	14	239
Future Vol, veh/h	73	26	213	71	14	239
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	7	-	4	-	-	3
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	4	2	2	0	2
Mvmt Flow	74	26	215	72	14	241
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	520	251	0	0	287	0
Stage 1	251	-	-	-	-	-
Stage 2	269	-	-	-	-	-
Critical Hdwy	7.8	6.94	-	-	4.1	-
Critical Hdwy Stg 1	6.8	-	-	-	-	-
Critical Hdwy Stg 2	6.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.2	-
Pot Cap-1 Maneuver	425	746	-	-	1287	-
Stage 1	722	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	419	746	-	-	1287	-
Mov Cap-2 Maneuver	419	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	14.6	0		0.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		474	1287	
HCM Lane V/C Ratio	-	-		0.211	0.011	
HCM Control Delay (s)	-	-		14.6	7.8	
HCM Lane LOS	-	-		B	A	
HCM 95th %tile Q(veh)	-	-		0.8	0	

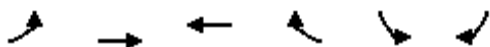
Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	2	3	98	1	2
Future Vol, veh/h	83	2	3	98	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-5	-7	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	94	2	3	111	1	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	96	0	212	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	-	-	4.1	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1510	-	848	985
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1510	-	846	985
Mov Cap-2 Maneuver	-	-	-	-	846	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	954	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		8.9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	934	-	-	1510	-	
HCM Lane V/C Ratio	0.004	-	-	0.002	-	
HCM Control Delay (s)	8.9	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	69	82	37	48	19
Future Vol, veh/h	16	69	82	37	48	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	3	1	3	4	0
Mvmt Flow	18	78	93	42	55	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	294	66	77	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6	6.03	4.11	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.209	-	-	-
Pot Cap-1 Maneuver	724	999	1528	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	679	999	1528	-	-	-
Mov Cap-2 Maneuver	679	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	5.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1528	-	918	-	-	
HCM Lane V/C Ratio	0.061	-	0.105	-	-	
HCM Control Delay (s)	7.5	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-	

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
Existing _PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	31	304	332	0	9	340
Future Volume (vph)	31	304	332	0	9	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.87	
Flt Protected		1.00	1.00		1.00	
Satd. Flow (prot)		1820	1810		1529	
Flt Permitted		0.94	1.00		1.00	
Satd. Flow (perm)		1727	1810		1529	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	32	310	339	0	9	347
RTOR Reduction (vph)	0	0	0	0	246	0
Lane Group Flow (vph)	0	342	339	0	110	0
Heavy Vehicles (%)	3%	4%	5%	0%	0%	8%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		1 2	1		3	
Permitted Phases	1 2					
Actuated Green, G (s)		85.0	40.0		39.1	
Effective Green, g (s)		85.0	40.0		39.1	
Actuated g/C Ratio		0.63	0.30		0.29	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1094	539		445	
v/s Ratio Prot			c0.19		c0.07	
v/s Ratio Perm		c0.20				
v/c Ratio		0.31	0.63		0.25	
Uniform Delay, d1		11.2	40.6		36.3	
Progression Factor		0.17	1.00		1.00	
Incremental Delay, d2		0.4	3.9		0.3	
Delay (s)		2.4	44.5		36.6	
Level of Service		A	D		D	
Approach Delay (s)		2.4	44.5		36.6	
Approach LOS		A	D		D	
Intersection Summary						
HCM 2000 Control Delay			27.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			134.1		Sum of lost time (s)	15.0
Intersection Capacity Utilization			69.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Kings Hwy (CR 13) & NYS 17M/NYS Route 17M 121-204; Davidson Drive Holdings, LLC

Existing _PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	175	451	269	403	351	160
Future Volume (vph)	175	451	269	403	351	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1810	1583		1757	1752	1495
Flt Permitted	1.00	1.00		0.79	0.95	1.00
Satd. Flow (perm)	1810	1583		1417	1752	1495
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	179	460	274	411	358	163
RTOR Reduction (vph)	0	323	0	0	0	36
Lane Group Flow (vph)	179	137	0	685	358	127
Heavy Vehicles (%)	5%	2%	9%	4%	3%	8%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	1			1 3	2	
Permitted Phases		1	1 3			2
Actuated Green, G (s)	40.0	40.0		84.1	40.0	40.0
Effective Green, g (s)	40.0	40.0		84.1	40.0	40.0
Actuated g/C Ratio	0.30	0.30		0.63	0.30	0.30
Clearance Time (s)	5.0	5.0			5.0	5.0
Vehicle Extension (s)	6.0	6.0			3.0	3.0
Lane Grp Cap (vph)	539	472		888	522	445
v/s Ratio Prot	0.10				0.20	
v/s Ratio Perm		0.09		0.48		0.08
v/c Ratio	0.33	0.29		0.77	0.69	0.28
Uniform Delay, d1	36.6	36.2		18.1	41.5	36.1
Progression Factor	1.00	1.00		0.78	1.00	1.00
Incremental Delay, d2	1.0	1.0		4.4	7.2	1.6
Delay (s)	37.7	37.1		18.5	48.7	37.7
Level of Service	D	D		B	D	D
Approach Delay (s)	37.3			18.5	45.2	
Approach LOS	D			B	D	
Intersection Summary						
HCM 2000 Control Delay			32.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			134.1		Sum of lost time (s)	15.0
Intersection Capacity Utilization			78.0%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	7	210	58	19	202
Future Vol, veh/h	58	7	210	58	19	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	7	-	4	-	-	3
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	6	0	6	6	7	6
Mvmt Flow	76	9	276	76	25	266
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	630	314	0	0	352	0
Stage 1	314	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	7.86	6.9	-	-	4.17	-
Critical Hdwy Stg 1	6.86	-	-	-	-	-
Critical Hdwy Stg 2	6.86	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.263	-
Pot Cap-1 Maneuver	344	688	-	-	1180	-
Stage 1	648	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	335	688	-	-	1180	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	18.3	0		0.7		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		355	1180	
HCM Lane V/C Ratio	-	-		0.241	0.021	
HCM Control Delay (s)	-	-		18.3	8.1	
HCM Lane LOS	-	-		C	A	
HCM 95th %tile Q(veh)	-	-		0.9	0.1	

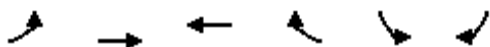
Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	75	1	1	61	2	3
Future Vol, veh/h	75	1	1	61	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-5	-7	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	0	0	4	0	0
Mvmt Flow	94	1	1	76	3	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	173	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	78	-
Critical Hdwy	-	-	4.1	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1512	-	879	985
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	878	985
Mov Cap-2 Maneuver	-	-	-	-	878	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	978	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		8.9	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	939	-	-	1512	-	
HCM Lane V/C Ratio	0.007	-	-	0.001	-	
HCM Control Delay (s)	8.9	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	55	48	53	25	13
Future Vol, veh/h	25	55	48	53	25	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	10	2	5	5	15	0
Mvmt Flow	31	69	60	66	31	16
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	225	39	47	0	-	0
Stage 1	39	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.1	6.02	4.15	-	-	-
Critical Hdwy Stg 1	5.1	-	-	-	-	-
Critical Hdwy Stg 2	5.1	-	-	-	-	-
Follow-up Hdwy	3.59	3.318	2.245	-	-	-
Pot Cap-1 Maneuver	765	1035	1541	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	734	1035	1541	-	-	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	3.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1541	-	917	-	-	
HCM Lane V/C Ratio	0.039	-	0.109	-	-	
HCM Control Delay (s)	7.4	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-	

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
NB 2024_AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	375	213	0	15	139
Future Volume (vph)	15	375	213	0	15	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.88	
Flt Protected		1.00	1.00		1.00	
Satd. Flow (prot)		1764	1810		1462	
Flt Permitted		0.99	1.00		1.00	
Satd. Flow (perm)		1741	1810		1462	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	431	245	0	17	160
RTOR Reduction (vph)	0	0	0	0	122	0
Lane Group Flow (vph)	0	448	245	0	55	0
Heavy Vehicles (%)	20%	7%	5%	0%	0%	15%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		1 2	1		3	
Permitted Phases	1 2					
Actuated Green, G (s)		83.5	38.2		28.7	
Effective Green, g (s)		83.5	38.2		28.7	
Actuated g/C Ratio		0.68	0.31		0.23	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1189	565		343	
v/s Ratio Prot			c0.14		c0.04	
v/s Ratio Perm		c0.26				
v/c Ratio		0.38	0.43		0.16	
Uniform Delay, d1		8.3	33.4		37.2	
Progression Factor		0.12	1.00		1.00	
Incremental Delay, d2		0.5	1.5		0.2	
Delay (s)		1.6	34.9		37.4	
Level of Service		A	C		D	
Approach Delay (s)		1.6	34.9		37.4	
Approach LOS		A	C		D	
Intersection Summary						
HCM 2000 Control Delay			18.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			122.2		Sum of lost time (s)	15.0
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Kings Hwy (CR 13) & NYS 17M/NYS Route 17M 121-204; Davidson Drive Holdings, LLC

NB 2024_AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	216	341	148	204	385	174
Future Volume (vph)	216	341	148	204	385	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1759	1495		1680	1703	1509
Flt Permitted	1.00	1.00		0.75	0.95	1.00
Satd. Flow (perm)	1759	1495		1292	1703	1509
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	248	392	170	234	443	200
RTOR Reduction (vph)	0	269	0	0	0	34
Lane Group Flow (vph)	248	123	0	404	443	166
Heavy Vehicles (%)	8%	8%	16%	7%	6%	7%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	1			1 3	2	
Permitted Phases		1	1 3			2
Actuated Green, G (s)	38.2	38.2		71.9	40.3	40.3
Effective Green, g (s)	38.2	38.2		71.9	40.3	40.3
Actuated g/C Ratio	0.31	0.31		0.59	0.33	0.33
Clearance Time (s)	5.0	5.0			5.0	5.0
Vehicle Extension (s)	6.0	6.0			3.0	3.0
Lane Grp Cap (vph)	549	467		760	561	497
v/s Ratio Prot	0.14				0.26	
v/s Ratio Perm		0.08		0.31		0.11
v/c Ratio	0.45	0.26		0.53	0.79	0.33
Uniform Delay, d1	33.6	31.5		15.1	37.1	30.8
Progression Factor	1.00	1.00		0.45	1.00	1.00
Incremental Delay, d2	1.7	0.8		1.6	10.8	1.8
Delay (s)	35.3	32.3		8.4	47.9	32.6
Level of Service	D	C		A	D	C
Approach Delay (s)	33.5			8.4	43.2	
Approach LOS	C			A	D	
Intersection Summary						
HCM 2000 Control Delay			31.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.65			
Actuated Cycle Length (s)			122.2		Sum of lost time (s)	15.0
Intersection Capacity Utilization			64.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

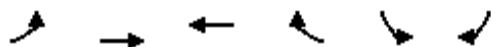
Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	75	27	229	73	14	272
Future Vol, veh/h	75	27	229	73	14	272
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	7	-	4	-	-	3
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	4	2	2	0	2
Mvmt Flow	76	27	231	74	14	275
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	571	268	0	0	305	0
Stage 1	268	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	7.8	6.94	-	-	4.1	-
Critical Hdwy Stg 1	6.8	-	-	-	-	-
Critical Hdwy Stg 2	6.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.2	-
Pot Cap-1 Maneuver	389	727	-	-	1267	-
Stage 1	704	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	384	727	-	-	1267	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	704	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.7	0		0.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	439	1267	-	
HCM Lane V/C Ratio	-	-	0.235	0.011	-	
HCM Control Delay (s)	-	-	15.7	7.9	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.9	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	2	3	101	1	2
Future Vol, veh/h	86	2	3	101	1	2
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, %	1	-	-	-5	-7	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	98	2	3	115	1	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	100	0	220	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.1	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1505	-	842	981
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1505	-	840	981
Mov Cap-2 Maneuver	-	-	-	-	840	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	951	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		8.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	929	-	-	1505	-	
HCM Lane V/C Ratio	0.004	-	-	0.002	-	
HCM Control Delay (s)	8.9	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	71	84	40	59	20
Future Vol, veh/h	16	71	84	40	59	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	3	1	3	4	0
Mvmt Flow	18	81	95	45	67	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	314	79	90	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	235	-	-	-	-	-
Critical Hdwy	6	6.03	4.11	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.209	-	-	-
Pot Cap-1 Maneuver	707	983	1512	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	662	983	1512	-	-	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.5	5.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1512	-	903	-	-	
HCM Lane V/C Ratio	0.063	-	0.109	-	-	
HCM Control Delay (s)	7.5	0	9.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-	

HCM Signalized Intersection Capacity Analysis 121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
NB 2024_PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	31	355	365	0	9	347
Future Volume (vph)	31	355	365	0	9	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.87	
Flt Protected		1.00	1.00		1.00	
Satd. Flow (prot)		1821	1810		1529	
Flt Permitted		0.95	1.00		1.00	
Satd. Flow (perm)		1733	1810		1529	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	32	362	372	0	9	354
RTOR Reduction (vph)	0	0	0	0	249	0
Lane Group Flow (vph)	0	394	372	0	114	0
Heavy Vehicles (%)	3%	4%	5%	0%	0%	8%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		1 2	1		3	
Permitted Phases	1 2					
Actuated Green, G (s)		85.0	40.0		40.0	
Effective Green, g (s)		85.0	40.0		40.0	
Actuated g/C Ratio		0.63	0.30		0.30	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1091	536		453	
v/s Ratio Prot			c0.21		c0.07	
v/s Ratio Perm		c0.23				
v/c Ratio		0.36	0.69		0.25	
Uniform Delay, d1		12.0	42.1		36.1	
Progression Factor		0.15	1.00		1.00	
Incremental Delay, d2		0.5	5.8		0.3	
Delay (s)		2.4	47.8		36.4	
Level of Service		A	D		D	
Approach Delay (s)		2.4	47.8		36.4	
Approach LOS		A	D		D	
Intersection Summary						
HCM 2000 Control Delay			28.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			74.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Kings Hwy (CR 13) & NYS 17M/NYS Route 17M 121-204; Davidson Drive Holdings, LLC

NB 2024_PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	197	478	278	434	415	189
Future Volume (vph)	197	478	278	434	415	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1810	1583		1759	1752	1495
Flt Permitted	1.00	1.00		0.79	0.95	1.00
Satd. Flow (perm)	1810	1583		1408	1752	1495
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	201	488	284	443	423	193
RTOR Reduction (vph)	0	343	0	0	0	37
Lane Group Flow (vph)	201	145	0	727	423	156
Heavy Vehicles (%)	5%	2%	9%	4%	3%	8%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	1			1 3	2	
Permitted Phases		1	1 3			2
Actuated Green, G (s)	40.0	40.0		85.0	40.0	40.0
Effective Green, g (s)	40.0	40.0		85.0	40.0	40.0
Actuated g/C Ratio	0.30	0.30		0.63	0.30	0.30
Clearance Time (s)	5.0	5.0			5.0	5.0
Vehicle Extension (s)	6.0	6.0			3.0	3.0
Lane Grp Cap (vph)	536	469		886	519	442
v/s Ratio Prot	0.11				0.24	
v/s Ratio Perm		0.09		0.52		0.10
v/c Ratio	0.38	0.31		0.82	0.82	0.35
Uniform Delay, d1	37.6	36.8		19.2	44.1	37.3
Progression Factor	1.00	1.00		0.89	1.00	1.00
Incremental Delay, d2	1.2	1.1		5.8	13.2	2.2
Delay (s)	38.8	37.8		22.8	57.3	39.6
Level of Service	D	D		C	E	D
Approach Delay (s)	38.1			22.8	51.7	
Approach LOS	D			C	D	
Intersection Summary						
HCM 2000 Control Delay			36.8		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			84.1%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	7	210	94	24	202
Future Vol, veh/h	63	7	210	94	24	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	7	-	4	-	-	3
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	6	0	6	5	6	6
Mvmt Flow	83	9	276	124	32	266
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	668	338	0	0	400	0
Stage 1	338	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	7.86	6.9	-	-	4.16	-
Critical Hdwy Stg 1	6.86	-	-	-	-	-
Critical Hdwy Stg 2	6.86	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	322	664	-	-	1137	-
Stage 1	626	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	311	664	-	-	1137	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	20.2	0		0.9		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	328	1137	-	
HCM Lane V/C Ratio	-	-	0.281	0.028	-	
HCM Control Delay (s)	-	-	20.2	8.3	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-	

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	41	75	1	1	61	62	2	0	3	9	0	5
Future Vol, veh/h	41	75	1	1	61	62	2	0	3	9	0	5
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, %	-	1	-	-	-5	-	-	-7	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	4	0	0	4	3	0	0	0	20	0	0
Mvmt Flow	51	94	1	1	76	78	3	0	4	11	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	154	0	0	95	0	0	317	353	95	316	314	115
Stage 1	-	-	-	-	-	-	197	197	-	117	117	-
Stage 2	-	-	-	-	-	-	120	156	-	199	197	-
Critical Hdwy	4.1	-	-	4.1	-	-	5.7	5.1	5.5	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	4.7	4.1	-	6.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	4.7	4.1	-	6.3	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.68	4	3.3
Pot Cap-1 Maneuver	1439	-	-	1512	-	-	724	660	985	603	605	943
Stage 1	-	-	-	-	-	-	874	801	-	846	803	-
Stage 2	-	-	-	-	-	-	932	821	-	763	742	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1439	-	-	1512	-	-	699	635	985	583	582	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	699	635	-	583	582	-
Stage 1	-	-	-	-	-	-	842	771	-	815	802	-
Stage 2	-	-	-	-	-	-	925	820	-	732	715	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.7			0.1			9.3			10.5		
HCM LOS							A			B		

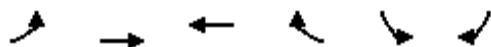
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	846	1439	-	-	1512	-	-	675
HCM Lane V/C Ratio	0.007	0.036	-	-	0.001	-	-	0.026
HCM Control Delay (s)	9.3	7.6	0	-	7.4	0	-	10.5
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	58	73	53	25	50
Future Vol, veh/h	31	58	73	53	25	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	12	2	4	5	15	3
Mvmt Flow	39	73	91	66	31	63
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	311	63	94	0	-	0
Stage 1	63	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.12	6.02	4.14	-	-	-
Critical Hdwy Stg 1	5.12	-	-	-	-	-
Critical Hdwy Stg 2	5.12	-	-	-	-	-
Follow-up Hdwy	3.608	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	684	1005	1488	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	641	1005	1488	-	-	-
Mov Cap-2 Maneuver	641	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.9	4.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1488	-	839	-	-	
HCM Lane V/C Ratio	0.061	-	0.133	-	-	
HCM Control Delay (s)	7.6	0	9.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-	

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
Build 2024_AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	15	377	228	0	15	139
Future Volume (vph)	15	377	228	0	15	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.88	
Flt Protected		1.00	1.00		1.00	
Satd. Flow (prot)		1764	1810		1462	
Flt Permitted		0.98	1.00		1.00	
Satd. Flow (perm)		1740	1810		1462	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	433	262	0	17	160
RTOR Reduction (vph)	0	0	0	0	121	0
Lane Group Flow (vph)	0	450	262	0	56	0
Heavy Vehicles (%)	20%	7%	5%	0%	0%	15%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		1 2	1		3	
Permitted Phases	1 2					
Actuated Green, G (s)		84.0	38.8		30.3	
Effective Green, g (s)		84.0	38.8		30.3	
Actuated g/C Ratio		0.68	0.31		0.24	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1175	564		356	
v/s Ratio Prot			c0.14		c0.04	
v/s Ratio Perm		c0.26				
v/c Ratio		0.38	0.46		0.16	
Uniform Delay, d1		8.8	34.4		37.0	
Progression Factor		0.12	1.00		1.00	
Incremental Delay, d2		0.5	1.7		0.2	
Delay (s)		1.6	36.1		37.2	
Level of Service		A	D		D	
Approach Delay (s)		1.6	36.1		37.2	
Approach LOS		A	D		D	
Intersection Summary						
HCM 2000 Control Delay			18.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.36			
Actuated Cycle Length (s)			124.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			49.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Kings Hwy (CR 13) & NYS 17M/NYS Route 17M 121-204; Davidson Drive Holdings, LLC

Build 2024_AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	216	363	163	204	389	176
Future Volume (vph)	216	363	163	204	389	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1759	1495		1675	1703	1509
Flt Permitted	1.00	1.00		0.74	0.95	1.00
Satd. Flow (perm)	1759	1495		1269	1703	1509
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	248	417	187	234	447	202
RTOR Reduction (vph)	0	287	0	0	0	35
Lane Group Flow (vph)	248	130	0	421	447	167
Heavy Vehicles (%)	8%	8%	16%	7%	6%	7%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	1			1 3	2	
Permitted Phases		1	1 3			2
Actuated Green, G (s)	38.8	38.8		74.1	40.2	40.2
Effective Green, g (s)	38.8	38.8		74.1	40.2	40.2
Actuated g/C Ratio	0.31	0.31		0.60	0.32	0.32
Clearance Time (s)	5.0	5.0			5.0	5.0
Vehicle Extension (s)	6.0	6.0			3.0	3.0
Lane Grp Cap (vph)	549	466		756	550	488
v/s Ratio Prot	0.14				0.26	
v/s Ratio Perm		0.09		0.33		0.11
v/c Ratio	0.45	0.28		0.56	0.81	0.34
Uniform Delay, d1	34.2	32.2		15.2	38.6	32.0
Progression Factor	1.00	1.00		0.51	1.00	1.00
Incremental Delay, d2	1.7	0.9		1.8	12.4	1.9
Delay (s)	35.9	33.1		9.6	51.0	33.9
Level of Service	D	C		A	D	C
Approach Delay (s)	34.2			9.6	45.7	
Approach LOS	C			A	D	
Intersection Summary						
HCM 2000 Control Delay			32.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			124.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			65.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	93	29	229	76	14	272
Future Vol, veh/h	93	29	229	76	14	272
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	7	-	4	-	-	3
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	4	2	1	0	2
Mvmt Flow	94	29	231	77	14	275
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	573	270	0	0	308	0
Stage 1	270	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	7.8	6.94	-	-	4.1	-
Critical Hdwy Stg 1	6.8	-	-	-	-	-
Critical Hdwy Stg 2	6.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.2	-
Pot Cap-1 Maneuver	388	725	-	-	1264	-
Stage 1	702	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	383	725	-	-	1264	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.7	0		0.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	431	1264	-	
HCM Lane V/C Ratio	-	-	0.286	0.011	-	
HCM Control Delay (s)	-	-	16.7	7.9	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	1.2	0	-	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	86	2	3	101	5	1	0	2	30	0	20
Future Vol, veh/h	3	86	2	3	101	5	1	0	2	30	0	20
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, %	-	1	-	-	-5	-	-	-7	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	1	20	0	0	0	4	0	0
Mvmt Flow	3	98	2	3	115	6	1	0	2	34	0	23
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	100	0	0	241	232	99	230	230	118
Stage 1	-	-	-	-	-	-	105	105	-	124	124	-
Stage 2	-	-	-	-	-	-	136	127	-	106	106	-
Critical Hdwy	4.1	-	-	4.1	-	-	5.7	5.1	5.5	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	4.7	4.1	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	4.7	4.1	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	1479	-	-	1505	-	-	788	735	981	721	673	939
Stage 1	-	-	-	-	-	-	943	846	-	875	797	-
Stage 2	-	-	-	-	-	-	919	835	-	895	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1479	-	-	1505	-	-	767	732	981	717	670	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	767	732	-	717	670	-
Stage 1	-	-	-	-	-	-	941	844	-	873	795	-
Stage 2	-	-	-	-	-	-	895	833	-	891	809	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			9			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	898	1479	-	-	1505	-	-	792				
HCM Lane V/C Ratio	0.004	0.002	-	-	0.002	-	-	0.072				
HCM Control Delay (s)	9	7.4	0	-	7.4	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2				

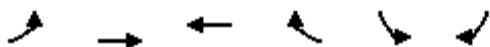
Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	83	86	40	59	23
Future Vol, veh/h	34	83	86	40	59	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	3	1	3	4	5
Mvmt Flow	39	94	98	45	67	26
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	321	80	93	0	-	0
Stage 1	80	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.03	6.03	4.11	-	-	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.209	-	-	-
Pot Cap-1 Maneuver	695	982	1508	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	648	982	1508	-	-	-
Mov Cap-2 Maneuver	648	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10	5.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1508	-	854	-	-	
HCM Lane V/C Ratio	0.065	-	0.156	-	-	
HCM Control Delay (s)	7.6	0	10	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-	

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave

Build 2024_PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	31	362	366	0	9	347
Future Volume (vph)	31	362	366	0	9	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.87	
Flt Protected		1.00	1.00		1.00	
Satd. Flow (prot)		1821	1810		1529	
Flt Permitted		0.95	1.00		1.00	
Satd. Flow (perm)		1735	1810		1529	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	32	369	373	0	9	354
RTOR Reduction (vph)	0	0	0	0	249	0
Lane Group Flow (vph)	0	401	373	0	114	0
Heavy Vehicles (%)	3%	4%	5%	0%	0%	8%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		1 2	1		3	
Permitted Phases	1 2					
Actuated Green, G (s)		85.0	40.0		40.0	
Effective Green, g (s)		85.0	40.0		40.0	
Actuated g/C Ratio		0.63	0.30		0.30	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1092	536		453	
v/s Ratio Prot			c0.21		c0.07	
v/s Ratio Perm		c0.23				
v/c Ratio		0.37	0.70		0.25	
Uniform Delay, d1		12.0	42.1		36.1	
Progression Factor		0.15	1.00		1.00	
Incremental Delay, d2		0.6	5.8		0.3	
Delay (s)		2.3	47.9		36.4	
Level of Service		A	D		D	
Approach Delay (s)		2.3	47.9		36.4	
Approach LOS		A	D		D	
Intersection Summary						
HCM 2000 Control Delay			28.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			74.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Kings Hwy (CR 13) & NYS 17M/NYS Route 17M 121-204; Davidson Drive Holdings, LLC

Build 2024_PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	197	480	279	434	426	196
Future Volume (vph)	197	480	279	434	426	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1810	1583		1759	1752	1495
Flt Permitted	1.00	1.00		0.78	0.95	1.00
Satd. Flow (perm)	1810	1583		1407	1752	1495
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	201	490	285	443	435	200
RTOR Reduction (vph)	0	345	0	0	0	37
Lane Group Flow (vph)	201	145	0	728	435	163
Heavy Vehicles (%)	5%	2%	9%	4%	3%	8%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	1			1 3	2	
Permitted Phases		1	1 3			2
Actuated Green, G (s)	40.0	40.0		85.0	40.0	40.0
Effective Green, g (s)	40.0	40.0		85.0	40.0	40.0
Actuated g/C Ratio	0.30	0.30		0.63	0.30	0.30
Clearance Time (s)	5.0	5.0			5.0	5.0
Vehicle Extension (s)	6.0	6.0			3.0	3.0
Lane Grp Cap (vph)	536	469		885	519	442
v/s Ratio Prot	0.11				0.25	
v/s Ratio Perm		0.09		0.52		0.11
v/c Ratio	0.38	0.31		0.82	0.84	0.37
Uniform Delay, d1	37.6	36.8		19.2	44.5	37.5
Progression Factor	1.00	1.00		0.89	1.00	1.00
Incremental Delay, d2	1.2	1.1		5.9	14.9	2.4
Delay (s)	38.8	37.9		22.9	59.4	39.9
Level of Service	D	D		C	E	D
Approach Delay (s)	38.2			22.9	53.2	
Approach LOS	D			C	D	
Intersection Summary						
HCM 2000 Control Delay			37.4		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			84.7%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						