

February 15, 2023 (Revision #2)



Town of Chester Planning Board
1786 Kings Highway
Chester, NY 10918
Attn: Don Serotta, Chairman

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

Dear Chairman Serotta:

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 as well as by Colliers Engineering & Design in its comment letter, dated January 30, 2023. This study is based on traffic engineering industry standards and the Site Plan prepared by Arden Consulting Engineering, PLLC, last revised February 6, 2023, 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. Davidson Drive, which is currently an unbuilt public paper street that will be terminated at the subject site's northerly property line, will provide access to the site via two driveways located approximately 380 and 980 feet north of Lake Station Road. The southerly site access is a 26-foot-wide driveway dedicated for passenger vehicles only. The northerly site access is a 50-foot-wide driveway designated for passenger vehicles and trucks. The industrial facility will have one shift from 8:00 AM to 6:00PM that will consist of 45 employees. The proposed project is expected to be completed and operational by 2025. 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 45 miles per hour. There are no sidewalks provided along the roadway.

Kings Highway Bypass (County Road 13A): is classified as an Urban Local roadway and in under the jurisdiction of the OCDPW. The roadway runs north-south from Kings Highway (CR 13) to Bellvale Road within the Town of Chester. In the vicinity of the project, Kings Highway Bypass provides one 11-foot-wide travel lane in each direction with four-foot wide shoulders. Turn lanes are not provides at intersections or driveways. The posted speed limit is 45 miles per hour. There are no sidewalks 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

Bellvale Road/Kings Highway Bypass: This is a three-leg unsignalized intersection. The eastbound Bellvale Road approach is uncontrolled and provides one shared lane for left-turns/through movements. The westbound Bevalle Road provides one shared lane for through/right-turn movements. The southbound Kings Highway Bypass approach is stop-controlled and provides one shared lane for left-turn/right-turn movements onto Bellvale Road. Exhibit 6 is a Nearmap image that shows the study intersection.



Exhibit 6 –Bellvale Road/Kings Highway Bypass Intersection

Kings Highway/Leone Lane/Laroe Road: This is a four-leg signalized intersection. The eastbound Leone Lane approach provides a shared left-turn/through/right-turn lane. The westbound Laroe Road approach provides an exclusive left-turn lane and a shared through/right-turn lane. The northbound Kings Highway approach provides an exclusive left-turn lane and a shared through/right-turn lane. The southbound Kings Highway approach provides an exclusive left-turn lane, an exclusive through lane, and an exclusive channelized right-turn lane controlled by a yield sign. Analysis at this intersection was based on field timings. Exhibit 7 is a Nearmap image that shows the study intersection.



Exhibit 7 – Kings Highway/Leone Lane/Laroe Road 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 8 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. Access highway designation request letter by CM and approval letter by NYSDOT are included under Attachment B.



Exhibit 8 – 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, and at the intersections of Kings Highway/Leone Lane/Laroe Road and Kings Highway Bypass/Bellvale Road on Friday, February 10, 2023 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* th 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.

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. The raw TMC data is included under Attachment C.

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* th 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.

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							
General Light Industrial – LUC 110 Trucks							
Total Site-Generated Trips		103					

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. These peak hour estimates are considered to be conservative as the largest shift size is 45 employees with only shift per day. 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				

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. During the weekday PM study period (4:00 PM to 6:00 PM), there were

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

AM Calibration Factor = 1.1 | PM Calibration Factor = 1.0

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.

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

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.

Future Traffic Volumes

To evaluate the impact of the proposed project, traffic projections were prepared for the anticipated year of completion – 2025. 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 2025 traffic volume, a +1.0% growth rate was applied to the existing traffic volumes and compounded annually for four years. Additionally, CM spoke with the Town of Chester Plannign Board Chairman who 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 Project

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		
1251 Kings Highway	Industrial	Kings Highway & Bellvale Road			
The Greens at Chester	Residential	NYS Route 94	John Meyer Consulting		
Trestle Tree	Industrial	NYS Route 17 and Trestle Tree Lane	Maser Consulting		
208 Business Center	Retail	NYS Route 208			
Craigville Road	Industrial	Craigville Road			

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 were then added to the grown 2025 volumes to present the 2025 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.

Four years of growth were also applied to the Kings Highway By-Pass/Bellvale Road and Kings Highway/Laroe Road/Leone Lane intersections even though they were counted in 2023.

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 3 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 3 – Level of Service Summary

Intersection	I ntr	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Existing	No-Build	Build	Existing	No-Build	Build
Kings Highway/Lake Station Road							
Lake Station Road, WB Kings Highway, SB							
Lake Station Road/Paradise Lane/Davidson Drive							
Lake Station Road, EB Lake Station Road, WB Paradise Lane, NB [Davidson Drive, SB]							
Lake Station Road/Bellvale Road							
Lake Station Road, EB Bellvale Road, NB							
Bellvale Road/Kings Hwy Bypass							
Bellvale Road, EB Kings Highway Bypass, SB							
Kings Highway/Leone Ln/Laroe Rd							
Leone Lane, EB Laroe Road, WB Kings Highway, NB Kings Highway, SB							
Overall							
NYS Route 17M/Kings Hwy/Lehigh Ave							
NYS Route 17M, EB NYS Route 17M, WB Kings Highway, NB Lehigh Avenue, SB							

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)

Existing analysis is based on volumes collected on February 2023

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 B 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 0.6 seconds indicates that the proposed development is not anticipated to have a significant adverse impact on the operations of this intersection.

Bellvale Road/Kings Highway Bypass: The level of service analysis indicates that the Kings Highway Bypass approach will operate at a LOS B in the Build conditions, which is consistent with the anticipated LOS for the intersection in the No-Build condition. The maximum increase in delay of 1.2 seconds indicates that the proposed development is not anticipated to have significant adverse impact on the operations of this intersection.

Kings Highway/Leone Lane/Laroe Road: The level of service analysis indicates that in the Build conditions the intersection will operate at an acceptable LOS B, which is consistent with the anticipated LOS in the No-Build conditions. CM spoke with Michael Villarosa from the OCDPW on February 14, 2023 regarding potential improvements for this intersection. GPI is completing a study on behalf of the OCDPW of the intersection. While the results and recommendations are still forthcoming, Mr. Villarosa indicated that the improvements focused mainly on the side street approaches – Leone Lane and Laroe Road.

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 February 6, 2023. Vehicular access is proposed from Lake Station Road via Davidson Drive, currently an unbuilt public paper street. Lake Station Road is a relatively straight roadway with some rolling vertical curvature. A sight distance analysis based on AASHTO methodology indicated that the available intersection sight distance from the proposed driveway is 400+ feet, which exceeds the AASHTO recommended sight distance for 35-mph. However, the proposed project will include clearing as shown on the Site Plan along the north side of Lake Station Roadway within the property limits to optimize sight lines for an operating speed of 45-mph. Davidson Drive will provide access to the site via two driveways located approximately

380 and 980 feet north of Lake Station Road. 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

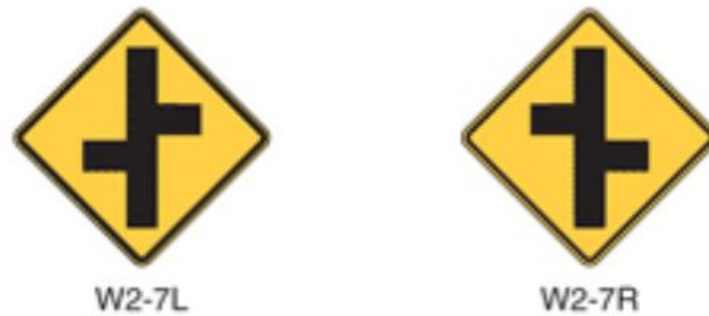


Exhibit 10 – MUTCD Compliant W2-7L/R Signs

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. Additional counts were conducted on Friday, February 10, 2023, during the same study periods at the expanded study intersection locations.

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. These trip generation estimate are considered conservative as the facility will have a maximum of 45 employees with one shift per day.

Site access is proposed from Lake Station Road via Davidson Drive. The existing geometry of Lake Station Road lends itself to satisfactory sight lines. However, the applicant will clear vegetation along the site’s frontage in order to optimize sight lines further.

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, Bellvale Road/Kings Highway Bypass, Kings Highway/Leone Lane/Laroe 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

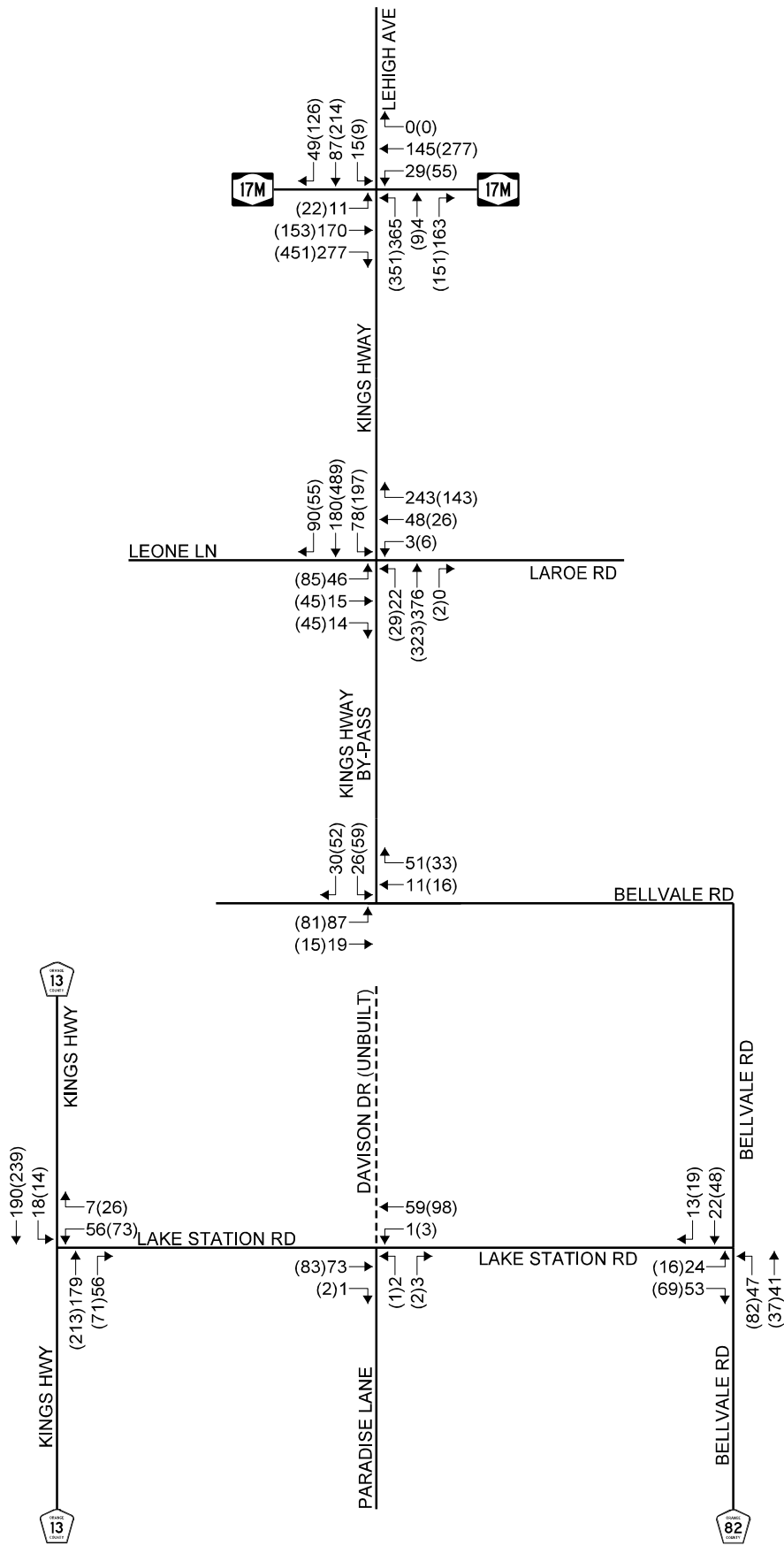


Frank A. Filiciotto, PE
Associate

cc: Michael A. Morgante, PE
Israel Vanchozker
Joseph Herskovitz



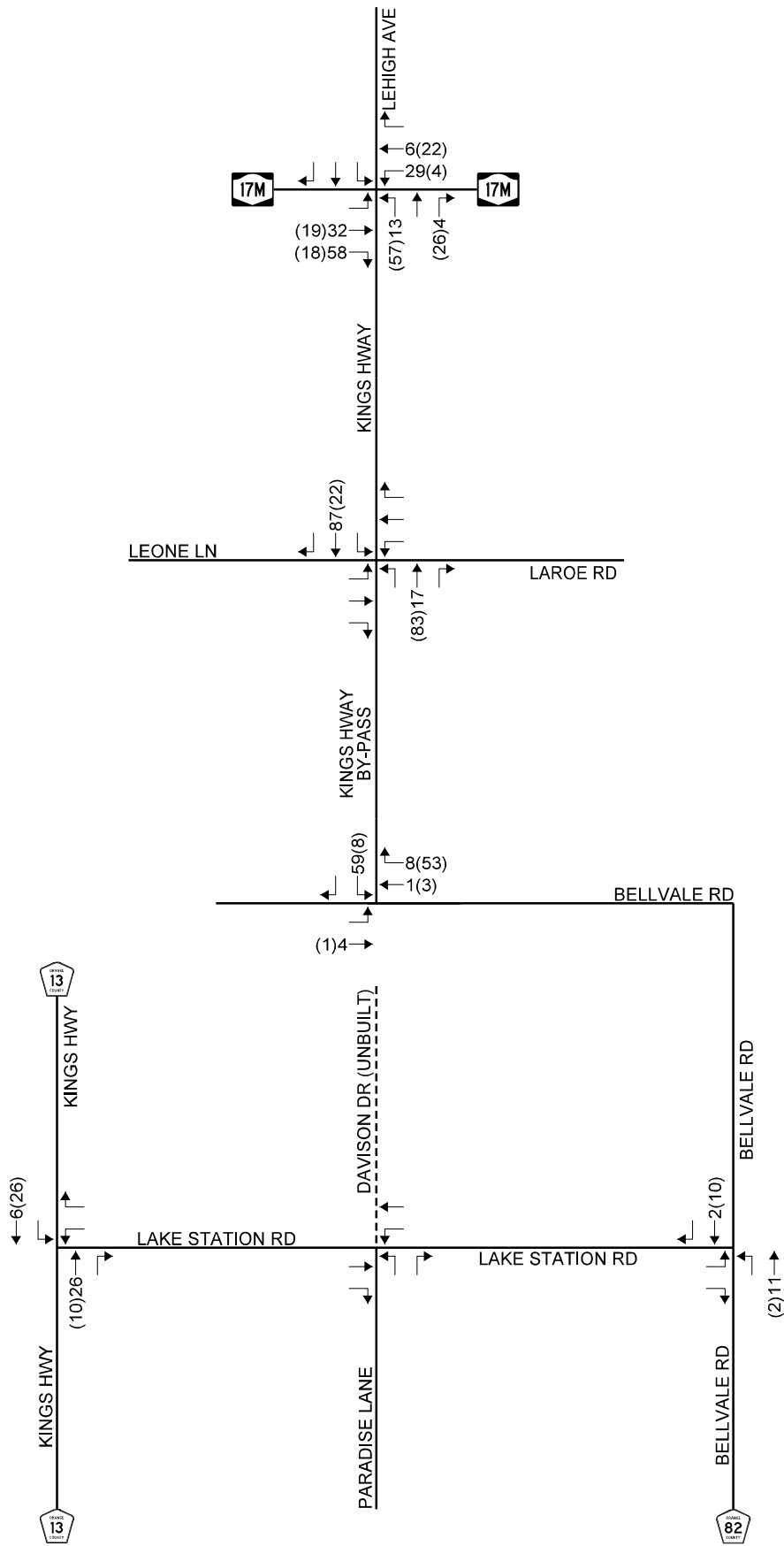
Starke W. Hipp, PE
Project Engineer



2021 EXISTING TRAFFIC VOLUMES

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



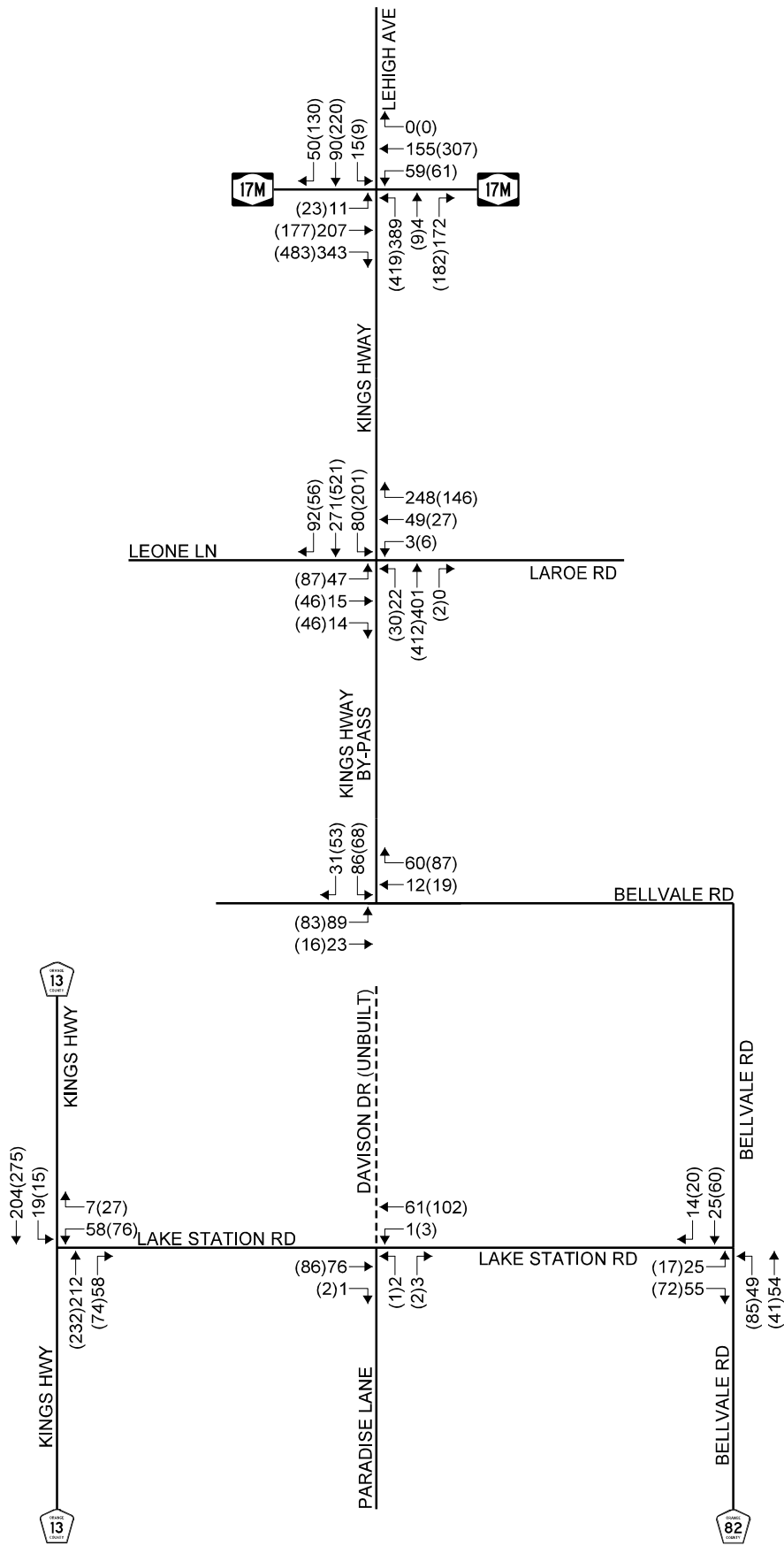


LEGEND:
AM (PM)

OTHER DEVELOPMENT TRAFFIC VOLUMES

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

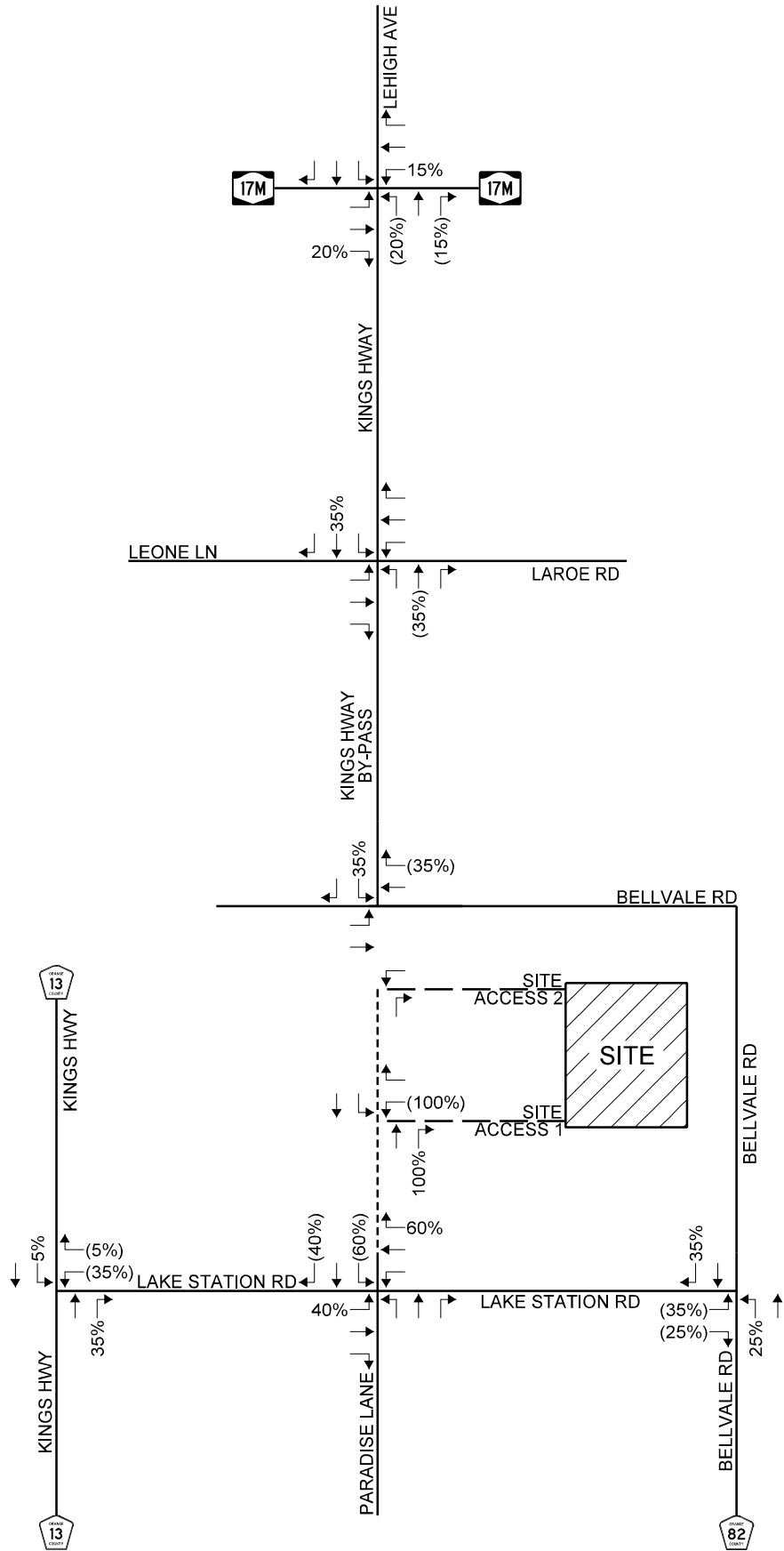




2025 NO-BUILD TRAFFIC VOLUMES

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



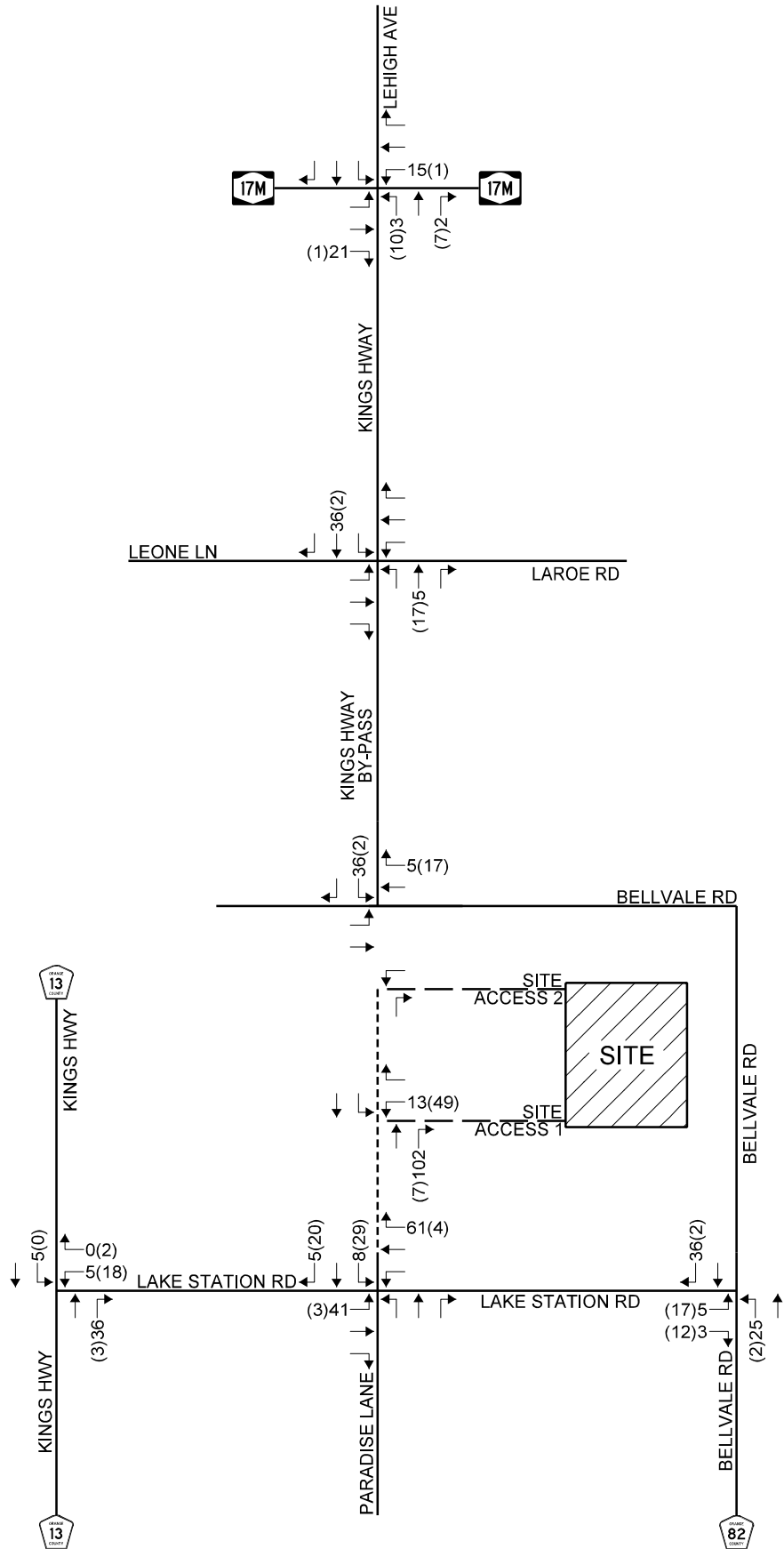


PASSENGER VEHICLE - TRIP DISTRIBUTION

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



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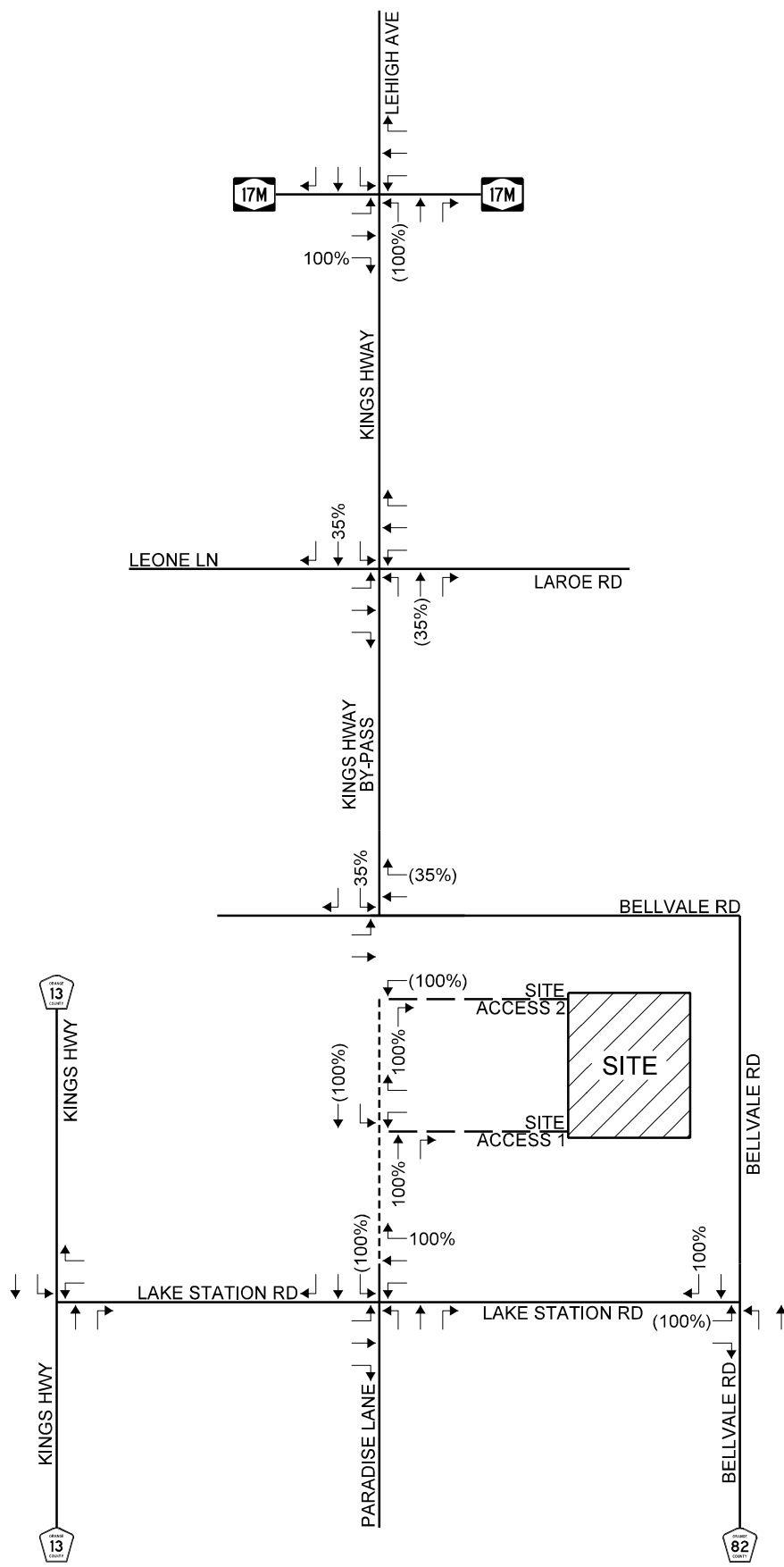


LEGEND:
AM (PM)

PASSENGER VEHICLE - TRIP ASSIGNMENT

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





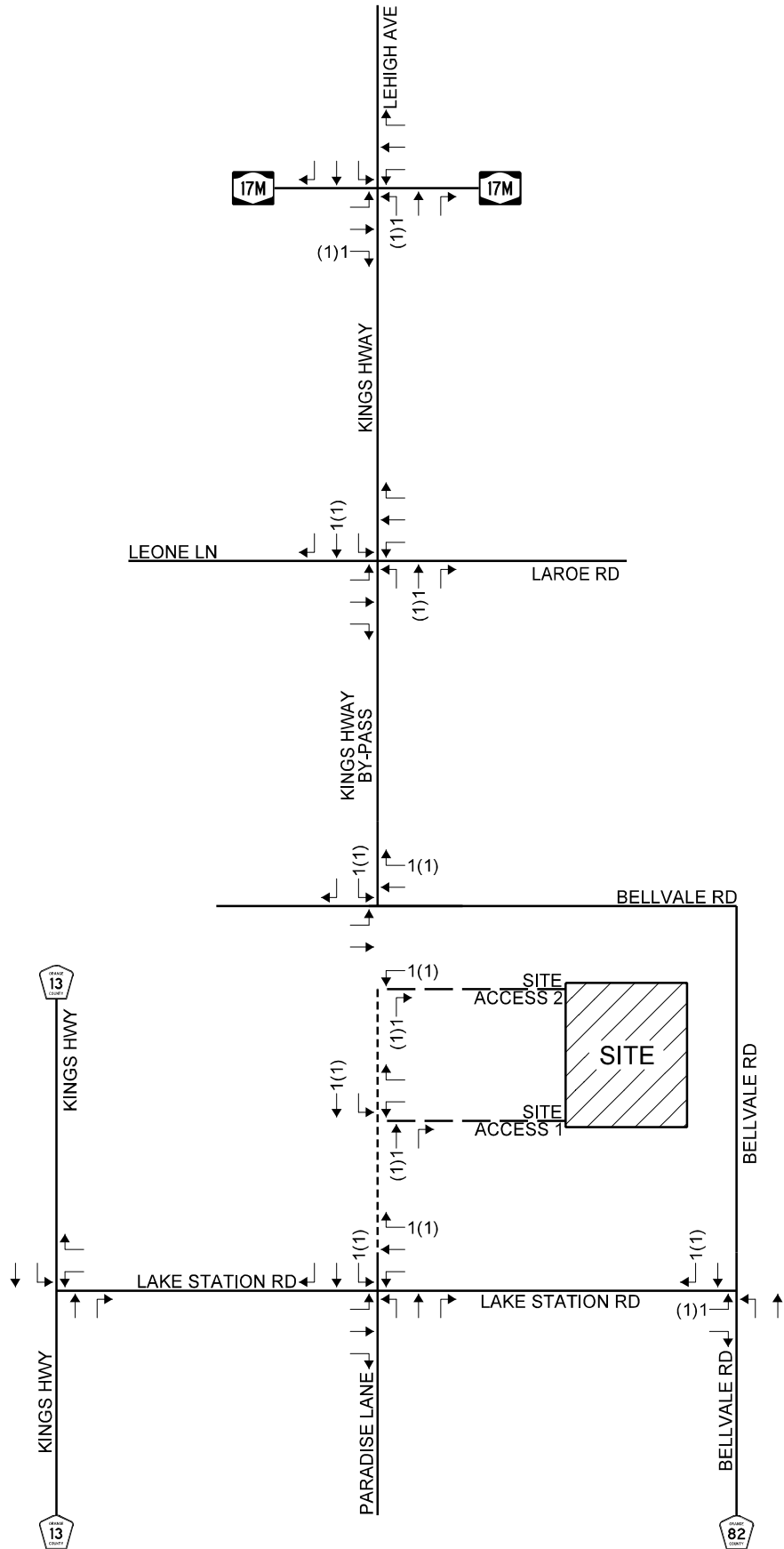
LEGEND:
ENTERING (EXITING)

TRUCK - TRIP DISTRIBUTION

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



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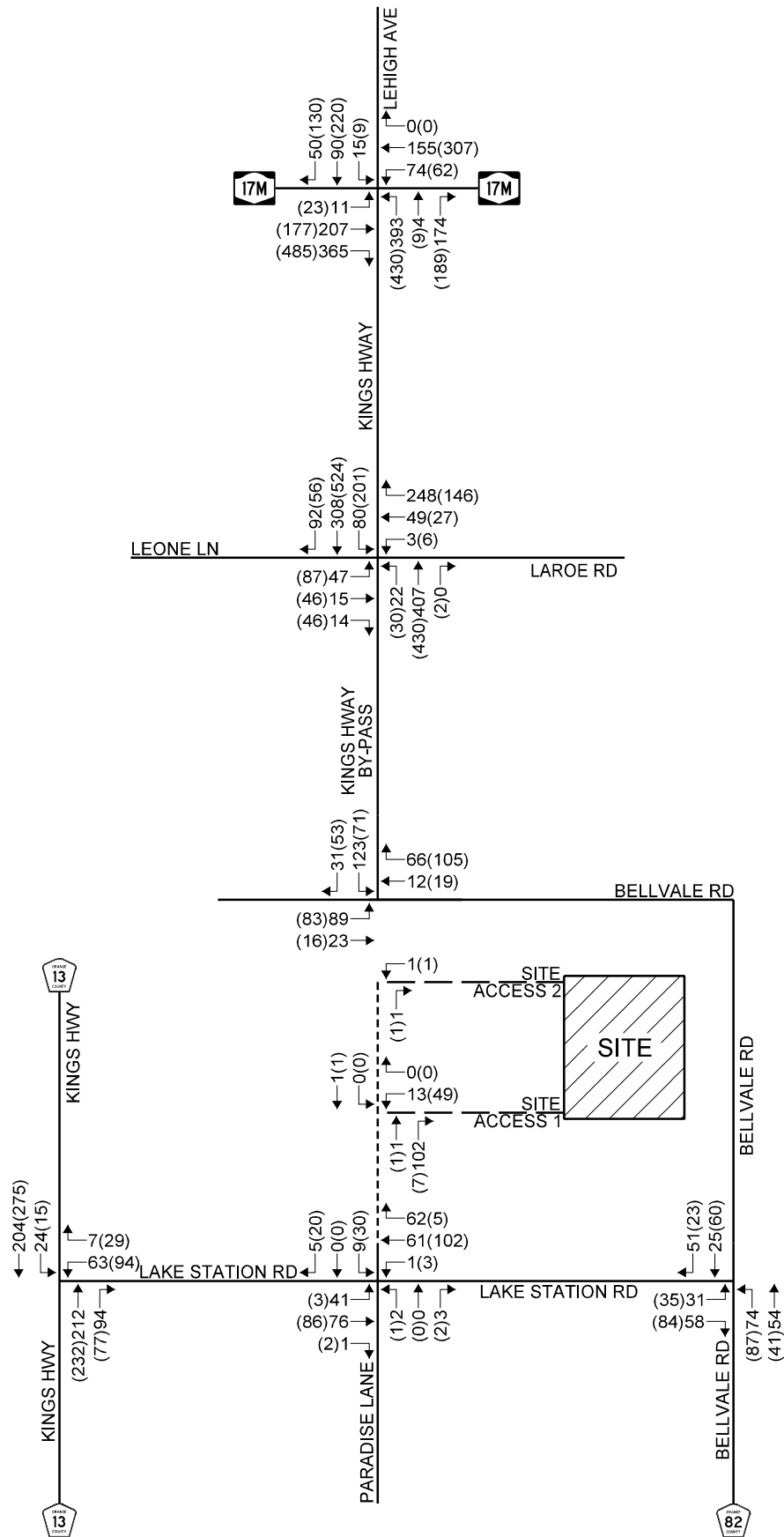


LEGEND:
AM (PM)

TRUCK - TRIP ASSIGNMENT

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





LEGEND:
AM (PM)

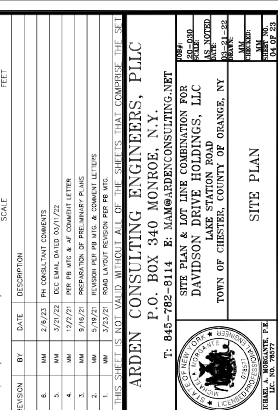
2024 BUILD TRAFFIC VOLUMES

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



PARKING CALCULATION TABLE		
PROPOSED USE	GARAGE REQUIREMENT	REQUIRED SPACES
OFFICE	ONE SPACE/200 SQ FT.	4,000/200=20 SPACES
LIGHT INDUSTRIAL	2 SPACES PER 1,000 SQ FT. LARGEST CONSISTENT USE	2/945 LUM=2.15 SPACES
		TOTAL REQUIRED=22 SPACES
TRUCK PARKING SPACES		PROVIDED=13 SPACES

PARKING CALCULATION TABLE		
PROPOSED USE	GARAGE REQUIREMENT	REQUIRED SPACES
OFFICE	ONE SPACE/200 SQ FT.	4,000/200=20 SPACES
LIGHT INDUSTRIAL	2 SPACES PER 1,000 SQ FT. LARGEST CONSISTENT USE	2/945 LUM=2.15 SPACES
		TOTAL REQUIRED=22 SPACES
TRUCK PARKING SPACES		PROVIDED=13 SPACES



TE PLAN

[illegible]

January 19, 2022



NYS Department of Transportation
4 Burnett Boulevard
Poughkeepsie, NY 12603
Attn: Lee Zimmer, PE, Acting RTE (via email)

RE: Access Highway Designation Request, Bellvale Road (CR 82) and Lake Station Road, Town of Chester, Orange County, New York; CM Project No. 121-204

Dear Mr. Zimmer:

On behalf of the proposed industrial development located on Lake Station Drive in the Town of Chester, Orange County, New York, Creighton Manning Engineering, LLP (CM) is submitting this request to designate two highway segments in Orange County as Access Highways. The subject property is known as Section 17, Block 1, Lots 22.1 through 22.8. Attached is a copy of the current Site Plan, prepared by Arden Consulting Engineers PLLC, showing the subject property, proposed industrial building, and proposed driveways on the Private Access Drive. It is the intent of the proposed industrial development to have Special Dimension Vehicles (SDVs), specifically WB-67s (53-foot trailers), visit the subject property from NYS Route 17, a qualifying highway, via Exit 126 (NYS Route 94) for northbound/southbound approaches.

In order to navigate to and from this exit, the segments of (A) Bellvale Road (CR 82) from Kings Highway Bypass (CR 13A) to Lake Station Road and (B) Lake Station Road from Bellvale Road to the Private Access Drive opposite Paradise Lane need to be designated as Access Highways. It should be noted that the segments of Kings Highway (CR 13)/Kings Highway Bypass (CR 13A) from Bellvale Road (CR 82) to NYS Route 17M, NYS Route 17M from Kings Highway (CR 13) to NYS Route 94, and NYS Route 94 from NYS Route 17M to NYS Route 17A in the neighboring Town/Village of Chester are currently designated as Access Highways as per the New York State Department of Transportation (NYSDOT) *Official Description of Designated Qualifying and Access Highways in New York State*, October 2020. Additionally, on September 1, 2021, the NYSDOT designated NYS Route 17M from Kings Highway (CR 13) to Craigville Road (CR 51) as an access highway (reference number T21-113). This segment will serve SDVs traveling eastbound to NYS Route 17 outbound from the site. These new designations would cover both the approach and departure paths for site-generated SDVs.

In summary, the following highway segments in Orange County (NYSDOT Region 8) are hereby requested for designation as access highways:

- A. Bellvale Road (CR 82): from Kings Highway (CR 13A) to Lake Station Road in the Town of Chester, a distance of approximately 3,900 feet.
- B. Lake Station Road: from Bellvale Road (CR 82) to Private Access Drive in the Town of Chester, a distance of approximately 1,070 feet.

Included herein is a map highlighting the highway segments associated with this request for designation as Access Highways. If it would be helpful, the project team can be available and is willing to facilitate a virtual meeting to discuss this request at a mutually convenient date and time. Please feel free to call me at 914.800.9202 if you have any questions or comments regarding this request.

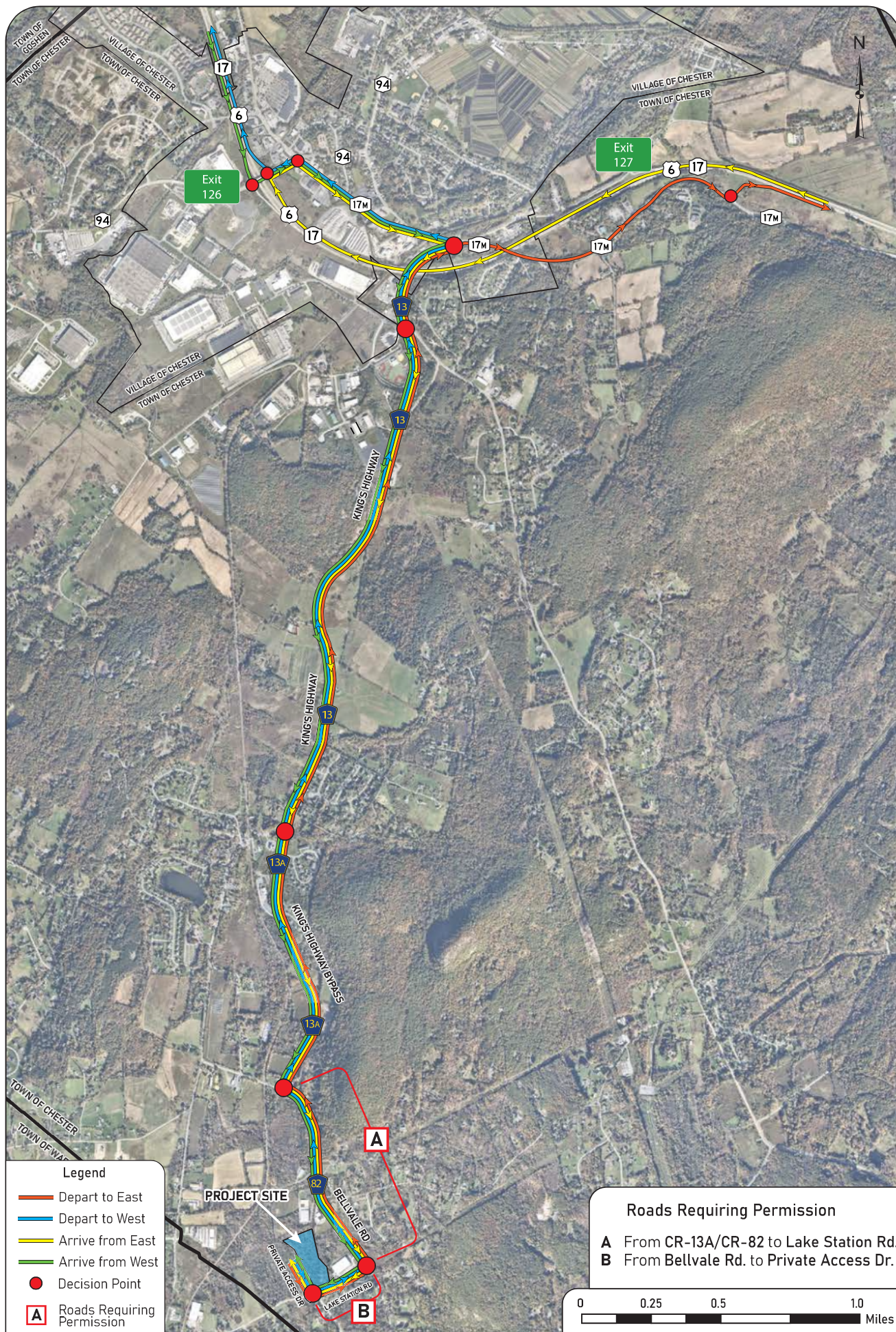
Respectfully submitted,
Creighton Manning Engineering, LLP

A handwritten signature in blue ink, appearing to read "Frank A. Filiciotto".

Frank A. Filiciotto, PE
Associate

cc: Michael A. Morgante, PE
Israel Vanchozker
Joseph Herskovitz

Attachments





Department of Transportation

ANDREW M. CUOMO
Governor

MARIE THERESE DOMINGUEZ
Commissioner

LANCE MacMILLAN, P.E.
Regional Director

April 7, 2022

Mr. Frank Filiciotto, PE
Associate, Creighton Manning Engineering, LLP
145 Main Street
Ossining, NY 10562

Re: T22-039

Dear Mr. Filiciotto:

Thank you for your correspondence to the New York State Department of Transportation (NYSDOT) dated January 19, 2022, requesting the following roads be designated as access highways for Special Dimension Vehicles (53' tractor trailers) in the Town of Chester.

- Bellvale Road (CR 82) from Kings Highway (CR 13A) to Lake Station Road, a distance of approximately 3,900 feet; and,
- Lake Station Road from Bellvale Road (CR 82) to Private Access Drive, a distance of approximately 1,070 feet.

Please know that on April 18, 2022 it will be legal to drive special dimension vehicles on these segments of Bellvale Road (CR 82) and Lake Station Road.

Law enforcement officials are being notified of this change by copy of this letter.

Thank you for your interest in traffic safety and for bringing your concerns to our attention. If you require further information on this request, please contact the Regional Traffic and Safety Group at (845) 437-3320 and reference T22-039.

Sincerely,


Gayle Sudder
Transportation Analyst

Cc: D. Carey, Office of Traffic Safety and Mobility, Traffic Operations Bureau, POD 53
R. Gaupman, Resident Engineer, Residency 8-5
Sgt. M. Belgiovene, New York State Police, Troop F



Department of Transportation

ANDREW M. CUOMO
Governor

MARIE THERESE DOMINGUEZ
Commissioner

LANCE MacMILLAN, P.E.
Regional Director

Sheriff C.E. Dubois, Orange County Sheriff's Department
Chief D. Doellinger, Town of Chester Police Department
Hon. E. Denega, Commissioner, Orange County Dept. of Public Works
M. Villarosa, P.E., Principal Engineer, Orange County Dept. of Public Works
Hon. R. Valentine, Supervisor, Town of Chester
Hon. J. Reilley III, Superintendent, Town of Chester Highway Department

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			
	L	R	U	App	L	T	U	App	T	R	U	App Int
Time												
2021-07-22 7:00AM	1	6	0	7	9	7	0	16	1	6	0	7
7:15AM	6	6	0	12	5	13	0	18	2	4	0	6
7:30AM	3	13	0	16	6	6	0	12	10	1	0	11
7:45AM	1	11	0	12	9	6	0	15	5	4	0	9
Hourly Total	11	36	0	47	29	32	0	61	18	15	0	33
8:00AM	5	10	0	15	7	9	0	16	5	3	0	8
8:15AM	3	11	0	14	9	7	0	16	4	2	0	6
8:30AM	6	16	0	22	8	9	0	17	3	3	0	6
8:45AM	7	8	0	15	16	12	1	29	8	3	0	11
Hourly Total	21	45	0	66	40	37	1	78	20	11	0	31
9:00AM	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
Total	32	81	0	113	69	69	1	139	38	26	0	64
% 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
% Lights	90.6%	96.3%	0%	94.7%	97.1%	89.9%	0%	92.8%	86.8%	96.2%	0%	90.6%
Articulated Trucks and Single-Unit Trucks	1	3	0	4	1	5	1	7	5	1	0	6
% 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%
Buses	2	0	0	2	1	2	0	3	0	0	0	0
% 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)

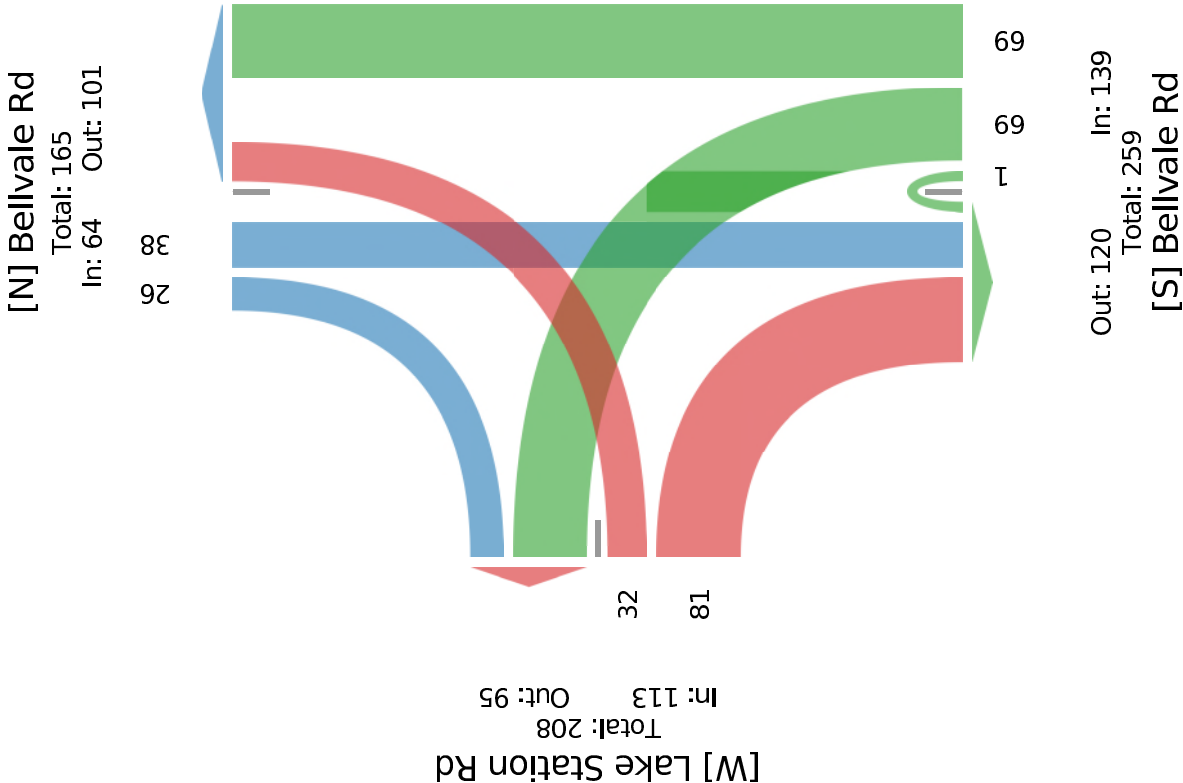
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

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			
	L	R	U	App	L	T	U	App	T	R	U	App Int
Time												
2021-07-22 8:00AM	5	10	0	15	7	9	0	16	5	3	0	8
8:15AM	3	11	0	14	9	7	0	16	4	2	0	6
8:30AM	6	16	0	22	8	9	0	17	3	3	0	6
8:45AM	7	8	0	15	16	12	1	29	8	3	0	11
Total	21	45	0	66	40	37	1	78	20	11	0	31
% 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
Lights	19	44	0	63	38	35	0	73	17	11	0	28
% Lights	90.5%	97.8%	0%	95.5%	95.0%	94.6%	0%	93.6%	85.0%	100%	0%	90.3%
Articulated Trucks and Single-Unit Trucks	1	1	0	2	1	1	1	3	3	0	0	3
% 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%
Buses	1	0	0	1	1	1	0	2	0	0	0	0
% Buses	4.8%	0%	0%	1.5%	2.5%	2.7%	0%	2.6%	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

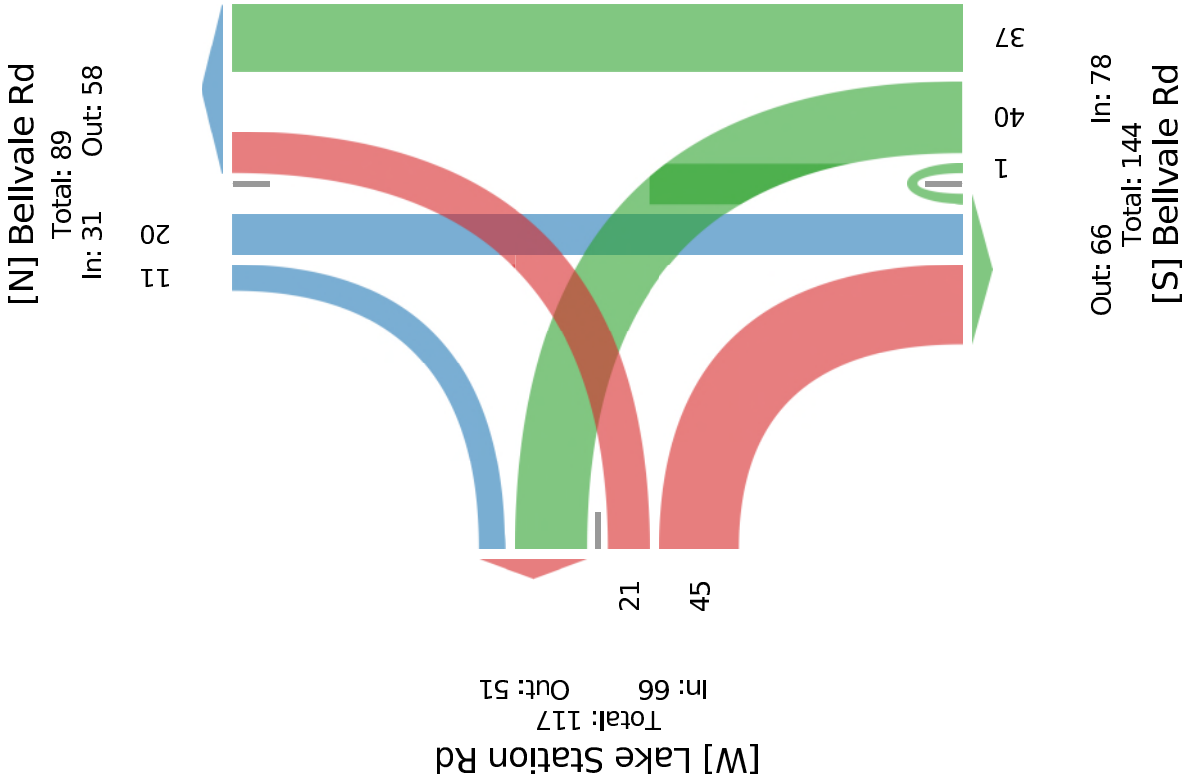
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

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			
	L	R	U	App	T	R	U	App	L	T	U	App Int
Time												
2021-07-22 7:00AM	7	3	0	10	25	3	0	28	2	16	0	18
7:15AM	7	2	0	9	33	8	0	41	3	27	0	30
7:30AM	11	2	0	13	37	9	0	46	3	37	0	40
7:45AM	13	1	0	14	47	9	0	56	3	30	0	33
Hourly Total	38	8	0	46	142	29	0	171	11	110	0	121
8:00AM	10	0	0	10	27	12	0	39	4	36	0	40
8:15AM	14	1	0	15	40	15	0	55	3	30	0	33
8:30AM	11	4	0	15	40	13	0	53	3	42	0	45
8:45AM	16	1	0	17	56	7	0	63	5	65	1	71
Hourly Total	51	6	0	57	163	47	0	210	15	173	1	189
9:00AM	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
Total	89	14	0	103	305	76	0	381	26	283	1	310
% 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
% Lights	95.5%	92.9%	0%	95.1%	92.8%	93.4%	0%	92.9%	92.3%	94.0%	100%	93.9%
Articulated Trucks and Single-Unit Trucks	3	0	0	3	17	3	0	20	1	13	0	14
% 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%
Buses	1	1	0	2	5	2	0	7	1	4	0	5
% Buses	1.1%	7.1%	0%	1.9%	1.6%	2.6%	0%	1.8%	3.8%	1.4%	0%	1.6%

*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)

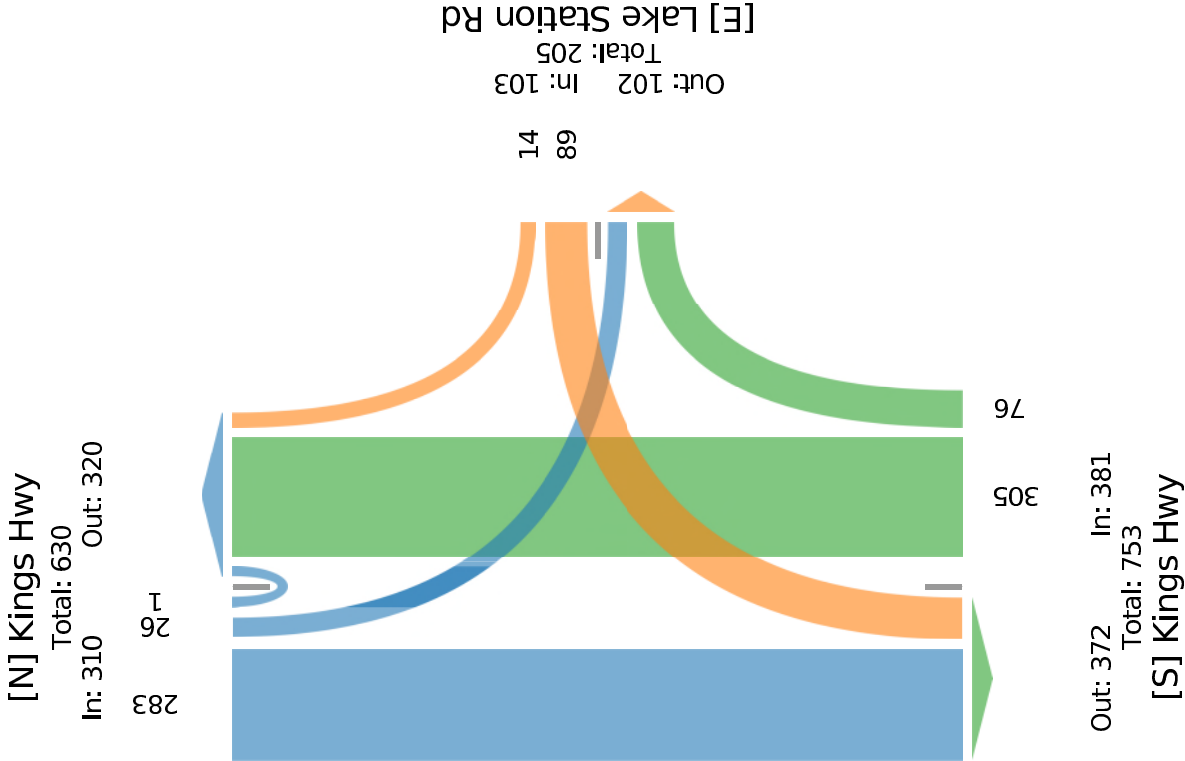
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

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



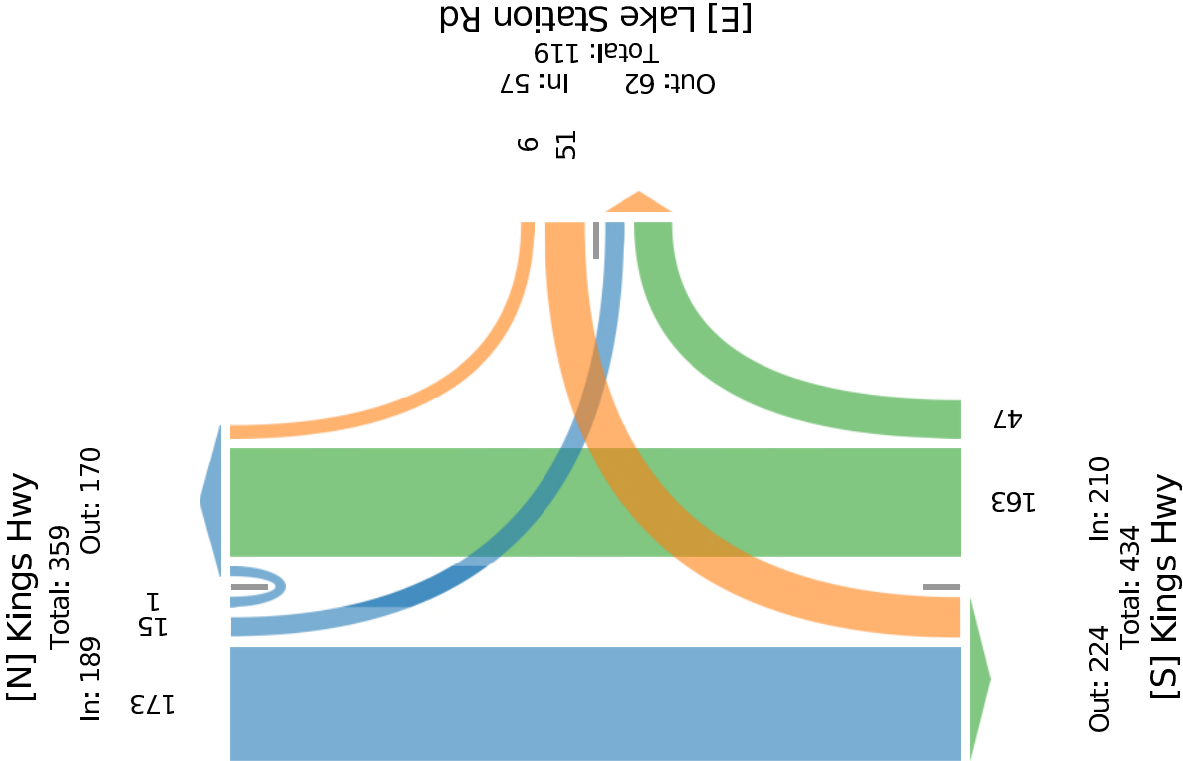
Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

Leg Direction	Time	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound			
		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
	8:15AM	14	1	0	15	40	15	0	55	3	30	0	33
	8:30AM	11	4	0	15	40	13	0	53	3	42	0	45
	8:45AM	16	1	0	17	56	7	0	63	5	65	1	71
	Total	51	6	0	57	163	47	0	210	15	173	1	189
	% 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
	Lights	48	6	0	54	153	44	0	197	14	162	1	177
	% Lights	94.1%	100%	0%	94.7%	93.9%	93.6%	0%	93.8%	93.3%	93.6%	100%	93.7%
	Articulated Trucks and Single-Unit Trucks	2	0	0	2	9	2	0	11	1	8	0	9
	% 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%
	Buses	1	0	0	1	1	1	0	2	0	3	0	3
	% 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



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			
	L	R	U	App	L	T	U	App	T	R	U	App Int
Time												
2021-07-22 4:00PM	5	14	0	19	16	12	0	28	7	5	0	12
4:15PM	5	26	0	31	20	8	0	28	10	3	0	13
4:30PM	6	15	0	21	22	6	0	28	8	6	0	14
4:45PM	2	13	0	15	13	10	0	23	15	3	0	18
Hourly Total	18	68	0	86	71	36	0	107	40	17	0	57
5:00PM	3	12	0	15	15	13	0	28	15	4	0	19
5:15PM	2	11	0	13	16	13	0	29	11	5	0	16
5:30PM	3	16	0	19	16	12	0	28	13	3	0	16
5:45PM	3	9	0	12	16	15	0	31	13	3	0	16
Hourly Total	11	48	0	59	63	53	0	116	52	15	0	67
6:00PM	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
Total	29	116	0	145	134	89	0	223	92	32	0	124
% 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
% Lights	100%	98.3%	0%	98.6%	98.5%	97.8%	0%	98.2%	97.8%	100%	0%	98.4%
Articulated Trucks and Single-Unit Trucks	0	1	0	1	1	2	0	3	2	0	0	2
% 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%
Buses	0	1	0	1	1	0	0	1	0	0	0	0
% Buses	0%	0.9%	0%	0.7%	0.7%	0%	0%	0.4%	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)

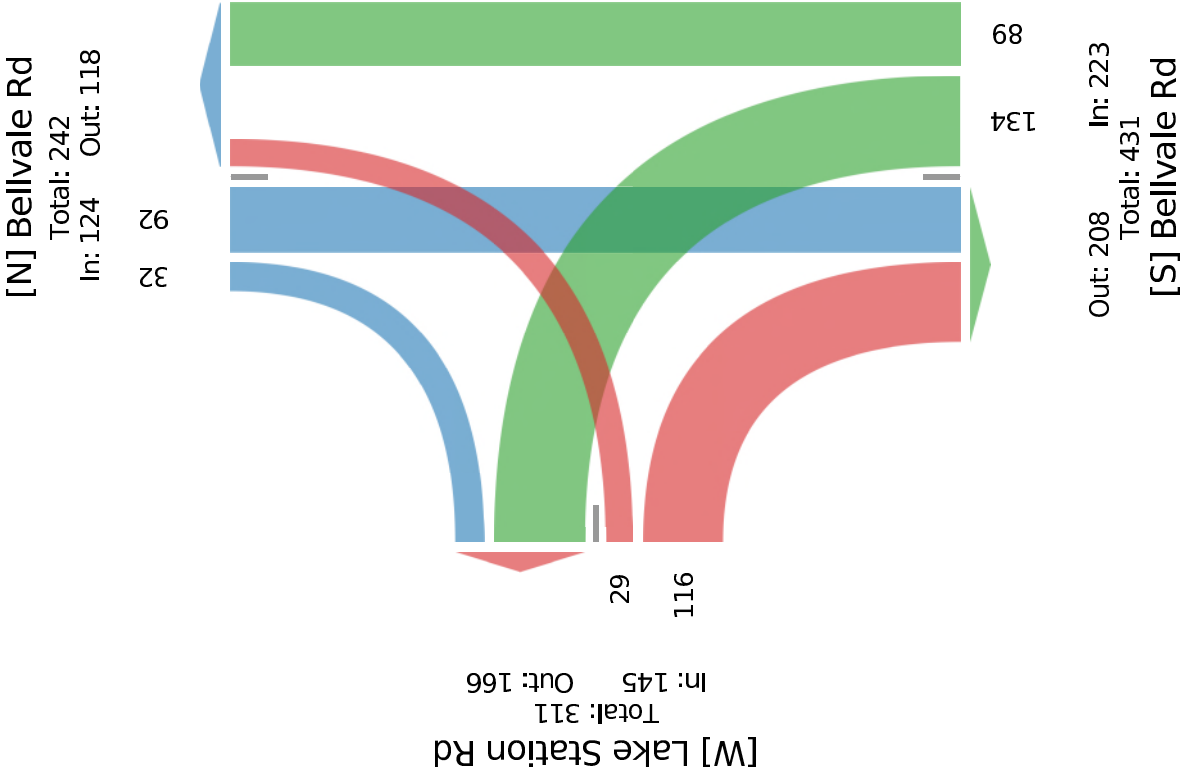
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

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



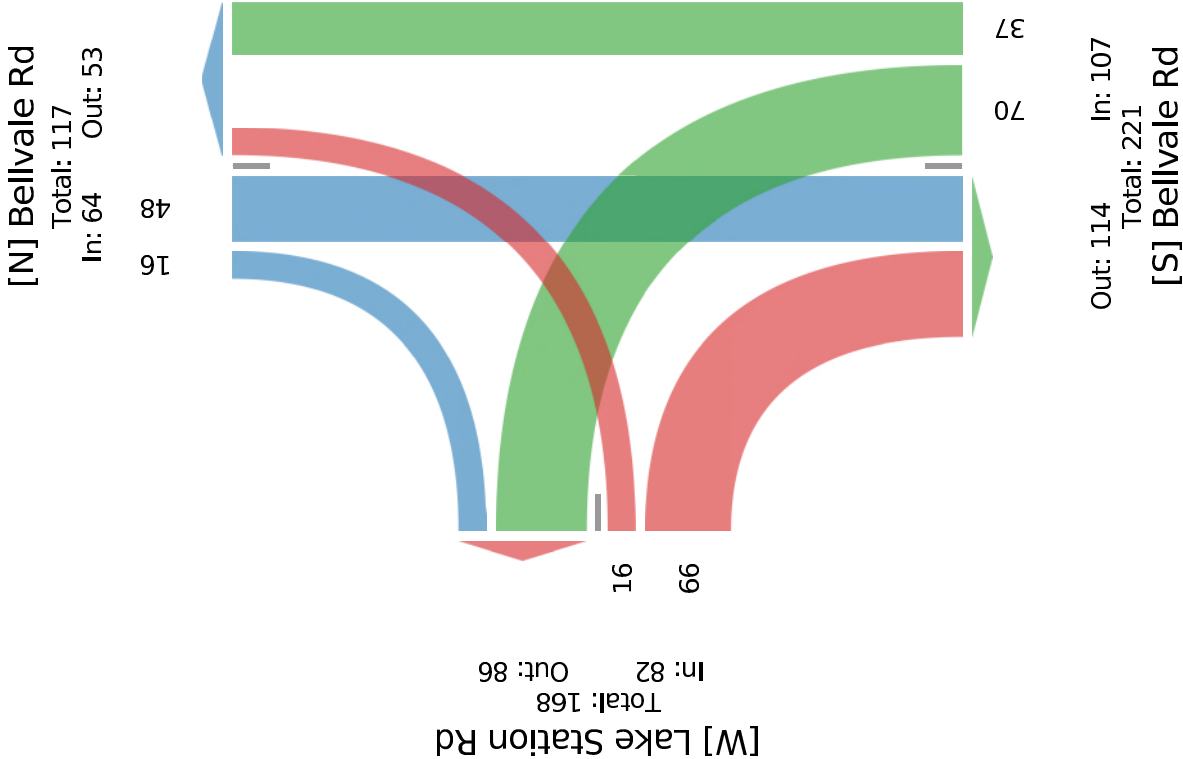
Provided by: Creighton Manning Engineering, LLP
2 Winners Circle, Albany, NY, 12205, US

Leg Direction	Time	Lake Station Rd Eastbound				Bellvale Rd Northbound				Bellvale Rd Southbound			
		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
	4:30PM	6	15	0	21	22	6	0	28	8	6	0	14
	4:45PM	2	13	0	15	13	10	0	23	15	3	0	18
	5:00PM	3	12	0	15	15	13	0	28	15	4	0	19
	Total	16	66	0	82	70	37	0	107	48	16	0	64
	% 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
	Lights	16	64	0	80	69	36	0	105	46	16	0	62
	% Lights	100%	97.0%	0%	97.6%	98.6%	97.3%	0%	98.1%	95.8%	100%	0%	96.9%
	Articulated Trucks and Single-Unit Trucks	0	1	0	1	0	1	0	1	2	0	0	2
	% Articulated Trucks and Single-Unit Trucks	0%	1.5%	0%	1.2%	0%	2.7%	0%	0.9%	4.2%	0%	0%	3.1%
	Buses	0	1	0	1	1	0	0	1	0	0	0	0
	% Buses	0%	1.5%	0%	1.2%	1.4%	0%	0%	0.9%	0%	0%	0%	0.8%

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



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

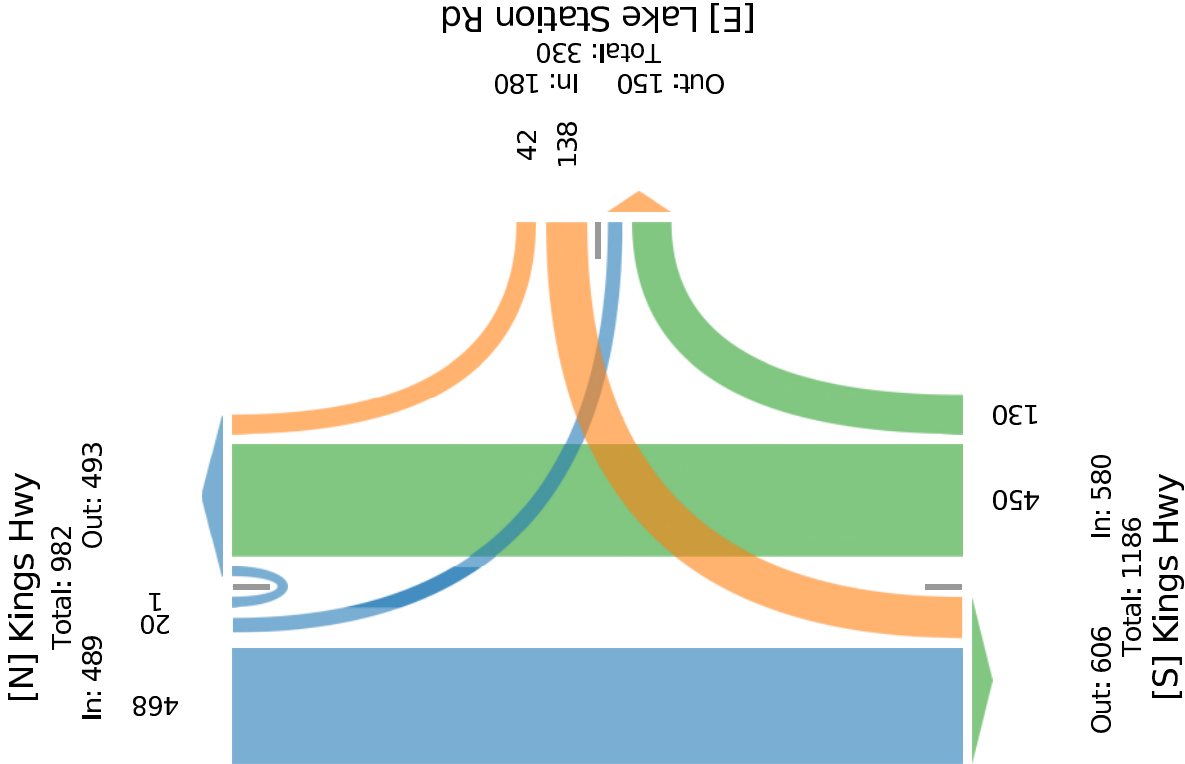
Leg Direction	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound			
	L	R	U	App	T	R	U	App	L	T	U	App Int
Time												
2021-07-22 4:00PM	21	6	0	27	57	15	0	72	1	50	0	51
4:15PM	17	5	0	22	56	25	0	81	1	55	0	56
4:30PM	22	11	0	33	47	19	0	66	5	53	0	58
4:45PM	12	4	0	16	56	14	0	70	4	70	0	74
Hourly Total	72	26	0	98	216	73	0	289	11	228	0	239
5:00PM	22	6	0	28	54	13	0	67	4	61	0	65
5:15PM	12	3	0	15	71	19	0	90	0	62	1	63
5:30PM	12	5	0	17	49	14	0	63	1	52	0	53
5:45PM	20	2	0	22	60	11	0	71	4	65	0	69
Hourly Total	66	16	0	82	234	57	0	291	9	240	1	250
6:00PM	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
Total	138	42	0	180	450	130	0	580	20	468	1	489
% 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
% Lights	100%	90.5%	0%	97.8%	98.2%	96.9%	0%	97.9%	100%	98.7%	100%	98.8%
Articulated Trucks and Single-Unit Trucks	0	2	0	2	6	3	0	9	0	5	0	5
% 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%
Buses	0	2	0	2	2	1	0	3	0	1	0	1
% Buses	0%	4.8%	0%	1.1%	0.4%	0.8%	0%	0.5%	0%	0.2%	0%	0.2%

*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

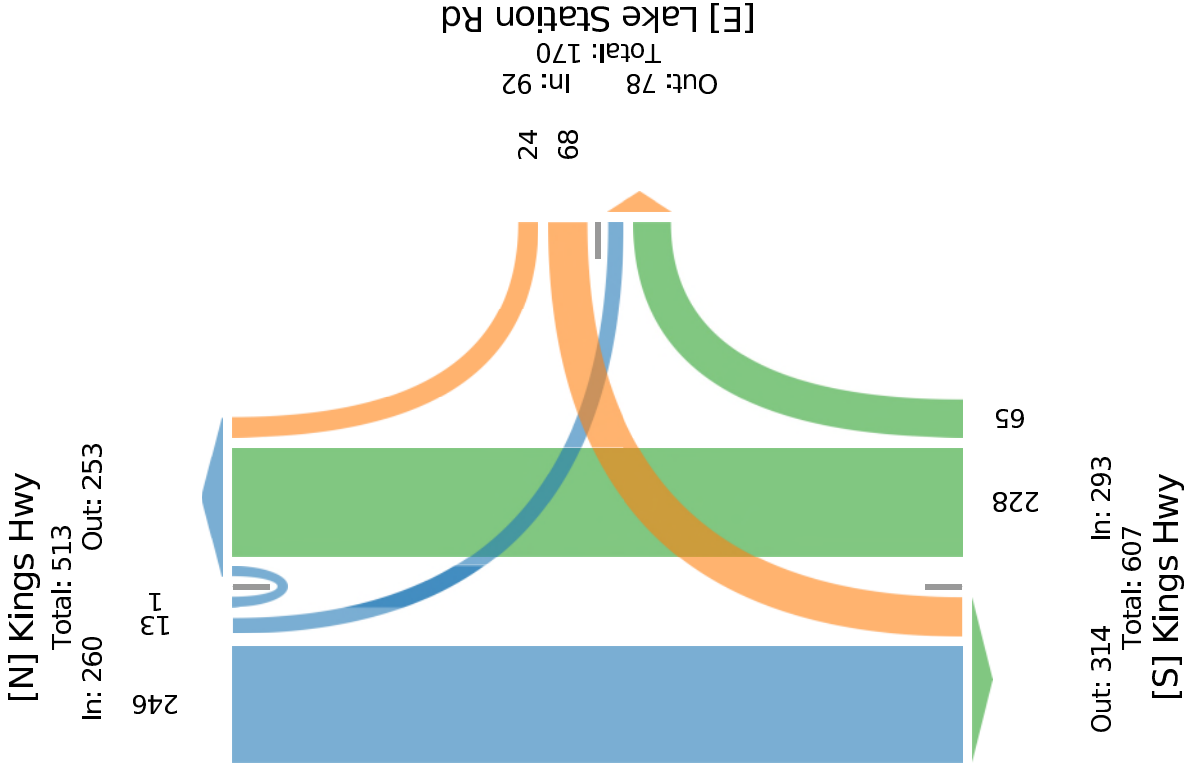
Leg Direction	Lake Station Rd Westbound				Kings Hwy Northbound				Kings Hwy Southbound			
	L	R	U	App	T	R	U	App	L	T	U	App Int
Time												
2021-07-22 4:30PM	22	11	0	33	47	19	0	66	5	53	0	58
4:45PM	12	4	0	16	56	14	0	70	4	70	0	74
5:00PM	22	6	0	28	54	13	0	67	4	61	0	65
5:15PM	12	3	0	15	71	19	0	90	0	62	1	63
Total	68	24	0	92	228	65	0	293	13	246	1	260
% 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
Lights	68	23	0	91	224	64	0	288	13	242	1	256
% Lights	100%	95.8%	0%	98.9%	98.2%	98.5%	0%	98.3%	100%	98.4%	100%	98.5%
Articulated Trucks and Single-Unit Trucks	0	1	0	1	3	0	0	3	0	3	0	3
% Articulated Trucks and Single-Unit Trucks	0%	4.2%	0%	1.1%	1.3%	0%	0%	1.0%	0%	1.2%	0%	1.2%
Buses	0	0	0	0	1	1	0	2	0	1	0	1
% Buses	0%	0%	0%	0%	0.4%	1.5%	0%	0.7%	0%	0.4%	0%	0.4%

*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		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL		
	0	1	1	0	0	1	0	0	0	0	1	1	0	0	1	0	0		
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	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH % :		696	10	362	0	15	187	94	0	31	348	490	0	47	270	1	0	2551	
		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 :																			
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																	
		0.870																	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL				
	NL	NT	NR	NU	0	1	0	1	SL	ST	SR	SU	0	1	0	1		WL	WT	WR	WU
	94	1	37	0	2	46	31	0	8	25	84	0	10	57	1	0		0	0	0	396
	110	2	30	0	3	50	30	0	0	37	95	0	9	56	0	0		0	0	0	422
	94	1	33	0	0	49	36	0	3	32	140	0	8	45	0	0		0	0	0	441
	76	3	39	0	5	59	32	0	7	36	116	0	13	73	0	0		0	0	0	459
	91	3	48	0	0	42	29	0	4	47	96	0	13	80	0	0		0	0	0	453
	90	2	31	0	4	64	29	0	8	38	98	0	21	79	0	0		0	0	0	464
	92	5	25	0	1	55	27	0	6	40	99	0	14	47	0	0		0	0	0	411
	87	1	32	0	0	41	28	0	11	27	106	0	12	48	0	0		0	0	0	393
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL				
APPROACH % :	734	18	275	0	15	406	242	0	47	282	834	0	100	485	1	0	3439				
PEAK HR :	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 VOL :	351	9	151	0	9	214	126	0	22	153	450	0	55	277	0	0	TOTAL				
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	1817				
			0.900				0.899				0.893				0.830		0.979				

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								
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
	0	1	1	0	0	1	0	0	0	0	1	1	0	0	1	0					
7:00 AM	62	0	53	0	1	16	10	0	6	33	37	0	1	21	0	0					
7:15 AM	89	1	56	0	2	11	7	0	6	52	38	0	6	30	1	0					
7:30 AM	83	1	33	0	3	14	9	0	0	38	59	0	2	26	0	0					
7:45 AM	100	0	39	0	0	28	10	0	1	44	72	0	3	44	0	0					
8:00 AM	90	0	37	0	3	17	10	0	2	38	50	0	7	31	0	0					
8:15 AM	74	0	37	0	3	13	15	0	1	30	64	0	9	27	0	0					
8:30 AM	82	3	40	0	0	15	8	0	5	45	70	0	6	35	0	0					
8:45 AM	83	2	37	0	3	37	9	0	6	42	63	0	6	34	0	0					
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU				
APPROACH %'s :		66.17%	7	332	0	15	151	78	0	27	322	453	0	40	248	1	0				
						61.89%				31.97%				13.84%				85.81%			
PEAK HR :		07:45 AM - 08:45 AM								40.15%				56.48%				0.35%			
PEAK HR VOL :		346	3	153	0	6	73	43	0	9	157	256	0	25	137	0	0				
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	0.594	0.778	0.000	0.000				
		0.903				0.803				0.879				0.862							
TOTAL																					

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	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	45	0	3	45	27	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	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		704	17	258	0	15	371	237	0	46	271	815	0	94	468	1	0	3297
		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																
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 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 - HT

NS/EW Streets:		Kings Hwy/Lehigh Ave						NYS Rte 17M						NYS Rte 17M					
AM		NORTHBOUND						SOUTHBOUND						EASTBOUND					
		NL	NT	NR	NU	0	1	0	1	0	0	0	0	0	1	0	0	1	0
7:00 AM		3	0	5	0	0	5	6	0	2	0	0	0	0	2	0	0	4	0
7:15 AM		6	0	4	0	0	4	1	0	0	0	0	0	0	4	3	0	3	0
7:30 AM		4	0	5	0	0	5	2	0	0	0	0	0	0	6	4	0	2	0
7:45 AM		5	0	3	0	0	5	2	0	0	0	0	0	0	8	7	0	1	0
8:00 AM		5	1	2	0	0	2	3	0	1	1	7	0	0	1	7	0	0	0
8:15 AM		3	0	2	0	0	3	1	0	1	3	6	0	0	3	6	0	3	0
8:30 AM		6	0	3	0	0	4	0	0	0	1	1	0	0	1	4	0	1	0
8:45 AM		1	2	6	0	0	8	1	0	0	1	3	0	0	1	3	0	5	0
TOTAL VOLUMES :		NL	NT	NR	NU	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :		33	3	30	0	0	36	16	0	4	26	37	0	0	24.14%	75.86%	0.00%	0.00%	0.00%
PEAK HR :		07:45 AM - 08:45 AM						0.00%						5.97%					
PEAK HR VOL :		19	1	10	0	0	14	6	0	2	13	21	0	0	0.500	0.406	0.750	0.000	0.000
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	0.000	0.500	0.500	0.000	0.600	0.000
		0.833						0.714						0.600					
TOTAL		98						0.742						0.600					

PM		NORTHBOUND						SOUTHBOUND						EASTBOUND					
		NL	NT	NR	NU	0	1	0	0	0	0	0	0	0	1	0	0	1	0
4:00 PM		4	0	3	0	0	3	1	0	0	0	5	0	0	0	3	0	3	0
4:15 PM		6	0	3	0	0	5	0	0	0	0	3	0	0	1	1	0	1	0
4:30 PM		6	0	2	0	0	4	1	0	0	0	6	0	0	0	2	0	2	0
4:45 PM		2	0	0	0	0	9	0	0	1	0	1	0	0	2	2	0	2	0
5:00 PM		3	0	3	0	0	3	1	0	0	4	1	0	0	0	5	0	0	0
5:15 PM		1	0	0	0	0	6	2	0	0	2	2	0	0	1	3	0	3	0
5:30 PM		5	1	2	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
5:45 PM		3	0	4	0	0	4	0	0	0	1	1	0	0	1	1	0	0	0
TOTAL VOLUMES :		NL	NT	NR	NU	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :		30	1	17	0	0	35	5	0	1	11	19	0	0	26.09%	73.91%	0.00%	0.00%	0.00%
PEAK HR :		04:30 PM - 05:30 PM						0.00%						3.23%					
PEAK HR VOL :		12	0	5	0	0	22	4	0	1	7	10	0	0	0.250	0.438	0.417	0.000	0.000
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	0.000	0.375	0.600	0.000	0.000	0.000
		0.531						0.722						0.643					
TOTAL		76						0.864						0.750					

National Data & Surveying Services Intersection Turning Movement

Count

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
	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 :		EB	WB	EB	WB	NB	SB	NB	SB
APPROACH %'s :		0	0	0	0	0	0	0	0
TOTAL									
PEAK HR :		07:45 AM - 08:45 AM							
PEAK HR VOL :		0	0	0	0	0	0	0	0
PEAK HR FACTOR :									
TOTAL									

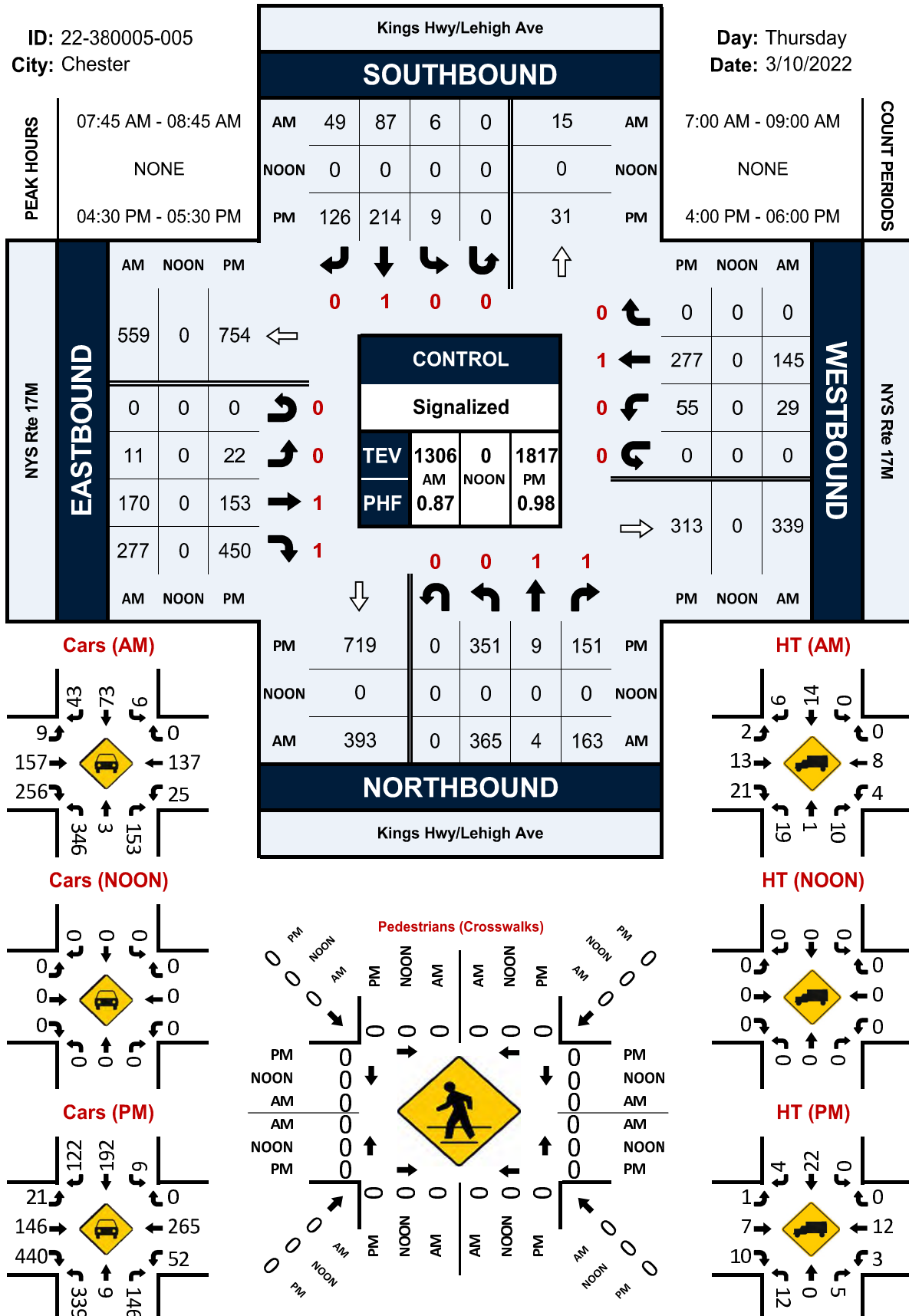
PM		NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
		EB	WB	EB	WB	NB	SB	NB	SB
		0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0
TOTAL VOLUMES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

Kings Hwy/Lehigh Ave & NYS Rte 17M

Peak Hour Turning Movement Count

ID: 22-380005-005
City: Chester

Day: Thursday
Date: 3/10/2022





Creighton Manning Engineering, LLP

145 Main St, 3rd Floor
Ossining, NY 10562

Project No.: 121-204; Davidson Dr
Recorded By: EM
Date/Time: 2/10/2023/AM
Locaton: Kings Hwy Bypass & Bellvale Rd

File Name : Not Named 6
Site Code : 11111111
Start Date : 2/10/2023
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	Bellvale Rd Eastbound					Bellvale Rd Westbound					Northbound					Kings Hwy Bypas Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	18	2	0	0	20	0	3	9	0	12	0	0	0	0	0	5	0	4	0	9	41
07:15 AM	17	8	0	0	25	0	3	20	0	23	0	0	0	0	0	6	0	2	0	8	56
07:30 AM	29	5	0	0	34	0	2	10	0	12	0	0	0	0	0	6	0	13	0	19	65
07:45 AM	15	2	0	0	17	0	2	7	0	9	0	0	0	0	0	7	0	8	0	15	41
Total	79	17	0	0	96	0	10	46	0	56	0	0	0	0	0	24	0	27	0	51	203
08:00 AM	13	3	0	0	16	0	8	7	0	15	0	0	0	0	0	3	0	7	0	10	41
08:15 AM	11	1	0	0	12	0	1	5	0	6	0	0	0	0	0	5	0	3	0	8	26
08:30 AM	14	5	0	0	19	0	2	6	0	8	0	0	0	0	0	4	0	6	0	10	37
08:45 AM	17	3	0	0	20	0	5	8	0	13	0	0	0	0	0	4	0	5	0	9	42
Total	55	12	0	0	67	0	16	26	0	42	0	0	0	0	0	16	0	21	0	37	146
Grand Total	134	29	0	0	163	0	26	72	0	98	0	0	0	0	0	40	0	48	0	88	349
Apprch %	82.2	17.8	0	0		0	26.5	73.5	0		0	0	0	0		45.5	0	54.5	0		
Total %	38.4	8.3	0	0	46.7	0	7.4	20.6	0	28.1	0	0	0	0	0	11.5	0	13.8	0	25.2	
Unshifted	127	27	0	0	154	0	22	72	0	94	0	0	0	0	0	38	0	41	0	79	327
% Unshifted	94.8	93.1	0	0	94.5	0	84.6	100	0	95.9	0	0	0	0	0	95	0	85.4	0	89.8	93.7
Bank 1	6	0	0	0	6	0	1	0	0	1	0	0	0	0	0	1	0	7	0	8	15
% Bank 1	4.5	0	0	0	3.7	0	3.8	0	0	1	0	0	0	0	0	2.5	0	14.6	0	9.1	4.3
Bank 2	1	2	0	0	3	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	7
% Bank 2	0.7	6.9	0	0	1.8	0	11.5	0	0	3.1	0	0	0	0	0	2.5	0	0	0	1.1	2



Creighton Manning Engineering, LLP

145 Main St, 3rd Floor
Ossining, NY 10562

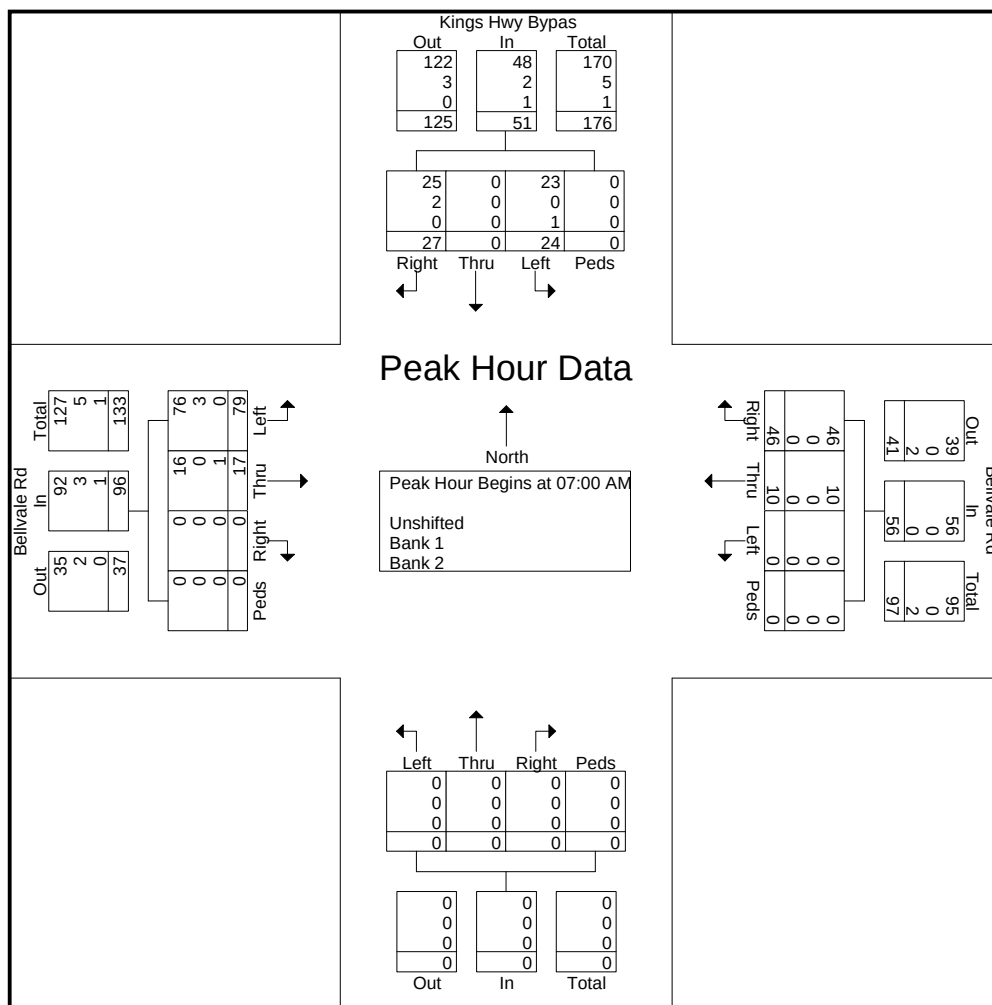
File Name : Not Named 6

Site Code : 11111111

Start Date : 2/10/2023

Page No : 2

	Bellvale Rd Eastbound					Bellvale Rd Westbound					Northbound					Kings Hwy Bypass Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	18	2	0	0	20	0	3	9	0	12	0	0	0	0	0	5	0	4	0	9	41
07:15 AM	17	8	0	0	25	0	3	20	0	23	0	0	0	0	0	6	0	2	0	8	56
07:30 AM	29	5	0	0	34	0	2	10	0	12	0	0	0	0	0	6	0	13	0	19	65
07:45 AM	15	2	0	0	17	0	2	7	0	9	0	0	0	0	0	7	0	8	0	15	41
Total Volume	79	17	0	0	96	0	10	46	0	56	0	0	0	0	0	24	0	27	0	51	203
% App. Total	82.3	17.7	0	0		0	17.9	82.1	0		0	0	0	0	0	47.1	0	52.9	0		
PHF	.681	.531	.000	.000	.706	.000	.833	.575	.000	.609	.000	.000	.000	.000	.000	.857	.000	.519	.000	.671	.781
Unshifted	76	16	0	0	92	0	10	46	0	56	0	0	0	0	0	23	0	25	0	48	196
% Unshifted	96.2	94.1	0	0	95.8	0	100	100	0	100	0	0	0	0	0	95.8	0	92.6	0	94.1	96.6
Bank 1	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
% Bank 1	3.8	0	0	0	3.1	0	0	0	0	0	0	0	0	0	0	0	0	7.4	0	3.9	2.5
Bank 2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
% Bank 2	0	5.9	0	0	1.0	0	0	0	0	0	0	0	0	0	0	4.2	0	0	0	2.0	1.0





Creighton Manning Engineering, LLP

145 Main St, 3rd Floor
Ossining, NY 10562

File Name : Not Named 6

Site Code : 11111111

Start Date : 2/10/2023

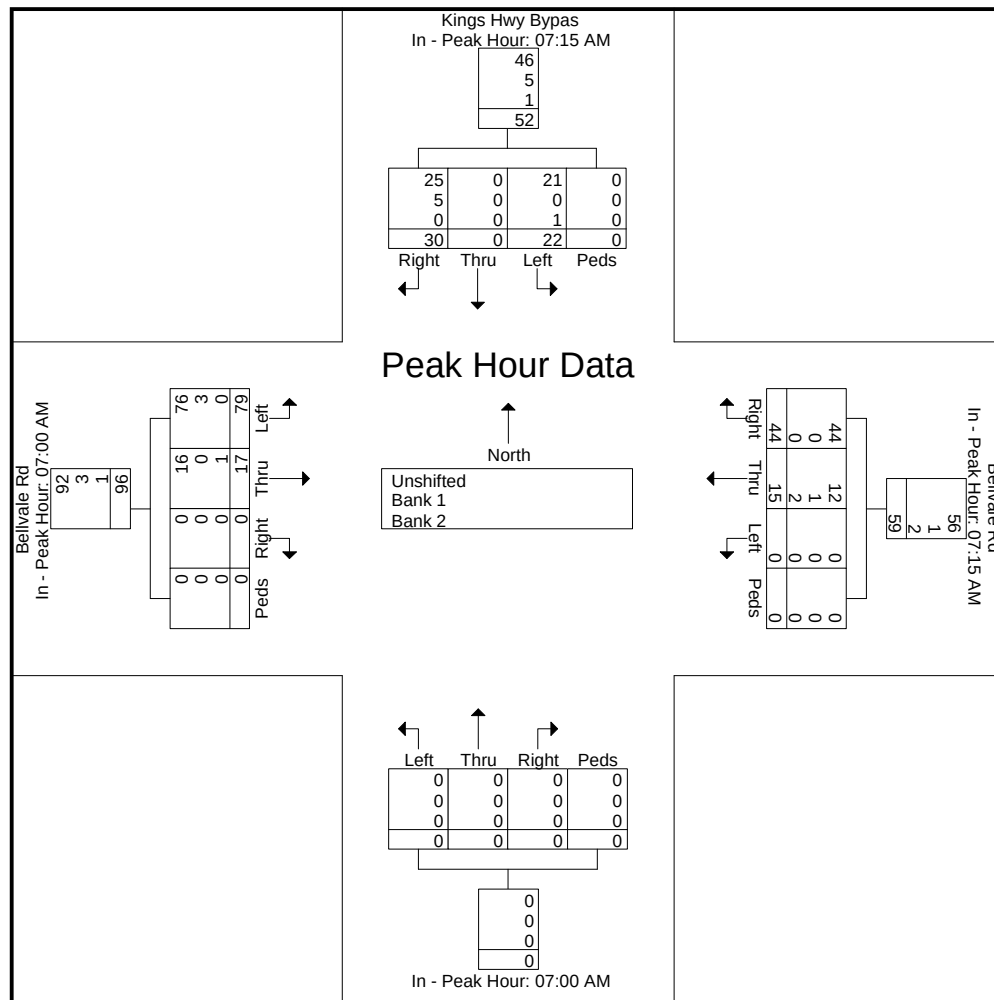
Page No : 3

	Bellvale Rd Eastbound					Bellvale Rd Westbound					Northbound					Kings Hwy Bypass Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					07:15 AM					07:00 AM					07:15 AM				
+0 mins.	18	2	0	0	20	0	3	20	0	23	0	0	0	0	0	6	0	2	0	8
+15 mins.	17	8	0	0	25	0	2	10	0	12	0	0	0	0	0	6	0	13	0	19
+30 mins.	29	5	0	0	34	0	2	7	0	9	0	0	0	0	0	7	0	8	0	15
+45 mins.	15	2	0	0	17	0	8	7	0	15	0	0	0	0	0	3	0	7	0	10
Total Volume	79	17	0	0	96	0	15	44	0	59	0	0	0	0	0	22	0	30	0	52
% App. Total	82.3	17.7	0	0		0	25.4	74.6	0		0	0	0	0	0	42.3	0	57.7	0	
PHF	.681	.531	.000	.000	.706	.000	.469	.550	.000	.641	.000	.000	.000	.000	.000	.786	.000	.577	.000	.684
Unshifted	76	16	0	0	92	0	12	44	0	56	0	0	0	0	0	21	0	25	0	46
% Unshifted	96.	94.	0	0	95.8	0	80	100	0	94.9	0	0	0	0	0	95.	0	83.	0	88.5
Bank 1	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	0	0	5	0	5
% Bank 1	3.8	0	0	0	3.1	0	6.7	0	0	1.7	0	0	0	0	0	0	0	16.	0	9.6
Bank 2	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1
% Bank 2	0	5.9	0	0	1	0	13.	0	0	3.4	0	0	0	0	0	4.5	0	0	0	1.9



[illegible]



Creighton Manning Engineering, LLP

145 Main St, 3rd Floor
Ossining, NY 10562

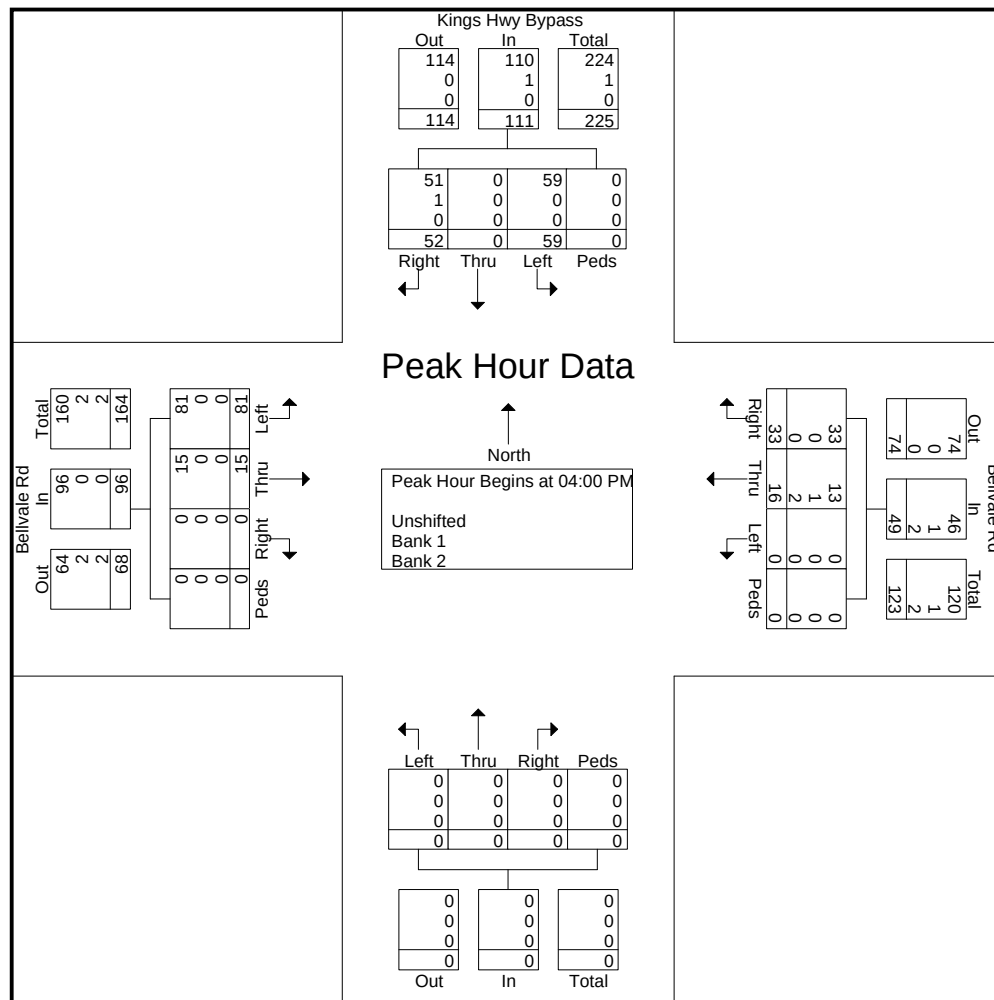
File Name : Not Named 7

Site Code : 00121204

Start Date : 2/10/2023

Page No : 2

	Bellvale Rd Eastbound					Bellvale Rd Westbound					Northbound					Kings Hwy Bypass Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	30	4	0	0	34	0	3	7	0	10	0	0	0	0	0	15	0	17	0	32	76
04:15 PM	20	6	0	0	26	0	5	9	0	14	0	0	0	0	0	10	0	14	0	24	64
04:30 PM	17	1	0	0	18	0	4	7	0	11	0	0	0	0	0	22	0	11	0	33	62
04:45 PM	14	4	0	0	18	0	4	10	0	14	0	0	0	0	0	12	0	10	0	22	54
Total Volume	81	15	0	0	96	0	16	33	0	49	0	0	0	0	0	59	0	52	0	111	256
% App. Total	84.4	15.6	0	0		0	32.7	67.3	0		0	0	0	0		53.2	0	46.8	0		
PHF	.675	.625	.000	.000	.706	.000	.800	.825	.000	.875	.000	.000	.000	.000	.000	.670	.000	.765	.000	.841	.842
Unshifted	81	15	0	0	96	0	13	33	0	46	0	0	0	0	0	59	0	51	0	110	252
% Unshifted	100	100	0	0	100	0	81.3	100	0	93.9	0	0	0	0	0	100	0	98.1	0	99.1	98.4
Bank 1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	2
% Bank 1	0	0	0	0	0	0	6.3	0	0	2.0	0	0	0	0	0	0	0	1.9	0	0.9	0.8
Bank 2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% Bank 2	0	0	0	0	0	0	12.5	0	0	4.1	0	0	0	0	0	0	0	0	0	0	0.8



121-204; Davidson Drive-Weekday/AM - TMC

Fri Feb 10, 2023

Full Length (7 AM-9 AM)

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

All Movements

ID: 1037358, Location: 41.346752, -74.274781, Site Code: 121204



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

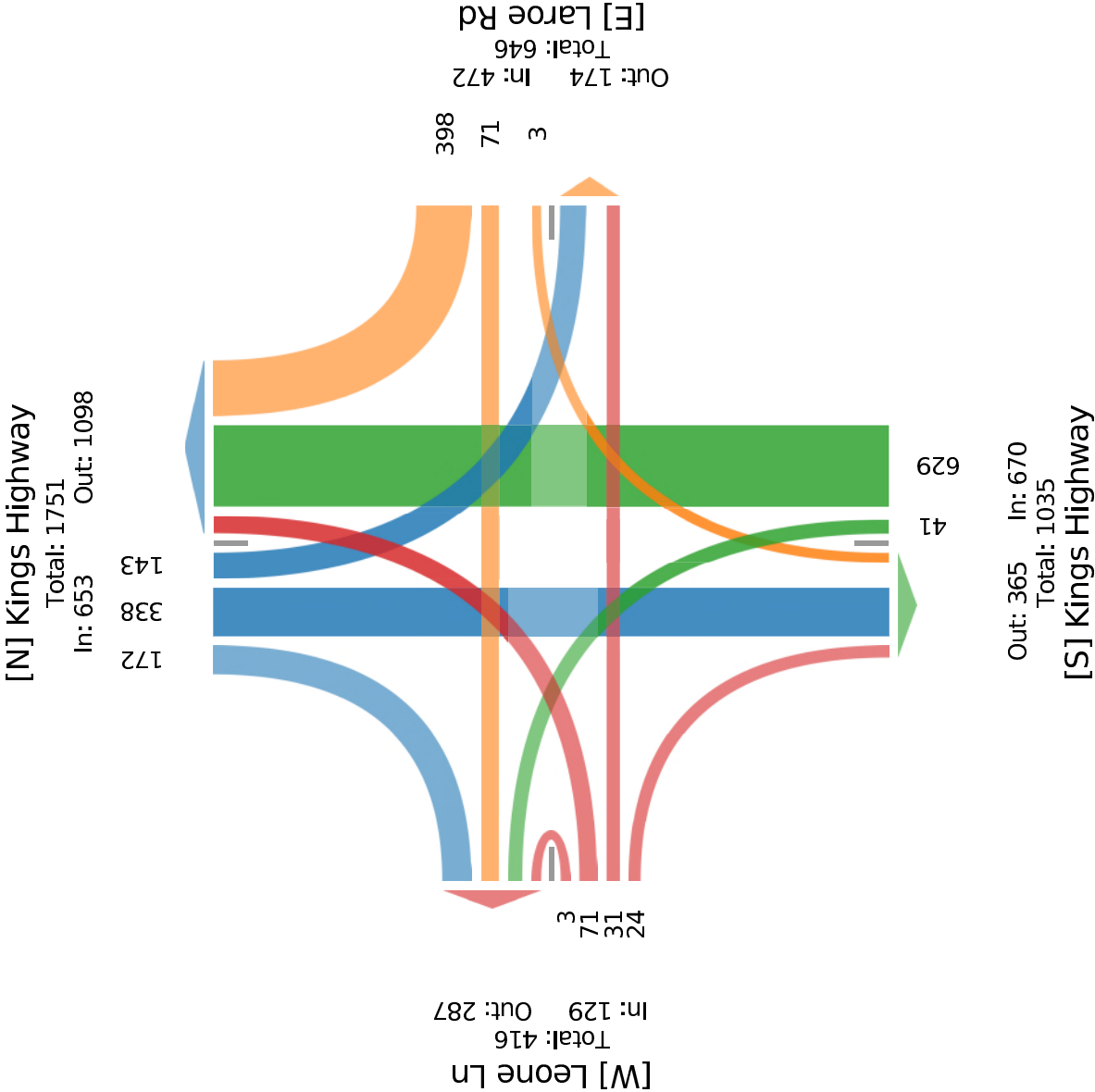
Leg Direction	Leone Ln Eastbound				Laroe Rd Westbound				Kings Highway Northbound				Kings Highway Southbound			
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2023-02-10 7:00AM	5	2	1	0	8	0	3	38	0	41	1	72	0	0	73	61
7:15AM	13	6	3	1	23	0	6	50	0	56	1	71	0	0	72	79
7:30AM	15	1	3	0	19	1	13	43	0	57	9	109	0	0	118	272
7:45AM	7	3	2	2	14	0	12	61	0	73	4	83	0	0	87	264
Hourly Total	40	12	9	3	64	1	34	192	0	227	15	335	0	0	350	949
8:00AM	7	4	5	0	16	2	13	67	0	82	6	79	0	0	85	253
8:15AM	9	7	1	0	17	0	5	45	0	50	10	67	0	0	77	224
8:30AM	6	6	8	0	20	0	10	53	0	63	0	86	0	0	86	252
8:45AM	9	2	1	0	12	0	9	41	0	50	10	62	0	0	72	246
Hourly Total	31	19	15	0	65	2	37	206	0	245	26	294	0	0	320	975
Total	71	31	24	3	129	3	71	398	0	472	41	629	0	0	670	1924
% Approach	55.0%	24.0%	18.6%	2.3%	-	0.6%	15.0%	84.3%	0%	-	6.1%	93.9%	0%	0%	-	-
% Total	3.7%	1.6%	1.2%	0.2%	6.7%	0.2%	3.7%	20.7%	0%	24.5%	2.1%	32.7%	0%	0%	34.8%	-
Lights	43	26	22	3	94	1	70	385	0	456	41	611	0	0	652	1794
% Lights	60.6%	83.9%	91.7%	100%	72.9%	33.3%	98.6%	96.7%	0%	96.6%	100%	97.1%	0%	0%	97.3%	93.2%
Articulated Trucks and Single-Unit Trucks	28	5	2	0	35	0	1	4	0	5	0	14	0	0	14	103
% Articulated Trucks and Single-Unit Trucks	39.4%	16.1%	8.3%	0%	27.1%	0%	1.4%	1.0%	0%	1.1%	0%	2.2%	0%	0%	2.1%	5.4%
Buses	0	0	0	0	0	2	0	9	0	11	0	4	0	0	4	27
% Buses	0%	0%	0%	0%	0%	66.7%	0%	2.3%	0%	2.3%	0%	0.6%	0%	0%	0.6%	1.4%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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

121-204; Davidson Drive-Weekday/AM - TMC
Fri Feb 10, 2023
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Bicycles on Road)
All Movements
ID: 1037358, Location: 41.346752, -74.274781, Site Code: 121204



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



121-204; Davidson Drive-Weekday/AM - TMC

Fri Feb 10, 2023

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

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

All Movements

ID: 1037358, Location: 41.346752, -74.274781, Site Code: 121204



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

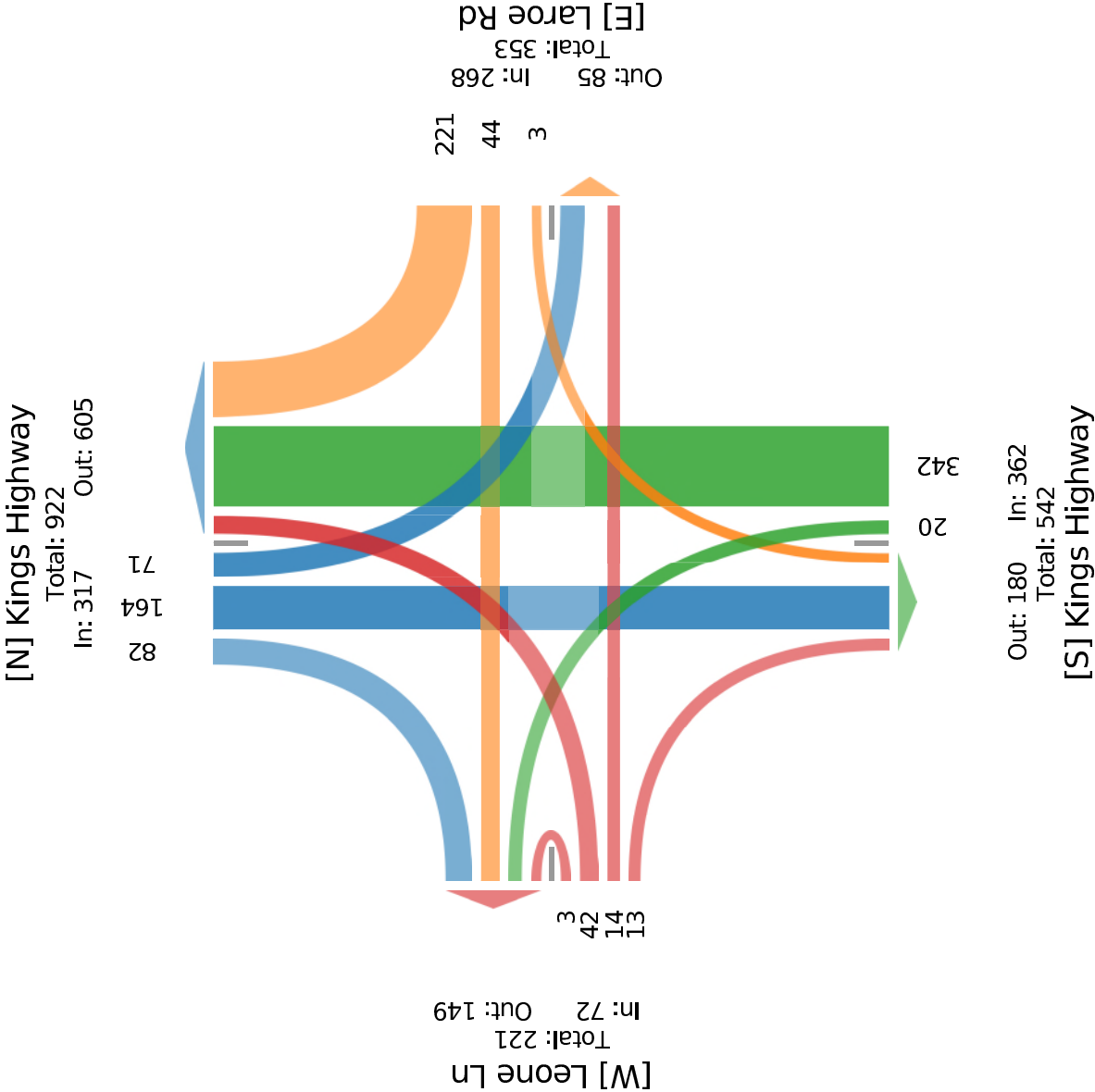
Leg Direction	Leone Ln Eastbound					Laroe Rd Westbound					Kings Highway Northbound					Kings Highway Southbound				
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App
Time																				
2023-02-10 7:15AM	13	6	3	1	23	0	6	50	0	56	1	71	0	0	72	19	43	17	0	79
7:30AM	15	1	3	0	19	1	13	43	0	57	9	109	0	0	118	18	40	20	0	78
7:45AM	7	3	2	2	14	0	12	61	0	73	4	83	0	0	87	16	51	23	0	90
8:00AM	7	4	5	0	16	2	13	67	0	82	6	79	0	0	85	18	30	22	0	70
Total	42	14	13	3	72	3	44	221	0	268	20	342	0	0	362	71	164	82	0	317
% Approach	58.3%	19.4%	18.1%	4.2%	-	1.1%	16.4%	82.5%	0%	-	5.5%	94.5%	0%	0%	-	22.4%	51.7%	25.9%	0%	-
% Total	4.1%	1.4%	1.3%	0.3%	7.1%	0.3%	4.3%	21.7%	0%	26.3%	2.0%	33.6%	0%	0%	35.5%	7.0%	16.1%	8.0%	0%	31.1%
PHF	0.700	0.583	0.650	0.375	0.783	0.375	0.846	0.825	-	0.817	0.556	0.784	-	-	0.767	0.934	0.804	0.891	-	0.881
Lights	26	12	12	3	53	1	43	213	0	257	20	333	0	0	353	60	157	68	0	285
% Lights	61.9%	85.7%	92.3%	100%	73.6%	33.3%	97.7%	96.4%	0%	95.9%	100%	97.4%	0%	0%	97.5%	84.5%	95.7%	82.9%	0%	89.9%
Articulated Trucks and Single-Unit Trucks	16	2	1	0	19	0	1	1	0	2	0	6	0	0	6	5	6	14	0	25
% Articulated Trucks and Single-Unit Trucks	38.1%	14.3%	7.7%	0%	26.4%	0%	2.3%	0.5%	0%	0.7%	0%	1.8%	0%	0%	1.7%	7.0%	3.7%	17.1%	0%	7.9%
Buses	0	0	0	0	0	2	0	7	0	9	0	3	0	0	3	6	1	0	0	7
% Buses	0%	0%	0%	0%	0%	66.7%	0%	3.2%	0%	3.4%	0%	0.9%	0%	0%	0.8%	8.5%	0.6%	0%	0%	2.2%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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

121-204; Davidson Drive-Weekday/AM - TMC
Fri Feb 10, 2023
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Bicycles on Road)
All Movements
ID: 1037358, Location: 41.346752, -74.274781, Site Code: 121204



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



121-204; Davidson Drive-Weekday/PM - TMC

Fri Feb 10, 2023

Full Length (4 PM-6 PM)

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

All Movements

ID: 1037627, Location: 41.346752, -74.274781, Site Code: 121204



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

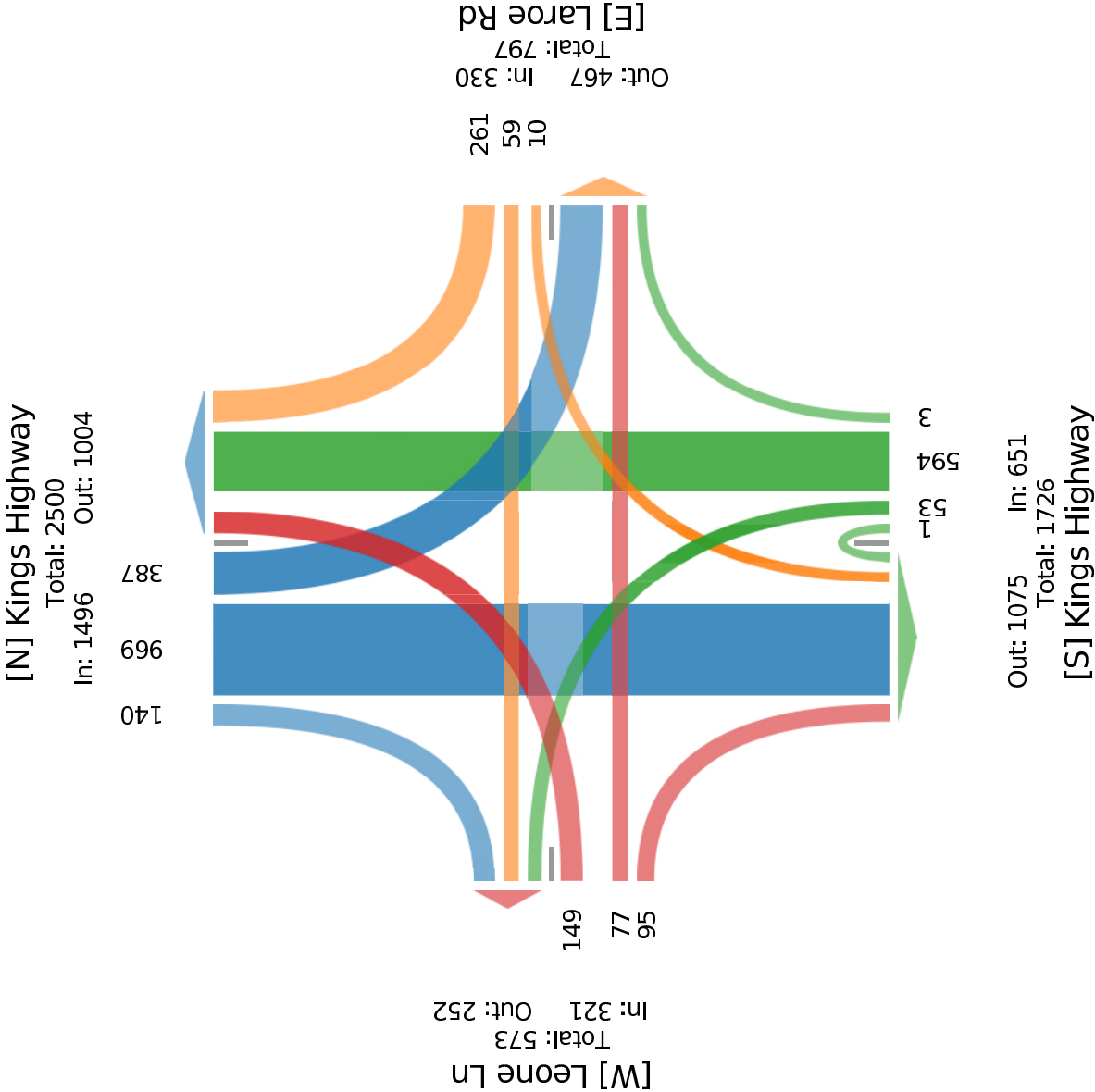
Leg Direction	Leone Ln Eastbound				Laroe Rd Westbound				Kings Highway Northbound				Kings Highway Southbound			
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
Time																
2023-02-10 4:00PM	24	7	10	0	41	1	5	33	0	39	7	77	1	0	85	334
4:15PM	13	13	14	0	40	4	7	40	0	51	7	88	1	1	97	390
4:30PM	26	14	11	0	51	0	7	36	0	43	5	81	0	0	86	386
4:45PM	17	13	5	0	35	1	3	35	0	39	7	79	0	0	86	316
Hourly Total	80	47	40	0	167	6	22	144	0	172	26	325	2	1	354	1426
5:00PM	29	5	15	0	49	1	9	32	0	42	10	75	1	0	86	354
5:15PM	13	12	8	0	33	0	5	41	0	46	5	72	0	0	77	358
5:30PM	16	3	19	0	38	1	11	26	0	38	4	56	0	0	60	332
5:45PM	11	10	13	0	34	2	12	18	0	32	8	66	0	0	74	328
Hourly Total	69	30	55	0	154	4	37	117	0	158	27	269	1	0	297	1372
Total	149	77	95	0	321	10	59	261	0	330	53	594	3	1	651	2798
% Approach	46.4%	24.0%	29.6%	0%	-	3.0%	17.9%	79.1%	0%	-	8.1%	91.2%	0.5%	0.2%	-	-
% Total	5.3%	2.8%	3.4%	0%	11.5%	0.4%	2.1%	9.3%	0%	11.8%	1.9%	21.2%	0.1%	0%	23.3%	-
Lights	146	75	93	0	314	8	58	251	0	317	51	585	2	1	639	2728
% Lights	98.0%	97.4%	97.9%	0%	97.8%	80.0%	98.3%	96.2%	0%	96.1%	96.2%	98.5%	66.7%	100%	98.2%	97.5%
Articulated Trucks and Single-Unit Trucks	3	2	2	0	7	0	1	4	0	5	2	7	1	0	10	57
% Articulated Trucks and Single-Unit Trucks	2.0%	2.6%	2.1%	0%	2.2%	0%	1.7%	1.5%	0%	1.5%	3.8%	1.2%	33.3%	0%	1.5%	2.0%
Buses	0	0	0	0	0	2	0	6	0	8	0	2	0	0	2	13
% Buses	0%	0%	0%	0%	0%	20.0%	0%	2.3%	0%	2.4%	0%	0.3%	0%	0%	0.3%	0.5%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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

121-204; Davidson Drive-Weekday/PM - TMC
Fri Feb 10, 2023
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Bicycles on Road)
All Movements
ID: 1037627, Location: 41.346752, -74.274781, Site Code: 121204



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



121-204; Davidson Drive-Weekday/PM - TMC

Fri Feb 10, 2023

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

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

All Movements

ID: 1037627, Location: 41.346752, -74.274781, Site Code: 121204



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

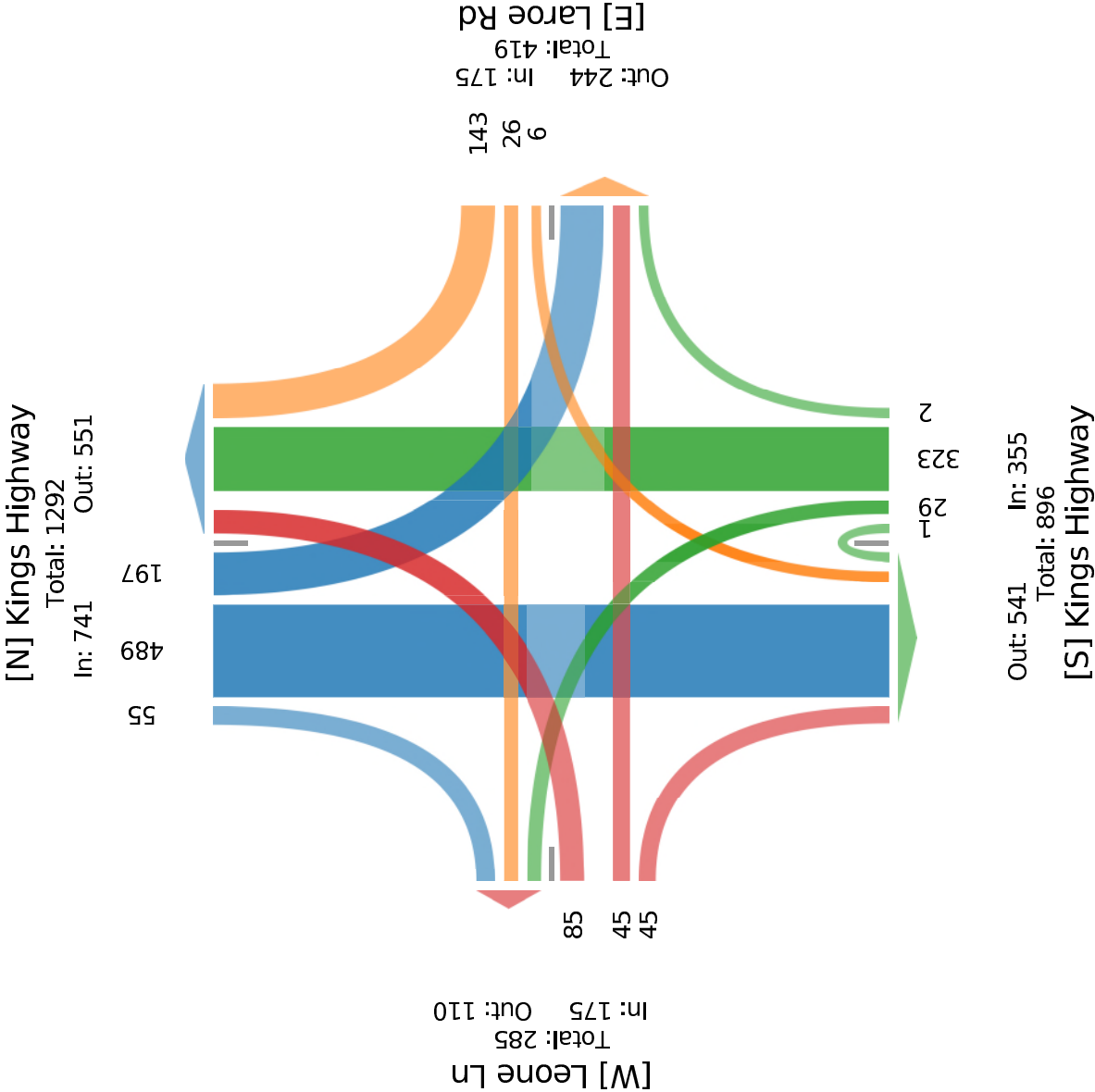
Leg Direction	Leone Ln Eastbound				Laroe Rd Westbound				Kings Highway Northbound				Kings Highway Southbound			
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2023-02-10 4:15PM	13	13	14	0	40	4	7	40	0	51	7	88	1	1	97	390
4:30PM	26	14	11	0	51	0	7	36	0	43	5	81	0	0	86	386
4:45PM	17	13	5	0	35	1	3	35	0	39	7	79	0	0	86	316
5:00PM	29	5	15	0	49	1	9	32	0	42	10	75	1	0	86	354
Total	85	45	45	0	175	6	26	143	0	175	29	323	2	1	355	1446
% Approach	48.6%	25.7%	25.7%	0%	-	3.4%	14.9%	81.7%	0%	-	8.2%	91.0%	0.6%	0.3%	-	-
% Total	5.9%	3.1%	3.1%	0%	12.1%	0.4%	1.8%	9.9%	0%	12.1%	2.0%	22.3%	0.1%	0.1%	24.6%	51.2%
PHF	0.733	0.804	0.750	-	0.858	0.375	0.722	0.894	-	0.858	0.725	0.918	0.500	0.250	0.915	0.927
Lights	83	45	43	0	171	5	26	137	0	168	28	320	1	1	350	1415
% Lights	97.6%	100%	95.6%	0%	97.7%	83.3%	100%	95.8%	0%	96.0%	96.6%	99.1%	50.0%	100%	98.6%	97.9%
Articulated Trucks and Single-Unit Trucks	2	0	2	0	4	0	0	2	0	2	1	2	1	0	4	15
% Articulated Trucks and Single-Unit Trucks	2.4%	0%	4.4%	0%	2.3%	0%	0%	1.4%	0%	1.1%	3.4%	0.6%	50.0%	0%	1.1%	1.7%
Buses	0	0	0	0	0	1	0	4	0	5	0	1	0	0	1	6
% Buses	0%	0%	0%	0%	0%	16.7%	0%	2.8%	0%	2.9%	0%	0.3%	0%	0%	0.3%	0.4%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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

121-204; Davidson Drive-Weekday/PM - TMC
Fri Feb 10, 2023
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Bicycles on Road)
All Movements
ID: 1037627, Location: 41.346752, -74.274781, Site Code: 121204



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



LOS Definitions

The following is an excerpt from the Highway Capacity Manual, 6th Edition (HCM).

Level of Service for Signalized Intersections

Level of Service (LOS) can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay *and* volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption. The v/c ratio quantifies the degree to which a phase's capacity is utilized by a lane group. The following paragraphs describe each LOS.

LOS A describes operations with a control delay of 10 s/veh or less and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a v/c ratio greater than 1.0. This level is typically assigned when the v/c ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 s/veh when the v/c ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and v/c ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

Average control delay and queue length at roundabout controlled intersections are calculated using SIDRA Intersection. The physical geometry such as entry lane width and approach flare, and traffic volume at the roundabout are factors that influence the intersection's performance. The average delay reported using SIDRA Intersection is based on the signalized HCM Method of Delay for Level-of-Service.

Level of Service Criteria for Unsignalized Intersections

Level of service (LOS) for Two-Way Stop-Controlled (TWSC) intersections is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns by using criteria given in Exhibit 20-2. LOS is not defined for the intersection as a whole or for major-street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. LOS F is assigned to the movement if the volume-to-capacity (v/c) ratio for the movement exceeds 1.0, regardless of the control delay.

The LOS criteria for TWSC intersections are somewhat different from the criteria used in Chapter 18 for signalized intersections, primarily because user perceptions differ among transportation facility types. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals, which can reduce users' delay tolerance.

The LOS criteria for All-Way Stop-Controlled (AWSC) intersections are given in Exhibit 21-8. LOS F is assigned if the v/c ratio of a lane exceeds 1.0, regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

Exhibits 20-2/21-8:
Level-of-Service Criteria for Stop Controlled Intersections

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio	
	$v/c \leq 1.0$	$v/c \geq 1.0$
10.0	A	F
>10.0 and ≤ 15.0	B	F
>15.0 and ≤ 25.0	C	F
>25.0 and ≤ 35.0	D	F
>35.0 and ≤ 50.0	E	F
>50.0	F	F

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
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	-	-

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	19	11	51	26	30
Future Vol, veh/h	87	19	11	51	26	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-3	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	4	6	0	0	4	7
Mvmt Flow	128	28	16	75	38	44
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	91	0	-	0	338	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	284	-
Critical Hdwy	4.14	-	-	-	5.84	5.97
Critical Hdwy Stg 1	-	-	-	-	4.84	-
Critical Hdwy Stg 2	-	-	-	-	4.84	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.363
Pot Cap-1 Maneuver	1491	-	-	-	691	1004
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	796	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1491	-	-	-	631	1004
Mov Cap-2 Maneuver	-	-	-	-	631	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	796	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.3	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1491	-	-	-	788	
HCM Lane V/C Ratio	0.086	-	-	-	0.105	
HCM Control Delay (s)	7.6	0	-	-	10.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	

HCM 6th Signalized Intersection Summary
121-204; Davidson Drive Holdings, LLC

20: Kings Hwy & Leone Ln /Laroe Rd
Existing 2023 _ AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	15	14	3	48	243	22	376	0	78	180	90
Future Volume (veh/h)	46	15	14	3	48	243	22	376	0	78	180	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1337	1693	1781	907	1870	1841	1900	1856	1900	1663	1841	1648
Adj Flow Rate, veh/h	49	16	15	3	51	259	23	400	0	83	191	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	38	14	8	67	2	4	0	3	0	16	4	17
Cap, veh/h	134	41	21	235	67	338	756	965	0	535	1016	
Arrive On Green	0.19	0.19	0.19	0.00	0.25	0.25	0.03	0.52	0.00	0.06	0.55	0.00
Sat Flow, veh/h	268	217	112	864	267	1358	1810	1856	0	1584	1841	1397
Grp Volume(v), veh/h	80	0	0	3	0	310	23	400	0	83	191	0
Grp Sat Flow(s),veh/h/ln	597	0	0	864	0	1626	1810	1856	0	1584	1841	1397
Q Serve(g_s), s	2.9	0.0	0.0	0.2	0.0	12.2	0.4	9.1	0.0	1.6	3.6	0.0
Cycle Q Clear(g_c), s	10.9	0.0	0.0	0.2	0.0	12.2	0.4	9.1	0.0	1.6	3.6	0.0
Prop In Lane	0.61		0.19	1.00		0.84	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	196	0	0	235	0	405	756	965	0	535	1016	
V/C Ratio(X)	0.41	0.00	0.00	0.01	0.00	0.77	0.03	0.41	0.00	0.16	0.19	
Avail Cap(c_a), veh/h	245	0	0	306	0	405	997	965	0	695	1016	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.9	0.0	0.0	21.1	0.0	24.1	7.2	10.2	0.0	7.1	7.8	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.0	8.5	0.0	1.3	0.0	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.0	0.0	5.1	0.1	3.4	0.0	0.4	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	0.0	21.1	0.0	32.6	7.3	11.5	0.0	7.3	8.2	0.0
LnGrp LOS	C	A	A	C	A	C	A	B	A	A	A	
Approach Vol, veh/h	80				313				423			
Approach Delay, s/veh	29.2				32.5				11.3			
Approach LOS	C				C				B			
Approach LOS									A			
Timer - Assigned Phs	1	2	3	4	5	6	8					
Phs Duration (G+Y+Rc), s	8.0	40.0	4.3	17.0	5.8	42.2	21.2					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	11.0	36.0	6.0	16.0	11.0	36.0	16.0					
Max Q Clear Time (g_c+I1), s	3.6	11.1	2.2	12.9	2.4	5.6	14.2					
Green Ext Time (p_c), s	0.1	2.3	0.0	0.1	0.0	1.0	0.3					

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

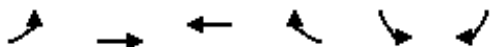
Notes

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

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				c0.25	
v/s Ratio Perm		0.07		c0.26		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	0	
HCM Lane LOS	-	-	B	A	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
Stage 1	-	-	-	-	95
Stage 2	-	-	-	-	117
Critical Hdwy	-	-	4.1	-	5
Critical Hdwy Stg 1	-	-	-	-	4
Critical Hdwy Stg 2	-	-	-	-	4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1510	-	848
Stage 1	-	-	-	-	969
Stage 2	-	-	-	-	956
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1510	-	846
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	-	-	

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	15	16	33	59	52
Future Vol, veh/h	81	15	16	33	59	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-3	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	19	0	0	2
Mvmt Flow	96	18	19	39	70	62
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	58	0	-	0	249	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	4.1	-	-	-	5.8	5.92
Critical Hdwy Stg 1	-	-	-	-	4.8	-
Critical Hdwy Stg 2	-	-	-	-	4.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1559	-	-	-	775	1036
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	859	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	727	1036
Mov Cap-2 Maneuver	-	-	-	-	727	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	859	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.3	0		10		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1559	-	-	-	845	
HCM Lane V/C Ratio	0.062	-	-	-	0.156	
HCM Control Delay (s)	7.5	0	-	-	10	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	

HCM 6th Signalized Intersection Summary
121-204; Davidson Drive Holdings, LLC

20: Kings Hwy & Leone Ln /Laroe Rd
Existing 2023 _ PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	85	45	45	6	26	143	29	323	2	197	489	55	
Future Volume (veh/h)	85	45	45	6	26	143	29	323	2	197	489	55	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1870	1900	1841	1648	1900	1856	1856	1885	1159	1885	1885	1604	
Adj Flow Rate, veh/h	91	48	48	6	28	154	31	347	2	212	526	0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	2	0	4	17	0	3	3	1	50	1	1	20	
Cap, veh/h	171	77	59	301	58	321	506	966	6	672	1066		
Arrive On Green	0.17	0.17	0.17	0.01	0.23	0.23	0.03	0.52	0.52	0.08	0.57	0.00	
Sat Flow, veh/h	573	463	358	1570	254	1395	1767	1872	11	1795	1885	1359	
Grp Volume(v), veh/h	187	0	0	6	0	182	31	0	349	212	526	0	
Grp Sat Flow(s),veh/h/ln	1394	0	0	1570	0	1649	1767	0	1883	1795	1885	1359	
Q Serve(g_s), s	7.0	0.0	0.0	0.2	0.0	6.7	0.6	0.0	7.7	3.6	11.7	0.0	
Cycle Q Clear(g_c), s	9.1	0.0	0.0	0.2	0.0	6.7	0.6	0.0	7.7	3.6	11.7	0.0	
Prop In Lane	0.49		0.26	1.00		0.85	1.00		0.01	1.00		1.00	
Lane Grp Cap(c), veh/h	307	0	0	301	0	380	506	0	971	672	1066		
V/C Ratio(X)	0.61	0.00	0.00	0.02	0.00	0.48	0.06	0.00	0.36	0.32	0.49		
Avail Cap(c_a), veh/h	399	0	0	424	0	380	727	0	971	808	1066		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	28.2	0.0	0.0	22.3	0.0	23.2	7.8	0.0	10.1	6.5	9.1	0.0	
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	1.0	0.3	1.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	0.1	0.0	2.4	0.2	0.0	2.9	1.0	4.2	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	30.2	0.0	0.0	22.4	0.0	24.2	7.8	0.0	11.1	6.8	10.8	0.0	
LnGrp LOS	C	A	A	C	A	C	A	A	B	A	B		
Approach Vol, veh/h	187			188			380			738			A
Approach Delay, s/veh	30.2			24.1			10.8			9.6			
Approach LOS	C			C			B			A			
Timer - Assigned Phs	1	2	3	4	5	6	8						
Phs Duration (G+Y+Rc), s	9.7	40.0	4.5	15.5	6.3	43.5	20.1						
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Max Green Setting (Gmax), s	11.0	36.0	6.0	16.0	11.0	36.0	16.0						
Max Q Clear Time (g_c+I1), s	5.6	9.7	2.2	11.1	2.6	13.7	8.7						
Green Ext Time (p_c), s	0.3	2.0	0.0	0.4	0.0	3.2	0.5						

Intersection Summary

HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

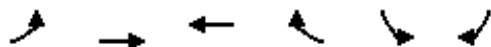
Notes

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

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				c0.20	
v/s Ratio Perm		0.09		c0.48		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	212	58	19	204
Future Vol, veh/h	58	7	212	58	19	204
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	279	76	25	268

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	635	317	0
Stage 1	317	-	-
Stage 2	318	-	-
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	341	685	-
Stage 1	645	-	-
Stage 2	644	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	332	685	-
Mov Cap-2 Maneuver	332	-	-
Stage 1	645	-	-
Stage 2	628	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	352	1176
HCM Lane V/C Ratio	-	-	0.243	0.021
HCM Control Delay (s)	-	-	18.5	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	76	1	1	61	2	3
Future Vol, veh/h	76	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	95	1	1	76	3	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	96	0	174	96
Stage 1	-	-	-	-	96	-
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	-	-	1510	-	878	984
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1510	-	877	984
Mov Cap-2 Maneuver	-	-	-	-	877	-
Stage 1	-	-	-	-	968	-
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)	938	-	-	1510	-	
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	49	54	25	14
Future Vol, veh/h	25	55	49	54	25	14
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	61	68	31	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	230	40	49	0	-	0
Stage 1	40	-	-	-	-	-
Stage 2	190	-	-	-	-	-
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	760	1034	1539	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	729	1034	1539	-	-	-
Mov Cap-2 Maneuver	729	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	841	-	-	-	-	-
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)	1539	-	914	-	-	
HCM Lane V/C Ratio	0.04	-	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	-	-	

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	23	12	60	86	31
Future Vol, veh/h	89	23	12	60	86	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-3	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	4	6	0	0	4	7
Mvmt Flow	131	34	18	88	126	46
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	106	0	-	0	358	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	4.14	-	-	-	5.84	5.97
Critical Hdwy Stg 1	-	-	-	-	4.84	-
Critical Hdwy Stg 2	-	-	-	-	4.84	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.363
Pot Cap-1 Maneuver	1473	-	-	-	676	994
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1473	-	-	-	614	994
Mov Cap-2 Maneuver	-	-	-	-	614	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	788	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.1	0		12		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1473	-	-	-	683	
HCM Lane V/C Ratio	0.089	-	-	-	0.252	
HCM Control Delay (s)	7.7	0	-	-	12	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	1	

HCM 6th Signalized Intersection Summary
121-204; Davidson Drive Holdings, LLC

20: Kings Hwy & Leone Ln /Laroe Rd
No-Build 2025__ AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	47	15	14	3	49	248	22	401	0	80	271	92	
Future Volume (veh/h)	47	15	14	3	49	248	22	401	0	80	271	92	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1337	1693	1781	907	1870	1841	1900	1856	1900	1663	1841	1648	
Adj Flow Rate, veh/h	50	16	15	3	52	264	23	427	0	85	288	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	38	14	8	67	2	4	0	3	0	16	4	17	
Cap, veh/h	135	40	21	237	68	345	665	958	0	512	1009		
Arrive On Green	0.19	0.19	0.19	0.00	0.25	0.25	0.03	0.52	0.00	0.06	0.55	0.00	
Sat Flow, veh/h	266	209	108	864	268	1358	1810	1856	0	1584	1841	1397	
Grp Volume(v), veh/h	81	0	0	3	0	316	23	427	0	85	288	0	
Grp Sat Flow(s),veh/h/ln	583	0	0	864	0	1626	1810	1856	0	1584	1841	1397	
Q Serve(g_s), s	3.1	0.0	0.0	0.2	0.0	12.6	0.4	10.1	0.0	1.7	5.8	0.0	
Cycle Q Clear(g_c), s	11.3	0.0	0.0	0.2	0.0	12.6	0.4	10.1	0.0	1.7	5.8	0.0	
Prop In Lane	0.62		0.19	1.00		0.84	1.00		0.00	1.00		1.00	
Lane Grp Cap(c), veh/h	196	0	0	237	0	412	665	958	0	512	1009		
V/C Ratio(X)	0.41	0.00	0.00	0.01	0.00	0.77	0.03	0.45	0.00	0.17	0.29		
Avail Cap(c_a), veh/h	238	0	0	308	0	412	904	958	0	671	1009		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	28.0	0.0	0.0	21.0	0.0	24.1	7.5	10.6	0.0	7.4	8.4	0.0	
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.0	8.4	0.0	1.5	0.0	0.2	0.7	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.0	0.0	5.2	0.1	3.7	0.0	0.5	2.0	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	29.4	0.0	0.0	21.0	0.0	32.5	7.5	12.1	0.0	7.6	9.1	0.0	
LnGrp LOS	C	A	A	C	A	C	A	B	A	A	A		
Approach Vol, veh/h	81			319			450			373			A
Approach Delay, s/veh	29.4			32.4			11.9			8.8			
Approach LOS	C			C			B			A			
Timer - Assigned Phs	1	2	3	4	5	6	8						
Phs Duration (G+Y+Rc), s	8.0	40.0	4.3	17.4	5.8	42.2	21.7						
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Max Green Setting (Gmax), s	11.0	36.0	6.0	16.0	11.0	36.0	16.0						
Max Q Clear Time (g_c+l1), s	3.7	12.1	2.2	13.3	2.4	7.8	14.6						
Green Ext Time (p_c), s	0.1	2.5	0.0	0.1	0.0	1.6	0.3						

Intersection Summary

HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

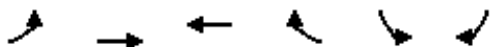
Notes

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

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
NB 2025_AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	15	379	214	0	15	140
Future Volume (vph)	15	379	214	0	15	140
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)		1742	1810		1462	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	436	246	0	17	161
RTOR Reduction (vph)	0	0	0	0	123	0
Lane Group Flow (vph)	0	453	246	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		29.0	
Effective Green, g (s)		83.5	38.2		29.0	
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)		1187	564		346	
v/s Ratio Prot			c0.14		c0.04	
v/s Ratio Perm		c0.26				
v/c Ratio		0.38	0.44		0.16	
Uniform Delay, d1		8.4	33.6		37.1	
Progression Factor		0.12	1.00		1.00	
Incremental Delay, d2		0.5	1.5		0.2	
Delay (s)		1.6	35.1		37.3	
Level of Service		A	D		D	
Approach Delay (s)		1.6	35.1		37.3	
Approach LOS		A	D		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)			122.5		Sum of lost time (s)	15.0
Intersection Capacity Utilization			49.9%		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 2025_AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	218	343	149	205	389	176
Future Volume (vph)	218	343	149	205	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		1680	1703	1509
Flt Permitted	1.00	1.00		0.75	0.95	1.00
Satd. Flow (perm)	1759	1495		1290	1703	1509
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	251	394	171	236	447	202
RTOR Reduction (vph)	0	271	0	0	0	34
Lane Group Flow (vph)	251	123	0	407	447	168
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		72.2	40.3	40.3
Effective Green, g (s)	38.2	38.2		72.2	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)	548	466		760	560	496
v/s Ratio Prot	0.14				c0.26	
v/s Ratio Perm		0.08		c0.32		0.11
v/c Ratio	0.46	0.26		0.54	0.80	0.34
Uniform Delay, d1	33.8	31.6		15.1	37.4	31.0
Progression Factor	1.00	1.00		0.45	1.00	1.00
Incremental Delay, d2	1.7	0.9		1.6	11.3	1.8
Delay (s)	35.5	32.5		8.5	48.7	32.9
Level of Service	D	C		A	D	C
Approach Delay (s)	33.7			8.5	43.8	
Approach LOS	C			A	D	
Intersection Summary						
HCM 2000 Control Delay			31.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			122.5		Sum of lost time (s)	15.0
Intersection Capacity Utilization			64.6%		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	76	27	232	74	15	275
Future Vol, veh/h	76	27	232	74	15	275
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	77	27	234	75	15	278
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	580	272	0	0	309	0
Stage 1	272	-	-	-	-	-
Stage 2	308	-	-	-	-	-
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	383	723	-	-	1263	-
Stage 1	700	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	378	723	-	-	1263	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	16		0		0.4	
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	432	1263	-
HCM Lane V/C Ratio		-	-	0.241	0.012	-
HCM Control Delay (s)		-	-	16	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	102	1	2
Future Vol, veh/h	86	2	3	102	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	116	1	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	100	0	221	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	122	-
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	-	841	981
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1505	-	839	981
Mov Cap-2 Maneuver	-	-	-	-	839	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	950	-
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	17	72	85	41	60	20
Future Vol, veh/h	17	72	85	41	60	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	19	82	97	47	68	23

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	321	80	91
Stage 1	80	-	-
Stage 2	241	-	-
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	701	982	1510
Stage 1	957	-	-
Stage 2	826	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	655	982	1510
Mov Cap-2 Maneuver	655	-	-
Stage 1	894	-	-
Stage 2	826	-	-

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)	1510	-	897	-	-
HCM Lane V/C Ratio	0.064	-	0.113	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	16	19	87	68	53
Future Vol, veh/h	83	16	19	87	68	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-3	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	19	0	0	2
Mvmt Flow	99	19	23	104	81	63
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	127	0	-	0	292	75
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	4.1	-	-	-	5.8	5.92
Critical Hdwy Stg 1	-	-	-	-	4.8	-
Critical Hdwy Stg 2	-	-	-	-	4.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1472	-	-	-	738	993
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1472	-	-	-	688	993
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	854	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.4	0		10.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1472	-	-	-	795	
HCM Lane V/C Ratio	0.067	-	-	-	0.181	
HCM Control Delay (s)	7.6	0	-	-	10.5	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7	

HCM 6th Signalized Intersection Summary
121-204; Davidson Drive Holdings, LLC

20: Kings Hwy & Leone Ln /Laroe Rd
No-Build 2025__ PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	46	46	6	27	146	30	412	2	201	521	56
Future Volume (veh/h)	87	46	46	6	27	146	30	412	2	201	521	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1841	1648	1900	1856	1856	1885	1159	1885	1885	1604
Adj Flow Rate, veh/h	94	49	49	6	29	157	32	443	2	216	560	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	4	17	0	3	3	1	50	1	1	20
Cap, veh/h	173	77	60	304	60	327	478	959	4	595	1059	
Arrive On Green	0.17	0.17	0.17	0.01	0.24	0.24	0.03	0.51	0.51	0.08	0.56	0.00
Sat Flow, veh/h	570	455	351	1570	257	1392	1767	1875	8	1795	1885	1359
Grp Volume(v), veh/h	192	0	0	6	0	186	32	0	445	216	560	0
Grp Sat Flow(s),veh/h/ln	1375	0	0	1570	0	1649	1767	0	1884	1795	1885	1359
Q Serve(g_s), s	7.3	0.0	0.0	0.2	0.0	6.8	0.6	0.0	10.6	3.7	13.0	0.0
Cycle Q Clear(g_c), s	9.6	0.0	0.0	0.2	0.0	6.8	0.6	0.0	10.6	3.7	13.0	0.0
Prop In Lane	0.49		0.26	1.00		0.84	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	0	304	0	388	478	0	963	595	1059	
V/C Ratio(X)	0.62	0.00	0.00	0.02	0.00	0.48	0.07	0.00	0.46	0.36	0.53	
Avail Cap(c_a), veh/h	392	0	0	425	0	388	695	0	963	725	1059	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	0.0	0.0	22.2	0.0	23.2	8.1	0.0	11.0	7.3	9.6	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	1.6	0.4	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.1	0.0	2.5	0.2	0.0	4.0	1.1	4.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	0.0	0.0	22.3	0.0	24.1	8.2	0.0	12.6	7.6	11.5	0.0
LnGrp LOS	C	A	A	C	A	C	A	A	B	A	B	
Approach Vol, veh/h		192			192			477			776	A
Approach Delay, s/veh		30.4			24.1			12.3			10.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	40.0	4.6	16.0	6.3	43.5		20.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	11.0	36.0	6.0	16.0	11.0	36.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.6	2.2	11.6	2.6	15.0		8.8				
Green Ext Time (p_c), s	0.3	2.6	0.0	0.4	0.0	3.4		0.5				

Intersection Summary

HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

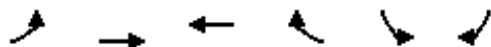
Notes

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

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave
NB 2025_PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	359	368	0	9	350
Future Volume (vph)	32	359	368	0	9	350
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)		1730	1810		1529	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	33	366	376	0	9	357
RTOR Reduction (vph)	0	0	0	0	251	0
Lane Group Flow (vph)	0	399	376	0	115	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)		1089	536		453	
v/s Ratio Prot			c0.21		c0.08	
v/s Ratio Perm		c0.23				
v/c Ratio		0.37	0.70		0.25	
Uniform Delay, d1		12.0	42.2		36.1	
Progression Factor		0.15	1.00		1.00	
Incremental Delay, d2		0.6	6.0		0.3	
Delay (s)		2.4	48.2		36.4	
Level of Service		A	D		D	
Approach Delay (s)		2.4	48.2		36.4	
Approach LOS		A	D		D	
Intersection Summary						
HCM 2000 Control Delay			28.4		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			74.7%		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 2025_PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	200	483	281	437	419	191
Future Volume (vph)	200	483	281	437	419	191
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		1405	1752	1495
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	204	493	287	446	428	195
RTOR Reduction (vph)	0	347	0	0	0	37
Lane Group Flow (vph)	204	146	0	733	428	158
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		884	519	442
v/s Ratio Prot	0.11				0.24	
v/s Ratio Perm		0.09		0.52		0.11
v/c Ratio	0.38	0.31		0.83	0.82	0.36
Uniform Delay, d1	37.7	36.8		19.4	44.2	37.4
Progression Factor	1.00	1.00		0.90	1.00	1.00
Incremental Delay, d2	1.3	1.1		6.1	13.9	2.3
Delay (s)	38.9	37.9		23.5	58.1	39.7
Level of Service	D	D		C	E	D
Approach Delay (s)	38.2			23.5	52.3	
Approach LOS	D			C	D	
Intersection Summary						
HCM 2000 Control Delay			37.2		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			84.8%		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	212	94	24	204
Future Vol, veh/h	63	7	212	94	24	204
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	279	124	32	268
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	673	341	0	0	403	0
Stage 1	341	-	-	-	-	-
Stage 2	332	-	-	-	-	-
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	319	661	-	-	1134	-
Stage 1	623	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	308	661	-	-	1134	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	20.4	0	0.9			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	325	1134	-	
HCM Lane V/C Ratio	-	-	0.283	0.028	-	
HCM Control Delay (s)	-	-	20.4	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	76	1	1	61	62	2	0	3	9	0	5
Future Vol, veh/h	41	76	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	95	1	1	76	78	3	0	4	11	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	154	0	0	96	0	0	318	354	96	317	315	115
Stage 1	-	-	-	-	-	-	198	198	-	117	117	-
Stage 2	-	-	-	-	-	-	120	156	-	200	198	-
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	-	-	1510	-	-	723	659	984	602	604	943
Stage 1	-	-	-	-	-	-	873	800	-	846	803	-
Stage 2	-	-	-	-	-	-	932	821	-	762	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1439	-	-	1510	-	-	698	634	984	582	581	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	698	634	-	582	581	-
Stage 1	-	-	-	-	-	-	841	770	-	815	802	-
Stage 2	-	-	-	-	-	-	925	820	-	731	714	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.6			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)	845	1439	-	-	1510	-	-	674				
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	74	54	25	51
Future Vol, veh/h	31	58	74	54	25	51
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	93	68	31	64
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	317	63	95	0	-	0
Stage 1	63	-	-	-	-	-
Stage 2	254	-	-	-	-	-
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	679	1005	1486	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	635	1005	1486	-	-	-
Mov Cap-2 Maneuver	635	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10	4.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1486	-	835	-	-	
HCM Lane V/C Ratio	0.062	-	0.133	-	-	
HCM Control Delay (s)	7.6	0	10	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-	

Intersection						
Int Delay, s/veh	7.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	23	12	66	123	31
Future Vol, veh/h	89	23	12	66	123	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-3	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	4	6	0	0	4	7
Mvmt Flow	131	34	18	97	181	46
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	115	0	-	0	363	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	4.14	-	-	-	5.84	5.97
Critical Hdwy Stg 1	-	-	-	-	4.84	-
Critical Hdwy Stg 2	-	-	-	-	4.84	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.363
Pot Cap-1 Maneuver	1462	-	-	-	672	988
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	611	988
Mov Cap-2 Maneuver	-	-	-	-	611	-
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	788	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.1	0		13.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1462	-	-	-	662	
HCM Lane V/C Ratio	0.09	-	-	-	0.342	
HCM Control Delay (s)	7.7	0	-	-	13.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5	

HCM 6th Signalized Intersection Summary 121-204; Davidson Drive Holdings, LLC

21: Kings Hwy/Kings Hwy & Leone Ln/Laroe Rd
Build 2025_ AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	47	15	14	3	49	248	22	407	0	80	308	92	
Future Volume (veh/h)	47	15	14	3	49	248	22	407	0	80	308	92	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1337	1693	1781	907	1870	1841	1900	1856	1900	1663	1841	1648	
Adj Flow Rate, veh/h	50	16	15	3	52	264	23	433	0	85	328	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	38	14	8	67	2	4	0	3	0	16	4	17	
Cap, veh/h	135	40	21	238	68	345	629	966	0	505	1012		
Arrive On Green	0.19	0.19	0.19	0.00	0.25	0.25	0.02	0.52	0.00	0.05	0.55	0.00	
Sat Flow, veh/h	267	210	108	864	268	1358	1810	1856	0	1584	1841	1397	
Grp Volume(v), veh/h	81	0	0	3	0	316	23	433	0	85	328	0	
Grp Sat Flow(s),veh/h/ln	585	0	0	864	0	1626	1810	1856	0	1584	1841	1397	
Q Serve(g_s), s	3.0	0.0	0.0	0.2	0.0	12.5	0.4	10.1	0.0	1.7	6.8	0.0	
Cycle Q Clear(g_c), s	11.2	0.0	0.0	0.2	0.0	12.5	0.4	10.1	0.0	1.7	6.8	0.0	
Prop In Lane	0.62		0.19	1.00		0.84	1.00		0.00	1.00		1.00	
Lane Grp Cap(c), veh/h	197	0	0	238	0	413	629	966	0	505	1012		
V/C Ratio(X)	0.41	0.00	0.00	0.01	0.00	0.77	0.04	0.45	0.00	0.17	0.32		
Avail Cap(c_a), veh/h	241	0	0	309	0	413	875	966	0	674	1012		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	27.8	0.0	0.0	20.9	0.0	23.9	7.5	10.4	0.0	7.5	8.5	0.0	
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.0	8.4	0.0	1.5	0.0	0.2	0.9	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.0	0.0	5.2	0.1	3.7	0.0	0.5	2.4	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	29.2	0.0	0.0	20.9	0.0	32.3	7.5	11.9	0.0	7.6	9.4	0.0	
LnGrp LOS	C	A	A	C	A	C	A	B	A	A	A		
Approach Vol, veh/h	81			319			456			413			A
Approach Delay, s/veh	29.2			32.2			11.7			9.0			
Approach LOS	C			C			B			A			
Timer - Assigned Phs	1	2	3	4	5	6	8						
Phs Duration (G+Y+Rc), s	7.6	40.0	4.3	17.3	5.6	42.0	21.6						
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Max Green Setting (Gmax), s	11.0	36.0	6.0	16.0	11.0	36.0	16.0						
Max Q Clear Time (g_c+I1), s	3.7	12.1	2.2	13.2	2.4	8.8	14.5						
Green Ext Time (p_c), s	0.1	2.5	0.0	0.1	0.0	1.9	0.3						

Intersection Summary

HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

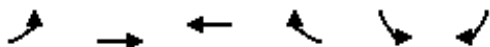
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave

Build 2025_AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	15	381	229	0	15	140
Future Volume (vph)	15	381	229	0	15	140
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)		1741	1810		1462	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	438	263	0	17	161
RTOR Reduction (vph)	0	0	0	0	122	0
Lane Group Flow (vph)	0	455	263	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)		84.2	39.0		30.6	
Effective Green, g (s)		84.2	39.0		30.6	
Actuated g/C Ratio		0.67	0.31		0.25	
Clearance Time (s)			5.0		5.0	
Vehicle Extension (s)			6.0		3.0	
Lane Grp Cap (vph)		1174	565		358	
v/s Ratio Prot			c0.15		c0.04	
v/s Ratio Perm		c0.26				
v/c Ratio		0.39	0.47		0.16	
Uniform Delay, d1		8.9	34.5		37.0	
Progression Factor		0.12	1.00		1.00	
Incremental Delay, d2		0.6	1.7		0.2	
Delay (s)		1.7	36.2		37.2	
Level of Service		A	D		D	
Approach Delay (s)		1.7	36.2		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)			124.8		Sum of lost time (s)	15.0
Intersection Capacity Utilization			50.0%		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 2025_AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	218	365	164	205	393	178
Future Volume (vph)	218	365	164	205	393	178
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		1674	1703	1509
Flt Permitted	1.00	1.00		0.74	0.95	1.00
Satd. Flow (perm)	1759	1495		1267	1703	1509
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	251	420	189	236	452	205
RTOR Reduction (vph)	0	289	0	0	0	35
Lane Group Flow (vph)	251	131	0	425	452	170
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)	39.0	39.0		74.6	40.2	40.2
Effective Green, g (s)	39.0	39.0		74.6	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	467		757	548	486
v/s Ratio Prot	0.14				0.27	
v/s Ratio Perm		0.09		0.34		0.11
v/c Ratio	0.46	0.28		0.56	0.82	0.35
Uniform Delay, d1	34.4	32.3		15.2	39.0	32.3
Progression Factor	1.00	1.00		0.52	1.00	1.00
Incremental Delay, d2	1.7	0.9		1.8	13.2	2.0
Delay (s)	36.1	33.3		9.8	52.3	34.3
Level of Service	D	C		A	D	C
Approach Delay (s)	34.3			9.8	46.7	
Approach LOS	C			A	D	
Intersection Summary						
HCM 2000 Control Delay			33.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			124.8		Sum of lost time (s)	15.0
Intersection Capacity Utilization			65.6%		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	94	29	232	77	15	275
Future Vol, veh/h	94	29	232	77	15	275
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	95	29	234	78	15	278
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	581	273	0	0	312	0
Stage 1	273	-	-	-	-	-
Stage 2	308	-	-	-	-	-
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	382	722	-	-	1260	-
Stage 1	699	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	722	-	-	1260	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.9	0	0.4			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	425	1260	-	
HCM Lane V/C Ratio	-	-	0.292	0.012	-	
HCM Control Delay (s)	-	-	16.9	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	102	5	1	0	2	30	0	20
Future Vol, veh/h	3	86	2	3	102	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	116	6	1	0	2	34	0	23
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	100	0	0	242	233	99	231	231	119
Stage 1	-	-	-	-	-	-	105	105	-	125	125	-
Stage 2	-	-	-	-	-	-	137	128	-	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	1478	-	-	1505	-	-	787	734	981	720	672	938
Stage 1	-	-	-	-	-	-	943	846	-	874	796	-
Stage 2	-	-	-	-	-	-	919	835	-	895	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1505	-	-	766	731	981	716	669	938
Mov Cap-2 Maneuver	-	-	-	-	-	-	766	731	-	716	669	-
Stage 1	-	-	-	-	-	-	941	844	-	872	794	-
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)	897	1478	-	-	1505	-	-	791				
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	35	84	87	41	60	23
Future Vol, veh/h	35	84	87	41	60	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	40	95	99	47	68	26
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	326	81	94	0	-	0
Stage 1	81	-	-	-	-	-
Stage 2	245	-	-	-	-	-
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	691	981	1506	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	645	981	1506	-	-	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10	5.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1506	-	851	-	-	
HCM Lane V/C Ratio	0.066	-	0.159	-	-	
HCM Control Delay (s)	7.6	0	10	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-	

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	16	19	105	71	53
Future Vol, veh/h	83	16	19	105	71	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-3	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	19	0	0	2
Mvmt Flow	99	19	23	125	85	63
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	148	0	-	0	303	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	4.1	-	-	-	5.8	5.92
Critical Hdwy Stg 1	-	-	-	-	4.8	-
Critical Hdwy Stg 2	-	-	-	-	4.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1446	-	-	-	729	980
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1446	-	-	-	679	980
Mov Cap-2 Maneuver	-	-	-	-	679	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	854	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.4	0		10.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1446	-	-	-	782	
HCM Lane V/C Ratio	0.068	-	-	-	0.189	
HCM Control Delay (s)	7.7	0	-	-	10.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7	

HCM 6th Signalized Intersection Summary 121-204; Davidson Drive Holdings, LLC

21: Kings Hwy/Kings Hwy & Leone Ln/Laroe Rd

Build 2025_ PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	46	46	6	27	146	30	430	2	201	524	56
Future Volume (veh/h)	87	46	46	6	27	146	30	430	2	201	524	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1841	1648	1900	1856	1856	1885	1159	1885	1885	1604
Adj Flow Rate, veh/h	94	49	49	6	29	157	32	462	2	216	563	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	4	17	0	3	3	1	50	1	1	20
Cap, veh/h	173	77	60	304	60	327	476	959	4	581	1059	
Arrive On Green	0.17	0.17	0.17	0.01	0.24	0.24	0.03	0.51	0.51	0.08	0.56	0.00
Sat Flow, veh/h	570	455	351	1570	257	1392	1767	1876	8	1795	1885	1359
Grp Volume(v), veh/h	192	0	0	6	0	186	32	0	464	216	563	0
Grp Sat Flow(s),veh/h/ln	1375	0	0	1570	0	1649	1767	0	1884	1795	1885	1359
Q Serve(g_s), s	7.3	0.0	0.0	0.2	0.0	6.8	0.6	0.0	11.3	3.7	13.1	0.0
Cycle Q Clear(g_c), s	9.6	0.0	0.0	0.2	0.0	6.8	0.6	0.0	11.3	3.7	13.1	0.0
Prop In Lane	0.49		0.26	1.00		0.84	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	0	304	0	388	476	0	963	581	1059	
V/C Ratio(X)	0.62	0.00	0.00	0.02	0.00	0.48	0.07	0.00	0.48	0.37	0.53	
Avail Cap(c_a), veh/h	392	0	0	425	0	388	693	0	963	711	1059	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	0.0	0.0	22.3	0.0	23.2	8.1	0.0	11.2	7.4	9.7	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	1.7	0.4	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.1	0.0	2.5	0.2	0.0	4.3	1.2	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	0.0	0.0	22.3	0.0	24.1	8.2	0.0	12.9	7.8	11.6	0.0
LnGrp LOS	C	A	A	C	A	C	A	A	B	A	B	
Approach Vol, veh/h		192			192			496			779	A
Approach Delay, s/veh		30.4			24.1			12.6			10.5	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	40.0	4.6	16.0	6.3	43.6		20.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	11.0	36.0	6.0	16.0	11.0	36.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	13.3	2.2	11.6	2.6	15.1		8.8				
Green Ext Time (p_c), s	0.3	2.7	0.0	0.4	0.0	3.7		0.5				

Intersection Summary

HCM 6th Ctrl Delay 15.0

HCM 6th LOS B

Notes

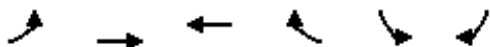
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM Signalized Intersection Capacity Analysis

121-204; Davidson Drive Holdings, LLC

4: NYS Route 17M & Lehigh Ave

Build 2025_PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Volume (vph)	32	366	369	0	9	350
Future Volume (vph)	32	366	369	0	9	350
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)		1731	1810		1529	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	33	373	377	0	9	357
RTOR Reduction (vph)	0	0	0	0	251	0
Lane Group Flow (vph)	0	406	377	0	115	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)		1089	536		453	
v/s Ratio Prot			c0.21		c0.08	
v/s Ratio Perm		c0.23				
v/c Ratio		0.37	0.70		0.25	
Uniform Delay, d1		12.1	42.2		36.1	
Progression Factor		0.15	1.00		1.00	
Incremental Delay, d2		0.6	6.1		0.3	
Delay (s)		2.4	48.3		36.4	
Level of Service		A	D		D	
Approach Delay (s)		2.4	48.3		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			0.45			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			75.1%		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

Build 2025_PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Volume (vph)	200	485	282	437	430	198
Future Volume (vph)	200	485	282	437	430	198
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		1404	1752	1495
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	204	495	288	446	439	202
RTOR Reduction (vph)	0	348	0	0	0	37
Lane Group Flow (vph)	204	147	0	734	439	165
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		884	519	442
v/s Ratio Prot	0.11				c0.25	
v/s Ratio Perm		0.09		c0.52		0.11
v/c Ratio	0.38	0.31		0.83	0.85	0.37
Uniform Delay, d1	37.7	36.8		19.4	44.6	37.6
Progression Factor	1.00	1.00		0.90	1.00	1.00
Incremental Delay, d2	1.3	1.1		6.2	15.5	2.4
Delay (s)	38.9	37.9		23.7	60.2	40.0
Level of Service	D	D		C	E	D
Approach Delay (s)	38.2			23.7	53.8	
Approach LOS	D			C	D	
Intersection Summary						
HCM 2000 Control Delay			37.9		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			85.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						