

TRAFFIC IMPACT ANALYSIS

FOR

DIXON INNOVATION CENTER

Dixon, CA

Prepared For:

BUZZ OATES CONSTRUCTION, INC.

555 Capitol Mall, Suite 900

Sacramento, CA 95814

Prepared By:

Flecker Associates

8020 SW Valley View Ct

Portland, OR 97225

(916) 501-7513

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1000-01

0 Dixon Innovation Center



**TRAFFIC IMPACT ANALYSIS FOR
DIXON INNOVATION CENTER**
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**TRAFFIC IMPACT ANALYSIS FOR
DIXON INNOVATION CENTER**

Dixon, CA

EXECUTIVE SUMMARY

- **Project Description.** The project is located in a portion of the Northeast Quadrant Specific Plan area of Dixon. The project is bounded by Pedrick Road to the east, the TEC Equipment facility which is a truck and trailer dealer to the north and the future Professional Drive to the south. The project will construct the frontage portion of Professional Drive which will connect to Vaughn Road in the south to Pedrick Road. The project consists of 563,828 square feet of industrial business park uses on about 37.6 acres.
- **Existing Setting.** As part of the Dixon Streets Master Plan prepared in October 2021 by DKS Associates traffic counts were conducted at various intersections throughout the City. A new traffic count was conducted at the N. First Street / Dorset Drive intersection and provided to the City and DKS Associates (DKS). DKS used this data and approved / pending project data to develop 2025 and 2040 baseline conditions for the City's Travel Demand Model (TDM). Existing (2023) conditions were developed through interpolation of the baseline 2018 model and the 2025 model results. This includes construction of Commercial Drive between Professional Drive and Pedrick Road instead of the realignment of Vaughn Road to a new tee intersection north of the UPRR railroad crossing.

All intersections operate at acceptable levels of service.

The queue in the northbound left turn lane at the Pedrick Road at I-80 EB Ramps – Sparling Lane intersection exceeds the available storage. Storage length for this movement is constrained as Pedrick Road is a two-lane roadway. The queue exceeds the available storage by three feet, which is likely unnoticeable during the peak hour.

- **2025 Conditions.** All intersections will operate at acceptable levels of service. Queues within turn lanes are shown to be contained within the turn lanes.
- **2025 Plus Project Conditions.** All intersections except the Pedrick Road / I-80 Eastbound Ramps – Sparling Lane intersection will operate within acceptable City of Dixon LOS thresholds. The following improvements are noted:
 - The project shall contribute its fair share to the cost of regional circulation improvements via the existing Citywide traffic impact mitigation (TIM) fee program.
 - Pedrick Road / I-80 Eastbound Ramps – Sparling Lane: The overall intersection LOS will decline to LOS E conditions with the project. Installation of a traffic signal at the location will result in the intersection operating at LOS C conditions (27.2 spv). The project would be responsible for installing the signal and should pay their fair share of signalization as the intersection will operate

unacceptably and continue to meet the peak hour warrant in the 2040 No Project scenario. The fair share contribution (19.8%) is based on the project traffic divided by the future traffic at the intersection.

Queues will exceed the available storage in the northbound left turn lane and eastbound right turn lane at the Pedrick Road at I-80 EB Ramps – Sparling Lane intersection. Additionally, queues along the southbound approach to the intersection will be about 350 feet. With signalization the queues along each approach should allow clearing during each green phase.

- **2040 Conditions.** Three intersections will operate below the City LOS D threshold under 2040 plus Project conditions. These include the Pedrick Road / I-80 Westbound Ramps – Sievers Road intersection, Pedrick Road at I-80 Eastbound Ramps – Sparling Lane and the Pedrick Road / Professional Drive intersection. All are projected to operate at LOS E or F conditions. The following improvements are noted:
 - Pedrick Road / I-80 Westbound Ramps – Sievers Road: The overall intersection LOS will decline to LOS E conditions. Installation of a traffic signal at the location will result in the intersection operating at LOS C conditions (28.3 spv). With signalization the westbound shared left-through lane queue will shorten to about 293 feet.
 - Pedrick Road / I-80 Eastbound Ramps – Sparling Lane: The overall intersection LOS will decline to LOS F conditions. Installation of a traffic signal, the addition of a shared 210-foot southbound through-right lane, extending the eastbound right turn lane to about 100 feet and the lengthening of the northbound left turn lane to about 300 feet will result in the intersection operating at LOS C conditions in the p.m. peak hour (23.1 spv); the added southbound lane would not reach the structure over I-80. After implementation of the identified improvements the queues in the northbound left turn lane and eastbound right turn lane can be contained in each turn lane while the southbound queues will be about 175 feet.
 - N. First Street / Dorset Drive: Retiming of the N. 1st Street / Dorset Drive signal will result in LOS C (25.4 spv) conditions at the intersection and allow queues in the westbound right turn lane to be accommodated without blocking the adjacent through lane.
 - Pedrick Road / Professional Drive: The overall intersection LOS will decline to LOS F conditions. Installation of a traffic signal will result in the intersection operating at LOS B conditions in the p.m. peak hour (19.0 spv).
- **2040 plus Project Conditions.** Three intersections will continue to operate below the City LOS D threshold under 2040 plus Project conditions. These include the Pedrick Road / I-80 Westbound Ramps – Sievers Road intersection, Pedrick Road at I-80 Eastbound Ramps – Sparling Lane and Pedrick Road at Professional Drive. All are projected to operate at LOS F conditions. The following improvements are noted:

- Pedrick Road / I-80 Westbound Ramps – Sievers Road: The overall intersection LOS will decline to LOS F conditions. Installation of the traffic signal noted under the 2040 scenario will result in the intersection operating at LOS C conditions (31.8 spv). The project would be responsible for their fair share of the improvements. The fair share contribution (15.3%). With signalization the westbound shared left-through lane queue will shorten to about 353 feet.
- Pedrick Road / I-80 Eastbound Ramps – Sparling Lane: The overall intersection LOS will decline to LOS F conditions. Installation of the improvements noted under the 2040 scenario will result in the intersection operating at LOS C conditions in the a.m. peak hour (21.3 spv) and p.m. peak hour (23.4 spv); the added southbound lane would not reach the structure over I-80. The project would be responsible for their fair share of the improvements. The fair share contribution is (19.8%). After implementation of the identified improvements the queues in the northbound left turn lane and eastbound right turn lane can be contained in each turn lane while the southbound queues will be about 210 feet.
- N. First Street / Dorset Drive: Retiming of the N. 1st Street / Dorset Drive signal will result in LOS C (24.6 spv) conditions at the intersection and allow queues in the westbound right and left turn lanes to be accommodated without blocking the adjacent through lanes.
- Pedrick Road / Professional Drive: The overall intersection LOS will decline to LOS F conditions. Installation of the improvements noted under the 2040 scenario will result in the intersection operating at LOS in the a.m. peak hour (12.7 spv) and LOS C in the p.m. peak hour (22.1 spv). The project would be responsible for their fair share of the improvements identified under 2040 conditions (22.6%). After the improvements at this intersection are completed the eastbound left turn queue will be 70 feet in the a.m. peak hour and 345 feet in the p.m. peak hour.

Table i presents the mitigated intersections and resulting levels of service.

TABLE i			
PEAK HOUR LEVELS OF SERVICE AFTER RECOMMENDATIONS AND IMPROVEMENTS			
Location	2025 plus Project Peak Hour¹	2040 Peak Hour¹	2040 plus Project Peak Hour¹
	Average Delay	Average Delay	Average Delay
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd	---	C / 28.3 ²	C / 31.8 ⁵
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln	C / 27.2 ¹	C / 23.1 ³	C / 23.4 ⁶
4. N. 1 st St / Dorset Dr	---	C / 25.4 ⁴	C / 24.6 ⁴
6. Pedrick Rd / Professional Dr	---	B / 19.0 ²	C / 22.1 ⁵
Note –LOS results shown for worst case peak hour ¹ worst LOS shown ² install traffic signal ³ previously installed traffic signal; install 210 ft SB shared through-right lane, extend eastbound right turn lane 100 ft, lengthen NB left lane to 300 ft ⁴ retime signal (reduces queues to within turn lanes) ⁵ previously installed traffic signal ⁶ previously installed improvements			

**TRAFFIC IMPACT ANALYSIS FOR
DIXON INNOVATION CENTER**
Dixon, CA

INTRODUCTION

Study Purpose and Objectives

This study evaluates the traffic impacts associated with the construction of the Dixon Innovation Center (DIC) project located in the Northeast Quadrant Specific Plan area of Dixon. The project is located south of the I-80 / Pedrick Road interchange, adjacent to the TEC Equipment facility which is a truck and trailer dealer. The site is on the west side of Pedrick Road north of the proposed Professional Drive which will provide a future north-south arterial roadway between Vaughn Road and Pedrick Road. (Figure 1). The project consists of 563,828 square feet of industrial business park uses on about 37.6 acres.

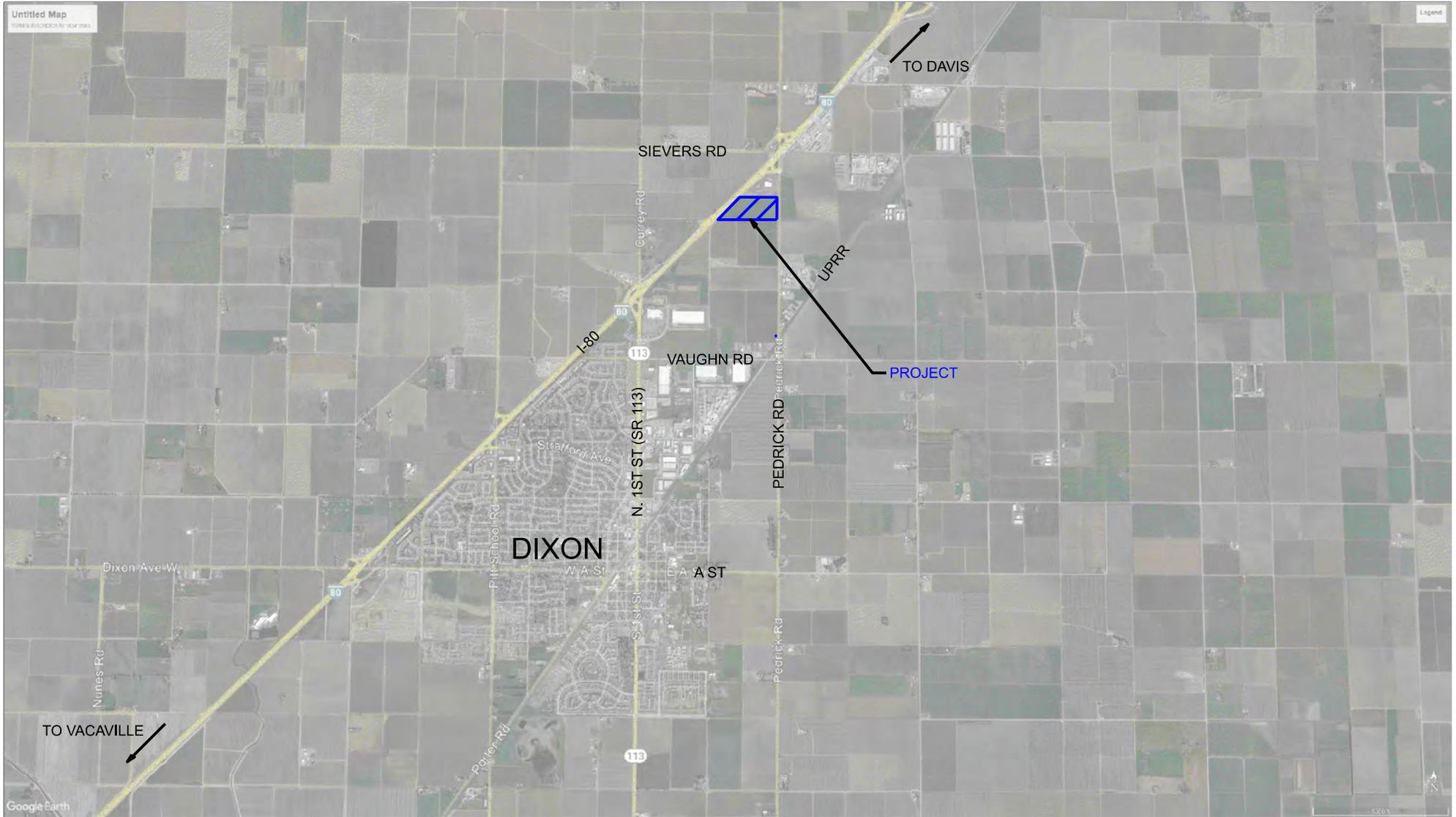
The scope of this traffic analysis has been identified through consideration of City of Dixon traffic study guidelines in consultation with the City of Dixon Public Works staff. This study addresses the following scenarios:

1. Existing Traffic Conditions
2. Opening Day (2025) Conditions
3. Opening Day (2025) Plus Project Conditions
4. Cumulative (2040) Traffic Conditions
5. Cumulative (2040) Plus Project Conditions

The objective of this study is to identify those roads and street intersections that may be impacted by development of this project based on City of Dixon significance criteria.

Project Description

The project is located in a portion of the Northeast Quadrant Specific Plan area of Dixon. The project is bounded by Pedrick Road to the east, TEC Equipment to the north and Professional Drive, a new arterial roadway between Vaughn Road and Pedrick Road to the south. The project will construct that portion of Professional Drive along its project frontage and a second southbound lane along Pedrick Road along the project frontage. Figure 2 provides a site plan of the proposed industrial park. Access is proposed along Pedrick Road with temporary full access along Pedrick Road with the access ultimately allowing only right-in, right-out movements by 2040. Four driveways are proposed along Professional Drive providing access throughout the industrial park complex.





RAW

RAW Architecture
1700 Third Street
Suite 101
Sacramento, California 95811

Office
916 443-1400

raw@raw.com



BUZZ OATES

100 CAPITAL BLVD SUITE 200
SACRAMENTO, CA 95814
916.443.1400

PLANNING DESIGN DOCUMENTS FOR

DIXON INNOVATION CENTER

PROFESSIONAL DRIVE
CITY OF DIXON, CA

Approved by the owner to:

Approved by the architect to:

Scale: as shown Date: 08/18/22
* ALL DIMENSIONS ARE IN FEET

GENERAL CONTRACTOR

Drawn by: JDL Date: 08/18/22

Checked by: JDL Date: 08/18/22

Scale: as shown Date: 08/18/22

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SITE LEGEND

- BUILDING AREA
- ASPHALT AREA
- LANDSCAPE AREA
- CONCRETE
- STORM WATER RETENTION AREA
- STORM WATER DRAINAGE FEATURE
- EXISTING PROPERTY LINE
- POTENTIAL FUTURE PARCELLINE
- 7' X 10' OVERHEAD LOCK LEVEL DOOR
- 12' X 14' OVERHEAD GRADE LEVEL DOOR
- YARD FENCING
- FIRE DEPARTMENT TURN RADIUS

KEYNOTES

- 1.2 Bldg. Property Lines
- 1.3 Bldg. Property Lines - See Civil Drawings
- 1.4 Bldg. Property Easement - See Civil Drawings
- 1.5 Bldg. Property Easement - See Civil Drawings

OVERALL SITE DATA - OPTION A

ITEM	DESCRIPTION	QUANTITY
1.0	GRAND TOTAL SITE AREA	1,636,546.41 S.F.
1.1	GRAND TOTAL BUILDING AREA	563,828 S.F.
1.2	GRAND TOTAL PAVED AREA	1,000,000 S.F.
1.3	GRAND TOTAL LANDSCAPE AREA	636,546.41 S.F.
1.4	GRAND TOTAL CONCRETE AREA	100,000 S.F.
1.5	GRAND TOTAL ASPHALT AREA	900,000 S.F.
1.6	GRAND TOTAL VEHICLE PARKING STALLS	1,382
1.7	GRAND TOTAL DOCK STALLS	6
1.8	GRAND TOTAL GRADE LEVEL DOORS	34
1.9	GRAND TOTAL OVERHEAD LOCK LEVEL DOORS	0
1.10	GRAND TOTAL OVERHEAD GRADE LEVEL DOORS	0
1.11	GRAND TOTAL YARD FENCING	0
1.12	GRAND TOTAL FIRE DEPARTMENT TURN RADIUS	0

SITE PLAN

FIGURE 1

EXISTING SETTING

Study Area

This study addresses traffic conditions at five (5) existing intersections in Dixon. Three intersections are located along Pedrick Road while two are located along N. First Street (SR 113). The limits of the study area were based on discussion with City of Dixon staff. The quality of traffic flow is typically governed by the operation of major intersections and the daily volume of traffic along the roadways. The physical characteristics of the study intersections are described in the text which follows.

Study Area Intersections

The **Pedrick Road / I-80 Westbound Ramps – Sievers Road intersection** is an all-way stop controlled intersection. The southbound Pedrick Road approach includes a dedicated left turn lane and a shared through-right lane. The northbound Pedrick Road approach includes a dedicated left turn lane and a through lane. A short free right turn lane (≈50') into a loop ramp is present for motorists entering westbound I-80. The Westbound I-80 Off-Ramp includes a shared through-left lane and a short (50') stop controlled right turn lane. The eastbound Sievers Road approach includes a shared through-left lane and a free right turn lane with yield control. There are no bike lanes or sidewalks in the vicinity.

The **Pedrick Road / I-80 Eastbound Ramps – Sparling Lane intersection** is an all-way stop controlled intersection. The southbound Pedrick Road approach includes a dedicated left turn lane, a through lane and a free right turn lane for motorists entering eastbound I-80. The free right turn lane is about 75' long. The northbound Pedrick Road approach includes a dedicated left turn lane and a shared through-right lane. The through lane is wide enough to allow a right turning vehicle to queue side-by-side. The Eastbound I-80 Off-Ramp includes a single shared lane for left, through and right movements. The lane is wide enough to allow a right turning vehicle to queue side-by-side. The westbound Sparling Lane approach includes a single shared lane for left, through and right turn movements. The lane is wide enough to allow a right turning vehicle to queue side-by-side. There are no sidewalks in the vicinity.

The **Pedrick Road / Vaughn Road intersection** is an all-way stop controlled intersection. All approaches are single shared left-through-right lanes. The Vaughn Road approaches include bike lanes. There are no bike lanes or sidewalks in the vicinity.

The **North 1st Street (State Route 113) / Dorset Drive intersection** is a traffic signal controlled intersection. The northbound approach includes a left turn lane, two through lanes and a right turn lane. A second left turn lane can be added with restriping if needed in the future. The southbound approach includes dual left turn lanes, two through lanes and a right turn lane. The eastbound and westbound approaches include dual left turn lanes, a through lane and a right turn lane. Bike lanes and crosswalks are present along all approaches.

The **North 1st Street (State Route 113) / Vaughn Road intersection** is a traffic signal controlled intersection. The northbound and southbound approaches include a left turn lane, a through lane and a shared through-right lane. The eastbound and westbound approaches include a left turn lane, a through lane and a right turn lane. Bike lanes and sidewalks are present along all approaches.

Analysis Criteria

Circulation systems are normally evaluated based on a comparison of the system's capacity and the projected level of traffic volumes. The operating conditions experienced by motorists are described in terms of Levels of Service (LOS). LOS is a qualitative measure, reflecting a number of quantitative factors, including speed and travel time, traffic interruptions, freedom to maneuver, and driving comfort and convenience. LOS is designated on a scale from LOS A to LOS F, with LOS A representing the best performance and LOS F the worst. LOS is quantified using the average delay per vehicle approaching the intersection. Table 1 presents the ranges of vehicle delay associated with each LOS.

The most recent version (7th Edition) of the Highway Capacity Manual (HCM) was used to analyze intersection operations. *Synchro* software was used to calculate LOS conditions. The intersection Levels of Service presented in this analysis are based on the weighted average total delay per vehicle for the intersection as a whole at signalized intersections and at locations controlled by all-way stops. The average delay experienced by motorists yielding the right of way is the basis for identification of Level of Service at locations controlled by side street stop signs. Applicable Level of Service thresholds based on average delay are shown in Table 1.

Signal Warrants. Traffic signal warrants are a series of standards which provide guidelines for determining if a traffic signal is appropriate. Signal warrant analyses are typically conducted at intersections of uncontrolled major streets and stop sign-controlled minor streets. If one or more signal warrants are met, signalization of the intersection may be appropriate. However, a signal should not be installed if none of the warrants are met, since the installation of signals would increase delays on the previously uncontrolled major street, resulting in an undesirable increase in overall vehicle delay at the intersection. Signalization may also increase the occurrence of particular types of accidents. Therefore, if signals are installed where signal warrants are not met, the detriment of increased accidents and overall delay may be greater than the benefit in traffic operating conditions on the single worst movement at the intersection. Signal warrants, then, provide an industry-standard basis for identifying when the adverse effect on the worst movement is substantial enough to warrant signalization.

For the traffic analysis conducted for this traffic study, available data are limited to a.m. and p.m. peak hour volumes. Thus, unsignalized intersections were evaluated using the Peak Hour Warrant (Warrant Number 3) from the California Department of Transportation document *California Manual on Uniform Traffic Control Devices* (California Department of Transportation 2014).

Even if the Peak Hour Warrant is met, a more detailed signal warrant study is recommended before a signal is installed. The more detailed study should consider volumes during the highest eight hours of the day, volumes during the highest four hours of the day, pedestrian traffic, and accident histories.

Intersection Queuing Analysis. The quality of traffic flow can also be affected by queuing at signalized intersections. For this study, the lengths of peak period queues have been identified and compared to available storage in order to determine whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections. 95th percentile queue lengths have been calculated as a byproduct of the *Synchro* analysis. Those locations where the 95th percentile queue exceeds the available storage have also been noted.

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay \leq 10.0 sec	Little or no delay. Delay \leq 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay $>$ 10.0 sec and \leq 20.0 sec	Short traffic delays. Delay $>$ 10 sec/veh and \leq 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay $>$ 20.0 sec and \leq 35.0 sec	Average traffic delays. Delay $>$ 15 sec/veh and \leq 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay $>$ 35.0 sec and \leq 55.0 sec	Long traffic delays. Delay $>$ 25 sec/veh and \leq 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay $>$ 55.0 sec and \leq 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay $>$ 35 sec/veh and \leq 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay $>$ 80.0 sec	Intersection blocked by external causes. Delay $>$ 50 sec/veh	Forced flow, breakdown.

Sources: 7th Edition Highway Capacity Manual, Transportation Research Board (TRB).

Level of Service Impact Criteria

The City's Engineering Design Standards define the minimum acceptable operation level for intersections to be LOS D. The City uses the following thresholds to determine if a transportation impact is significant and requires improvements to address adverse impacts:

Signalized Intersections: A project is considered to have a significant effect if it would:

- Result in a signalized intersection operating at an acceptable LOS (LOS D or better) to deteriorate to an unacceptable LOS; or
- Increase the average delay by more than 2 seconds at a signalized intersection that is operating at an unacceptable LOS without the project.

Unsignalized Intersections: A project is considered to have a significant effect if it would:

- Result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, or
- Result in an increase in average delay of more than 2 seconds, at a movement/approach that is operating at an unacceptable LOS without the project, or
- Result in an unsignalized intersection meeting a traffic signal warrant.

Freeway Ramps: A project is considered to have a significant effect if it would:

- Result in or ramp queues exceeding storage capacity; or result in a decrease in safety.

Bicycle and Pedestrian Facilities: A project is considered to have a significant effect if it would:

- Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;
- Interfere with the implementation of a planned bikeway as shown in the General Plan or • Fail to provide adequate access for bicyclists and pedestrians, resulting in unsafe conditions, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflicts.

Safety: A project is considered to have a significant effect if it would:

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

Improvements to Address Significant Adverse Impacts

If a project is found to cause significant adverse transportation effects, a recommended improvement to address these should be identified. If a project causes a level of service deficiency, potential intersection improvements shall be proposed. At a minimum, the study shall consider improvements identified in the City of Dixon Capital Improvement Program (CIP). If an unsignalized study area intersection is proposed to be signalized, a signal warrant analysis based on the California Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) should be conducted.

If a project causes an LOS deficiency to a facility that is operating satisfactorily under the existing condition, the project is generally 100% responsible for implementing the improvement. If a project is found to cause a significant transportation effect at a facility that is already operating below the standard

under existing conditions, a fair share project contribution should be calculated based on the project's share of traffic in excess of the acceptable standard. Similarly, project fair share contributions should be calculated for any improvements needed under background or cumulative conditions without the project.

Public Transit

The City of Dixon provides the "Readi-Ride" Transit service, a public dial-a-ride service within the city limits. Service is scheduled on a reservation, space available basis. The system operates Monday, Tuesday, Thursday and Friday from 7 a.m. to 12:00 p.m. and from 1:00 p.m. to 4:00 p.m. and on Wednesday from 7 a.m. to 11 a.m. and 12:00 p.m. to 4:00 p.m.

Additional bus service is provided by Solano Transit SolTrans buses. Route B is the only route with stops in Dixon. The 'B' makes a single stop at the Dixon Park and Ride located along Pitt School Road. Southbound, there are 12 runs Monday through Friday with service at Dixon Park and Ride beginning at 6:05 a.m. and ending at 6:18 p.m. Northbound, there are 12 runs to the Dixon Park and Ride beginning at 6:49 a.m. and ending at 6:38 p.m. SolTrans provides Saturday service between Dixon and Walnut Creek. Six runs are provided in each direction with southbound service operating between 6:15 a.m. and 4:45 p.m. and northbound service operating between 9:33 a.m. and 8:03 p.m.

Pedestrian and Bicycle Facilities

Pedestrian facilities are present throughout Dixon, with sidewalk present along most City streets. Marked bicycle facilities are prevalent throughout the City, and the City encourages bicycle ridership. New developments are generally constructed to include bicycle lanes. In addition, the City has been installing bicycle lanes along existing roadways through a combination of lane narrowing and parking removal. In the project vicinity there are no bike or sidewalk facilities along Pedrick Road.

Existing Traffic Operating Conditions

Traffic Volume Counts. As part of the Dixon Streets Master Plan prepared in October 2021 by DKS Associates traffic counts were conducted at various intersections throughout the City. A new traffic count was conducted at the N. First Street / Dorset Drive intersection and provided to the City and DKS Associates (DKS). DKS used this data and approved / pending project data to develop 2025 and 2040 baseline conditions for the City's Travel Demand Model (TDM). Existing (2023) conditions were developed through interpolation of the baseline 2018 model and the 2025 model results. This accounts for the projected Vaughn Road realignment anticipated by 2025 which will realign Vaughn Road north to a new tee intersection north of the UPRR railroad crossing. 2023 intersection turning movements are presented in Figure 3.

LEGEND

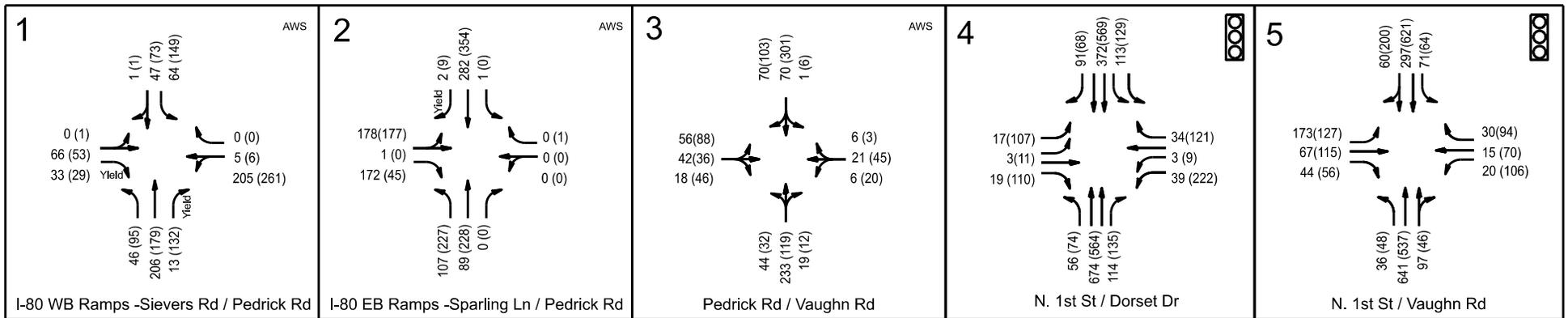
XX - AM PEAK HOUR
 (XX) - PM PEAK HOUR



SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP



Intersection Levels of Service. Table 2 summarizes current operating Levels of Service at the study area intersections. Traffic signal timing plans were obtained from Caltrans District 4 for the N. 1st Street / Dorset Drive and N. 1st Street / Vaughn Road intersections. All study intersections operate within the City’s acceptable Levels of Service thresholds during the a.m. and p.m. peak hours.

Traffic Signal Warrants. The Pedrick Road / I-80 WB Ramps – Sievers Road and Pedrick Road / I-80 EB Ramps – Sparling Lane intersections currently meet the peak hour traffic signal warrant in either the a.m. or p.m. peak hours.

Location	Control	AM Peak Hour		PM Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd	AWS	B	12.1	C	15.2	Yes ¹
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln	AWS	B	13.4	C	18.9	Yes ²
3. Pedrick Rd / Vaughn Rd	AWS	A	9.7	B	12.6	No
4. N. First St / Dorset Dr	Signal	B	14.9	B	19.4	N/A
5. N/ First St / Vaughn Rd	Signal	C	22.5	C	23.6	N/A
AWS – all way stop ¹ meets rural warrant in p.m. peak hour ² meets rural warrant in a.m. and p.m. peak hour						

Intersection Queues. Table 3 presents information regarding current peak period queuing in lanes at signalized study intersections and at unsignalized intersection with turn lanes. The available storage is presented with the 95th percentile queue length. On multiple lane approaches the longest queue is identified. The northbound left turn lane along Pedrick Road at the Eastbound I-80 ramps intersection exceeds the available storage.

TABLE 3 EXISTING PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS			
Location	Storage Length* (feet)	AM Peak Hour	PM Peak Hour
		Queue (feet)	Queue (feet)
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd			
NB left	120	<25	<25
NB	---	45	43
SB left	65	<25	40
SB	---	<25	<25
EB right	100	<25	<25
EB through-left	---	<25	<25
WB through-left	---	53	100
WB right	70	<25	<25
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln			
NB left	65	<25	68
NB	---	<25	60
SB left	100	<25	<25
SB	---	80	148
EB through-left	---	43	53
EB right	30	30	<25
WB through-left		<25	<25
WB right	30	<25	<25
4. N. 1 st St / Dorset Dr			
NB left turn	200	28	43
NB right turn	320	40	63
SB left turn	235 (2)	28	35
SB right turn	140	30	28
EB left turn	155 (2)	<25	30
EB right turn	165	<25	63
WB left turn	195 (2)	<25	65
WB right turn	195	<25	68
5. N. 1 st St / Vaughn Rd			
NB left turn	290	40	50
SB left turn	285	80	70
EB left turn	275	183	130
WB left turn	180 ¹	<25	130
WB right turn	300	28	90
* includes portion of taper without blocking adjacent lane			
¹ Length of left turn lane prior to two-way-left-turn-lane			

Collision History. A review of the latest three-year collision history was completed at the study intersections and in the project vicinity. Data was obtained from the Statewide Integrated Traffic Records System (SWITRS). This system summarizes collision reports filed by the California Highway Patrol (CHP), the Solano County Sheriff’s department and the City of Dixon police department. SWITRS reports between

2020 and 2022 were reviewed. Over this five-year period, 24 crashes were reported. Table 4 presents the crash history along N. 1st Street between Dorset Drive and Vaughn Road and along Pedrick Road between Vaughn Road and Sievers Road – I-80 WB Ramps. The primary crash factor is speed which comprises 33% of the identified crashes.

TABLE 4				
2020-2022 COLLISION HISTORY				
N. 1ST Street Dorset Dr Intersection to Vaughn Rd intersection				
Crash Type	2020	2021	2022	Total
Speed	1*		3† / 1*	5
Unsafe Starting / Backing			1†	1
Improper Turn	1†	1*	1†	2
Right-of-Way	1†		1†	3
Signal Violation		1†		1
Improper Passing	1†			1
Total Crashes				13
† N. 1 st St / Dorset Dr * N. 1 st St / Vaughn Rd				
N. 1ST Street Dorset Dr Intersection to Vaughn Rd intersection				
Following too Closely	1 Δ			1
DUI	1‡			1
Speed	1◊ / 1‡	1◊		3
Unsafe Starting / Backing			1 Δ / 1‡	2
Improper Turn	1◊	1◊	1‡	3
Right-of-Way			1‡	1
Total Crashes				11
Δ Pedrick Rd / Sparling Ln – I-80 EB Ramps ‡ Pedrick Rd / Sievers Rd – I-80 WB Ramps ◊ Pedrick Rd (midblock)				

2025 OPENING DAY SCENARIO

The analysis of the short range 2025 opening day traffic conditions is intended to consider the impact of this project within the context of short-term development. DKS identified the following projects in Table 5 to include in the TDM to develop the project Opening Day 2025 traffic conditions without the project. Adjustments to the model volumes were made to reflect project intersection and driveway locations.

TABLE 5	
2025 BACKGROUND LAND USE PROJECTS*	
Project Name	Description
Gateway Plaza Expansion	3 retail buildings proposed, 21ksf
Homestead Phase 2A	10 acres commercial + 391 DU
Homestead Phase 3	189 LD, 69 MDL
Homestead Phase 1	152 LD residential (TAZs 59-60)
Homestead Phase 1	152 LD residential (TAZs 59-60)
Valley Glen Phases 3-1 and 3-2	Add 132 lots under construction
Parklane	Units 4 and 5 (Sutton) 121 units
Valley Glen Phase 4-1	Buildout (84 units)
Various Projects	Senior Care Facility, Hotel/Drive Thru, Popeye's, Fueling Station expansion
Lewis Development (Independence)	Residential + commercial
Campus 257	Phase 1 Residential (495 units)
*per DKS	

The following roadway improvements that would affect the study intersections were assumed completed by 2025 as a result of these projects:

- Widening of southbound Pedrick Road to two lanes along the Campus 257 frontage;
- Construction of Professional Drive (2 lanes) between Vaughn Road and Pedrick Road;
- Construction of Commercial Drive between Professional Drive and Pedrick Road; this will be built instead of the Vaughn Road realignment;
- Installation of left turn lane along northbound Pedrick Road at Professional Drive;
- Installation of left turn lane along eastbound Vaughn Road at Professional Drive.

Figure 4 presents the study intersections while Figure 5 presents the 2025 No Project traffic volumes at the study intersections.

2025 Opening Day Operating Conditions

Intersection Levels of Service. Table 6 summarizes operating Levels of Service at the study area intersections. All study intersections operate within the City’s acceptable Levels of Service thresholds during the a.m. and p.m. peak hours.

Traffic Signal Warrants. The Pedrick Road / I-80 WB Ramps – Sievers Road and Pedrick Road / I-80 EB Ramps – Sparling Lane intersections will continue to meet the peak hour traffic signal warrant in either the a.m. or p.m. peak hours.

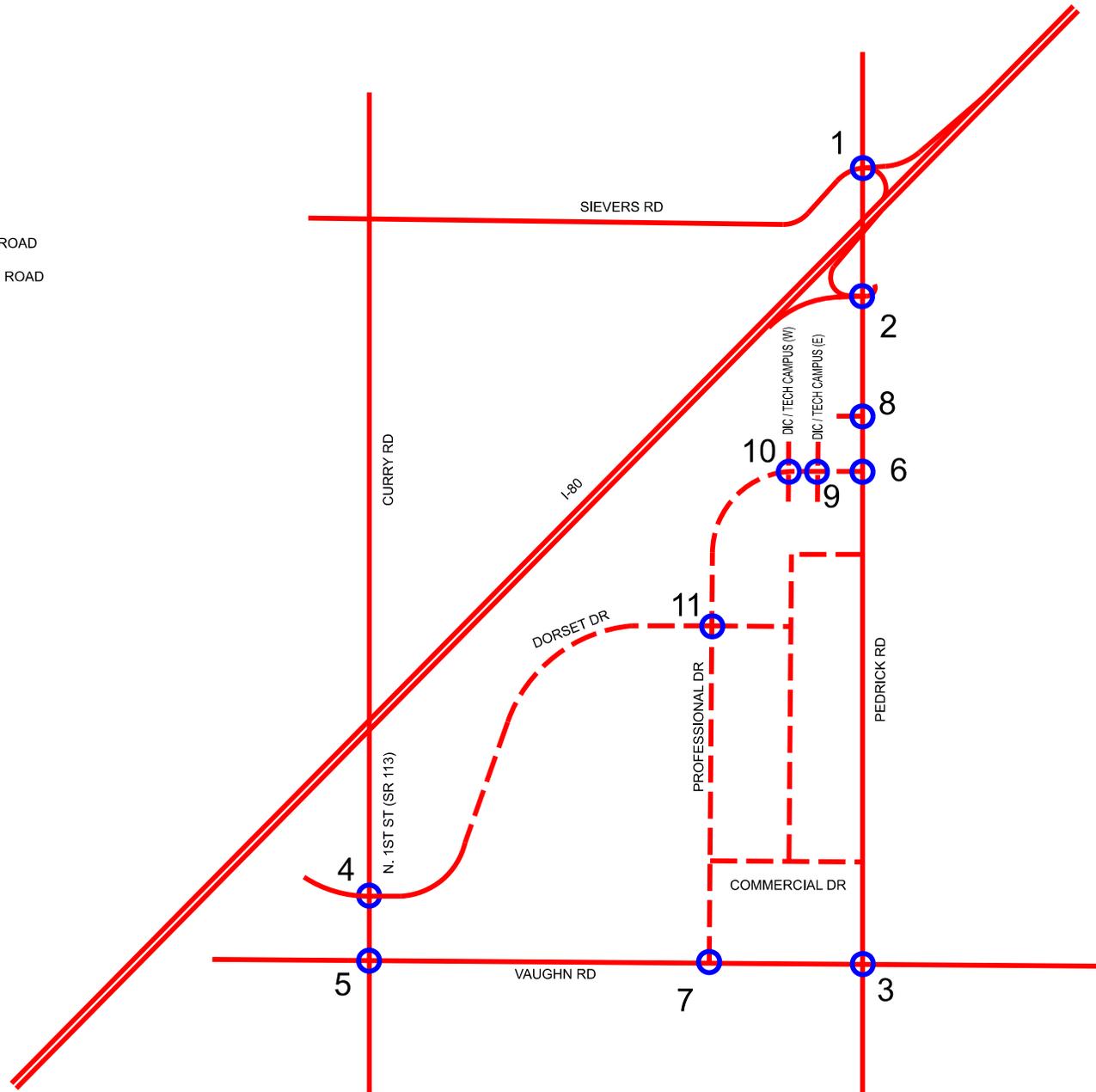
TABLE 6 2025 OPENING DAY PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS						
Location	Control	AM Peak Hour		PM Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd	AWS	A	9.8	C	17.5	Yes ³
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln	AWS	B	11.7	C	17.3	Yes ³
3. Pedrick Rd / Vaughn Rd	AWS	2		2		---
4. N. First St / Dorset Dr	Signal	B	15.3	B	19.7	N/A
5. N/ First St / Vaughn Rd	Signal	C	26.5	C	26.7	N/A
6. Pedrick Rd / Professional Dr	EB Stop ¹	B	11.6	B	13.4	No
7. Vaughn Rd / Professional Dr	SB Stop ¹	A	9.5	A	9.5	No
AWS – all way stop ¹ LOS for worst approach shown ² Intersection 3 not studied after Commercial Drive ‘bypass’ constructed ³ meets rural warrant in p.m. peak hour Red indicated threshold exceeded						

Intersection Queues. Table 7 presents information regarding current peak period queuing in turn lanes at signalized study intersections and at unsignalized intersection. The available storage is presented with the 95th percentile queue length. On multiple lane approaches the longest queue is identified. All intersections have lane storage capacity that can accommodate peak period queues.



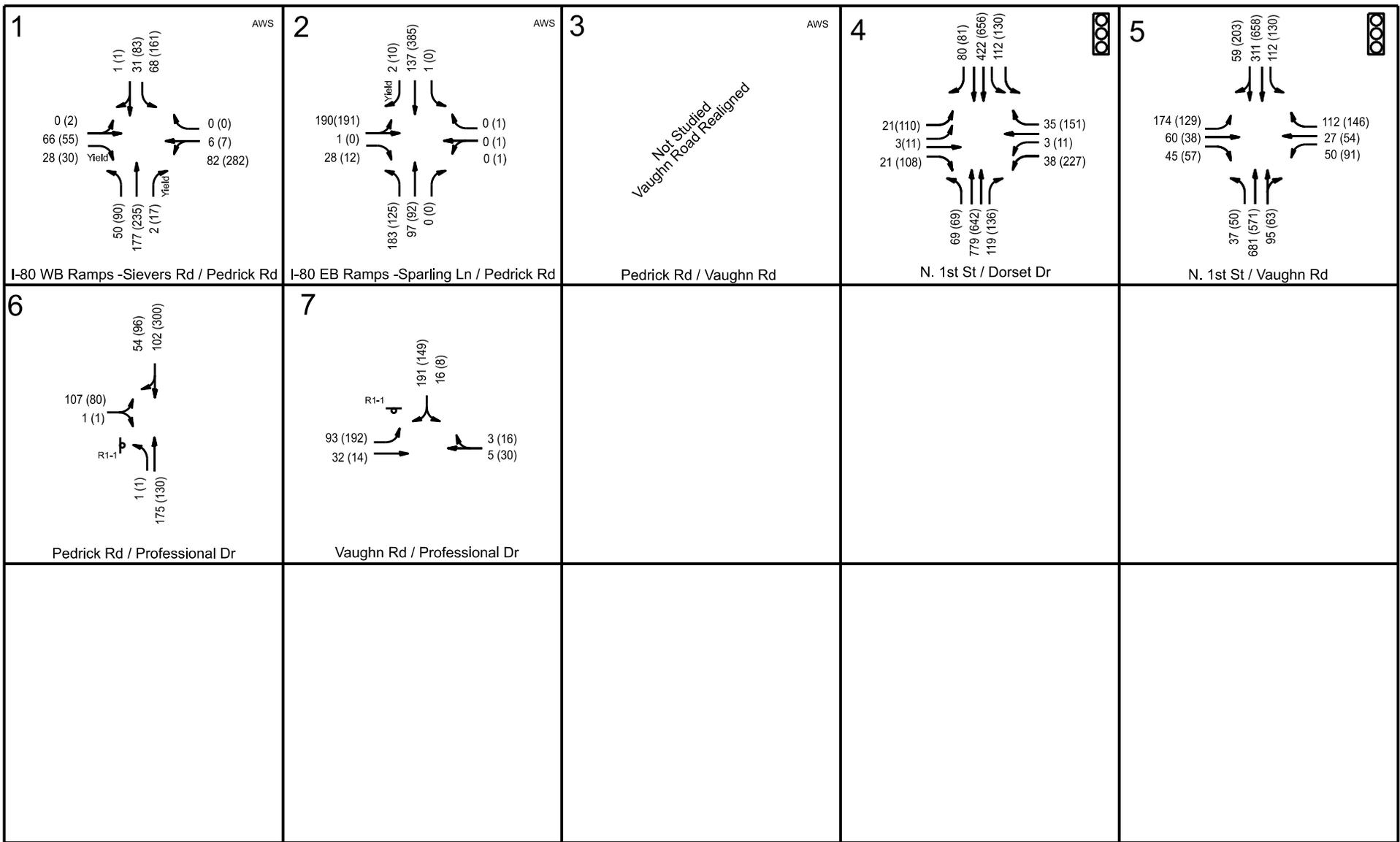
LEGEND

- EXISTING ROAD
- - - PROPOSED ROAD



STUDY INTERSECTIONS

FIGURE 4



LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR



R1-1 STOP SIGN

AWS ALL WAY STOP

2025 (OPENING DAY) TRAFFIC VOLUMES

FIGURE 5

TABLE 7			
2025 OPENING DAY PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS			
Location	Storage Length* (feet)	AM Peak Hour	PM Peak Hour
		Queue (feet)	Queue (feet)
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd			
NB left	120	<25	<25
NB	---	30	70
SB left	65	<25	45
SB	---	<25	<25
EB right	100	<25	<25
EB through-left	---	<25	<25
WB through-left	---	<25	120
WB right	70	<25	<25
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln			
NB left	65	40	28
NB	---	<25	<25
SB left	100	<25	<25
SB	---	25	143
EB through-left	---	43	50
EB right	30	<25	<25
WB through-left	---	<25	<25
WB right	30	<25	<25
4. N. 1st St / Dorset Dr			
NB left turn	200	38	40
NB right turn	320	45	65
SB left turn	235 (2)	30	38
SB right turn	140	28	33
EB left turn	155 (2)	<25	33
EB right turn	165	<25	65
WB left turn	195 (2)	<25	73
WB right turn	195	<25	93
5. N. 1st St / Vaughn Rd			
NB left turn	290	43	60
SB left turn	285	128	150
EB left turn	275	193	148
WB left turn	180 ¹	58	123
WB right turn	300	123	160
6. Pedrick Rd / Professional Dr			
NB left turn	150	<25	<25
7. Vaughn Rd / Professional Dr			
EB left turn	200	<25	<25
* includes portion of taper without blocking adjacent lane			
¹ Length of left turn lane prior to two-way-left-turn-lane			

PROJECT CHARACTERISTICS

The development of this project will create origin and destination traffic. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

Trip Generation

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends resulting from the day-to-day operation of the businesses in the project.

The project includes the development of about 37.6 acres in the City’s Northeast Quadrant Specific Plan. The project will construct 563,828 square feet of business park uses. This analysis considered trip generation rates derived from the Institute of Transportation Engineers (ITE) publication “*Trip Generation, 11th Edition*” for Land Use (LU) Code 770, Business Park. Table 8 presents the projected trip generation for the project which is expected to generate 7,014 daily trips, 761 a.m. peak hour trips and 688 p.m. peak hour trips. The application does not currently propose a specific building type and LU 770 was used as a worst-case trip generation assessment.

Trip Generation was also reviewed for truck generation, and this land use does not have available truck generation information. Instead, LU 150, Warehousing, which is an allowable land use was reviewed. Based on the Warehouse land use the number of trucks that could be generated is 338 daily trucks; however, the Warehouse land use will generate fewer total trips. The actual truck trips for the Business Park land use would be expected to be substantially less than the Warehouse land use.

The projected project trips were provided to DKS Associates who used this data to update the TDM to create a ‘Plus Project’ condition. Trip distribution was performed within the model runs for 2025 and 2040 time periods. The model results were used for LOS analysis.

Land Use	Unit Quantity	Size	Trips Per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Business Park (LU 770)	KSF	563.83	12.44	85%	15%	1.35	26%	74%	1.22
Business Park (LU 770)			7,014	647	114	761	179	509	688
Net New Trips			7,014¹	647	114	761¹	179	509	688¹
KSF – thousand square feet									
¹ Warehouse (LU 150) generates 964 daily trips and 338 daily trucks, 96 a.m. trips and 11 a.m. trucks and 101 p.m. trips and 17 p.m. trucks									

PROJECT TRAFFIC IMPACTS

2025 Opening Day Plus Project Conditions

Traffic Volumes The impacts of developing the project uses on the project site have been identified by superimposing project traffic onto background 2025 conditions. Figure 6 displays the “Existing Plus Project” traffic volumes at the study intersections in both a.m. and p.m. peak hours.

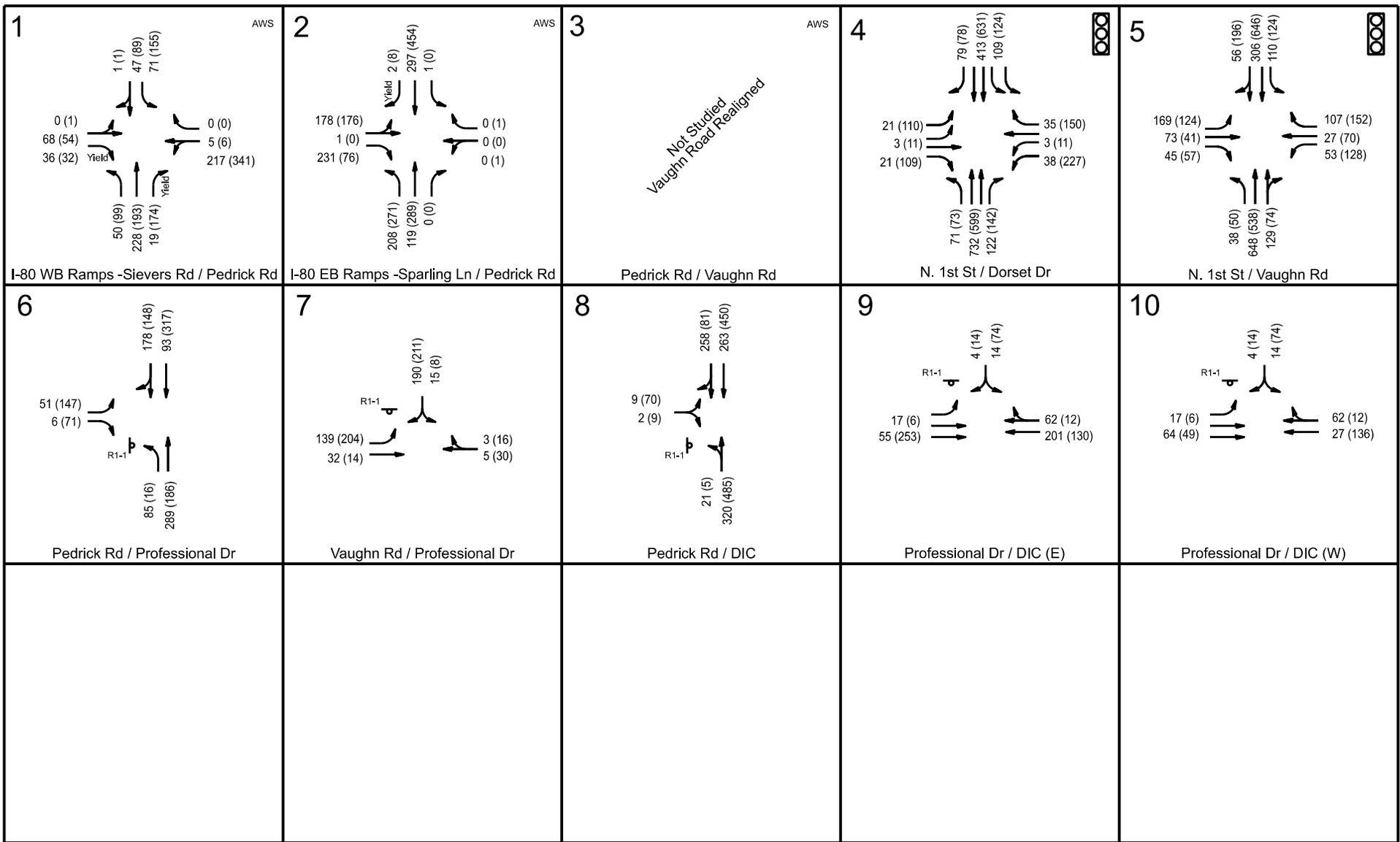
Circulation System Improvements. Figure 6 also presents the intersection geometry and traffic controls resulting from implementation of the project’s planned improvements. The following improvements are assumed to be completed with the project:

- Widening of southbound Pedrick Road to two lanes along the DIC frontage;
- Construction of Professional Drive to 4 lanes along the Professional Drive frontage;

Intersection Levels of Service. Intersection Levels of Service were calculated and used as the basis for evaluating project impacts. Existing traffic signal timing plans were used at signalized intersections. Table 9 displays the peak hour Levels of Service at each study intersection and compares existing Levels of Service with those accompanying the project. Two of the project driveways along Professional Drive were evaluated, those at the west and east sides of the project. These locations are expected to have the highest volumes. All intersections except the I-80 Eastbound Ramps – Sparling Lane / Pedrick Road intersection will continue to operate above the minimum City of Dixon LOS D standard. The I-80 Eastbound Ramps – Sparling Lane / Pedrick Road intersection will decline to LOS E (39.0 seconds per vehicle [spv]) during the p.m. peak hour.

Traffic Signal Warrants. 2025 Opening Day Plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements. The I-80 Westbound Ramps -Sievers Road / Pedrick Road intersection and the I-80 Eastbound Ramps -Sparling Lane / Pedrick Road intersection will continue to meet the peak hour signal warrant. Additionally, the Pedrick Road / Project Driveway intersection will meet the p.m. peak hour warrant.

Intersection Queues. Table 10 identifies peak period queues within turn lanes assuming the addition of project trips. Those 95th percentile queues with lengths exceeding the available storage have been highlighted. Queues in the northbound left turn lane and eastbound right turn lane at the Pedrick Road / I-80 Eastbound Ramps – Sparling Lane intersection will exceed the available storage. These two locations will exceed the available storage under ‘plus Project’ conditions. While the westbound left turn lane along Vaughn Road at N. 1st Street will exceed the available storage the left turn lane changes into a two-way-left-turn-lane (TWLTL) which allows vehicles to queue without blocking the through lane.



LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR



SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

**TABLE 9
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2025 OPENING DAY PLUS PROJECT CONDITIONS**

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2025		2025 Plus Project		2025		2025 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd	AWS	A	9.8	B	12.8	C	17.5 ³	C	22.9 ³	Yes
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln	AWS	B	11.7	C	16.5 ⁴	C	17.3 ³	E	39.0 ⁴	Yes
3. Pedrick Rd / Vaughn Rd	AWS	2		2		2		2		---
4. N. First St / Dorset Dr	Signal	B	15.3	B	15.2	B	19.7	B	19.6	N/A
5. N/ First St / Vaughn Rd	Signal	C	26.5	C	26.2	C	26.7	C	29.1	N/A
6. Pedrick Rd / Professional Dr	EB Stop ¹	B	11.6	C	15.9	B	13.4	C	16.6	No
7. Vaughn Rd / Professional Dr	SB Stop ¹	A	9.5	A	9.5	A	9.5	A	9.8	No
8. Pedrick Rd / Driveway	EB Stop ¹	---	---	C	15.5	---	---	D	27.2 ³	Yes
9. Professional Dr / East Driveway	SB Stop ¹	---	---	B	10.4	---	---	B	10.9	No
10. Professional Dr / West Driveway	SB Stop ¹	---	---	A	9.2	---	---	B	10.1	No
<p>AWS – all way stop ¹ LOS for worst approach shown ² Intersection 3 not studied after Commercial Drive ‘bypass’ constructed ³ meets rural warrant in p.m. peak hour ⁴ meets rural warrant in a.m. and p.m. peak hour Red indicated threshold exceeded</p>										

TABLE 10 2025 OPENING DAY PLUS PROJECT PEAK HOUR QUEUES					
Location	Storage Length* (feet)	AM Peak Hour Queue (feet)		PM Peak Hour Queue (feet)	
		2025	2025 plus Project	2025	2025 plus Project
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd					
NB left	120	<25	<25	<25	<25
NB	---	45	53	43	55
SB left	65	<25	<25	43	48
SB	---	<25	<25	<25	<25
EB right	100	<25	<25	<25	<25
EB through-left	---	<25	<25	<25	<25
WB through-left	---	<25	60	113	208
WB right	70	<25	<25	<25	<25
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln					
NB left	65	40	63	28	110
NB	---	<25	25	<25	110
SB left	100	<25	<25	<25	<25
SB	---	25	108	143	350
EB through-left	---	43	48	50	60
EB right	30	<25	55	<25	<25
WB through-left		<25	<25	<25	<25
WB right	30	<25	<25	<25	<25
4. N. 1 st St / Dorset Dr					
NB left turn	200	38	38	40	43
NB right turn	320	45	45	65	68
SB left turn	235 (2)	30	28	38	35
SB right turn	140	28	28	33	33
EB left turn	155 (2)	<25	<25	33	33
EB right turn	165	<25	<25	65	63
WB left turn	195 (2)	<25	<25	73	70
WB right turn	195	<25	<25	93	88
5. N. 1 st St / Vaughn Rd					
NB left turn	290	43	43	60	60
SB left turn	285	128	125	150	140
EB left turn	275	193	188	148	143
WB left turn	180 ¹	58	63	123	215 ²
WB right turn	300	123	115	160	165
6. Pedrick Rd / Professional Dr					
NB Left	150	<25	<25	<25	<25
7. Vaughn Rd / Professional Dr					
EB Left	200	<25	<25	<25	<25
* includes portion of taper without blocking adjacent lane					
¹ Length of left turn lane prior to TWLTL					
² Queue extends into TWLTL					
Highlighted values indicate queue length in excess of available storage					

TABLE 10 2025 OPENING DAY PLUS PROJECT PEAK HOUR QUEUES (con't)					
Location	Storage Length* (feet)	AM Peak Hour Queue (feet)		PM Peak Hour Queue (feet)	
		2025	2025 plus Project	2025	2025 plus Project
8. Pedrick Rd / DIC Driveway					
NB Left	150	---	<25	---	<25
9. Professional Dr / DIC East					
EB Left	150	---	<25	---	<25
10. Professional Dr / DIC West					
EB Left	150	---	<25	---	<25

CUMULATIVE IMPACTS (2040)

The analysis of the long range 2040 cumulative condition is intended to consider the impact of this project within the context of buildout of the General Plan circulation element occurring in 2040.

Year 2040 Forecasts / Conditions

2040 Traffic Forecasts

Year 2040 traffic forecasts were developed by DKS who provided intersection turning movements for the study intersections. The Traffic Analysis Zones (TAZ) in the model reflect general areas of development, not necessarily individual projects thereby requiring manual adjustments to the model results. Traffic volumes at project access intersections and driveways were updated for project intersection and driveway locations.

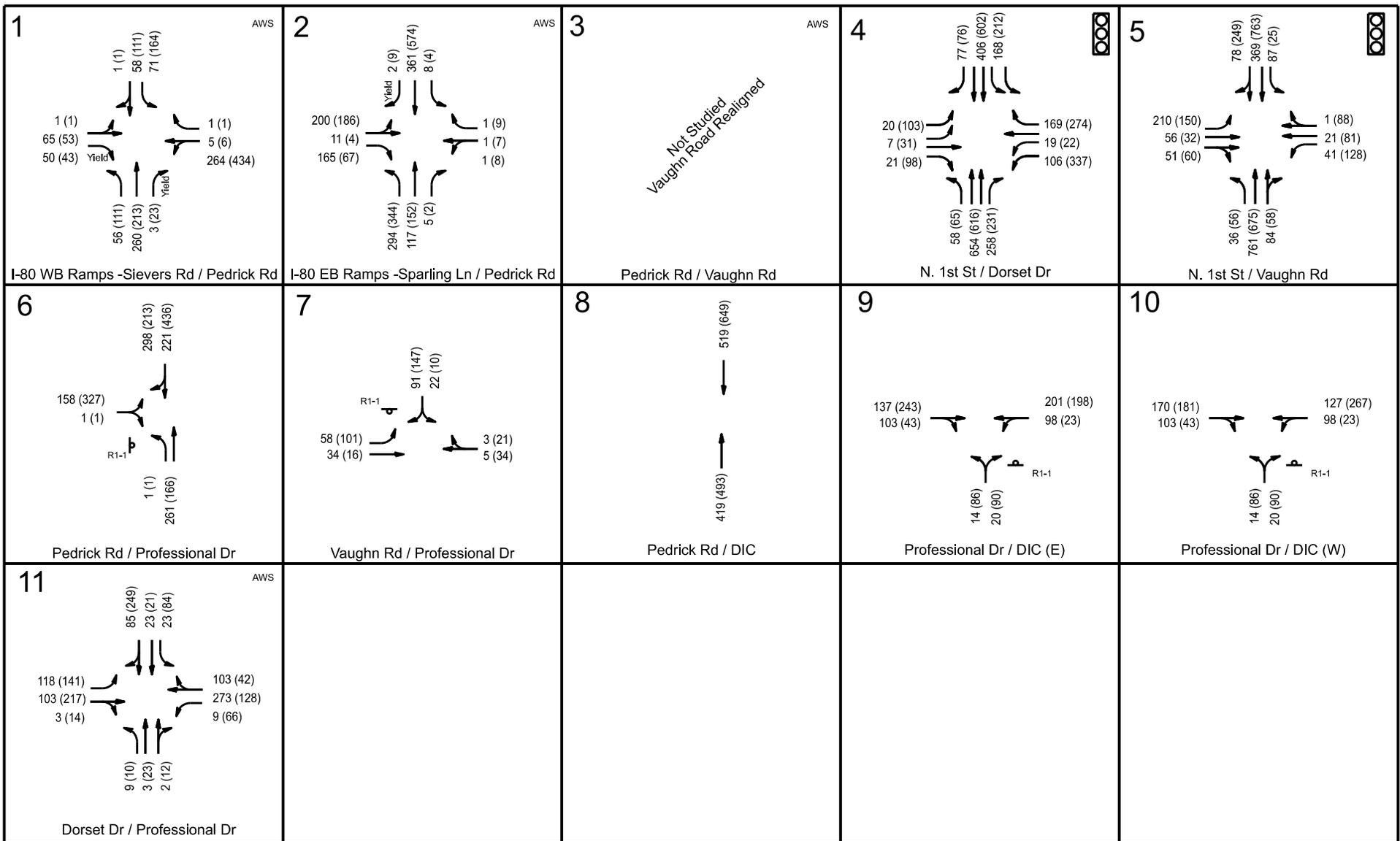
Roadway Conditions

Roadways in 2040 are generally projected to remain with their current lane configurations along First Street but will change along Vaughn Road and Pedrick Road. The following changes to the roadway network are identified based on the City of Dixon General Plan, the Northeast Quadrant Specific Plan (NEQSP) and the City of Dixon model:

- Pedrick Road. In the 2021 General Plan Pedrick Road from I-80 south to Midway Road is identified as a four-lane facility. The NEQSP, originally adopted in 1995 and most recently corrected in 2009, notes that Pedrick Road will also be a four-lane facility. The NEQSP also notes that the roads will be constructed based on specific applications in the PUD review process or equivalent mechanism. The City's zoning map identifies Pedrick Road as the city limit, aside from an area along Sparling Lane. This would appear to negate development of a four-lane roadway as the City does not control the east side of the roadway. The City of Dixon model results also indicate the one lane facility for northbound traffic with a two-lane facility for southbound traffic as a result of the NEQSP development. The 2040 No Project condition assumes that Pedrick Road will have two lanes in the southbound direction except along the project frontage which is consistent with the NEQSP review process. The two lanes along the project frontage are assumed constructed with development of the project. Based on the growth in traffic volumes and the 55 mph speed limit along Pedrick Road it is also assumed that northbound left turns will be prohibited into the project driveway.
- Professional Drive. Professional Drive is projected to ultimately be a 4-lane facility. Based on the NEQSP it is assumed that under the "No Project" conditions Professional Drive will be a two-lane facility along the DIC project frontage. The remainder of Professional Drive is assumed to be built out to the 4-lane facility. Left turn lanes are also assumed to be constructed at intersections.

- Vaughn Road. Under the 2040 No Project scenario Vaughn Road is assumed to be constructed to its ultimate 4-lane roadway. The inside eastbound lane is also assumed to be a left turn lane with the roadway narrowing to a two lane facility between Professional Drive and the west side of the UPRR crossing.
- Commercial Drive. Commercial Drive will be constructed as part of the Campus 257 project. This roadway will provide access between Professional Drive and Pedrick Road on the south side of the Campus 257 project.
- Dorset Drive. Dorset Drive will be extended as a four-lane roadway from its existing terminus to Professional Drive. The intersection is assumed to be all-way stop controlled with left turn lanes on all approaches. East of Professional Drive it will be a two-lane roadway within the Campus 257 project.

Figure 7 presents the projected 2040 intersection turning movements and lane configurations.



LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR



R1-1 STOP SIGN

AWS ALL WAY STOP

2040 Intersection Levels of Service. The identified Year 2040 volumes were used to recalculate operating Levels of Service at the study intersections. Table 11 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2040 condition. Two driveways were analyzed along Professional Drive with development of the proposed Tech Campus. While there will likely be multiple driveways no plans currently exist for the Tech Campus site. The two driveways are assumed to be opposite the east and west driveways of DIC. This should provide a worst-case assessment of traffic conditions.

Three intersections, Pedrick Road at I-80 Eastbound Ramps – Sparling Lane, Pedrick Road at Professional Drive and Pedrick Road at Professional Drive will operate at LOS E or F conditions in the p.m. peak.

Traffic Signal Warrants. 2040 traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals could be needed. Three intersections meet the peak hour warrant. These include Pedrick Road at I-80 Westbound Ramps – Sievers Road, Pedrick Road at I-80 Eastbound Ramps – Sparling Way and Pedrick Road at Professional Drive.

2040 Intersection Queues. Table 12 identifies peak period queues within turn lanes at the Year 2040 base condition. Three locations where the 95th percentile queues exceed the available storage are highlighted. Queues in the northbound left turn lane at the Pedrick Road / I-80 Eastbound Ramps – Sparling Way are projected to reach 133 feet in the a.m. peak hour and 188 feet in the p.m. peak hour while the eastbound right turn lane is projected to extend to 38 feet. The westbound right turn lane at the 1st Street / Dorset Drive intersection is projected to lengthen to 215 feet.

**TABLE 11
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2040 PLUS PROJECT CONDITIONS**

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2040		2040 Plus Project		2040		2040 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd	AWS	C	15.2	C	24.8	E	45.0	F	68.7	Yes ³
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln	AWS	C	24.0	F	63.1	F	84.7	F	128.2	Yes ³
3. Pedrick Rd / Vaughn Rd		²								
4. N. First St / Dorset Dr	Signal	B	18.8	C	24.0	C	29.1	C	29.7	N/A
5. N/ First St / Vaughn Rd	Signal	C	25.0	C	25.2	C	24.4	C	26.6	N/A
6. Pedrick Rd / Professional Dr	EB Stop ¹	C	19.9	F	77.7	F	73.8	F	566.0	Yes ³
7. Vaughn Rd / Professional Dr	SB Stop ¹	A	8.9	B	9.0	A	9.3	A	9.4	No
8. Pedrick Rd / Project Driveway	EB Stop ¹	---	---	B	11.2	---	---	B	11.5	No
9. Professional Dr / Tech Campus (E)	NB/SB Stop ¹	B	11.7	C	15.1	B	14.0	C	23.9	No
10. Professional Dr / Tech Campus (W)	NB/SB Stop ¹	B	11.5	B	13.5	B	13.6	C	18.9	No
11. Professional Dr / Dorset Dr	AWS Stop	B	13.5	B	12.9	B	13.5	C	17.4	No
<p>AWS – all way stop ¹LOS for worst approach shown ²Intersection 3 not studied after Commercial Drive ‘bypass’ constructed ³meets rural warrant in a.m. and p.m. peak hour Red indicated threshold exceeded</p>										

TABLE 12 2040 PLUS PROJECT PEAK HOUR QUEUES					
Location	Storage Length* (feet)	AM Peak Hour Queue (feet)		PM Peak Hour Queue (feet)	
		2040	2040 plus Project	2040	2040 plus Project
1. Pedrick Rd / I-80 WB Ramps – Sievers Rd					
NB left	120	<25	<25	30	33
NB	---	73	85	73	80
SB left	65	<25	<25	53	63
SB	---	<25	<25	28	25
EB right	100	<25	<25	<25	<25
EB through-left	---	<25	<25	<25	<25
WB through-left	---	90	220	390	563
WB right	70	<25	<25	<25	<25
2. Pedrick Rd / I-80 EB Ramps – Sparling Ln					
NB left	65	133	170	188	413
NB	---	25	35	38	148
SB left	100	<25	<25	<25	<25
SB	---	190	523	648	835
EB through-left	---	70	68	65	68
EB right	30	38	95	<25	28
WB through-left		<25	<25	<25	<25
WB right	30	<25	<25	<25	<25
4. N. 1 st St / Dorset Dr					
NB left turn	200	35	35	45	45
NB right turn	320	135	140	143	150
SB left turn	235 (2)	55	148	118	103
SB right turn	140	30	30	38	35
EB left turn	155 (2)	<25	<25	38	35
EB right turn	165	<25	<25	63	60
WB left turn	195 (2)	33	33	185	210
WB right turn	195	<25	88	215	208
5. N. 1 st St / Vaughn Dr					
NB left turn	290	43	43	60	60
SB left turn	285	100	110	28	25
EB left turn	275	230	223	153	153
WB left turn	180 ¹	48	45	175	238 ²
6. Pedrick Rd / Professional Dr					
NB Left	150	<25	<25	<25	<25
EB Left	---	50	190	273	1298
EB Right	--- ¹	---	<25	---	<25
* includes portion of taper without blocking adjacent lane					
¹ Length of left turn lane prior to TWLTL					
² Queue extends into TWLTL					
Highlighted values indicate queue length in excess of available storage					

TABLE 12 (con't)					
2040 PLUS PROJECT PEAK HOUR QUEUES					
Location	Storage Length* (feet)	AM Peak Hour Queue (feet)		PM Peak Hour Queue (feet)	
		2040	2040 plus Project	2040	2040 plus Project
7. Vaughn Rd / Professional Dr					
EB Left	200 ¹	<25	<25	<25	<25
SB Right	---	<25	<25	<25	<25
9. Professional Dr / Tech Campus D/W (E)					
EB Left	200 ¹	---	<25	---	<25
WB Left	200	<25	<25	<25	<25
10. Professional Dr / Tech Campus D/W (W)					
EB Left	200 ¹	---	<25	---	<25
WB Left	200	<25	<25	<25	<25
11. Professional Dr / Dorset Dr					
WB Left	150	<25	<25	<25	<25
EB Left	---	<25	33	33	118
NB Left	200	<25	<25	<25	<25
SB Left	200	<25	<25	<25	<25
* includes portion of taper without blocking adjacent lane					
¹ added in 'plus Project' scenario					
Intersection #8 is right-in, right-out only and queues were not shown for the EB right movement					

2040 Plus Project

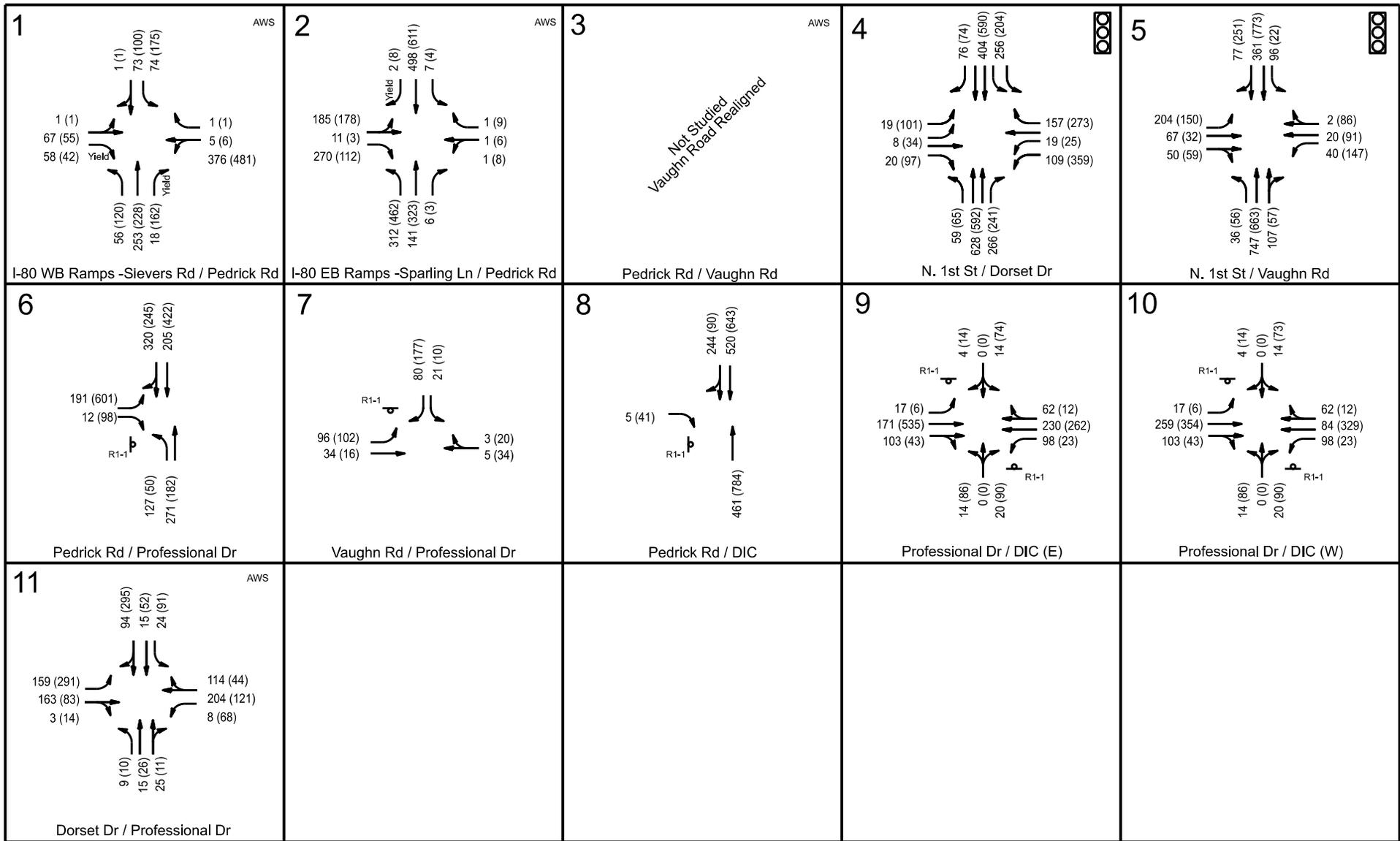
Intersection Levels of Service. The Year 2040 plus Project volumes were used to recalculate operating Levels of Service at the study intersections. Figure 8 presents the “2040 Plus Project traffic” traffic volumes at each study intersection in both a.m. and p.m. peak hours. Table 11 displays the a.m. and p.m. peak hour Levels of Service at each study intersection. Three intersections are projected to operate at LOS E or F conditions. These include Pedrick Road at I-80 Westbound Ramps – Sievers Road, Pedrick Road at I-80 Eastbound Ramps – Sparling Lane and Pedrick Road at Professional Drive. Buildout of Professional Drive to four lanes is presumed as part of the DIC frontage improvements while southbound Pedrick Road is also assumed to be built out to include two southbound lanes.

Traffic Signal Warrants. 2040 Plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. The Pedrick Road at I-80 Westbound Ramps – Sievers Road and Pedrick Road at I-80 Eastbound Ramps – Sparling Lane intersections will continue to meet the peak hour warrant as will the Pedrick Road / Professional Drive intersection.

Intersection Queues. Table 12 identifies peak period queues for the Year 2040 plus Project condition assuming the addition of project trips. Project trips will result in additional queuing throughout the study area with four locations projected to exceed the available storage. These include the northbound left turn lane and eastbound right turn lane at the Pedrick Road / I-80 Eastbound Ramps – Sparling Lane intersection. Additionally, the westbound left and right turn lanes at the N. 1st Street / Dorset Drive intersection are projected to exceed the available storage, with the longest queue in the left turn lanes projected to be 210 feet and the queue in the right turn lane to be 208 feet. Queues along the shared through-left lane on the Westbound I-80 Off-Ramp are projected to exceed 550 feet. Adequate storage (1,100 feet) is available along the ramp before reaching the I-80 mainline while the queue in the eastbound left turn lane along Professional Drive at Pedrick Road is projected to extend over ¼ mile (1298 feet). The westbound left turn lane along Vaughn Road at N. 1st Street will exceed the available storage, but the queue will be able to extend into the TWLTL without blocking the adjacent through lane.

SITE OVERVIEW

The Dixon Innovation Center project is a 37.6± acre industrial business park in the northeast corner of the northeast Quadrant Specific Plan area in the City of Dixon. The buildings within the site are proposed to be laid out aligned linearly in both east-west and north-south directions. Access to the site will include a temporary full access driveway along Pedrick Road that will revert to right-in, right-out access by 2040 and four proposed full access driveways along Professional Drive. The Pedrick Road driveway will provide a main east-west spine to the west side of the project while each of the Professional Drive driveways will provide access across the site to the north side of the property. The layout will allow inbound traffic from I-80 to enter the site without having to turn onto Professional Drive. It is expected almost all outbound traffic will exit onto Professional Drive when departing the site in all directions.



LEGEND

XX - AM PEAK HOUR
 (XX) - PM PEAK HOUR



SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

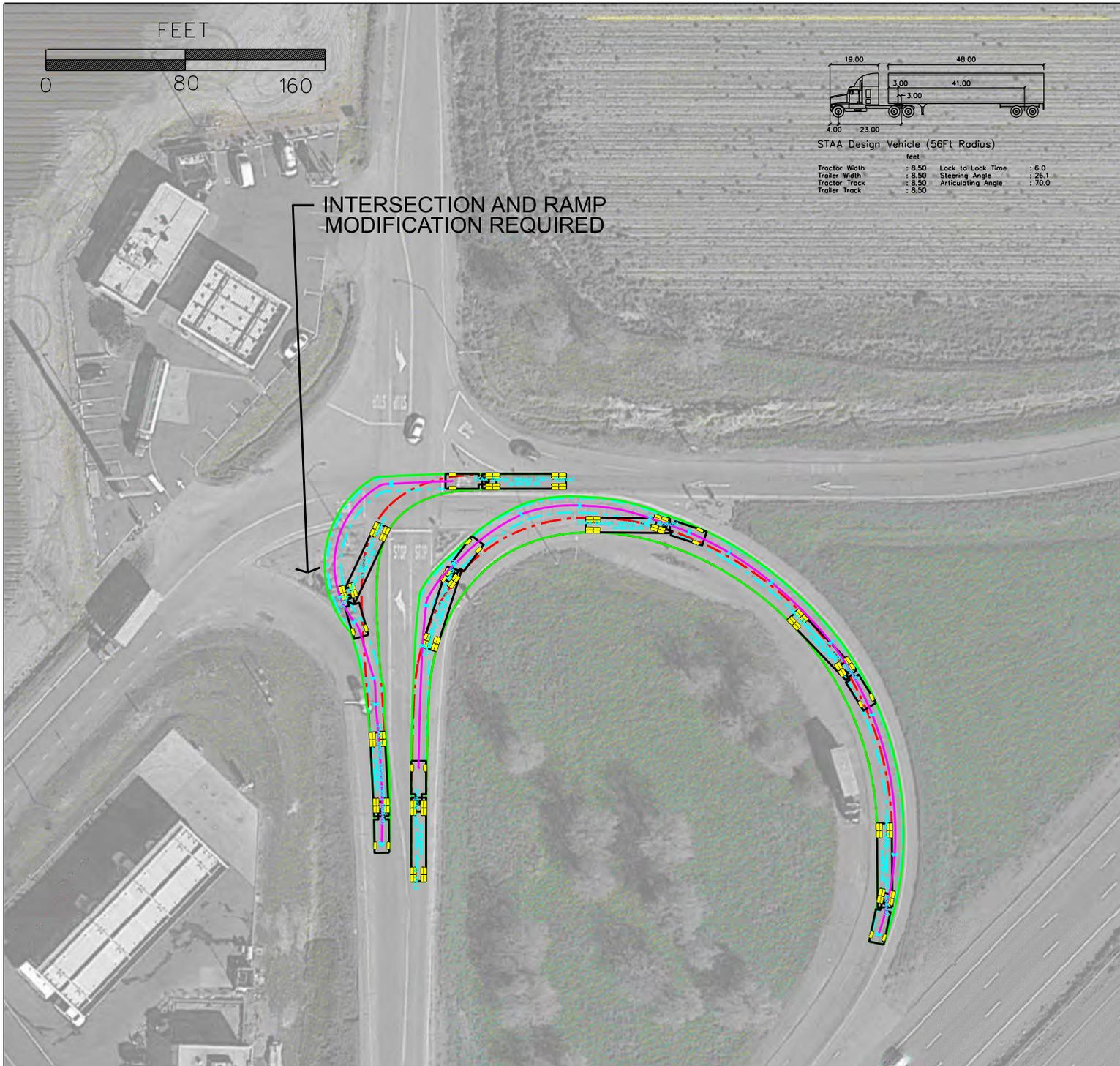
Alternative Transportation Modes – The City’s General Plan identifies existing and proposed pedestrian and bicycle facilities. Future development of the NEQSP area includes extension of the City’s bicycle and pedestrian facilities. The General Plan identifies a Class I Multi-Use Path paralleling I-80 between N. First Street to just east of Pedrick Road. Pedrick Road is also identified to include a similar facility from I-80 south to the Vaughn Road realignment. Professional Drive is identified as an arterial roadway with a Class IV separated bikeway. In addition, Dorset Drive is shown to include Class II Bicycle Lanes to Professional Drive. The project should install those facilities along the project frontage consistent with the City’s Active Transportation Plan prepared by the Solano Transportation Authority.

Truck Access - The DIC will be located on the north side of Professional Drive while the Tech Campus portion of the Campus 257 project will be located on the south side. Inbound truck access can be considered along Pedrick Road with full accessibility provided at the Professional Drive driveways.

A review of truck routes shows that Pedrick Road is identified by the City as a truck route between I-80 to the UPRR crossing north of Vaughn Road. There is no identified STAA signage along I-80 that identifies Pedrick Road as a Terminal Route or Service Route.

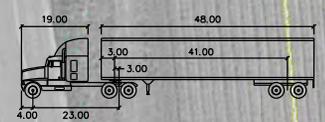
AutoTurn software was used to assess whether STAA vehicles can utilize the Pedrick Road interchange. The *Google Earth* spatial database was used as the base to simulate truck paths. Figures 9 and 10 show the STAA routes to and from the westbound and eastbound on- and off-ramps at I-80 at Pedrick Road. The *AutoTurn* assessment indicates that the eastbound I-80 off-ramp and westbound I-80 on-ramp can currently accommodate STAA vehicles. Westbound off-ramp and eastbound on-ramp turning movements departing the intersections will overtop outside curbs or require the vehicle to cut across the opposing approach lane. Should the Pedrick Road interchange be used for truck access both intersections will need to be upgraded to accommodate an STAA vehicle.

An AutoTurn assessment was also completed to assess site access for the initial site plans, considering a business park and a warehouse facility. Figures A-1 and A-2 illustrate access based on these initial site layouts. All truck traffic should occur along Professional Drive where 45-foot driveways are proposed. Figure A-1 presents truck access for the business park site plan. This plan can accommodate up to a WB-40 truck with trucks projected to be limited to the far west side of the site. Figure A-2 illustrates STAA truck access with a warehouse as the primary end user. As the exact uses are not identified and the site plan could change it is recommended that an additional truck assessment be completed during the design stage to confirm the design truck can be accommodated.



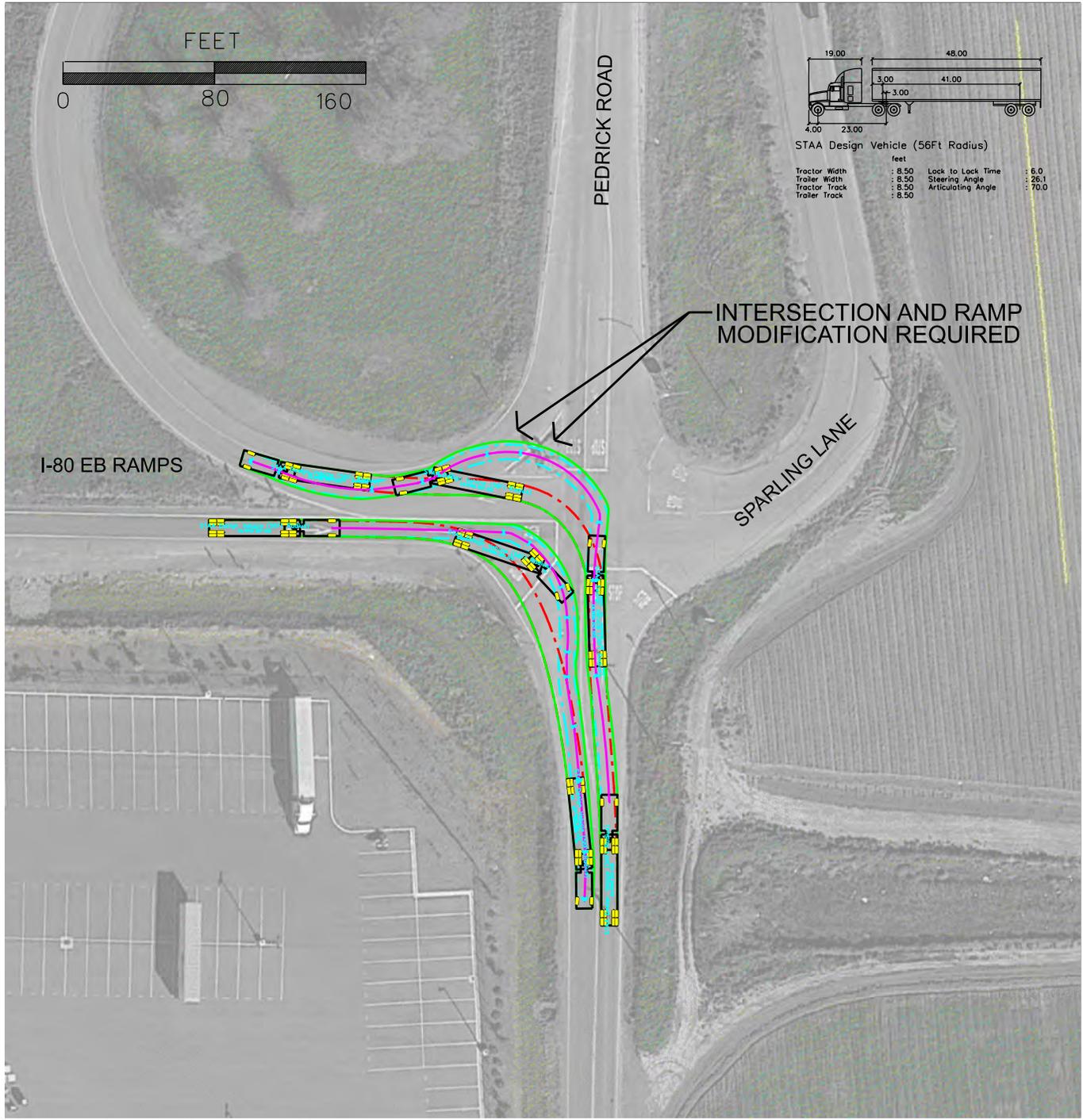
STAA - AUTOTURN I-80 WB RAMPS / PEDRICK ROAD

FIGURE 9



STAA Design Vehicle (56Ft Radius)

feet	
Tractor Width	: 8.50
Trailer Width	: 8.50
Tractor Track	: 8.50
Trailer Track	: 8.50
Lock to Lock Time	: 5.0
Steering Angle	: 26.1
Articulating Angle	: 70.0



STAA - AUTOTURN I-80 EB RAMPS / PEDRICK ROAD

FIGURE 10

FINDINGS / RECOMMENDATIONS / IMPROVEMENTS

The preceding analysis has identified project effects that may occur without recommendations or improvements to the roadway network. The text that follows identifies a strategy for recommendations to the 'No Project' conditions or improvements to the 'Plus Project' conditions.

Existing Conditions

All intersections operate at acceptable levels of service.

The queue in the northbound left turn lane at the Pedrick Road at I-80 EB Ramps – Sparling Lane intersection exceeds the available storage. Storage length for this movement is constrained as Pedrick Road is a two-lane roadway. The queue exceeds the available storage by three feet, which is likely unnoticeable during the peak hour.

2025 Conditions

All intersections will operate at acceptable levels of service. Queues within turn lanes are shown to be contained within the turn lanes.

2025 Plus Project Conditions

All intersections except the Pedrick Road / I-80 Eastbound Ramps – Sparling Lane intersection will operate within acceptable City of Dixon LOS thresholds. The following improvements are noted:

- The project shall contribute its fair share to the cost of regional circulation improvements via the existing Citywide traffic impact mitigation (TIM) fee program.
- Pedrick Road / I-80 Eastbound Ramps – Sparling Lane: The overall intersection LOS will decline to LOS E conditions with the project. Installation of a traffic signal at the location will result in the intersection operating at LOS C conditions (27.2 spv). The project would be responsible for installing the signal and should pay their fair share of signalization as the intersection will operate unacceptably and continue to meet the peak hour warrant in the 2040 No Project scenario. The fair share contribution (19.8%) is based on the project traffic divided by the future traffic at the intersection.

Queues will exceed the available storage in the northbound left turn lane and eastbound right turn lane. Additionally, queues along the southbound approach to the intersection will be about 350 feet. With signalization the queues along each approach should allow clearing during each green phase.

2040 Conditions

Three intersections will operate below the City LOS D threshold under 2040 plus Project conditions. These include the Pedrick Road / I-80 Westbound Ramps – Sievers Road intersection, Pedrick Road at I-80 Eastbound Ramps – Sparling Lane and the Pedrick Road / Professional Drive intersection. In addition, the westbound queues in the right turn lane along Dorset Drive at N. First Street will exceed the available storage. All are projected to operate at LOS E or F conditions. The following improvements are noted:

Pedrick Road / I-80 Westbound Ramps – Sievers Road: The overall intersection LOS will decline to LOS E conditions. Installation of a traffic signal at the location will result in the intersection operating at LOS C conditions (28.3 spv). With signalization the westbound shared left-through lane queue will shorten to about 293 feet.

Pedrick Road / I-80 Eastbound Ramps – Sparling Lane: The overall intersection LOS will decline to LOS F conditions. Installation of a traffic signal, the addition of a shared 210-foot southbound through-right lane, extending the eastbound right turn lane to about 100 feet and the lengthening of the northbound left turn lane to about 300 feet will result in the intersection operating at LOS C conditions in the p.m. peak hour (23.1 spv); the added southbound lane would not reach the structure over I-80. After implementation of the identified improvements the queues in the northbound left turn lane and eastbound right turn lane can be contained in each turn lane while the southbound queues will be about 175 feet.

- N. First Street / Dorset Drive: Retiming of the N. 1st Street / Dorset Drive signal will result in LOS C (25.4 spv) conditions at the intersection and allow queues in the westbound right turn lane to be accommodated without blocking the adjacent through lane.
- Pedrick Road / Professional Drive: The overall intersection LOS will decline to LOS F conditions. Installation of a traffic signal will result in the intersection operating at LOS B conditions in the p.m. peak hour (19.0 spv).

2040 plus Project Conditions

Three intersections will continue to operate below the City LOS D threshold under 2040 plus Project conditions. These include the Pedrick Road / I-80 Westbound Ramps – Sievers Road intersection, Pedrick Road at I-80 Eastbound Ramps – Sparling Lane and Pedrick Road at Professional Drive. All are projected to operate at LOS F conditions. In addition, the westbound queues in the left and right turn lanes along Dorset Drive at N. First Street will exceed the available storage. The following improvements are noted:

- Pedrick Road / I-80 Westbound Ramps – Sievers Road: The overall intersection LOS will decline to LOS F conditions. Installation of the traffic signal noted under the 2040 scenario will result in the intersection operating at LOS C conditions (31.8 spv). The project would be responsible for their fair share of the improvements. The fair share contribution (15.3%). With signalization the westbound shared left-through lane queue will shorten to about 353 feet.
- Pedrick Road / I-80 Eastbound Ramps – Sparling Lane: The overall intersection LOS will decline to LOS F conditions. Installation of the improvements noted under the 2040 scenario will result in the intersection operating at LOS C conditions in the a.m. peak hour (21.3 spv) and p.m. peak hour (23.4 spv); the added southbound lane would not reach the structure over I-80. The project would be responsible for their fair share of the improvements. The fair share contribution is (19.8%). After implementation of the identified improvements the queues in the northbound left turn lane and eastbound right turn lane can be contained in each turn lane while the southbound queues will be about 210 feet.
- N. First Street / Dorset Drive: Retiming of the N. 1st Street / Dorset Drive signal will result in the intersection operating at LOS C (24.6 spv) and allow queues in the westbound right and left turn lanes to be accommodated without blocking the adjacent through lanes.
- Pedrick Road / Professional Drive: The overall intersection LOS will decline to LOS F conditions. Installation of the improvements noted under the 2040 scenario will result in the intersection operating at LOS in the a.m. peak hour (12.7 spv) and LOS C in the p.m. peak hour (22.1 spv). The project would be responsible for their fair share of the improvements identified under 2040 conditions (22.6%). After the improvements at this intersection are completed the eastbound left turn queue will be 70 feet in the a.m. peak hour and 345 feet in the p.m. peak hour.

Table 13 presents the mitigated intersections and resulting levels of service.

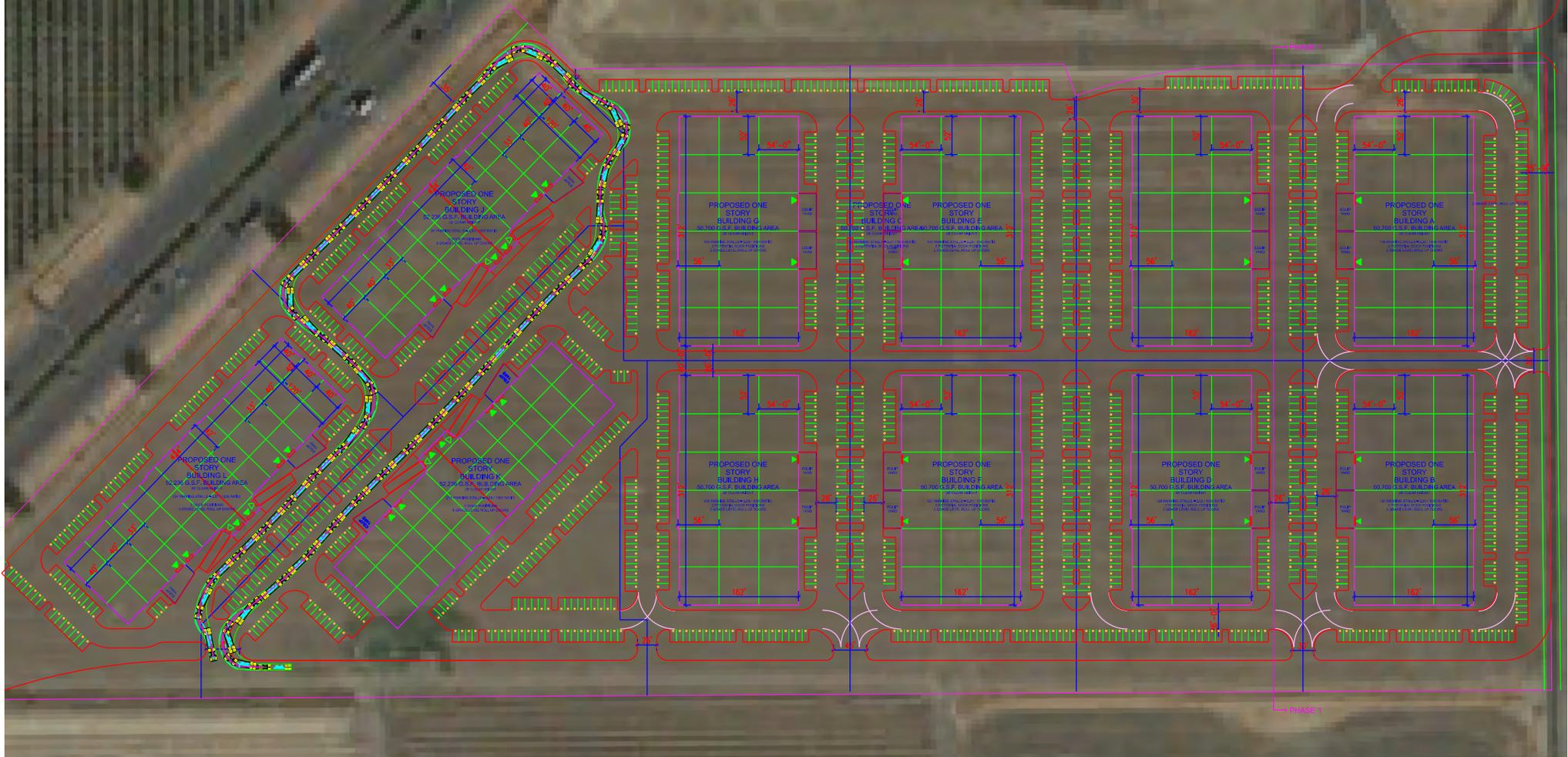
TABLE 13			
PEAK HOUR LEVELS OF SERVICE AFTER RECOMMENDATIONS AND IMPROVEMENTS			
Location	2025 plus Project Peak Hour¹	2040 Peak Hour¹	2040 plus Project Peak Hour¹
	Average Delay	Average Delay	Average Delay
3. Pedrick Rd / I-80 WB Ramps – Sievers Rd	---	C / 28.3 ²	C / 31.8 ⁵
4. Pedrick Rd / I-80 EB Ramps – Sparling Ln	C / 27.2 ¹	C / 23.1 ³	C / 23.4 ⁶
4. N. 1 st St / Dorset Dr	---	C / 25.4 ⁴	C / 24.6 ⁴
6. Pedrick Rd / Professional Dr	---	B / 19.0 ²	C / 22.1 ⁵
Note –LOS results shown for worst case peak hour ¹ worst LOS shown ² install traffic signal ³ previously installed traffic signal; install 210 ft SB shared through-right lane, extend eastbound right turn lane 100 ft, lengthen NB left lane to 300 ft ⁴ retime signal (reduces queues to within turn lanes) ⁵ previously installed traffic signal ⁶ previously installed improvements			

REFERENCES

1. Transportation Research Board, *Highway Capacity Manual*, 7th Edition
2. Caltrans *Highway Design Manual*, 2020
3. California *Manual of Uniform Traffic Control Devices*, 2014
4. Institute of Transportation Engineers. 2021. *Trip Generation*, 11th Edition. Washington, D.C.]
5. *Trip Generation Handbook*, Institute of Transportation Engineers, 3rd Edition, 2017
6. *General Plan 2040*, City of Dixon, Adopted May 2021
7. *Dixon Streets Master Plan*, DKS Associates. October 2021
8. *City of Dixon Northeast Quadrant Specific Plan*, April 1995, Corrected, June 2009
9. *Solano County Active Transportation Plan*, Solano Transportation Agency, 2020
10. Statewide Integrated Traffic Records System, California Highway Patrol, State of California, <https://iswitrs.chp.ca.gov>

APPENDICES

(under separate cover)



OPTION A - INDUSTRIAL BUSINESS PARK
AUTOTURN - WB-40

FIGURE A-1



OPTION B - WAREHOUSING
AUTOTURN - STAA

Location: N. LINCOLN ST./VAUGHN ROAD & ROUTE 113

Designed By:

System:

District: 04

Installed By: MRL

Master At:

I/C:

Service Info:

Timing Change:

Date Start:

Date End:

Designed:

Installed:

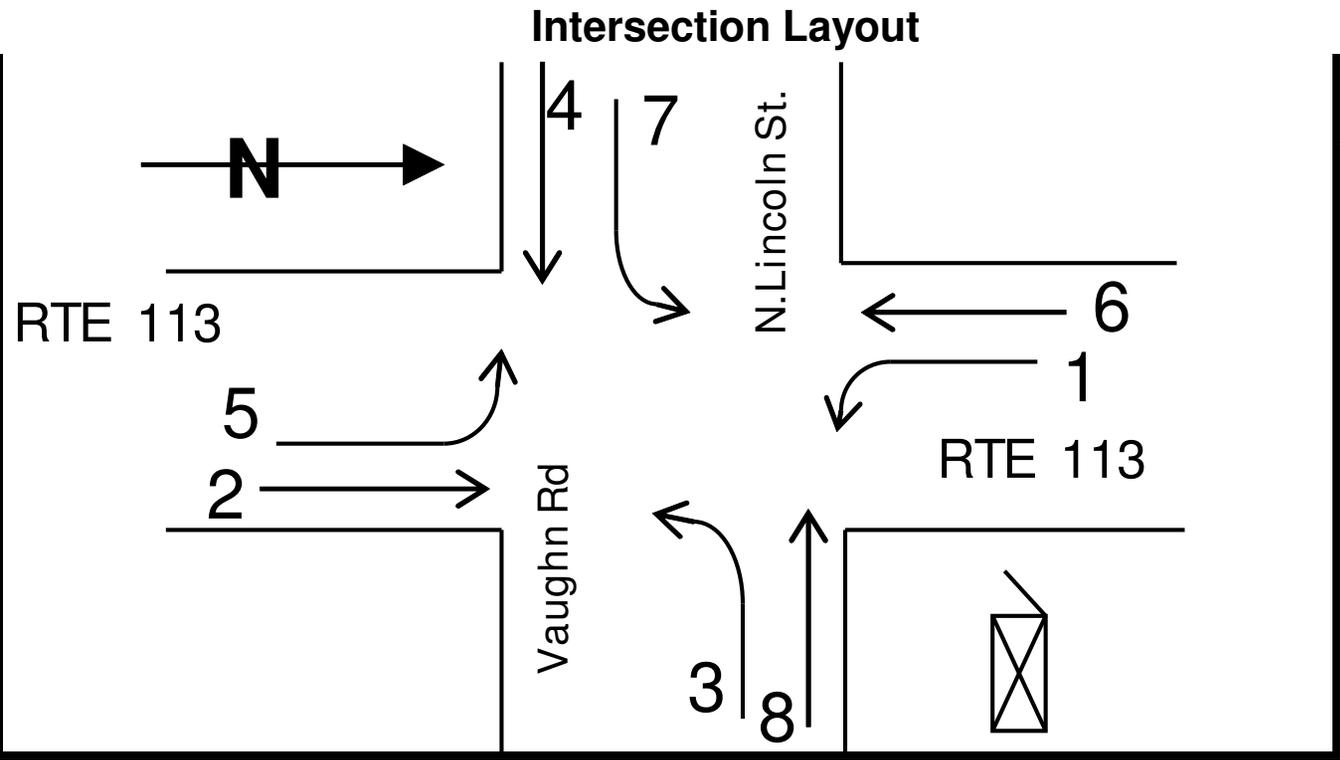
- 1) S/B LEFT ON ROUTE 113
- P 2) N/B THRU ON ROUTE 113
- H 3) W/B LEFT ON VAUGHN ROAD
- A 4) E/B THRU ON N. LINCOLN ST.
- S 5) N/B LEFT ON ROUTE 113
- E 6) S/B THRU ON ROUTE 113
- 7) E/B LEFT ON N. LINCOLN ST.
- 8) W/B THRU ON VAUGHN ROAD

FLASH

- [R]
- [R]
- [R]
- [R]
- [R]
- [R]
- [R]
- [R]

O A)
V B)
E C)
R D)
L E)
A F)
P

- []
- []
- []
- []
- []
- []



Comments and Notes:

CABINET E# E23C5
Signal turn-on 10/25/04 GG.
Adjusted Ped. & Bike Timing 6/7/11 MRL.
Implemented Yellow Timing 10/11/16 MRL.
TSCP Ver. 2.23 Build 2 9/15/2020 MRL.
Implemented LPI on 3/15/2023 MRL.

RAM Checksum

Page 2: DDEA	Page 8: 85AF
Page 3: C30B	Page 9: D2FD
Page 4: F29E	Page 10: 8E3F
Page 5: 191A	Page 11: FDAC
Page 6: 191A	Page 12: D68F
Page 7: 3805	Page 13: 86F7

CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 3 4 5 6 7 8
Restricted	.....

Phase Features (2-1-1-4)	
Double Entry	. 2 . 4 . 6 . 8
Rest In Walk	.....
Rest In Red	.....
Walk 2	.....
Max Green 2	.....
Max Green 3	.....

Startup (2-1-1-5)	
First Green Phases	. 2 ... 6 ..
Yellow Start Phases	.....
Vehicle Calls	1 2 3 4 5 6 7 8
Pedestrian Calls	. 2 . 4 . 6 . 8
Yellow Start Overlaps	.....
Startup All-Red	6.0

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 ... 6 ..
Vehicle Max	.....
Pedestrian	.....
Bicycle	.....

Phase Locks (2-1-1-3)	
Red	.....
Yellow	.....
Force/Max	.....

Call To Phase (2-1-2-1)		Omit On Green	
1	.....	1	.....
2	.....	2	.....
3	.....	3	.....
4	.....	4	.....
5	.....	5	.....
6	.....	6	.....
7	.....	7	.....
8	.....	8	.....

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	.....
Yellow Flash Overlap	.....
Flash In Red Phases	.....
Flash In Red Overlaps	.....

Special Operation (2-1-2-3)	
Single Exit Phase	.....
Driveway Signal Phases	.....
Driveway Signal Overlaps	.....
Leading Ped Phases	. 2 . 4 . 6 . 8

Protected Permissive (2-1-2-4)	
Protected Permissive	.....

Pedestrian (2-1-3)	
P1	.....
P2	. 2
P3	.....
P4	... 4 ...
P5	.....
P6	..... 6 ..
P7	.....
P8	..... 8

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A
B
C
D
E
F

PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	3	0	3	0	3	0	3
Flash Don't Walk	0	21	0	25	0	21	0	25
Minimum Green	11	10	11	11	10	10	11	11
Det Limit	0	30	0	0	0	30	0	0
Max Initial	0	0	0	0	0	0	0	0
Max Green 1	15	25	15	15	15	25	15	15
Max Green 2	0	0	0	0	0	0	0	0
Max Green 3	0	0	0	0	0	0	0	0
Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Gap	2.0	5.0	2.0	2.0	2.0	5.0	2.0	2.0
Minimum Gap	1.0	3.0	1.0	1.0	1.0	3.0	1.0	1.0
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reduce Gap By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Yellow	3.7	4.8	3.7	3.7	3.7	4.8	3.7	3.7
All-Red	0.0	1.0	0.0	0.5	0.0	1.0	0.0	0.5
Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	4	0	4	0	4	0	4
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor			.....										
Plan 2	Green Factor			.....										
Plan 3	Green Factor			.....										
Plan 4	Green Factor			.....										
Plan 5	Green Factor			.....										
Plan 6	Green Factor			.....										
Plan 7	Green Factor			.....										
Plan 8	Green Factor			.....										
Plan 9	Green Factor			.....										

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	.....
Veh Min	Veh Max
. 2 ... 6 ..	.....
Ped	Bike
.....
Cond	Cond Grn
.....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1
Plan 2
Plan 3
Plan 4
Plan 5
Plan 6
Plan 7
Plan 8
Plan 9

MANUAL COMMANDS

Manual Plan (4-1)		Plan: 1-29
Plan	OffSet	254 = Flash
	A	255 = Free
		Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets]

Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor			.....										
Plan 12	Green Factor			.....										
Plan 13	Green Factor			.....										
Plan 14	Green Factor			.....										
Plan 15	Green Factor			.....										
Plan 16	Green Factor			.....										
Plan 17	Green Factor			.....										
Plan 18	Green Factor			.....										
Plan 19	Green Factor			.....										

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11
Plan 12
Plan 13
Plan 14
Plan 15
Plan 16
Plan 17
Plan 18
Plan 19

Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets]

Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor			.....										
Plan 22	Green Factor			.....										
Plan 23	Green Factor			.....										
Plan 24	Green Factor			.....										
Plan 25	Green Factor			.....										
Plan 26	Green Factor			.....										
Plan 27	Green Factor			.....										
Plan 28	Green Factor			.....										
Plan 29	Green Factor			.....										

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21
Plan 22
Plan 23
Plan 24
Plan 25
Plan 26
Plan 27
Plan 28
Plan 29

DETECTORS

Detector Attributes (5-1)				Slot	Detector Configuration (5-2)				
Det	Type	Phases	Lock		Det	Delay	Extend	Recall	Port
1	COUNT+CALL+EXTEND	1.....	NO	I1U	1			10	3.2
2	COUNT+CALL+EXTEND	1.....	NO	I1L	2			10	7.2
3	COUNT+CALL+EXTEND	.2.....	NO	I2U	3			10	1.1
4	COUNT+CALL+EXTEND	.2.....	NO	I2L	4			10	1.5
5	COUNT+CALL+EXTEND	.2.....	NO	I3U	5			10	4.5
6	CALL+EXTEND	.2.....	NO	I3L	6			10	6.2
7	LIMITED	.2.....	NO	I4U	7			10	2.1
8	LIMITED	.2.....	NO	I4L	8			10	7.4
9	COUNT+CALL+EXTEND	..3.....	NO	I5U	9			10	3.4
10	COUNT+CALL+EXTEND	..3.....	NO	I5L	10			10	7.6
11	COUNT+CALL+EXTEND	...4....	NO	I6U	11	10		10	1.3
12	COUNT+CALL+EXTEND	...4....	NO	I6L	12	10		10	1.7
13	COUNT+CALL+EXTEND	...4....	NO	I7U	13			10	4.7
14	CALL+EXTEND	...4....	NO	I7L	14			10	6.4
15	COUNT+EXTEND	...4....	NO	I8U	15			10	2.3
16	COUNT+EXTEND	...4....	NO	I8L	16			10	7.8
17	COUNT+CALL+EXTEND	1.....	NO	I9U	17			10	3.6
18	COUNT+CALL+EXTEND	..3.....	NO	I9L	18			10	3.8
19	COUNT+CALL+EXTEND	.2.....	NO	I10U	19			10	4.1
20	COUNT+CALL+EXTEND	...4....	NO	I10L	20			10	4.2
21	COUNT+CALL+EXTEND	...5...	NO	J1U	21			10	3.1
22	COUNT+CALL+EXTEND	...5...	NO	J1L	22			10	7.1
23	COUNT+CALL+EXTEND	....6..	NO	J2U	23			10	1.2
24	COUNT+CALL+EXTEND	....6..	NO	J2L	24			10	1.6
25	COUNT+CALL+EXTEND	....6..	NO	J3U	25			10	4.6
26	CALL+EXTEND	....6..	NO	J3L	26			10	6.3
27	LIMITED	....6..	NO	J4U	27			10	2.2
28	LIMITED	....6..	NO	J4L	28			10	7.3
29	COUNT+CALL+EXTEND	.....7.	NO	J5U	29			10	3.3
30	COUNT+CALL+EXTEND	.....7.	NO	J5L	30			10	7.5
31	COUNT+CALL+EXTEND	.....8	NO	J6U	31	10		10	1.4
32	COUNT+CALL+EXTEND	.....8	NO	J6L	32	10		10	1.8
33	COUNT+CALL+EXTEND	.....8	NO	J7U	33			10	4.8
34	CALL+EXTEND	.....8	NO	J7L	34			10	6.5
35	COUNT+EXTEND	.....8	NO	J8U	35			10	2.4
36	COUNT+EXTEND	.....8	NO	J8L	36			10	7.7
37	COUNT+CALL+EXTEND	...5...	NO	J9U	37			10	3.5
38	COUNT+CALL+EXTEND	...7...	NO	J9L	38			10	3.7
39	COUNT+CALL+EXTEND	....6..	NO	J10U	39			10	4.3
40	COUNT+CALL+EXTEND	.....8	NO	J10L	40			10	4.4
41	PEDESTRIAN	.2.....	NO	I12U	41			10	5.1
42	PEDESTRIAN	...4....	NO	I12L	42			10	5.3
43	PEDESTRIAN	....6..	NO	I13U	43			10	5.2
44	PEDESTRIAN	.....8	NO	I13L	44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	.....
Detectors 9-16	.....
Detectors 17-24	.....
Detectors 25-32	.....
Detectors 33-40	.....
Detectors 41-44	.....

System Detector Assignment (5-5)								
Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)	
Enable in Plans	.....

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)								
Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

HOLIDAY TABLES

Floating Holiday Table (8-2-8)				
#	Mnth	Week	DOW	Table
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Fixed Holiday Table (8-2-9)				
#	Mnth	Day	DOW	Table
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Solar Clock Data (8-4)	
North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)	
Hebrew	Ped Recall
Sabbath	.....
Holiday	.....

Daylight Saving (8-6)	
Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)					
#	Start	End	DOW	Action	Phases
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

- Action Codes:
- 0. None
 - 1. Permitted
 - 2. Restricted
 - 4. Veh Min Recall
 - 5. Veh Max Recall
 - 6. Ped Recall
 - 7. Bike Recall
 - 8. Red Lock
 - 9. Yellow Lock
 - 10. Force/Max Lock
 - 11. Double Entry
 - 12. Y-Coord C
 - 13. Y-Coord D
 - 14. Free
 - 15. Flashing
 - 16. Walk 2
 - 17. Max Green 2

- 18. Max Green 3
- 19. Rest in Walk
- 20. Rest in Red
- 21. Free Lag Phases
- 22. Special Functions
- 23. Truck Preempt
- 24. Conditional Service
- 25. Conditional Service
- 26. Leading Ped
- 27. Traffic Actuated Max 2
- 41. Protected Permissive
- 42. Protected Permissive

Action Code = Phases added to normal setting
 100+Action Code = Phases removed
 200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Access Levels:

- 0-Full Access
- 1-Status Only
- 2-Status, Set Pattern, Time
- 3-Status, Set Pattern, Time, Manual Plan
- 4-Reserved
- 5-Full Access with No Set Pattern
- 6-Full Access with No Set Time
- 7-Full Access with No Set Pattern, Manual Plan
- 8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)							
#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	0	.	0	.	0	.	0
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	255
Gateway	0	.	0	.	0	.	254

*Refer to User's Manual for Data and OP Codes

RAILROAD PREEMPTION

RR 1	(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	. 2 . . 5 . . .	.....	.....	.....	.....	. 2 . 4 . 6 . 8	.....	.....	.....
	Clear 2		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clear 3		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Hold		.....	.....	1 2 3 4 5 6 7 8	.....	.....	.....	.....	.....	A B C D E F
	Exit	5	Exit Parameters (3-1-5)				Configuration (3-1-6)				
Min Grn		Phase Green	Overlap Green	Vehicle Call	Ped Call	PR 1	PR 2	Latching	Power-Up		
Ped Clr		.....	.....	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8	2.5	0.0	YES	FLASHING		

RR 2	(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	. . . 4 . . 7 .	.....	.....	.....	.....	. 2 . 4 . 6 . 8	.....	.....	.....
	Clear 2		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clear 3		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Hold		1 2 3 . . 6 . .	.....	.....	. 2 . . . 6 . .	.....	. . . 4 . . . 8	.....	.....	.....
	Exit		Exit Parameters (3-2-5)				Configuration (3-2-6)				
Min Grn		Phase Green	Overlap Green	Vehicle Call	Ped Call	PR 1	PR 2	Latching	Power-up		
Ped Clr		.....	.....	. . . 4 . . 7 .	.....	2.6	0.0	YES	DARK		

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	30	. 2 . . 5 . . .	.....
	Port	Latching	Phase Termination		
	5.5	NO	ADVANCE		

EVB (3-B)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	30	. . . 4 . . 7 .	.....
	Port	Latching	Phase Termination		
	5.6	NO	ADVANCE		

EVC (3-C)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	30	1 6 . .	.....
	Port	Latching	Phase Termination		
	5.7	NO	ADVANCE		

EVD (3-D)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	30	. . 3 8	.....
	Port	Latching	Phase Termination		
	5.8	NO	ADVANCE		

INPUTS

7 Wire I/C (2-1-5-1)					
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)								+
A	1	2	22	3	4	24	9	
B	5	6	26	7	8	28	10	
X	13	14	0	11	12	0	0	

- Loadswitch Codes:
- 0 Unused (no output)
 - 1-8 Vehicle 1-8
 - 9-14 Overlap A-F
 - 21-28 Ped 1-8
 - 41-47 Special Functions
 - 41 Protected Permissive Flashing Phase 1
 - 43 Protected Permissive Flashing Phase 3
 - 45 Protected Permissive Flashing Phase 5
 - 47 Protected Permissive Flashing Phase 7

- 51-57 Special Functions
- 71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											

Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)		Indicator Output			
Enable in Plans	Input	Type	Stop	Go	
Plan 1-9	0.0	NONE	0	0
Plan 11-19	0.0	NONE	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	Force-Offs								Coord	Lag	Min Recall	Restricted
					-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-				
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	.....	.....
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	.....	.....

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					0.0	0.0	0.0	0	0.0	0

Location: DORSET DR. & N. FIRST ST. (ROUTE 113)

Designed By:

System:

District: 04

Installed By: MRL

Master At:

I/C:

Service Info:

Timing Change:

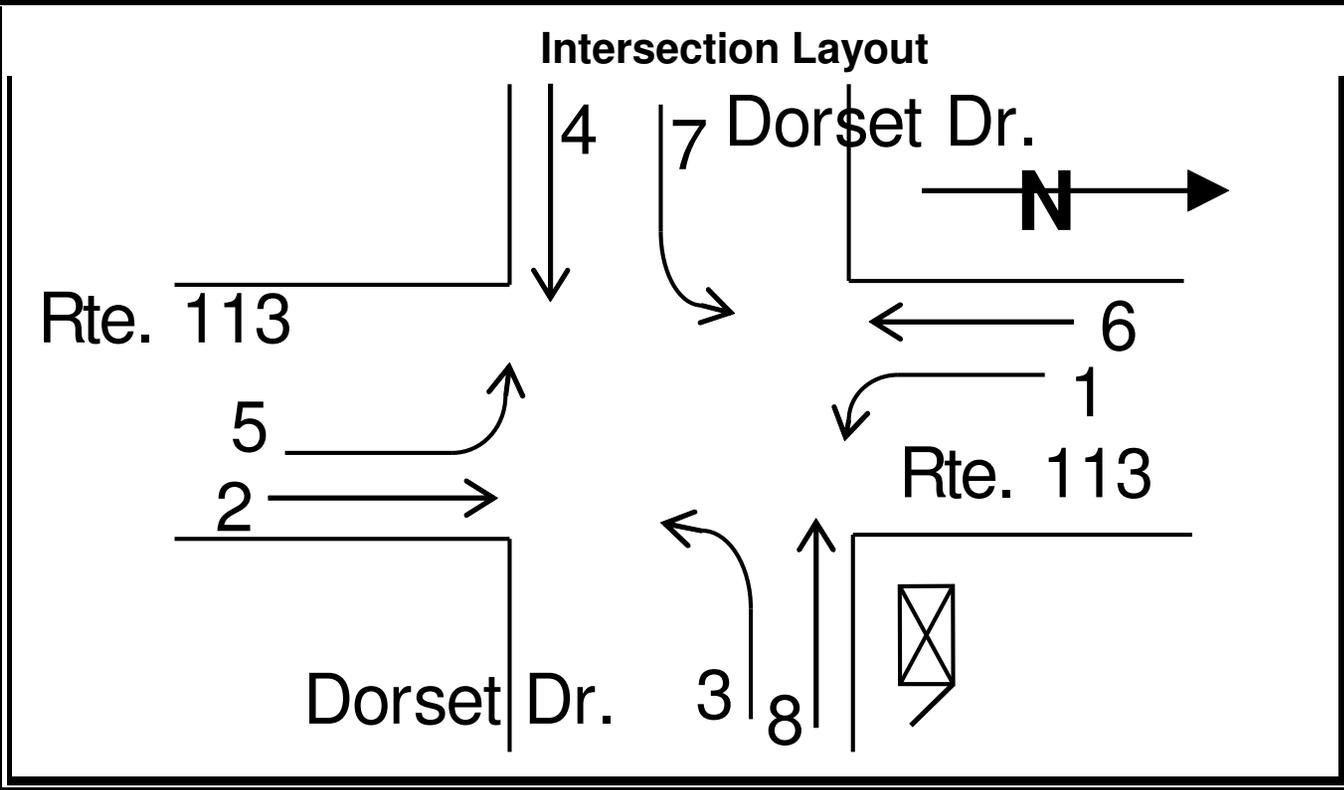
Date Start:

Date End:

Designed:

Installed:

	FLASH
1) S/B LEFT ON ROUTE 113	[R]
P 2) N/B THRU ON ROUTE 113	[R]
H 3) W/B LEFT ON DORSET DR.	[R]
A 4) E/B THRU ON DORSET DR.	[R]
S 5) N/B LEFT ON ROUTE 113	[R]
E 6) S/B THRU ON ROUTE 113	[R]
7) E/B LEFT ON DORSET DR.	[R]
8) W/B THRU ON DORSET DR.	[R]
O A) []	[]
V B) []	[]
E C) []	[]
R D) []	[]
L E) []	[]
A F) []	[]
P	[]



Comments and Notes:

CABINET E# E23C1
 Signal turn-on 10/23/03 EA/GG
 Adjusted Ped. & Bike Timing 6/7/12 MRL
 Implemented Yellow Timing 10/11/16 MRL
 TSCP V2.23 Build 2 9/17/2020 MRL.
 Implemented LPI on 3/15/2023 MRL.

RAM Checksum

Page 2: DDEA	Page 8: 85AF
Page 3: 5D1F	Page 9: D2FD
Page 4: F29E	Page 10: 8E3F
Page 5: 191A	Page 11: D4E0
Page 6: 191A	Page 12: ACF7
Page 7: 0209	Page 13: 86F7

CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 3 4 5 6 7 8
Restricted	.....

Phase Features (2-1-1-4)	
Double Entry	. 2 . 4 . 6 . 8
Rest In Walk	.....
Rest In Red	.....
Walk 2	.....
Max Green 2	.....
Max Green 3	.....

Startup (2-1-1-5)	
First Green Phases	. 2 6 . .
Yellow Start Phases	.....
Vehicle Calls	1 2 3 4 5 6 7 8
Pedestrian Calls	. 2 . 4 . 6 . 8
Yellow Start Overlaps	.....
Startup All-Red	6.0

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 6 . .
Vehicle Max	.....
Pedestrian	.....
Bicycle	.....

Phase Locks (2-1-1-3)	
Red	.....
Yellow	.....
Force/Max	.....

Call To Phase (2-1-2-1)		Omit On Green	
1	.....	1	.....
2	.....	2	.....
3	.....	3	.....
4	.....	4	.....
5	.....	5	.....
6	.....	6	.....
7	.....	7	.....
8	.....	8	.....

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	.....
Yellow Flash Overlap	.....
Flash In Red Phases	.....
Flash In Red Overlaps	.....

Special Operation (2-1-2-3)	
Single Exit Phase	.....
Driveway Signal Phases	.....
Driveway Signal Overlaps	.....
Leading Ped Phases	. 2 . 4 . 6 . 8

Protected Permissive (2-1-2-4)	
Protected Permissive	.....

Pedestrian (2-1-3)	
P1	.....
P2	. 2
P3	.....
P4	. . . 4
P5	.....
P6	. . . . . 6 . .
P7	.....
P8	. . . . . 8

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A
B
C
D
E
F

PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	3	0	3	0	3	0	3
Flash Don't Walk	0	24	0	30	0	26	0	30
Minimum Green	13	10	13	12	12	10	13	12
Det Limit	0	25	0	0	0	25	0	0
Max Initial	0	0	0	0	0	0	0	0
Max Green 1	15	30	15	20	15	30	17	20
Max Green 2	0	0	0	0	0	0	0	0
Max Green 3	0	0	0	0	0	0	0	0
Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Gap	2.0	5.0	3.0	2.0	2.0	5.0	2.0	2.0
Minimum Gap	1.0	3.0	2.0	1.0	1.0	3.0	1.0	1.0
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reduce Gap By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Reduce Every	1.0	1.2	1.0	1.0	1.0	1.2	1.0	1.0
Yellow	3.7	4.8	3.7	4.1	3.7	4.8	3.7	4.1
All-Red	0.0	1.0	0.0	0.5	0.0	1.0	0.0	0.5
Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	4	0	4	0	4	0	4
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor			.....										
Plan 2	Green Factor			.....										
Plan 3	Green Factor			.....										
Plan 4	Green Factor			.....										
Plan 5	Green Factor			.....										
Plan 6	Green Factor			.....										
Plan 7	Green Factor			.....										
Plan 8	Green Factor			.....										
Plan 9	Green Factor			.....										

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	.....
Veh Min	Veh Max
. 2 ... 6 ..	.....
Ped	Bike
.....
Cond	Cond Grn
.....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1
Plan 2
Plan 3
Plan 4
Plan 5
Plan 6
Plan 7
Plan 8
Plan 9

MANUAL COMMANDS

Manual Plan (4-1)		Plan: 1-29
Plan	OffSet	254 = Flash
	A	255 = Free
		Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets]

Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor			.....										
Plan 12	Green Factor			.....										
Plan 13	Green Factor			.....										
Plan 14	Green Factor			.....										
Plan 15	Green Factor			.....										
Plan 16	Green Factor			.....										
Plan 17	Green Factor			.....										
Plan 18	Green Factor			.....										
Plan 19	Green Factor			.....										

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11
Plan 12
Plan 13
Plan 14
Plan 15
Plan 16
Plan 17
Plan 18
Plan 19

Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets]

Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor			.....										
Plan 22	Green Factor			.....										
Plan 23	Green Factor			.....										
Plan 24	Green Factor			.....										
Plan 25	Green Factor			.....										
Plan 26	Green Factor			.....										
Plan 27	Green Factor			.....										
Plan 28	Green Factor			.....										
Plan 29	Green Factor			.....										

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21
Plan 22
Plan 23
Plan 24
Plan 25
Plan 26
Plan 27
Plan 28
Plan 29

DETECTORS

Detector Attributes (5-1)				Slot	Detector Configuration (5-2)				
Det	Type	Phases	Lock		Det	Delay	Extend	Recall	Port
1	COUNT+CALL+EXTEND	1.....	NO	I1U	1			10	3.2
2	COUNT+CALL+EXTEND	1.....	NO	I1L	2			10	7.2
3	COUNT+CALL+EXTEND	.2.....	NO	I2U	3			10	1.1
4	COUNT+CALL+EXTEND	.2.....	NO	I2L	4			10	1.5
5	COUNT+CALL+EXTEND	.2.....	NO	I3U	5			10	4.5
6	CALL+EXTEND	.2.....	NO	I3L	6			10	6.2
7	LIMITED	.2.....	NO	I4U	7			10	2.1
8	LIMITED	.2.....	NO	I4L	8			10	7.4
9	COUNT+CALL+EXTEND	..3.....	NO	I5U	9			10	3.4
10	COUNT+CALL+EXTEND	..3.....	NO	I5L	10			10	7.6
11	COUNT+CALL+EXTEND	...4....	NO	I6U	11			10	1.3
12	COUNT+CALL+EXTEND	.....8	NO	I6L	12			10	1.7
13	COUNT+CALL+EXTEND	...4....	NO	I7U	13			10	4.7
14	CALL+EXTEND	...4....	NO	I7L	14			10	6.4
15	COUNT+CALL+EXTEND	...4....	NO	I8U	15	15		10	2.3
16	COUNT+CALL+EXTEND	...4....	NO	I8L	16	15		10	7.8
17	COUNT+CALL+EXTEND	1.....	NO	I9U	17			10	3.6
18	COUNT+CALL+EXTEND	1.....	NO	I9L	18			10	3.8
19	COUNT+CALL+EXTEND	.2.....	NO	I10U	19			10	4.1
20	COUNT+CALL+EXTEND	...4....	NO	I10L	20			10	4.2
21	COUNT+CALL+EXTEND	...5...	NO	J1U	21			10	3.1
22	COUNT+CALL+EXTEND	...5...	NO	J1L	22			10	7.1
23	COUNT+CALL+EXTEND	....6..	NO	J2U	23			10	1.2
24	COUNT+CALL+EXTEND	....6..	NO	J2L	24			10	1.6
25	COUNT+CALL+EXTEND	....6..	NO	J3U	25			10	4.6
26	CALL+EXTEND	....6..	NO	J3L	26			10	6.3
27	LIMITED	....6..	NO	J4U	27			10	2.2
28	LIMITED	....6..	NO	J4L	28			10	7.3
29	COUNT+CALL+EXTEND	....7.	NO	J5U	29			10	3.3
30	COUNT+CALL+EXTEND	....7.	NO	J5L	30			10	7.5
31	COUNT+CALL+EXTEND	....7.	NO	J6U	31			10	1.4
32	COUNT+CALL+EXTEND	....7.	NO	J6L	32			10	1.8
33	COUNT+CALL+EXTEND	....8	NO	J7U	33			10	4.8
34	CALL+EXTEND	....8	NO	J7L	34			10	6.5
35	COUNT+CALL+EXTEND	....8	NO	J8U	35	15		10	2.4
36	COUNT+CALL+EXTEND	....8	NO	J8L	36	15		10	7.7
37	COUNT+CALL+EXTEND	...5...	NO	J9U	37			10	3.5
38	COUNT+CALL+EXTEND	...5...	NO	J9L	38			10	3.7
39	COUNT+CALL+EXTEND	....6..	NO	J10U	39			10	4.3
40	COUNT+CALL+EXTEND	....8	NO	J10L	40			10	4.4
41	PEDESTRIAN	.2.....	NO	I12U	41			10	5.1
42	PEDESTRIAN	...4....	NO	I12L	42			10	5.3
43	PEDESTRIAN	....6..	NO	I13U	43			10	5.2
44	PEDESTRIAN	....8	NO	I13L	44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	.....
Detectors 9-16	.....
Detectors 17-24	.....
Detectors 25-32	.....
Detectors 33-40	.....
Detectors 41-44	.....

System Detector Assignment (5-5)								
Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)	
Enable in Plans	.....

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)								
Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

HOLIDAY TABLES

Floating Holiday Table (8-2-8)				
#	Mnth	Week	DOW	Table
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Fixed Holiday Table (8-2-9)				
#	Mnth	Day	DOW	Table
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Solar Clock Data (8-4)	
North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)	
Hebrew	Ped Recall
Sabbath	.....
Holiday	.....

Daylight Saving (8-6)	
Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)					
#	Start	End	DOW	Action	Phases
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

- Action Codes:
- 0. None
 - 1. Permitted
 - 2. Restricted
 - 4. Veh Min Recall
 - 5. Veh Max Recall
 - 6. Ped Recall
 - 7. Bike Recall
 - 8. Red Lock
 - 9. Yellow Lock
 - 10. Force/Max Lock
 - 11. Double Entry
 - 12. Y-Coord C
 - 13. Y-Coord D
 - 14. Free
 - 15. Flashing
 - 16. Walk 2
 - 17. Max Green 2

- 18. Max Green 3
- 19. Rest in Walk
- 20. Rest in Red
- 21. Free Lag Phases
- 22. Special Functions
- 23. Truck Preempt
- 24. Conditional Service
- 25. Conditional Service
- 26. Leading Ped
- 27. Traffic Actuated Max 2
- 41. Protected Permissive
- 42. Protected Permissive

Action Code = Phases added to normal setting
 100+Action Code = Phases removed
 200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Access Levels:

- 0-Full Access
- 1-Status Only
- 2-Status, Set Pattern, Time
- 3-Status, Set Pattern, Time, Manual Plan
- 4-Reserved
- 5-Full Access with No Set Pattern
- 6-Full Access with No Set Time
- 7-Full Access with No Set Pattern, Manual Plan
- 8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)							
#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	0	.	0	.	0	.	0
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	255
Gateway	0	.	0	.	0	.	254

RAILROAD PREEMPTION

RR 1	(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	. 2 . . 5 . . .	.....	.....	.....	.....	. 2 . 4 . 6 . 8	.....	.....	.....
	Clear 2		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clear 3		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Hold		.....	.....	1 2 3 4 5 6 7 8	.....	.....	.....	.....	.....	A B C D E F
	Exit	5	Exit Parameters (3-1-5)				Configuration (3-1-6)				
	Min Grn		Phase Green	Overlap Green	Vehicle Call	Ped Call	PR 1	PR 2	Latching	Power-Up	
	Ped Clr		.....	.....	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8	2.5	0.0	YES	FLASHING	

RR 2	(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	. . . 4 . . 7 .	.....	.....	.....	.....	. 2 . 4 . 6 . 8	.....	.....	.....
	Clear 2		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clear 3		.....	.....	.....	.....	.....	.....	.....	.....	.....
	Hold		1 2 3 . . 6 . .	.....	.....	. 2 . . . 6 . .	.....	. . . 4 . . . 8	.....	.....	.....
	Exit		Exit Parameters (3-2-5)				Configuration (3-2-6)				
	Min Grn		Phase Green	Overlap Green	Vehicle Call	Ped Call	PR 1	PR 2	Latching	Power-up	
	Ped Clr		.....	.....	. . . 4 . . 7 .	.....	2.6	0.0	YES	DARK	

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	35	. 2 . . 5 . . .	.....
	Port	Latching	Phase Termination		
	5.5	NO	ADVANCE		

EVB (3-B)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	35	. . . 4 . . 7 .	.....
	Port	Latching	Phase Termination		
	5.6	NO	ADVANCE		

EVC (3-C)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	35	1 6 . .	.....
	Port	Latching	Phase Termination		
	5.7	NO	ADVANCE		

EVD (3-D)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		5	35	. . 3 8	.....
	Port	Latching	Phase Termination		
	5.8	NO	ADVANCE		

INPUTS

7 Wire I/C (2-1-5-1)					
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.8	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)								+
A	1	2	22	3	4	24	9	
B	5	6	26	7	8	28	10	
X	13	14	0	11	12	0	0	

- Loadswitch Codes:
- 0 Unused (no output)
 - 1-8 Vehicle 1-8
 - 9-14 Overlap A-F
 - 21-28 Ped 1-8
 - 41-47 Special Functions
 - 41 Protected Permissive Flashing Phase 1
 - 43 Protected Permissive Flashing Phase 3
 - 45 Protected Permissive Flashing Phase 5
 - 47 Protected Permissive Flashing Phase 7

- 51-57 Special Functions
- 71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											

Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)		Indicator Output			
Enable in Plans	Input	Type	Stop	Go	
Plan 1-9	0.0	NONE	0	0
Plan 11-19	0.0	NONE	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	Force-Offs								Coord	Lag	Min Recall	Restricted
					-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-				
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	.....	.....
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	.....	.....

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					0.0	0.0	0.0	0	0.0	0

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	0	66	33	205	5	0	46	206	13	64	47	1
Future Vol, veh/h	0	66	33	205	5	0	46	206	13	64	47	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	36	223	5	0	50	224	14	70	51	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	9.8	14.2	11.9	10.5
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	100%	0%	2%	100%	0%	98%
Vol Right, %	0%	0%	100%	0%	100%	0%	0%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	206	13	66	33	210	0	64	48
LT Vol	46	0	0	0	0	205	0	64	0
Through Vol	0	206	0	66	0	5	0	0	47
RT Vol	0	0	13	0	33	0	0	0	1
Lane Flow Rate	50	224	14	72	36	228	0	70	52
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.092	0.38	0.021	0.13	0.058	0.421	0	0.135	0.094
Departure Headway (Hd)	6.614	6.108	5.399	6.537	5.83	6.646	6.155	7.009	6.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	589	662	547	613	541	0	511	551
Service Time	4.355	3.849	3.14	4.287	3.579	4.387	3.896	4.76	4.237
HCM Lane V/C Ratio	0.092	0.38	0.021	0.132	0.059	0.421	0	0.137	0.094
HCM Control Delay, s/veh	10	12.6	8.3	10.3	8.9	14.2	8.9	10.9	9.9
HCM Lane LOS	A	B	A	B	A	B	N	B	A
HCM 95th-tile Q	0.3	1.8	0.1	0.4	0.2	2.1	0	0.5	0.3

Intersection												
Intersection Delay, s/veh	13.4											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗	↖	↕	↗
Traffic Vol, veh/h	178	1	172	0	0	0	107	89	0	1	282	2
Future Vol, veh/h	178	1	172	0	0	0	107	89	0	1	282	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	193	1	187	0	0	0	116	97	0	1	307	2
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	2.1	0	11.5	16.3
HCM LOS	B	-	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	99%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	1%	0%	100%	100%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	89	0	179	172	0	0	1	282	2
LT Vol	107	0	0	178	0	0	0	1	0	0
Through Vol	0	89	0	1	0	0	0	0	282	0
RT Vol	0	0	0	0	172	0	0	0	0	2
Lane Flow Rate	116	97	0	195	187	0	0	1	307	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.23	0.177	0	0.367	0.29	0	0	0.002	0.541	0.003
Departure Headway (Hd)	7.114	6.605	6.605	6.794	5.591	7.266	7.266	6.863	6.356	5.646
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	504	542	0	529	641	0	0	521	567	632
Service Time	4.87	4.361	4.361	4.544	3.34	5.043	5.043	4.611	4.103	3.393
HCM Lane V/C Ratio	0.23	0.179	0	0.369	0.292	0	0	0.002	0.541	0.003
HCM Control Delay, s/veh	12	10.8	9.4	13.5	10.6	10	10	9.6	16.4	8.4
HCM Lane LOS	B	B	N	B	B	N	N	A	C	A
HCM 95th-tile Q	0.9	0.6	0	1.7	1.2	0	0	0	3.2	0

Intersection												
Intersection Delay, s/veh	9.7											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	56	42	18	6	21	6	44	233	19	1	70	70
Future Vol, veh/h	56	42	18	6	21	6	44	233	19	1	70	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	46	20	7	23	7	48	253	21	1	76	76
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.2		8.5	10.6
HCM LOS	A		A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	48%	18%	1%
Vol Thru, %	79%	36%	64%	50%
Vol Right, %	6%	16%	18%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	296	116	33	141
LT Vol	44	56	6	1
Through Vol	233	42	21	70
RT Vol	19	18	6	70
Lane Flow Rate	322	126	36	153
Geometry Grp	1	1	1	1
Degree of Util (X)	0.403	0.177	0.051	0.188
Departure Headway (Hd)	4.507	5.053	5.112	4.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	798	707	697	811
Service Time	2.543	3.103	3.173	2.455
HCM Lane V/C Ratio	0.404	0.178	0.052	0.189
HCM Control Delay, s/veh	10.6	9.2	8.5	8.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2	0.6	0.2	0.7

HCM 7th Signalized Intersection Summary

4: N 1st St & Dorset Dr

Exist AM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↗	↔	↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	17	3	19	39	3	34	56	674	114	113	372	91
Future Volume (veh/h)	17	3	19	39	3	34	56	674	114	113	372	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	3	21	42	3	37	61	733	124	123	404	99
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	205	174	184	255	216	123	1156	516	212	1317	587
Arrive On Green	0.03	0.11	0.11	0.05	0.14	0.14	0.07	0.33	0.33	0.06	0.37	0.37
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	18	3	21	42	3	37	61	733	124	123	404	99
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	0.1	0.6	0.6	0.1	1.0	1.6	8.6	2.8	1.7	4.0	2.1
Cycle Q Clear(g_c), s	0.3	0.1	0.6	0.6	0.1	1.0	1.6	8.6	2.8	1.7	4.0	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	205	174	184	255	216	123	1156	516	212	1317	587
V/C Ratio(X)	0.20	0.01	0.12	0.23	0.01	0.17	0.50	0.63	0.24	0.58	0.31	0.17
Avail Cap(c_a), veh/h	519	596	505	519	748	634	268	2777	1239	337	2777	1239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	19.6	19.8	22.4	18.4	18.8	22.1	14.1	12.2	22.5	11.0	10.4
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.2	0.0	0.1	1.2	0.6	0.2	0.9	0.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.1	0.4	0.4	0.1	0.6	1.1	4.9	1.6	1.1	2.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.8	19.6	19.9	22.6	18.4	19.0	23.3	14.7	12.4	23.4	11.1	10.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	42			82			918			626		
Approach Delay, s/veh	21.6			20.8			15.0			13.5		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	21.8	7.2	10.0	8.0	24.1	5.9	11.3				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	1.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+1/3), s	13.5	10.6	2.6	2.6	3.6	6.0	2.3	3.0				
Green Ext Time (p_c), s	0.0	5.4	0.0	0.0	0.0	2.8	0.0	0.0				

Intersection Summary

HCM 7th Control Delay, s/veh	14.9
HCM 7th LOS	B

Notes

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

HCM 7th Signalized Intersection Summary

5: Vaughn Rd & N 1st St

Exist AM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	67	44	20	15	30	36	641	97	71	297	60
Future Volume (veh/h)	173	67	44	20	15	30	36	641	97	71	297	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	73	48	22	16	33	39	697	105	77	323	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	369	313	47	177	150	70	1484	223	100	1466	291
Arrive On Green	0.13	0.20	0.20	0.03	0.09	0.09	0.04	0.48	0.48	0.06	0.50	0.50
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3097	466	1781	2954	587
Grp Volume(v), veh/h	188	73	48	22	16	33	39	400	402	77	193	195
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1786	1781	1777	1765
Q Serve(g_s), s	8.6	2.7	2.1	1.0	0.7	1.6	1.8	12.6	12.6	3.6	5.1	5.2
Cycle Q Clear(g_c), s	8.6	2.7	2.1	1.0	0.7	1.6	1.8	12.6	12.6	3.6	5.1	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		0.33
Lane Grp Cap(c), veh/h	230	369	313	47	177	150	70	852	856	100	882	876
V/C Ratio(X)	0.82	0.20	0.15	0.47	0.09	0.22	0.56	0.47	0.47	0.77	0.22	0.22
Avail Cap(c_a), veh/h	416	560	475	160	560	475	160	852	856	288	882	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	28.0	27.7	40.1	34.5	34.9	39.4	14.6	14.6	38.8	11.9	11.9
Incr Delay (d2), s/veh	7.0	0.3	0.2	7.1	0.2	0.7	6.8	1.9	1.8	11.6	0.6	0.6
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(95%),veh/ln	7.3	2.2	1.4	0.9	0.5	1.1	1.6	8.4	8.5	3.2	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.4	28.2	27.9	47.2	34.7	35.7	46.2	16.5	16.5	50.5	12.4	12.5
LnGrp LOS	D	C	C	D	C	D	D	B	B	D	B	B
Approach Vol, veh/h	309			71			841			465		
Approach Delay, s/veh	36.8			39.0			17.8			18.8		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	45.8	6.8	21.6	7.9	47.2	15.4	13.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+I), s	15.6	14.6	3.0	4.7	3.8	7.2	10.6	3.6				
Green Ext Time (p_c), s	0.1	4.8	0.0	0.4	0.0	2.1	0.3	0.1				

Intersection Summary

HCM 7th Control Delay, s/veh	22.5
HCM 7th LOS	C

Notes

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

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↑	↗	↖	↗	
Traffic Vol, veh/h	1	53	29	261	6	0	95	179	132	149	73	1
Future Vol, veh/h	1	53	29	261	6	0	95	179	132	149	73	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	58	32	284	7	0	103	195	143	162	79	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	11.3	21.7	12.5	13.7
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	2%	0%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	98%	0%	2%	100%	0%	99%
Vol Right, %	0%	0%	100%	0%	100%	0%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	179	132	54	29	267	0	149	74
LT Vol	95	0	0	1	0	261	0	149	0
Through Vol	0	179	0	53	0	6	0	0	73
RT Vol	0	0	132	0	29	0	0	0	1
Lane Flow Rate	103	195	143	59	32	290	0	162	80
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.214	0.375	0.248	0.128	0.063	0.613	0	0.353	0.164
Departure Headway (Hd)	7.456	6.946	6.232	7.881	7.156	7.608	7.113	7.852	7.33
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	482	519	577	455	500	476	0	458	490
Service Time	5.192	4.681	3.967	5.628	4.902	5.345	4.85	5.594	5.071
HCM Lane V/C Ratio	0.214	0.376	0.248	0.13	0.064	0.609	0	0.354	0.163
HCM Control Delay, s/veh	12.2	13.8	11	11.8	10.4	21.7	9.9	14.8	11.5
HCM Lane LOS	B	B	B	B	B	C	N	B	B
HCM 95th-tile Q	0.8	1.7	1	0.4	0.2	4	0	1.6	0.6

Intersection												
Intersection Delay, s/veh	18.9											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗	↖	↕	↗
Traffic Vol, veh/h	177	0	45	0	0	1	227	228	0	0	354	9
Future Vol, veh/h	177	0	45	0	0	1	227	228	0	0	354	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	192	0	49	0	0	1	247	248	0	0	385	10
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	5.1		10.4	15.8
HCM LOS	C		B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	228	0	177	45	0	1	0	354	9
LT Vol	227	0	0	177	0	0	0	0	0	0
Through Vol	0	228	0	0	0	0	0	0	354	0
RT Vol	0	0	0	0	45	0	1	0	0	9
Lane Flow Rate	247	248	0	192	49	0	1	0	385	10
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.49	0.457	0	0.423	0.091	0	0.002	0	0.725	0.017
Departure Headway (Hd)	7.151	6.643	6.643	7.906	6.683	8.425	7.703	6.786	6.786	6.075
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	501	538	0	452	532	0	467	0	531	584
Service Time	4.942	4.434	4.434	5.704	4.48	6.125	5.403	4.575	4.575	3.863
HCM Lane V/C Ratio	0.493	0.461	0	0.425	0.092	0	0.002	0	0.725	0.017
HCM Control Delay, s/veh	16.7	15	9.4	16.4	10.2	11.1	10.4	9.6	25.6	9
HCM Lane LOS	C	B	N	C	B	N	B	N	D	A
HCM 95th-tile Q	2.7	2.4	0	2.1	0.3	0	0	0	5.9	0.1

Intersection												
Intersection Delay, s/veh	12.6											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	88	36	46	20	45	3	32	119	12	6	301	103
Future Vol, veh/h	88	36	46	20	45	3	32	119	12	6	301	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	96	39	50	22	49	3	35	129	13	7	327	112
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0.8		9.7	10.2
HCM LOS	B		A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	52%	29%	1%
Vol Thru, %	73%	21%	66%	73%
Vol Right, %	7%	27%	4%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	170	68	410
LT Vol	32	88	20	6
Through Vol	119	36	45	301
RT Vol	12	46	3	103
Lane Flow Rate	177	185	74	446
Geometry Grp	1	1	1	1
Degree of Util (X)	0.26	0.286	0.121	0.598
Departure Headway (Hd)	5.293	5.575	5.885	4.83
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	679	645	608	753
Service Time	3.327	3.613	3.93	2.83
HCM Lane V/C Ratio	0.261	0.287	0.122	0.592
HCM Control Delay, s/veh	10.2	10.8	9.7	14.8
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1	1.2	0.4	4

HCM 7th Signalized Intersection Summary

4: N 1st St & Dorset Dr

Exist PM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	107	11	110	222	9	121	74	564	135	129	569	68
Future Volume (veh/h)	107	11	110	222	9	121	74	564	135	129	569	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	12	120	241	10	132	80	613	147	140	618	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	274	232	371	304	258	138	965	430	232	1098	490
Arrive On Green	0.09	0.15	0.15	0.11	0.16	0.16	0.08	0.27	0.27	0.07	0.31	0.31
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	116	12	120	241	10	132	80	613	147	140	618	74
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	0.3	3.8	3.6	0.2	4.1	2.4	8.3	4.1	2.1	7.9	1.8
Cycle Q Clear(g_c), s	1.7	0.3	3.8	3.6	0.2	4.1	2.4	8.3	4.1	2.1	7.9	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	274	232	371	304	258	138	965	430	232	1098	490
V/C Ratio(X)	0.37	0.04	0.52	0.65	0.03	0.51	0.58	0.64	0.34	0.60	0.56	0.15
Avail Cap(c_a), veh/h	470	539	457	470	677	573	242	2513	1121	305	2513	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	20.0	21.5	23.3	19.2	20.8	24.3	17.5	15.9	24.7	15.7	13.6
Incr Delay (d2), s/veh	0.3	0.0	0.7	0.9	0.0	0.6	1.4	0.7	0.5	0.9	0.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.2	2.5	2.6	0.2	2.7	1.7	5.1	2.5	1.4	4.8	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.5	20.0	22.1	24.3	19.2	21.4	25.7	18.2	16.4	25.6	16.2	13.8
LnGrp LOS	C	B	C	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		248			383			840			832	
Approach Delay, s/veh		22.7			23.1			18.6			17.6	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	20.6	10.4	12.6	8.8	22.6	9.6	13.5				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	4.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+14), s	11.1	10.3	5.6	5.8	4.4	9.9	3.7	6.1				
Green Ext Time (p_c), s	0.0	4.5	0.0	0.1	0.0	4.3	0.0	0.2				

Intersection Summary

HCM 7th Control Delay, s/veh	19.4
HCM 7th LOS	B

Notes

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

Exist PM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	115	56	106	70	94	48	537	46	64	621	200
Future Volume (veh/h)	127	115	56	106	70	94	48	537	46	64	621	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	125	61	115	76	102	52	584	50	70	675	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	218	185	145	186	158	84	1648	141	96	1334	429
Arrive On Green	0.10	0.12	0.12	0.08	0.10	0.10	0.05	0.50	0.50	0.05	0.50	0.50
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3313	283	1781	2644	850
Grp Volume(v), veh/h	138	125	61	115	76	102	52	313	321	70	453	439
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1819	1781	1777	1717
Q Serve(g_s), s	6.1	5.1	2.8	5.1	3.1	5.0	2.3	8.6	8.7	3.1	13.6	13.7
Cycle Q Clear(g_c), s	6.1	5.1	2.8	5.1	3.1	5.0	2.3	8.6	8.7	3.1	13.6	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.49
Lane Grp Cap(c), veh/h	176	218	185	145	186	158	84	884	905	96	897	867
V/C Ratio(X)	0.78	0.57	0.33	0.79	0.41	0.65	0.62	0.35	0.35	0.73	0.51	0.51
Avail Cap(c_a), veh/h	432	582	493	166	582	493	166	884	905	299	897	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	33.6	32.6	36.2	34.0	34.8	37.6	12.3	12.3	37.4	13.2	13.2
Incr Delay (d2), s/veh	7.4	2.4	1.0	20.0	1.4	4.4	7.3	1.1	1.1	9.9	2.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	4.3	1.9	5.2	2.5	3.6	2.0	5.7	5.9	2.8	8.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.8	36.0	33.6	56.2	35.4	39.2	44.9	13.4	13.4	47.4	15.3	15.4
LnGrp LOS	D	D	C	E	D	D	D	B	B	D	B	B
Approach Vol, veh/h		324			293			686			962	
Approach Delay, s/veh		38.4			44.9			15.8			17.6	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	45.8	11.2	14.5	8.4	46.4	12.5	13.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+I), s	15.1	10.7	7.1	7.1	4.3	15.7	8.1	7.0				
Green Ext Time (p_c), s	0.1	3.7	0.0	0.7	0.0	5.5	0.2	0.6				

Intersection Summary												
HCM 7th Control Delay, s/veh											23.6	
HCM 7th LOS											C	

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

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	0	66	28	82	6	0	50	177	2	68	31	1
Future Vol, veh/h	0	66	28	82	6	0	50	177	2	68	31	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	30	89	7	0	54	192	2	74	34	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	8.9	10.3	10.1	9.5
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	93%	0%	100%	0%
Vol Thru, %	0%	100%	0%	100%	0%	7%	100%	0%	97%
Vol Right, %	0%	0%	100%	0%	100%	0%	0%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	177	2	66	28	88	0	68	32
LT Vol	50	0	0	0	0	82	0	68	0
Through Vol	0	177	0	66	0	6	0	0	31
RT Vol	0	0	2	0	28	0	0	0	1
Lane Flow Rate	54	192	2	72	30	96	0	74	35
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.089	0.289	0.003	0.115	0.043	0.166	0	0.127	0.055
Departure Headway (Hd)	5.918	5.415	4.711	5.793	5.09	6.245	5.777	6.197	5.671
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	602	658	753	613	695	570	0	574	625
Service Time	3.692	3.189	2.484	3.584	2.881	4.035	3.567	3.986	3.46
HCM Lane V/C Ratio	0.09	0.292	0.003	0.117	0.043	0.168	0	0.129	0.056
HCM Control Delay, s/veh	9.3	10.4	7.5	9.3	8.1	10.3	8.6	9.9	8.8
HCM Lane LOS	A	B	A	A	A	B	N	A	A
HCM 95th-tile Q	0.3	1.2	0	0.4	0.1	0.6	0	0.4	0.2

Intersection												
Intersection Delay, s/veh	11.7											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗	↖	↕	↗
Traffic Vol, veh/h	190	1	28	0	0	0	183	97	0	1	137	2
Future Vol, veh/h	190	1	28	0	0	0	183	97	0	1	137	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	207	1	30	0	0	0	199	105	0	1	149	2
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	2.4	0	11.5	10.9
HCM LOS	B	-	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	99%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	1%	0%	100%	100%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	97	0	191	28	0	0	1	137	2
LT Vol	183	0	0	190	0	0	0	1	0	0
Through Vol	0	97	0	1	0	0	0	0	137	0
RT Vol	0	0	0	0	28	0	0	0	0	2
Lane Flow Rate	199	105	0	208	30	0	0	1	149	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.349	0.17	0	0.373	0.045	0	0	0.002	0.254	0.003
Departure Headway (Hd)	6.308	5.802	5.802	6.467	5.267	6.623	6.623	6.649	6.143	5.434
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	571	619	0	558	681	0	0	539	585	659
Service Time	4.033	3.527	3.527	4.193	2.993	4.362	4.362	4.379	3.873	3.164
HCM Lane V/C Ratio	0.349	0.17	0	0.373	0.044	0	0	0.002	0.255	0.003
HCM Control Delay, s/veh	12.4	9.7	8.5	13	8.2	9.4	9.4	9.4	11	8.2
HCM Lane LOS	B	A	N	B	A	N	N	A	B	A
HCM 95th-tile Q	1.6	0.6	0	1.7	0.1	0	0	0	1	0

HCM 7th Signalized Intersection Summary

4: N 1st St & Dorset Dr

2025 AM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	21	3	21	38	3	35	69	779	119	112	422	80
Future Volume (veh/h)	21	3	21	38	3	35	69	779	119	112	422	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	3	23	41	3	38	75	847	129	122	459	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	209	177	177	244	207	135	1270	566	208	1390	620
Arrive On Green	0.03	0.11	0.11	0.05	0.13	0.13	0.08	0.36	0.36	0.06	0.39	0.39
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	23	3	23	41	3	38	75	847	129	122	459	87
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	0.1	0.7	0.6	0.1	1.1	2.2	10.7	3.0	1.8	4.8	1.9
Cycle Q Clear(g_c), s	0.3	0.1	0.7	0.6	0.1	1.1	2.2	10.7	3.0	1.8	4.8	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	209	177	177	244	207	135	1270	566	208	1390	620
V/C Ratio(X)	0.20	0.01	0.13	0.23	0.01	0.18	0.56	0.67	0.23	0.59	0.33	0.14
Avail Cap(c_a), veh/h	483	554	470	483	696	589	249	2583	1152	313	2583	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	20.9	21.2	24.1	20.0	20.5	23.6	14.4	11.9	24.2	11.3	10.4
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.2	0.0	0.2	1.3	0.6	0.2	1.0	0.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.1	0.4	0.4	0.1	0.7	1.5	6.1	1.8	1.2	2.6	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.3	20.9	21.3	24.4	20.1	20.7	25.0	15.0	12.1	25.2	11.4	10.5
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h	49			82			1051			668		
Approach Delay, s/veh	23.2			22.5			15.3			13.8		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	24.7	7.3	10.5	8.6	26.5	6.3	11.5				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	1.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+1), s	13.8	12.7	2.6	2.7	4.2	6.8	2.3	3.1				
Green Ext Time (p_c), s	0.0	6.3	0.0	0.0	0.0	3.2	0.0	0.0				

Intersection Summary

HCM 7th Control Delay, s/veh	15.3
HCM 7th LOS	B

Notes

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2025 AM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	60	45	50	27	112	37	681	95	112	311	59
Future Volume (veh/h)	174	60	45	50	27	112	37	681	95	112	311	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	65	49	54	29	122	40	740	103	122	338	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	345	293	82	191	162	69	1424	198	154	1500	281
Arrive On Green	0.13	0.18	0.18	0.05	0.10	0.10	0.04	0.45	0.45	0.09	0.50	0.50
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3133	436	1781	2987	559
Grp Volume(v), veh/h	189	65	49	54	29	122	40	420	423	122	200	202
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1792	1781	1777	1770
Q Serve(g_s), s	9.1	2.6	2.3	2.6	1.2	6.6	1.9	14.8	14.9	5.9	5.5	5.7
Cycle Q Clear(g_c), s	9.1	2.6	2.3	2.6	1.2	6.6	1.9	14.8	14.9	5.9	5.5	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.32
Lane Grp Cap(c), veh/h	229	345	293	82	191	162	69	808	814	154	892	889
V/C Ratio(X)	0.83	0.19	0.17	0.66	0.15	0.75	0.58	0.52	0.52	0.79	0.22	0.23
Avail Cap(c_a), veh/h	395	531	450	152	531	450	152	808	814	273	892	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	30.3	30.2	41.3	36.0	38.4	41.6	17.1	17.1	39.4	12.3	12.3
Incr Delay (d2), s/veh	7.4	0.3	0.3	8.8	0.4	6.9	7.3	2.4	2.4	8.7	0.6	0.6
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(95%),veh/ln	7.7	2.1	1.5	2.3	1.0	4.9	1.7	9.9	10.0	5.1	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.8	30.6	30.4	50.1	36.4	45.4	48.9	19.5	19.5	48.1	12.9	12.9
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	B	B
Approach Vol, veh/h	303			205			883			524		
Approach Delay, s/veh	39.4			45.4			20.9			21.1		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	45.8	8.6	21.4	8.0	50.0	15.9	14.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+1), s	16.9	16.9	4.6	4.6	3.9	7.7	11.1	8.6				
Green Ext Time (p_c), s	0.1	5.0	0.0	0.4	0.0	2.2	0.3	0.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			26.5									
HCM 7th LOS			C									

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

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	107	1	1	175	102	54
Future Vol, veh/h	107	1	1	175	102	54
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	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	1	1	190	111	59

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	333	140	170	0	0
Stage 1	140	-	-	-	-
Stage 2	192	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	662	908	1408	-	-
Stage 1	887	-	-	-	-
Stage 2	840	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	662	908	1408	-	-
Mov Cap-2 Maneuver	662	-	-	-	-
Stage 1	886	-	-	-	-
Stage 2	840	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.59	0.04	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1408	-	663	-	-
HCM Lane V/C Ratio	0.001	-	0.177	-	-
HCM Control Delay (s/veh)	7.6	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↘	
Traffic Vol, veh/h	93	30	5	3	16	191
Future Vol, veh/h	93	30	5	3	16	191
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	33	5	3	17	208

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	9	0	-	0	242
Stage 1	-	-	-	-	7
Stage 2	-	-	-	-	235
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1611	-	-	-	746
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	804
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1611	-	-	-	700
Mov Cap-2 Maneuver	-	-	-	-	700
Stage 1	-	-	-	-	952
Stage 2	-	-	-	-	804

Approach	EB	WB	SB
HCM Control Delay, s/v	5.58	0	9.46
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1611	-	-	-	1032
HCM Lane V/C Ratio	0.063	-	-	-	0.218
HCM Control Delay (s/veh)	7.4	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↑	↗	↖	↗	
Traffic Vol, veh/h	2	55	30	282	7	0	90	235	17	161	83	1
Future Vol, veh/h	2	55	30	282	7	0	90	235	17	161	83	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	60	33	307	8	0	98	255	18	175	90	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	11.5	24.4	15.5	14.3
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	4%	0%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	96%	0%	2%	100%	0%	99%
Vol Right, %	0%	0%	100%	0%	100%	0%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	235	17	57	30	289	0	161	84
LT Vol	90	0	0	2	0	282	0	161	0
Through Vol	0	235	0	55	0	7	0	0	83
RT Vol	0	0	17	0	30	0	0	0	1
Lane Flow Rate	98	255	18	62	33	314	0	175	91
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.208	0.507	0.033	0.138	0.066	0.666	0	0.385	0.188
Departure Headway (Hd)	7.661	7.15	6.435	7.991	7.257	7.634	7.14	7.915	7.393
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	503	556	448	493	474	0	455	485
Service Time	5.407	4.896	4.181	5.749	5.014	5.379	4.885	5.664	5.142
HCM Lane V/C Ratio	0.209	0.507	0.032	0.138	0.067	0.662	0	0.385	0.188
HCM Control Delay, s/veh	12.4	17.1	9.4	12	10.5	24.4	9.9	15.6	11.9
HCM Lane LOS	B	C	A	B	B	C	N	C	B
HCM 95th-tile Q	0.8	2.8	0.1	0.5	0.2	4.8	0	1.8	0.7

Intersection												
Intersection Delay, s/veh	17.3											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	191	0	12	1	1	1	125	92	0	0	385	10
Future Vol, veh/h	191	0	12	1	1	1	125	92	0	0	385	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	208	0	13	1	1	1	136	100	0	0	418	11
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	4.7		10.2	11.6
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	50%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	50%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	92	0	191	12	2	1	0	385	10
LT Vol	125	0	0	191	0	1	0	0	0	0
Through Vol	0	92	0	0	0	1	0	0	385	0
RT Vol	0	0	0	0	12	0	1	0	0	10
Lane Flow Rate	136	100	0	208	13	2	1	0	418	11
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.265	0.181	0	0.418	0.022	0.005	0.002	0	0.706	0.016
Departure Headway (Hd)	7.027	6.52	6.52	7.24	6.022	7.699	6.728	6.073	6.073	5.366
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	510	548	0	496	592	462	528	0	594	665
Service Time	4.789	4.282	4.282	5.001	3.783	5.486	4.514	3.823	3.823	3.116
HCM Lane V/C Ratio	0.267	0.182	0	0.419	0.022	0.004	0.002	0	0.704	0.017
HCM Control Delay, s/veh	12.3	10.7	9.3	15.1	8.9	10.5	9.5	8.8	22.2	8.2
HCM Lane LOS	B	B	N	C	A	B	A	N	C	A
HCM 95th-tile Q	1.1	0.7	0	2	0.1	0	0	0	5.7	0

HCM 7th Signalized Intersection Summary

4: N 1st St & Dorset Dr

2025 PM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔↔	↑	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (veh/h)	110	11	108	227	11	151	69	642	136	130	656	81
Future Volume (veh/h)	110	11	108	227	11	151	69	642	136	130	656	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	12	117	247	12	164	75	698	148	141	713	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	263	223	358	289	245	131	1058	472	231	1198	534
Arrive On Green	0.09	0.14	0.14	0.10	0.15	0.15	0.07	0.30	0.30	0.07	0.34	0.34
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	120	12	117	247	12	164	75	698	148	141	713	88
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.9	0.3	3.9	3.9	0.3	5.5	2.3	9.7	4.1	2.3	9.4	2.2
Cycle Q Clear(g_c), s	1.9	0.3	3.9	3.9	0.3	5.5	2.3	9.7	4.1	2.3	9.4	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	263	223	358	289	245	131	1058	472	231	1198	534
V/C Ratio(X)	0.39	0.05	0.52	0.69	0.04	0.67	0.57	0.66	0.31	0.61	0.60	0.16
Avail Cap(c_a), veh/h	451	517	438	451	649	550	232	2411	1075	292	2411	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	21.1	22.6	24.6	20.4	22.6	25.4	17.4	15.4	25.8	15.6	13.2
Incr Delay (d2), s/veh	0.3	0.0	0.7	1.9	0.0	1.2	1.5	0.7	0.4	1.0	0.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.2	2.6	2.9	0.2	3.7	1.6	6.1	2.6	1.5	5.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.6	21.1	23.3	26.4	20.4	23.8	26.9	18.1	15.8	26.7	16.1	13.4
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		249			423			921			942	
Approach Delay, s/veh		23.9			25.2			18.5			17.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	22.7	10.5	12.6	8.8	24.9	9.7	13.4				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	41.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+14), s	14.3	11.7	5.9	5.9	4.3	11.4	3.9	7.5				
Green Ext Time (p_c), s	0.0	5.1	0.0	0.1	0.0	5.1	0.0	0.2				

Intersection Summary

HCM 7th Control Delay, s/veh	19.7
HCM 7th LOS	B

Notes

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2025 PM
11/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	38	57	91	54	146	50	571	63	130	658	203
Future Volume (veh/h)	129	38	57	91	54	146	50	571	63	130	658	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	140	41	62	99	59	159	54	621	68	141	715	221
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	290	246	126	237	201	81	1454	159	175	1344	415
Arrive On Green	0.10	0.16	0.16	0.07	0.13	0.13	0.05	0.45	0.45	0.10	0.50	0.50
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3230	353	1781	2673	826
Grp Volume(v), veh/h	140	41	62	99	59	159	54	341	348	141	475	461
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1807	1781	1777	1722
Q Serve(g_s), s	6.8	1.7	3.1	4.9	2.5	8.7	2.7	11.6	11.7	6.9	16.1	16.1
Cycle Q Clear(g_c), s	6.8	1.7	3.1	4.9	2.5	8.7	2.7	11.6	11.7	6.9	16.1	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.48
Lane Grp Cap(c), veh/h	176	290	246	126	237	201	81	800	813	175	893	866
V/C Ratio(X)	0.80	0.14	0.25	0.79	0.25	0.79	0.67	0.43	0.43	0.81	0.53	0.53
Avail Cap(c_a), veh/h	391	526	446	150	526	446	150	800	813	271	893	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	32.4	33.0	40.7	35.0	37.7	41.8	16.6	16.7	39.2	15.0	15.0
Incr Delay (d2), s/veh	7.9	0.2	0.5	20.3	0.5	6.8	9.0	1.7	1.6	9.6	2.3	2.3
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(95%),veh/ln	5.9	1.4	2.1	4.9	2.0	6.4	2.4	8.1	8.2	6.0	10.3	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.1	32.7	33.6	60.9	35.5	44.5	50.7	18.3	18.3	48.8	17.3	17.3
LnGrp LOS	D	C	C	E	D	D	D	B	B	D	B	B
Approach Vol, veh/h		243			317			743			1077	
Approach Delay, s/veh		41.2			48.0			20.7			21.4	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	45.8	10.9	18.9	8.7	50.5	13.4	16.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+I), s	13.5	13.7	6.9	5.1	4.7	18.1	8.8	10.7				
Green Ext Time (p_c), s	0.1	4.0	0.0	0.3	0.0	5.6	0.2	0.6				

Intersection Summary												
HCM 7th Control Delay, s/veh											26.7	
HCM 7th LOS											C	

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

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	80	1	1	130	300	96
Future Vol, veh/h	80	1	1	130	300	96
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	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	1	1	141	326	104

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	522	378	430	0	-	0
Stage 1	378	-	-	-	-	-
Stage 2	143	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	515	668	1129	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	515	668	1129	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	884	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.4	0.06	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1129	-	516	-	-
HCM Lane V/C Ratio	0.001	-	0.171	-	-
HCM Control Delay (s/veh)	8.2	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	192	14	30	16	8	149
Future Vol, veh/h	192	14	30	16	8	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	15	33	17	9	162

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	50	0	-	0	474 41
Stage 1	-	-	-	-	41 -
Stage 2	-	-	-	-	433 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1557	-	-	-	549 1030
Stage 1	-	-	-	-	981 -
Stage 2	-	-	-	-	654 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1557	-	-	-	475 1030
Mov Cap-2 Maneuver	-	-	-	-	475 -
Stage 1	-	-	-	-	850 -
Stage 2	-	-	-	-	654 -

Approach	EB	WB	SB
HCM Control Delay, s/v	7.15	0	9.49
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1557	-	-	-	972
HCM Lane V/C Ratio	0.134	-	-	-	0.176
HCM Control Delay (s/veh)	7.7	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.5	-	-	-	0.6

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↑	↗	↖	↗	
Traffic Vol, veh/h	0	68	36	217	5	0	50	228	19	71	47	1
Future Vol, veh/h	0	68	36	217	5	0	50	228	19	71	47	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	74	39	236	5	0	54	248	21	77	51	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	10.1	15.2	12.7	10.9
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	100%	0%	2%	100%	0%	98%
Vol Right, %	0%	0%	100%	0%	100%	0%	0%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	228	19	68	36	222	0	71	48
LT Vol	50	0	0	0	0	217	0	71	0
Through Vol	0	228	0	68	0	5	0	0	47
RT Vol	0	0	19	0	36	0	0	0	1
Lane Flow Rate	54	248	21	74	39	241	0	77	52
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.102	0.429	0.032	0.138	0.066	0.457	0	0.154	0.097
Departure Headway (Hd)	6.74	6.233	5.524	6.741	6.033	6.815	6.323	7.202	6.677
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	577	646	530	591	528	0	496	535
Service Time	4.494	3.987	3.277	4.509	3.8	4.571	4.078	4.968	4.443
HCM Lane V/C Ratio	0.102	0.43	0.033	0.14	0.066	0.456	0	0.155	0.097
HCM Control Delay, s/veh	10.3	13.6	8.5	10.6	9.2	15.2	9.1	11.3	10.2
HCM Lane LOS	B	B	A	B	A	C	N	B	B
HCM 95th-tile Q	0.3	2.1	0.1	0.5	0.2	2.4	0	0.5	0.3

Intersection												
Intersection Delay, s/veh	16.5											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	178	1	231	0	0	0	208	119	0	1	297	2
Future Vol, veh/h	178	1	231	0	0	0	208	119	0	1	297	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	193	1	251	0	0	0	226	129	0	1	323	2
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	4.3	0	15.2	21
HCM LOS	B	-	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	99%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	1%	0%	100%	100%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	208	119	0	179	231	0	0	1	297	2
LT Vol	208	0	0	178	0	0	0	1	0	0
Through Vol	0	119	0	1	0	0	0	0	297	0
RT Vol	0	0	0	0	231	0	0	0	0	2
Lane Flow Rate	226	129	0	195	251	0	0	1	323	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.471	0.251	0	0.4	0.432	0	0	0.002	0.629	0.004
Departure Headway (Hd)	7.5	6.988	6.988	7.399	6.19	8.289	8.289	7.526	7.016	6.303
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	510	0	483	577	0	0	472	510	563
Service Time	5.298	4.786	4.786	5.192	3.983	5.989	5.989	5.322	4.812	4.097
HCM Lane V/C Ratio	0.474	0.253	0	0.404	0.435	0	0	0.002	0.633	0.004
HCM Control Delay, s/veh	16.9	12.1	9.8	15.1	13.7	11	11	10.3	21.1	9.1
HCM Lane LOS	C	B	N	C	B	N	N	B	C	A
HCM 95th-tile Q	2.5	1	0	1.9	2.2	0	0	0	4.3	0

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr

2025 plus Project AM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔↔	↑	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (veh/h)	21	3	21	38	3	35	71	732	122	109	413	79
Future Volume (veh/h)	21	3	21	38	3	35	71	732	122	109	413	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	3	23	41	3	38	77	796	133	118	449	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	213	181	179	249	211	139	1220	544	204	1333	594
Arrive On Green	0.03	0.11	0.11	0.05	0.13	0.13	0.08	0.34	0.34	0.06	0.38	0.38
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	23	3	23	41	3	38	77	796	133	118	449	86
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	0.1	0.7	0.6	0.1	1.1	2.1	9.7	3.1	1.7	4.6	1.8
Cycle Q Clear(g_c), s	0.3	0.1	0.7	0.6	0.1	1.1	2.1	9.7	3.1	1.7	4.6	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	213	181	179	249	211	139	1220	544	204	1333	594
V/C Ratio(X)	0.20	0.01	0.13	0.23	0.01	0.18	0.56	0.65	0.24	0.58	0.34	0.14
Avail Cap(c_a), veh/h	498	571	484	498	717	608	256	2662	1187	323	2662	1187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	20.2	20.5	23.4	19.3	19.8	22.8	14.3	12.1	23.6	11.5	10.6
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.2	0.0	0.2	1.3	0.6	0.2	1.0	0.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.1	0.4	0.4	0.1	0.7	1.5	5.6	1.8	1.1	2.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.5	20.2	20.6	23.6	19.4	19.9	24.1	14.9	12.3	24.5	11.6	10.7
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		49			82			1006			653	
Approach Delay, s/veh		22.4			21.8			15.2			13.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	23.4	7.3	10.5	8.6	25.1	6.3	11.4				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	4.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+1), s	13.5	11.7	2.6	2.7	4.1	6.6	2.3	3.1				
Green Ext Time (p_c), s	0.0	5.9	0.0	0.0	0.0	3.1	0.0	0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											15.2	
HCM 7th LOS											B	

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

HCM 7th Signalized Intersection Summary
 5: Vaughn Rd & N 1st St

2025 plus Project AM
 11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	73	45	53	27	107	38	648	129	110	306	56
Future Volume (veh/h)	169	73	45	53	27	107	38	648	129	110	306	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	79	49	58	29	116	41	704	140	120	333	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	330	280	85	184	156	71	1357	270	152	1518	275
Arrive On Green	0.13	0.18	0.18	0.05	0.10	0.10	0.04	0.46	0.46	0.09	0.51	0.51
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	2954	587	1781	3005	544
Grp Volume(v), veh/h	184	79	49	58	29	116	41	423	421	120	195	199
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1765	1781	1777	1772
Q Serve(g_s), s	8.8	3.2	2.3	2.8	1.2	6.2	2.0	14.7	14.7	5.8	5.3	5.4
Cycle Q Clear(g_c), s	8.8	3.2	2.3	2.8	1.2	6.2	2.0	14.7	14.7	5.8	5.3	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.31
Lane Grp Cap(c), veh/h	224	330	280	85	184	156	71	816	811	152	898	895
V/C Ratio(X)	0.82	0.24	0.18	0.68	0.16	0.74	0.58	0.52	0.52	0.79	0.22	0.22
Avail Cap(c_a), veh/h	399	537	455	153	537	455	153	816	811	276	898	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	30.8	30.5	40.8	35.9	38.2	41.1	16.7	16.7	39.0	12.0	12.0
Incr Delay (d2), s/veh	7.3	0.4	0.3	9.3	0.4	6.8	7.3	2.3	2.4	8.7	0.6	0.6
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(95%),veh/ln	7.5	2.6	1.5	2.5	1.0	4.6	1.7	9.8	9.7	5.0	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.4	31.2	30.7	50.1	36.3	45.0	48.4	19.0	19.1	47.8	12.5	12.6
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	B	B
Approach Vol, veh/h	312			203			885			514		
Approach Delay, s/veh	38.9			45.2			20.4			20.8		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	45.8	8.7	20.5	8.1	49.8	15.5	13.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+1), s	17.8	16.7	4.8	5.2	4.0	7.4	10.8	8.2				
Green Ext Time (p_c), s	0.1	5.0	0.0	0.5	0.0	2.2	0.3	0.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			26.2									
HCM 7th LOS			C									

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

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	6	85	289	93	178
Future Vol, veh/h	51	6	85	289	93	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	7	92	314	101	193

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	697	147	295	0	-	0
Stage 1	198	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	391	874	1265	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	362	874	1265	-	-	-
Mov Cap-2 Maneuver	362	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	609	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v15.92		1.83	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1265	-	362	874	-	-
HCM Lane V/C Ratio	0.073	-	0.153	0.007	-	-
HCM Control Delay (s/veh)	8.1	-	16.7	9.2	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	0	-	-

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	139	32	5	3	15	190
Future Vol, veh/h	139	32	5	3	15	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	151	35	5	3	16	207

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	9	0	-	0	344 7
Stage 1	-	-	-	-	7 -
Stage 2	-	-	-	-	337 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1611	-	-	-	652 1075
Stage 1	-	-	-	-	1016 -
Stage 2	-	-	-	-	723 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1611	-	-	-	591 1075
Mov Cap-2 Maneuver	-	-	-	-	591 -
Stage 1	-	-	-	-	921 -
Stage 2	-	-	-	-	723 -

Approach	EB	WB	SB
HCM Control Delay, s/v	6.07	0	9.54
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1611	-	-	-	1015
HCM Lane V/C Ratio	0.094	-	-	-	0.22
HCM Control Delay (s/veh)	7.5	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	9	2	21	320	263	258
Future Vol, veh/h	9	2	21	320	263	258
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	2	23	348	286	280

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	820	283	566	0	0
Stage 1	426	-	-	-	-
Stage 2	393	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-
Pot Cap-1 Maneuver	329	715	1004	-	-
Stage 1	627	-	-	-	-
Stage 2	681	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	319	715	1004	-	-
Mov Cap-2 Maneuver	319	-	-	-	-
Stage 1	610	-	-	-	-
Stage 2	681	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.49	0.53	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	111	-	355	-	-
HCM Lane V/C Ratio	0.023	-	0.034	-	-
HCM Control Delay (s/veh)	8.7	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	55	201	62	14	4
Future Vol, veh/h	17	55	201	62	14	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	60	218	67	15	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	286	0	-	0	319 143
Stage 1	-	-	-	-	252 -
Stage 2	-	-	-	-	67 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1273	-	-	-	649 879
Stage 1	-	-	-	-	767 -
Stage 2	-	-	-	-	948 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1273	-	-	-	640 879
Mov Cap-2 Maneuver	-	-	-	-	640 -
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	948 -

Approach	EB	WB	SB
HCM Control Delay, s/v	1.86	0	10.44
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	681
HCM Lane V/C Ratio	0.015	-	-	-	0.029
HCM Control Delay (s/veh)	7.9	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	64	27	62	14	4
Future Vol, veh/h	17	64	27	62	14	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	70	29	67	15	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	97	0	-	0	135 48
Stage 1	-	-	-	-	63 -
Stage 2	-	-	-	-	72 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1495	-	-	-	845 1010
Stage 1	-	-	-	-	952 -
Stage 2	-	-	-	-	943 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1495	-	-	-	835 1010
Mov Cap-2 Maneuver	-	-	-	-	835 -
Stage 1	-	-	-	-	940 -
Stage 2	-	-	-	-	943 -

Approach	EB	WB	SB
HCM Control Delay, s/v	1.56	0	9.24
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1495	-	-	-	868
HCM Lane V/C Ratio	0.012	-	-	-	0.023
HCM Control Delay (s/veh)	7.4	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	1	54	32	341	6	0	99	193	174	155	89	1
Future Vol, veh/h	1	54	32	341	6	0	99	193	174	155	89	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	59	35	371	7	0	108	210	189	168	97	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	12.4	41.6	14.7	15.7
HCM LOS	B	E	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	2%	0%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	98%	0%	2%	100%	0%	99%
Vol Right, %	0%	0%	100%	0%	100%	0%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	193	174	55	32	347	0	155	90
LT Vol	99	0	0	1	0	341	0	155	0
Through Vol	0	193	0	54	0	6	0	0	89
RT Vol	0	0	174	0	32	0	0	0	1
Lane Flow Rate	108	210	189	60	35	377	0	168	98
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.243	0.443	0.362	0.145	0.077	0.845	0	0.404	0.22
Departure Headway (Hd)	8.122	7.609	6.89	8.731	8	8.067	7.568	8.633	8.107
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	472	520	409	446	449	0	416	441
Service Time	5.89	5.377	4.658	6.522	5.791	5.831	5.332	6.411	5.885
HCM Lane V/C Ratio	0.245	0.445	0.363	0.147	0.078	0.84	0	0.404	0.222
HCM Control Delay, s/veh	13.5	16.3	13.6	13	11.5	41.6	10.3	17.2	13.2
HCM Lane LOS	B	C	B	B	B	E	N	C	B
HCM 95th-tile Q	0.9	2.2	1.6	0.5	0.2	8.3	0	1.9	0.8

Intersection	
Intersection Delay, s/veh	39
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	176	0	76	1	0	1	271	289	0	0	454	8
Future Vol, veh/h	176	0	76	1	0	1	271	289	0	0	454	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	191	0	83	1	0	1	295	314	0	0	493	9
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	6.8	12.3	23	70.5
HCM LOS	C	B	C	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	271	289	0	176	76	1	1	0	454	8
LT Vol	271	0	0	176	0	1	0	0	0	0
Through Vol	0	289	0	0	0	0	0	0	454	0
RT Vol	0	0	0	0	76	0	1	0	0	8
Lane Flow Rate	295	314	0	191	83	1	1	0	493	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.642	0.64	0	0.461	0.174	0.003	0.003	0	1.014	0.016
Departure Headway (Hd)	7.845	7.335	7.335	8.862	7.574	10.124	8.873	7.397	7.397	6.684
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	462	493	0	409	473	356	406	0	493	536
Service Time	5.581	5.071	5.071	6.562	5.327	7.824	6.573	5.13	5.13	4.417
HCM Lane V/C Ratio	0.639	0.637	0	0.467	0.175	0.003	0.002	0	1	0.017
HCM Control Delay, s/veh	23.7	22.3	10.1	18.9	11.9	12.9	11.6	10.1	71.6	9.5
HCM Lane LOS	C	C	N	C	B	B	B	N	F	A
HCM 95th-tile Q	4.4	4.4	0	2.4	0.6	0	0	0	14	0

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr

2025 plus Project PM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔↔	↑	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (veh/h)	110	11	109	227	11	150	73	599	142	124	631	78
Future Volume (veh/h)	110	11	109	227	11	150	73	599	142	124	631	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	12	118	247	12	163	79	651	154	135	686	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	270	229	366	297	252	136	1009	450	224	1135	506
Arrive On Green	0.09	0.14	0.14	0.11	0.16	0.16	0.08	0.28	0.28	0.06	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	120	12	118	247	12	163	79	651	154	135	686	85
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.8	0.3	3.8	3.8	0.3	5.3	2.4	8.9	4.3	2.1	9.0	2.1
Cycle Q Clear(g_c), s	1.8	0.3	3.8	3.8	0.3	5.3	2.4	8.9	4.3	2.1	9.0	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	270	229	366	297	252	136	1009	450	224	1135	506
V/C Ratio(X)	0.38	0.04	0.52	0.67	0.04	0.65	0.58	0.65	0.34	0.60	0.60	0.17
Avail Cap(c_a), veh/h	462	530	450	462	666	564	238	2471	1102	300	2471	1102
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	20.4	21.9	23.8	19.7	21.8	24.7	17.4	15.7	25.2	15.9	13.5
Incr Delay (d2), s/veh	0.3	0.0	0.7	1.5	0.0	1.0	1.5	0.7	0.4	1.0	0.5	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.2	2.5	2.8	0.2	3.5	1.7	5.5	2.7	1.4	5.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.0	20.4	22.6	25.3	19.7	22.9	26.2	18.1	16.2	26.2	16.4	13.7
LnGrp LOS	C	C	C	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		250			422			884			906	
Approach Delay, s/veh		23.1			24.2			18.5			17.6	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	21.5	10.5	12.6	8.8	23.5	9.7	13.4				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	4.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+1/4), s	11.1	10.9	5.8	5.8	4.4	11.0	3.8	7.3				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.1	0.0	4.8	0.0	0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		19.6
HCM 7th LOS		B

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2025 plus Project PM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	41	57	128	70	152	50	538	74	124	646	196
Future Volume (veh/h)	124	41	57	128	70	152	50	538	74	124	646	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	45	62	139	76	165	54	585	80	135	702	213
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	267	226	151	246	208	81	1418	193	169	1344	408
Arrive On Green	0.10	0.14	0.14	0.08	0.13	0.13	0.05	0.45	0.45	0.09	0.50	0.50
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3141	429	1781	2686	815
Grp Volume(v), veh/h	135	45	62	139	76	165	54	330	335	135	464	451
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1793	1781	1777	1724
Q Serve(g_s), s	6.6	1.9	3.1	6.9	3.3	8.9	2.6	11.1	11.2	6.6	15.7	15.7
Cycle Q Clear(g_c), s	6.6	1.9	3.1	6.9	3.3	8.9	2.6	11.1	11.2	6.6	15.7	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.47
Lane Grp Cap(c), veh/h	171	267	226	151	246	208	81	802	809	169	889	863
V/C Ratio(X)	0.79	0.17	0.27	0.92	0.31	0.79	0.66	0.41	0.41	0.80	0.52	0.52
Avail Cap(c_a), veh/h	392	528	447	151	528	447	151	802	809	271	889	863
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.4	33.9	40.3	34.8	37.3	41.6	16.4	16.4	39.3	15.0	15.0
Incr Delay (d2), s/veh	8.0	0.3	0.6	50.7	0.7	6.6	8.9	1.6	1.6	8.5	2.2	2.3
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(95%),veh/ln	5.7	1.5	2.1	8.6	2.6	6.6	2.4	7.8	7.9	5.6	10.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.2	33.7	34.6	91.0	35.6	43.9	50.6	17.9	18.0	47.8	17.2	17.2
LnGrp LOS	D	C	C	F	D	D	D	B	B	D	B	B
Approach Vol, veh/h	242			380			719			1050		
Approach Delay, s/veh	41.4			59.5			20.4			21.1		
Approach LOS	D			E			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	45.8	12.1	17.7	8.6	50.1	13.1	16.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+I), s	13.6	13.2	8.9	5.1	4.6	17.7	8.6	10.9				
Green Ext Time (p_c), s	0.1	3.9	0.0	0.3	0.0	5.5	0.2	0.7				

Intersection Summary												
HCM 7th Control Delay, s/veh			29.1									
HCM 7th LOS			C									

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

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	147	71	16	186	317	148
Future Vol, veh/h	147	71	16	186	317	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	77	17	202	345	161

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	662	253	505	0	-	0
Stage 1	425	-	-	-	-	-
Stage 2	237	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	411	748	1057	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	404	748	1057	-	-	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	16.62	0.67	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1057	-	404	748	-	-
HCM Lane V/C Ratio	0.016	-	0.396	0.103	-	-
HCM Control Delay (s/veh)	8.5	-	19.6	10.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.9	0.3	-	-

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	204	14	30	16	8	211
Future Vol, veh/h	204	14	30	16	8	211
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	222	15	33	17	9	229

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	50	0	-	0	500 41
Stage 1	-	-	-	-	41 -
Stage 2	-	-	-	-	459 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1557	-	-	-	530 1030
Stage 1	-	-	-	-	981 -
Stage 2	-	-	-	-	636 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1557	-	-	-	455 1030
Mov Cap-2 Maneuver	-	-	-	-	455 -
Stage 1	-	-	-	-	841 -
Stage 2	-	-	-	-	636 -

Approach	EB	WB	SB
HCM Control Delay, s/v	7.2	0	9.82
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1557	-	-	-	984
HCM Lane V/C Ratio	0.142	-	-	-	0.242
HCM Control Delay (s/veh)	7.7	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.5	-	-	-	0.9

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	70	9	5	485	450	81
Future Vol, veh/h	70	9	5	485	450	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	10	5	527	489	88

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1071	289	577	0	-	0
Stage 1	533	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	230	709	994	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	228	709	994	-	-	-
Mov Cap-2 Maneuver	228	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v27.17		0.09	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	18	-	247	-	-
HCM Lane V/C Ratio	0.005	-	0.348	-	-
HCM Control Delay (s/veh)	8.6	0	27.2	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	
Traffic Vol, veh/h	6	253	130	12	74	14
Future Vol, veh/h	6	253	130	12	74	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	275	141	13	80	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	154	0	-	0	298 77
Stage 1	-	-	-	-	148 -
Stage 2	-	-	-	-	151 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1424	-	-	-	669 968
Stage 1	-	-	-	-	864 -
Stage 2	-	-	-	-	862 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1424	-	-	-	666 968
Mov Cap-2 Maneuver	-	-	-	-	666 -
Stage 1	-	-	-	-	860 -
Stage 2	-	-	-	-	862 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.17	0	10.95
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1424	-	-	-	701
HCM Lane V/C Ratio	0.005	-	-	-	0.137
HCM Control Delay (s/veh)	7.5	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	49	136	12	74	14
Future Vol, veh/h	6	49	136	12	74	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	53	148	13	80	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	161	0	-	0	194 80
Stage 1	-	-	-	-	154 -
Stage 2	-	-	-	-	40 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1416	-	-	-	777 963
Stage 1	-	-	-	-	858 -
Stage 2	-	-	-	-	978 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1416	-	-	-	773 963
Mov Cap-2 Maneuver	-	-	-	-	773 -
Stage 1	-	-	-	-	854 -
Stage 2	-	-	-	-	978 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.82	0	10.12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	798
HCM Lane V/C Ratio	0.005	-	-	-	0.12
HCM Control Delay (s/veh)	7.6	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	1	65	50	264	5	1	56	260	3	71	58	1
Future Vol, veh/h	1	65	50	264	5	1	56	260	3	71	58	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	71	54	287	5	1	61	283	3	77	63	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	10.6	19	15.1	11.4
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	2%	0%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	98%	0%	2%	0%	0%	98%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	260	3	66	50	269	1	71	59
LT Vol	56	0	0	1	0	264	0	71	0
Through Vol	0	260	0	65	0	5	0	0	58
RT Vol	0	0	3	0	50	0	1	0	1
Lane Flow Rate	61	283	3	72	54	292	1	77	64
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.119	0.514	0.005	0.142	0.096	0.573	0.002	0.162	0.126
Departure Headway (Hd)	7.053	6.546	5.837	7.11	6.392	7.054	5.853	7.568	7.046
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	548	609	501	555	509	607	471	505
Service Time	4.832	4.325	3.615	4.907	4.189	4.83	3.628	5.364	4.841
HCM Lane V/C Ratio	0.121	0.516	0.005	0.144	0.097	0.574	0.002	0.163	0.127
HCM Control Delay, s/veh	10.8	16.1	8.6	11.1	9.9	19	8.6	11.8	10.9
HCM Lane LOS	B	C	A	B	A	C	A	B	B
HCM 95th-tile Q	0.4	2.9	0	0.5	0.3	3.6	0	0.6	0.4

Intersection

Intersection Delay, s/veh 24
 Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	200	11	165	1	1	1	294	117	5	8	361	2
Future Vol, veh/h	200	11	165	1	1	1	294	117	5	8	361	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	217	12	179	1	1	1	320	127	5	9	392	2
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	6.3	11.6	22.5	33.7
HCM LOS	C	B	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	95%	0%	50%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	5%	0%	50%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	294	117	5	211	165	2	1	8	361	2
LT Vol	294	0	0	200	0	1	0	8	0	0
Through Vol	0	117	0	11	0	1	0	0	361	0
RT Vol	0	0	5	0	165	0	1	0	0	2
Lane Flow Rate	320	127	5	229	179	2	1	9	392	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.696	0.259	0.01	0.509	0.339	0.006	0.002	0.019	0.806	0.004
Departure Headway (Hd)	7.837	7.326	6.612	7.986	6.806	9.12	8.152	7.908	7.398	6.684
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	491	541	452	529	392	438	453	490	535
Service Time	5.58	5.07	4.355	5.729	4.548	6.888	5.919	5.652	5.142	4.427
HCM Lane V/C Ratio	0.696	0.259	0.009	0.507	0.338	0.005	0.002	0.02	0.8	0.004
HCM Control Delay, s/veh	26.7	12.6	9.4	18.8	13	11.9	10.9	10.8	34.3	9.5
HCM Lane LOS	D	B	A	C	B	B	B	B	D	A
HCM 95th-tile Q	5.3	1	0	2.8	1.5	0	0	0.1	7.6	0

HCM 7th Signalized Intersection Summary

4: N 1st St & Dorset Dr

2040 AM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	20	7	21	106	19	169	58	654	258	168	406	77
Future Volume (veh/h)	20	7	21	106	19	169	58	654	258	168	406	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	8	23	115	21	184	63	711	280	183	441	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	256	217	303	362	307	118	1096	489	282	1311	585
Arrive On Green	0.03	0.14	0.14	0.09	0.19	0.19	0.07	0.31	0.31	0.08	0.37	0.37
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	22	8	23	115	21	184	63	711	280	183	441	84
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.4	0.2	0.7	1.8	0.5	6.1	2.0	10.0	8.5	3.0	5.1	2.0
Cycle Q Clear(g_c), s	0.4	0.2	0.7	1.8	0.5	6.1	2.0	10.0	8.5	3.0	5.1	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	256	217	303	362	307	118	1096	489	282	1311	585
V/C Ratio(X)	0.21	0.03	0.11	0.38	0.06	0.60	0.53	0.65	0.57	0.65	0.34	0.14
Avail Cap(c_a), veh/h	444	510	432	444	640	542	229	2377	1060	288	2377	1060
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	21.5	21.8	24.8	18.9	21.2	26.0	17.2	16.7	25.6	13.1	12.1
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.3	0.0	0.7	1.4	0.7	1.1	3.8	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.2	0.5	1.3	0.4	0.1	1.4	6.2	5.4	2.2	3.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.6	21.6	21.8	25.1	19.0	21.9	27.4	17.9	17.8	29.4	13.2	12.2
LnGrp LOS	C	C	C	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		53			320			1054			708	
Approach Delay, s/veh		24.2			22.8			18.4			17.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	23.6	9.6	12.5	8.4	27.0	6.4	15.7				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	11.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+1.5), s	11.8	12.0	3.8	2.7	4.0	7.1	2.4	8.1				
Green Ext Time (p_c), s	0.0	5.8	0.0	0.0	0.0	3.0	0.0	0.3				

Intersection Summary

HCM 7th Control Delay, s/veh	18.8
HCM 7th LOS	B

Notes

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2040 AM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	56	51	41	21	1	36	761	84	87	369	78
Future Volume (veh/h)	210	56	51	41	21	1	36	761	84	87	369	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	228	61	55	45	23	1	39	827	91	95	401	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	374	301	75	315	14	69	1481	163	123	1430	300
Arrive On Green	0.15	0.20	0.20	0.04	0.09	0.09	0.04	0.46	0.46	0.07	0.49	0.49
Sat Flow, veh/h	1781	1870	1506	1781	3470	150	1781	3228	355	1781	2923	614
Grp Volume(v), veh/h	228	58	58	45	12	12	39	455	463	95	242	244
Grp Sat Flow(s),veh/h/ln	1781	1777	1599	1781	1777	1843	1781	1777	1806	1781	1777	1760
Q Serve(g_s), s	10.9	2.3	2.6	2.2	0.5	0.5	1.9	16.2	16.2	4.6	7.0	7.2
Cycle Q Clear(g_c), s	10.9	2.3	2.6	2.2	0.5	0.5	1.9	16.2	16.2	4.6	7.0	7.2
Prop In Lane	1.00		0.94	1.00		0.08	1.00		0.20	1.00		0.35
Lane Grp Cap(c), veh/h	269	355	319	75	161	167	69	815	829	123	869	861
V/C Ratio(X)	0.85	0.16	0.18	0.60	0.07	0.07	0.57	0.56	0.56	0.77	0.28	0.28
Avail Cap(c_a), veh/h	399	510	459	153	510	529	153	815	829	276	869	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	28.8	29.0	41.0	36.3	36.3	41.2	17.2	17.2	39.9	13.2	13.2
Incr Delay (d2), s/veh	10.7	0.2	0.3	7.6	0.2	0.2	7.2	2.8	2.7	9.9	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	1.8	1.8	1.9	0.4	0.4	1.7	10.6	10.7	4.0	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.7	29.1	29.2	48.6	36.5	36.5	48.4	19.9	19.9	49.9	14.0	14.0
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	B	B
Approach Vol, veh/h		344			69			957			581	
Approach Delay, s/veh		40.8			44.4			21.0			19.9	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	45.8	8.2	22.5	8.0	48.4	17.8	13.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	10.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+10), s	10.6	18.2	4.2	4.6	3.9	9.2	12.9	2.5				
Green Ext Time (p_c), s	0.1	5.5	0.0	0.5	0.0	2.7	0.3	0.1				

Intersection Summary

HCM 7th Control Delay, s/veh	25.0
HCM 7th LOS	C

Notes

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

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	158	1	1	261	221	298
Future Vol, veh/h	158	1	1	261	221	298
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	1	1	284	240	324

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	688	402	564	0	-	0
Stage 1	402	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	412	648	1007	-	-	-
Stage 1	675	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	412	648	1007	-	-	-
Mov Cap-2 Maneuver	412	-	-	-	-	-
Stage 1	675	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	19.87	0.03	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1007	-	413	-	-
HCM Lane V/C Ratio	0.001	-	0.419	-	-
HCM Control Delay (s/veh)	8.6	-	19.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	2	-	-

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↗
Traffic Vol, veh/h	58	34	5	3	22	91
Future Vol, veh/h	58	34	5	3	22	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	37	5	3	24	99

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	9	0	-	0	170
Stage 1	-	-	-	-	7
Stage 2	-	-	-	-	163
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1611	-	-	-	820
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	866
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1611	-	-	-	788
Mov Cap-2 Maneuver	-	-	-	-	788
Stage 1	-	-	-	-	976
Stage 2	-	-	-	-	866

Approach	EB	WB	SB
HCM Control Delay, s/v	4.62	0	8.89
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1611	-	-	-	788	1075
HCM Lane V/C Ratio	0.039	-	-	-	0.03	0.092
HCM Control Delay (s/veh)	7.3	-	-	-	9.7	8.7
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.3

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	137	103	98	201	14	20
Future Vol, veh/h	137	103	98	201	14	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	112	107	218	15	22

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	261	0	636 205
Stage 1	-	-	-	-	205 -
Stage 2	-	-	-	-	432 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1304	-	442 836
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	655 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1304	-	401 836
Mov Cap-2 Maneuver	-	-	-	-	401 -
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	594 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.62	11.66
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	578	-	-	590	-
HCM Lane V/C Ratio	0.064	-	-	0.082	-
HCM Control Delay (s/veh)	11.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.3	-

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	103	98	127	14	20
Future Vol, veh/h	170	103	98	127	14	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	185	112	107	138	15	22

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	297	0	592 241
Stage 1	-	-	-	-	241 -
Stage 2	-	-	-	-	351 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1265	-	469 798
Stage 1	-	-	-	-	799 -
Stage 2	-	-	-	-	713 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1265	-	426 798
Mov Cap-2 Maneuver	-	-	-	-	426 -
Stage 1	-	-	-	-	799 -
Stage 2	-	-	-	-	648 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	3.53	11.54
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	587	-	-	784	-
HCM Lane V/C Ratio	0.063	-	-	0.084	-
HCM Control Delay (s/veh)	11.5	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.3	-

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	118	103	3	9	273	103	9	3	2	23	23	85
Future Vol, veh/h	118	103	3	9	273	103	9	3	2	23	23	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	128	112	3	10	297	112	10	3	2	25	25	92
Number of Lanes	1	1	0	1	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	10.7	16.5	10.1	9.9
HCM LOS	B	C	B	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	33%	0%	97%	0%	73%	0%	100%	8%
Vol Right, %	0%	0%	67%	0%	3%	0%	27%	0%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	2	3	118	106	9	376	23	15	93
LT Vol	9	0	0	118	0	9	0	23	0	0
Through Vol	0	2	1	0	103	0	273	0	15	8
RT Vol	0	0	2	0	3	0	103	0	0	85
Lane Flow Rate	10	2	3	128	115	10	409	25	17	101
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.02	0.004	0.006	0.232	0.191	0.017	0.62	0.049	0.031	0.167
Departure Headway (Hd)	7.459	6.949	6.473	6.498	5.976	6.153	5.46	7.121	6.612	5.959
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	480	514	552	553	601	583	662	503	542	601
Service Time	5.208	4.698	4.221	4.228	3.706	3.876	3.183	4.859	4.35	3.697
HCM Lane V/C Ratio	0.021	0.004	0.005	0.231	0.191	0.017	0.618	0.05	0.031	0.168
HCM Control Delay, s/veh	10.4	9.7	9.3	11.2	10.1	9	16.7	10.2	9.6	9.9
HCM Lane LOS	B	A	A	B	B	A	C	B	A	A
HCM 95th-tile Q	0.1	0	0	0.9	0.7	0.1	4.3	0.2	0.1	0.6

Intersection	
Intersection Delay, s/veh	45
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↑	↗	↖	↗	
Traffic Vol, veh/h	1	53	43	434	6	1	111	213	23	164	111	1
Future Vol, veh/h	1	53	43	434	6	1	111	213	23	164	111	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	58	47	472	7	1	121	232	25	178	121	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	12.7	91.6	17.4	16.7
HCM LOS	B	F	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	2%	0%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	98%	0%	1%	0%	0%	99%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	213	23	54	43	440	1	164	112
LT Vol	111	0	0	1	0	434	0	164	0
Through Vol	0	213	0	53	0	6	0	0	111
RT Vol	0	0	23	0	43	0	1	0	1
Lane Flow Rate	121	232	25	59	47	478	1	178	122
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.285	0.514	0.05	0.143	0.104	1.073	0.002	0.43	0.276
Departure Headway (Hd)	8.796	8.281	7.56	9.094	8.36	8.075	6.863	8.989	8.464
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	411	438	477	397	431	454	525	403	427
Service Time	6.496	5.981	5.26	6.794	6.06	5.775	4.563	6.689	6.164
HCM Lane V/C Ratio	0.294	0.53	0.052	0.149	0.109	1.053	0.002	0.442	0.286
HCM Control Delay, s/veh	15	19.4	10.7	13.3	12	91.8	9.6	18.3	14.4
HCM Lane LOS	B	C	B	B	B	F	A	C	B
HCM 95th-tile Q	1.2	2.9	0.2	0.5	0.3	15.6	0	2.1	1.1

Intersection												
Intersection Delay, s/veh	84.7											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	186	4	67	8	7	9	344	152	2	4	574	9
Future Vol, veh/h	186	4	67	8	7	9	344	152	2	4	574	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	202	4	73	9	8	10	374	165	2	4	624	10
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB				
Opposing Approach	WB	EB	SB	NB				
Opposing Lanes	2	2	3	3				
Conflicting Approach Left SB		NB	EB	WB				
Conflicting Lanes Left	3	3	2	2				
Conflicting Approach Right NB		SB	WB	EB				
Conflicting Lanes Right	3	3	2	2				
HCM Control Delay, s/veh	8.1		12.7		31.5		162	
HCM LOS	C		B		D		F	

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	98%	0%	53%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	2%	0%	47%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	344	152	2	190	67	15	9	4	574	9
LT Vol	344	0	0	186	0	8	0	4	0	0
Through Vol	0	152	0	4	0	7	0	0	574	0
RT Vol	0	0	2	0	67	0	9	0	0	9
Lane Flow Rate	374	165	2	207	73	16	10	4	624	10
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.816	0.338	0.004	0.492	0.15	0.042	0.023	0.01	1.283	0.018
Departure Headway (Hd)	8.425	7.913	7.196	9.126	7.918	10.066	9.072	7.913	7.403	6.69
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	434	458	500	399	456	358	397	451	493	532
Service Time	6.125	5.613	4.896	6.826	5.618	7.766	6.772	5.69	5.18	4.466
HCM Lane V/C Ratio	0.862	0.36	0.004	0.519	0.16	0.045	0.025	0.009	1.266	0.019
HCM Control Delay, s/veh	39.1	14.6	9.9	20.3	12	13.2	12	10.8	165.4	9.6
HCM Lane LOS	E	B	A	C	B	B	B	B	F	A
HCM 95th-tile Q	7.5	1.5	0	2.6	0.5	0.1	0.1	0	25.9	0.1

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr

2040 PM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔↔	↑	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (veh/h)	103	31	98	337	22	274	65	616	231	212	602	76
Future Volume (veh/h)	103	31	98	337	22	274	65	616	231	212	602	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	34	107	366	24	298	71	670	251	230	654	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	343	291	398	408	345	120	998	445	258	1169	521
Arrive On Green	0.08	0.18	0.18	0.12	0.22	0.22	0.07	0.28	0.28	0.07	0.33	0.33
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	112	34	107	366	24	298	71	670	251	230	654	83
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.0	1.0	3.8	6.7	0.7	11.6	2.5	10.7	8.7	4.2	9.7	2.4
Cycle Q Clear(g_c), s	2.0	1.0	3.8	6.7	0.7	11.6	2.5	10.7	8.7	4.2	9.7	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	343	291	398	408	345	120	998	445	258	1169	521
V/C Ratio(X)	0.40	0.10	0.37	0.92	0.06	0.86	0.59	0.67	0.56	0.89	0.56	0.16
Avail Cap(c_a), veh/h	398	457	388	398	574	486	205	2131	950	258	2131	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	21.8	23.0	28.1	19.9	24.2	29.1	20.5	19.7	29.4	17.7	15.3
Incr Delay (d2), s/veh	0.3	0.0	0.3	25.6	0.0	8.3	1.7	0.8	1.1	28.6	0.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.7	2.5	7.4	0.5	8.6	1.8	7.1	5.7	4.7	6.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.4	21.8	23.2	53.7	19.9	32.5	30.8	21.3	20.9	58.0	18.1	15.4
LnGrp LOS	C	C	C	D	B	C	C	C	C	E	B	B
Approach Vol, veh/h		253			688			992			967	
Approach Delay, s/veh		25.3			43.4			21.8			27.4	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	23.8	12.0	16.4	8.9	26.9	9.8	18.6				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	1.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+10), s	10.2	12.7	8.7	5.8	4.5	11.7	4.0	13.6				
Green Ext Time (p_c), s	0.0	5.3	0.0	0.2	0.0	4.5	0.0	0.4				

Intersection Summary

HCM 7th Control Delay, s/veh	29.1
HCM 7th LOS	C

Notes

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2040 PM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	150	32	60	128	81	88	56	675	58	25	763	249
Future Volume (veh/h)	150	32	60	128	81	88	56	675	58	25	763	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	35	65	139	88	96	61	734	63	27	829	271
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	215	191	166	177	158	91	1672	143	55	1277	417
Arrive On Green	0.11	0.12	0.12	0.09	0.10	0.10	0.05	0.50	0.50	0.03	0.49	0.49
Sat Flow, veh/h	1781	1777	1585	1781	1777	1585	1781	3312	284	1781	2633	860
Grp Volume(v), veh/h	163	35	65	139	88	96	61	394	403	27	559	541
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1819	1781	1777	1716
Q Serve(g_s), s	7.2	1.4	3.0	6.2	3.8	4.7	2.7	11.3	11.3	1.2	19.0	19.1
Cycle Q Clear(g_c), s	7.2	1.4	3.0	6.2	3.8	4.7	2.7	11.3	11.3	1.2	19.0	19.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.50
Lane Grp Cap(c), veh/h	204	215	191	166	177	158	91	897	919	55	862	832
V/C Ratio(X)	0.80	0.16	0.34	0.84	0.50	0.61	0.67	0.44	0.44	0.49	0.65	0.65
Avail Cap(c_a), veh/h	432	552	493	166	552	493	166	897	919	299	862	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	31.7	32.4	35.8	34.3	34.7	37.5	12.7	12.7	38.3	15.6	15.6
Incr Delay (d2), s/veh	7.0	0.4	1.0	29.4	2.2	3.8	8.4	1.6	1.5	6.6	3.8	3.9
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(95%),veh/ln	6.1	1.1	2.1	7.0	2.9	3.3	2.4	7.5	7.7	1.1	11.8	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.7	32.1	33.4	65.3	36.5	38.5	45.8	14.2	14.2	44.9	19.3	19.5
LnGrp LOS	D	C	C	E	D	D	D	B	B	D	B	B
Approach Vol, veh/h		263		323		858		1127				
Approach Delay, s/veh		38.4		49.5		16.4		20.0				
Approach LOS		D		D		B		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	46.4	12.1	14.8	8.7	44.8	13.8	13.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+13.2), s	13.2	13.3	8.2	5.0	4.7	21.1	9.2	6.7				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.4	0.0	6.5	0.3	0.8				

Intersection Summary												
HCM 7th Control Delay, s/veh											24.4	
HCM 7th LOS											C	

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

Intersection						
Int Delay, s/veh	21.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	327	1	1	166	436	213
Future Vol, veh/h	327	1	1	166	436	213
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	355	1	1	180	474	232

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	772	590	705	0	-	0
Stage 1	590	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	368	508	893	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	367	508	893	-	-	-
Mov Cap-2 Maneuver	367	-	-	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	849	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v73.76		0.05	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	893	-	368	-	-
HCM Lane V/C Ratio	0.001	-	0.97	-	-
HCM Control Delay (s/veh)	9	-	73.8	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	10.9	-	-

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	101	16	34	21	10	147
Future Vol, veh/h	101	16	34	21	10	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	17	37	23	11	160

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	60	0	-	0	285 48
Stage 1	-	-	-	-	48 -
Stage 2	-	-	-	-	237 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1544	-	-	-	705 1020
Stage 1	-	-	-	-	974 -
Stage 2	-	-	-	-	802 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1544	-	-	-	655 1020
Mov Cap-2 Maneuver	-	-	-	-	655 -
Stage 1	-	-	-	-	905 -
Stage 2	-	-	-	-	802 -

Approach	EB	WB	SB
HCM Control Delay, s/v	6.48	0	9.27
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1544	-	-	-	655	1020
HCM Lane V/C Ratio	0.071	-	-	-	0.017	0.157
HCM Control Delay (s/veh)	7.5	-	-	-	10.6	9.2
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0.6

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	243	43	23	198	86	90
Future Vol, veh/h	243	43	23	198	86	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	47	25	215	93	98

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	311	0	553 288
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	265 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1250	-	494 752
Stage 1	-	-	-	-	761 -
Stage 2	-	-	-	-	779 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1250	-	483 752
Mov Cap-2 Maneuver	-	-	-	-	483 -
Stage 1	-	-	-	-	761 -
Stage 2	-	-	-	-	762 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.83	13.98
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	591	-	-	187	-
HCM Lane V/C Ratio	0.324	-	-	0.02	-
HCM Control Delay (s/veh)	14	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	181	43	23	267	86	90
Future Vol, veh/h	181	43	23	267	86	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	197	47	25	290	93	98

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	243	0	560 220
Stage 1	-	-	-	-	220 -
Stage 2	-	-	-	-	340 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1323	-	489 820
Stage 1	-	-	-	-	817 -
Stage 2	-	-	-	-	721 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1323	-	478 820
Mov Cap-2 Maneuver	-	-	-	-	478 -
Stage 1	-	-	-	-	817 -
Stage 2	-	-	-	-	704 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.62	13.62
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	608	-	-	143	-
HCM Lane V/C Ratio	0.315	-	-	0.019	-
HCM Control Delay (s/veh)	13.6	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	141	217	14	66	128	42	10	23	12	84	21	249
Future Vol, veh/h	141	217	14	66	128	42	10	23	12	84	21	249
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	236	15	72	139	46	11	25	13	91	23	271
Number of Lanes	1	1	0	1	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	14.1	12.7	10.8	13.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	39%	0%	94%	0%	75%	0%	100%	3%
Vol Right, %	0%	0%	61%	0%	6%	0%	25%	0%	0%	97%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	15	20	141	231	66	170	84	14	256
LT Vol	10	0	0	141	0	66	0	84	0	0
Through Vol	0	15	8	0	217	0	128	0	14	7
RT Vol	0	0	12	0	14	0	42	0	0	249
Lane Flow Rate	11	17	21	153	251	72	185	91	15	278
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.025	0.036	0.044	0.302	0.457	0.148	0.347	0.188	0.029	0.479
Departure Headway (Hd)	8.391	7.877	7.438	7.102	6.558	7.432	6.755	7.394	6.885	6.191
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	429	457	484	503	545	479	528	483	517	579
Service Time	6.091	5.577	5.138	4.887	4.342	5.224	4.547	5.181	4.671	3.976
HCM Lane V/C Ratio	0.026	0.037	0.043	0.304	0.461	0.15	0.35	0.188	0.029	0.48
HCM Control Delay, s/veh	11.3	10.9	10.5	13	14.8	11.5	13.1	11.9	9.9	14.6
HCM Lane LOS	B	B	B	B	B	B	B	B	A	B
HCM 95th-tile Q	0.1	0.1	0.1	1.3	2.4	0.5	1.5	0.7	0.1	2.6

Intersection	
Intersection Delay, s/veh	24.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	1	67	58	376	5	1	56	253	18	74	73	1
Future Vol, veh/h	1	67	58	376	5	1	56	253	18	74	73	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	73	63	409	5	1	61	275	20	80	79	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	11.6	40.2	17.4	12.7
HCM LOS	B	E	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	0%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	99%	0%	1%	0%	0%	99%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	253	18	68	58	381	1	74	74
LT Vol	56	0	0	1	0	376	0	74	0
Through Vol	0	253	0	67	0	5	0	0	73
RT Vol	0	0	18	0	58	0	1	0	1
Lane Flow Rate	61	275	20	74	63	414	1	80	80
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.133	0.562	0.036	0.162	0.126	0.855	0.002	0.188	0.176
Departure Headway (Hd)	7.862	7.352	6.637	7.899	7.176	7.435	6.227	8.417	7.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	456	490	539	453	499	489	574	425	454
Service Time	5.612	5.101	4.386	5.66	4.936	5.179	3.971	6.178	5.653
HCM Lane V/C Ratio	0.134	0.561	0.037	0.163	0.126	0.847	0.002	0.188	0.176
HCM Control Delay, s/veh	11.8	19.2	9.6	12.2	11	40.3	9	13.1	12.3
HCM Lane LOS	B	C	A	B	B	E	A	B	B
HCM 95th-tile Q	0.5	3.4	0.1	0.6	0.4	8.8	0	0.7	0.6

Intersection												
Intersection Delay, s/veh	63.1											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	185	11	270	1	1	1	312	141	6	7	498	2
Future Vol, veh/h	185	11	270	1	1	1	312	141	6	7	498	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	201	12	293	1	1	1	339	153	7	8	541	2
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	13		29.9	
HCM LOS	C		D	

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	94%	0%	50%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	6%	0%	50%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	312	141	6	196	270	2	1	7	498	2
LT Vol	312	0	0	185	0	1	0	7	0	0
Through Vol	0	141	0	11	0	1	0	0	498	0
RT Vol	0	0	6	0	270	0	1	0	0	2
Lane Flow Rate	339	153	7	213	293	2	1	8	541	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.785	0.334	0.013	0.498	0.592	0.006	0.003	0.018	1.199	0.004
Departure Headway (Hd)	8.813	8.298	7.578	8.823	7.637	10.518	9.538	8.487	7.975	7.257
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	414	437	475	411	475	342	377	424	460	496
Service Time	6.513	5.998	5.278	6.523	5.337	8.218	7.238	6.187	5.675	4.957
HCM Lane V/C Ratio	0.819	0.35	0.015	0.518	0.617	0.006	0.003	0.019	1.176	0.004
HCM Control Delay, s/veh	37	15.1	10.4	20	20.8	13.3	12.3	11.3	134.9	10
HCM Lane LOS	E	C	B	C	C	B	B	B	F	A
HCM 95th-tile Q	6.8	1.4	0	2.7	3.8	0	0	0.1	20.9	0

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr

2040 plus Project AM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔↔	↑	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (veh/h)	19	8	20	109	19	157	59	628	266	256	404	76
Future Volume (veh/h)	19	8	20	109	19	157	59	628	266	256	404	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	9	22	118	21	171	64	683	289	278	439	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	257	218	307	368	312	119	1067	476	291	1290	575
Arrive On Green	0.03	0.14	0.14	0.09	0.20	0.20	0.07	0.30	0.30	0.08	0.36	0.36
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	21	9	22	118	21	171	64	683	289	278	439	83
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	0.2	0.7	1.8	0.5	5.5	2.0	9.5	8.9	4.6	5.1	2.0
Cycle Q Clear(g_c), s	0.3	0.2	0.7	1.8	0.5	5.5	2.0	9.5	8.9	4.6	5.1	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	257	218	307	368	312	119	1067	476	291	1290	575
V/C Ratio(X)	0.20	0.04	0.10	0.38	0.06	0.55	0.54	0.64	0.61	0.96	0.34	0.14
Avail Cap(c_a), veh/h	448	515	436	448	646	547	231	2399	1070	291	2399	1070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	21.3	21.5	24.5	18.6	20.6	25.7	17.3	17.1	26.0	13.2	12.2
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.3	0.0	0.6	1.4	0.6	1.3	40.5	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.2	0.4	1.3	0.4	3.5	1.4	5.9	5.6	5.9	3.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.4	21.3	21.6	24.8	18.6	21.2	27.1	17.9	18.3	66.5	13.4	12.3
LnGrp LOS	C	C	C	C	B	C	C	B	B	E	B	B
Approach Vol, veh/h		52			310			1036			800	
Approach Delay, s/veh		23.9			22.4			18.6			31.7	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	22.9	9.7	12.4	8.4	26.5	6.3	15.8				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	4.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+10), s	10.6	11.5	3.8	2.7	4.0	7.1	2.3	7.5				
Green Ext Time (p_c), s	0.0	5.6	0.0	0.0	0.0	3.0	0.0	0.3				

Intersection Summary												
HCM 7th Control Delay, s/veh											24.0	
HCM 7th LOS											C	

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2040 plus Project AM
11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	67	50	40	20	2	36	747	107	96	361	77
Future Volume (veh/h)	204	67	50	40	20	2	36	747	107	96	361	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	222	73	54	43	22	2	39	812	116	104	392	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	401	270	73	299	27	69	1427	204	133	1440	306
Arrive On Green	0.15	0.20	0.20	0.04	0.09	0.09	0.04	0.46	0.46	0.07	0.49	0.49
Sat Flow, veh/h	1781	2030	1371	1781	3298	296	1781	3121	446	1781	2917	619
Grp Volume(v), veh/h	222	63	64	43	12	12	39	462	466	104	237	239
Grp Sat Flow(s),veh/h/ln	1781	1777	1624	1781	1777	1817	1781	1777	1790	1781	1777	1759
Q Serve(g_s), s	10.6	2.6	2.9	2.1	0.5	0.5	1.9	16.7	16.7	5.0	6.8	7.0
Cycle Q Clear(g_c), s	10.6	2.6	2.9	2.1	0.5	0.5	1.9	16.7	16.7	5.0	6.8	7.0
Prop In Lane	1.00		0.84	1.00		0.16	1.00		0.25	1.00		0.35
Lane Grp Cap(c), veh/h	263	351	320	73	161	165	69	812	819	133	877	868
V/C Ratio(X)	0.85	0.18	0.20	0.59	0.07	0.07	0.57	0.57	0.57	0.78	0.27	0.27
Avail Cap(c_a), veh/h	397	508	464	153	508	519	153	812	819	275	877	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	29.2	29.3	41.2	36.4	36.4	41.3	17.4	17.4	39.8	12.9	13.0
Incr Delay (d2), s/veh	10.1	0.2	0.3	7.5	0.2	0.2	7.2	2.9	2.9	9.4	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.9	2.0	2.0	1.8	0.4	0.4	1.7	10.9	11.0	4.4	4.6	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.4	29.5	29.6	48.7	36.6	36.6	48.6	20.3	20.3	49.2	13.7	13.8
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	B	B
Approach Vol, veh/h	349			67			967			580		
Approach Delay, s/veh	40.3			44.4			21.4			20.1		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	45.8	8.2	22.4	8.0	49.0	17.5	13.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	40.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+1), s	18.7	18.7	4.1	4.9	3.9	9.0	12.6	2.5				
Green Ext Time (p_c), s	0.1	5.5	0.0	0.6	0.0	2.7	0.3	0.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			25.2									
HCM 7th LOS			C									

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

Intersection						
Int Delay, s/veh	15					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	191	12	127	271	205	320
Future Vol, veh/h	191	12	127	271	205	320
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	13	138	295	223	348

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	967	285	571	0	-	0
Stage 1	397	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	266	712	1000	-	-	-
Stage 1	649	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	230	712	1000	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v77.66		2.93	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1000	-	230	712	-	-
HCM Lane V/C Ratio	0.138	-	0.904	0.018	-	-
HCM Control Delay (s/veh)	9.2	-	81.9	10.1	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	7.6	0.1	-	-

Intersection						
Int Delay, s/veh	6.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↗
Traffic Vol, veh/h	96	34	5	3	21	80
Future Vol, veh/h	96	34	5	3	21	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	37	5	3	23	87

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	9	0	-	0	253
Stage 1	-	-	-	-	7
Stage 2	-	-	-	-	246
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1611	-	-	-	736
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	795
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1611	-	-	-	688
Mov Cap-2 Maneuver	-	-	-	-	688
Stage 1	-	-	-	-	950
Stage 2	-	-	-	-	795

Approach	EB	WB	SB
HCM Control Delay, s/v	5.46	0	9.01
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1611	-	-	-	688	1075
HCM Lane V/C Ratio	0.065	-	-	-	0.033	0.081
HCM Control Delay (s/veh)	7.4	-	-	-	10.4	8.6
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0.3

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↕	
Traffic Vol, veh/h	0	5	0	461	520	244
Future Vol, veh/h	0	5	0	461	520	244
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	501	565	265

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	415	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-
Pot Cap-1 Maneuver	0	587	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	587	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v11.19		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 587	-	-
HCM Lane V/C Ratio	- 0.009	-	-
HCM Control Delay (s/veh)	- 11.2	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 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	17	171	103	98	230	62	14	0	20	14	0	4
Future Vol, veh/h	17	171	103	98	230	62	14	0	20	14	0	4
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	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	186	112	107	250	67	15	0	22	15	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	317	0	0	298	0	0	617	809	149	627	832	159
Stage 1	-	-	-	-	-	-	279	279	-	497	497	-
Stage 2	-	-	-	-	-	-	338	530	-	130	335	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1239	-	-	1260	-	-	374	313	871	368	304	858
Stage 1	-	-	-	-	-	-	704	679	-	524	543	-
Stage 2	-	-	-	-	-	-	650	525	-	860	641	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1239	-	-	1260	-	-	336	282	871	324	274	858
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	282	-	324	274	-
Stage 1	-	-	-	-	-	-	694	668	-	479	497	-
Stage 2	-	-	-	-	-	-	592	480	-	826	632	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.46			2.04			12.36			15.11		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	1239	-	-	1260	-	-	376
HCM Lane V/C Ratio	0.07	0.015	-	-	0.085	-	-	0.052
HCM Control Delay (s/veh)	12.4	7.9	-	-	8.1	-	-	15.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.3	-	-	0.2

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	17	259	103	98	84	62	14	0	20	14	0	4
Future Vol, veh/h	17	259	103	98	84	62	14	0	20	14	0	4
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	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	282	112	107	91	67	15	0	22	15	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	393	0	0	633	746	197	516	768	79
Stage 1	-	-	-	-	-	-	374	374	-	338	338	-
Stage 2	-	-	-	-	-	-	259	372	-	178	430	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1418	-	-	1162	-	-	364	340	811	442	330	965
Stage 1	-	-	-	-	-	-	619	616	-	650	639	-
Stage 2	-	-	-	-	-	-	723	618	-	807	582	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1418	-	-	1162	-	-	325	305	811	386	296	965
Mov Cap-2 Maneuver	-	-	-	-	-	-	325	305	-	386	296	-
Stage 1	-	-	-	-	-	-	611	608	-	590	580	-
Stage 2	-	-	-	-	-	-	654	561	-	775	574	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.34			3.38			12.74			13.46		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	502	1418	-	-	1162	-	-	445
HCM Lane V/C Ratio	0.074	0.013	-	-	0.092	-	-	0.044
HCM Control Delay (s/veh)	12.7	7.6	-	-	8.4	-	-	13.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.3	-	-	0.1

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	159	163	3	8	204	114	9	15	25	24	15	94
Future Vol, veh/h	159	163	3	8	204	114	9	15	25	24	15	94
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	173	177	3	9	222	124	10	16	27	26	16	102
Number of Lanes	1	1	0	1	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	11.8	15.4	9.9	10.4
HCM LOS	B	C	A	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	17%	0%	98%	0%	64%	0%	100%	5%
Vol Right, %	0%	0%	83%	0%	2%	0%	36%	0%	0%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	10	30	159	166	8	318	24	10	99
LT Vol	9	0	0	159	0	8	0	24	0	0
Through Vol	0	10	5	0	163	0	204	0	10	5
RT Vol	0	0	25	0	3	0	114	0	0	94
Lane Flow Rate	10	11	33	173	180	9	346	26	11	108
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.022	0.059	0.314	0.302	0.016	0.557	0.054	0.021	0.185
Departure Headway (Hd)	7.643	7.132	6.536	6.549	6.034	6.551	5.797	7.392	6.882	6.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	467	500	546	548	595	546	622	484	519	577
Service Time	5.411	4.899	4.303	4.294	3.78	4.293	3.54	5.151	4.641	3.963
HCM Lane V/C Ratio	0.021	0.022	0.06	0.316	0.303	0.016	0.556	0.054	0.021	0.187
HCM Control Delay, s/veh	10.6	10.1	9.7	12.3	11.4	9.4	15.6	10.6	9.8	10.4
HCM Lane LOS	B	B	A	B	B	A	C	B	A	B
HCM 95th-tile Q	0.1	0.1	0.2	1.3	1.3	0	3.4	0.2	0.1	0.7

Intersection	
Intersection Delay, s/veh	68.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	1	55	42	481	6	1	120	228	162	175	100	1
Future Vol, veh/h	1	55	42	481	6	1	120	228	162	175	100	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	60	46	523	7	1	130	248	176	190	109	1
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay, s/veh	13.9	160.5	18.3	18.9
HCM LOS	B	F	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	2%	0%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	98%	0%	1%	0%	0%	99%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	120	228	162	56	42	487	1	175	101
LT Vol	120	0	0	1	0	481	0	175	0
Through Vol	0	228	0	55	0	6	0	0	100
RT Vol	0	0	162	0	42	0	1	0	1
Lane Flow Rate	130	248	176	61	46	529	1	190	110
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.308	0.551	0.357	0.156	0.108	1.26	0.002	0.474	0.258
Departure Headway (Hd)	9.261	8.743	8.019	9.965	9.226	8.571	7.354	9.817	9.287
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	391	416	451	362	391	429	490	369	390
Service Time	6.961	6.443	5.719	7.665	6.926	6.271	5.054	7.517	6.987
HCM Lane V/C Ratio	0.332	0.596	0.39	0.169	0.118	1.233	0.002	0.515	0.282
HCM Control Delay, s/veh	16	21.7	15.1	14.5	13	160.8	10.1	21.1	15.2
HCM Lane LOS	C	C	C	B	B	F	B	C	C
HCM 95th-tile Q	1.3	3.2	1.6	0.5	0.4	22.5	0	2.5	1

Intersection												
Intersection Delay, s/veh	28.2											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	178	3	112	8	6	9	462	323	3	4	611	8
Future Vol, veh/h	178	3	112	8	6	9	462	323	3	4	611	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	193	3	122	9	7	10	502	351	3	4	664	9
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	9.4		14.1	78.2
HCM LOS	C		B	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	98%	0%	57%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	2%	0%	43%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	462	323	3	181	112	14	9	4	611	8
LT Vol	462	0	0	178	0	8	0	4	0	0
Through Vol	0	323	0	3	0	6	0	0	611	0
RT Vol	0	0	3	0	112	0	9	0	0	8
Lane Flow Rate	502	351	3	197	122	15	10	4	664	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	1.122	0.735	0.006	0.5	0.269	0.043	0.025	0.01	1.483	0.018
Departure Headway (Hd)	8.923	8.409	7.689	9.994	8.775	11.414	10.391	8.819	8.307	7.59
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	412	432	468	364	411	316	347	408	445	474
Service Time	6.623	6.109	5.389	7.694	6.475	9.114	8.091	6.519	6.007	5.29
HCM Lane V/C Ratio	1.218	0.813	0.006	0.541	0.297	0.047	0.029	0.01	1.492	0.019
HCM Control Delay, s/veh	111.6	31.1	10.4	22.3	14.7	14.6	13.4	11.6	251.4	10.4
HCM Lane LOS	F	D	B	C	B	B	B	B	F	B
HCM 95th-tile Q	16.5	5.9	0	2.7	1.1	0.1	0.1	0	33.4	0.1

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr

2040 plus Project PM
11/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	101	34	97	359	25	273	65	592	241	204	590	74
Future Volume (veh/h)	101	34	97	359	25	273	65	592	241	204	590	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	37	105	390	27	297	71	643	262	222	641	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	341	289	405	408	346	120	973	434	262	1148	512
Arrive On Green	0.08	0.18	0.18	0.12	0.22	0.22	0.07	0.27	0.27	0.08	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	110	37	105	390	27	297	71	643	262	222	641	80
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.9	1.0	3.7	7.1	0.7	11.4	2.4	10.1	9.1	4.0	9.4	2.3
Cycle Q Clear(g_c), s	1.9	1.0	3.7	7.1	0.7	11.4	2.4	10.1	9.1	4.0	9.4	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	341	289	405	408	346	120	973	434	262	1148	512
V/C Ratio(X)	0.39	0.11	0.36	0.96	0.07	0.86	0.59	0.66	0.60	0.85	0.56	0.16
Avail Cap(c_a), veh/h	405	465	394	405	583	494	209	2165	965	262	2165	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	21.6	22.6	27.8	19.6	23.8	28.6	20.4	20.0	28.8	17.7	15.2
Incr Delay (d2), s/veh	0.3	0.1	0.3	35.1	0.0	7.6	1.7	0.8	1.4	20.8	0.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.8	2.4	8.4	0.6	8.3	1.8	6.7	6.0	4.1	6.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.9	21.6	22.9	62.9	19.6	31.4	30.3	21.1	21.3	49.6	18.1	15.4
LnGrp LOS	C	C	C	E	B	C	C	C	C	D	B	B
Approach Vol, veh/h		252		714		976		943				
Approach Delay, s/veh		24.9		48.1		21.9		25.3				
Approach LOS		C		D		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	23.1	12.0	16.1	8.9	26.2	9.7	18.4				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	4.8	38.5	7.4	15.7	7.4	38.5	7.4	19.7				
Max Q Clear Time (g_c+10), s	10.0	12.1	9.1	5.7	4.4	11.4	3.9	13.4				
Green Ext Time (p_c), s	0.0	5.2	0.0	0.2	0.0	4.4	0.0	0.4				

Intersection Summary												
HCM 7th Control Delay, s/veh				29.7								
HCM 7th LOS				C								

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

HCM 7th Signalized Intersection Summary
5: Vaughn Rd & N 1st St

2040 plus Project PM
11/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	32	59	147	91	86	56	663	57	22	773	251
Future Volume (veh/h)	150	32	59	147	91	86	56	663	57	22	773	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	35	64	160	99	93	61	721	62	24	840	273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	215	191	166	181	154	91	1681	144	51	1279	415
Arrive On Green	0.11	0.12	0.12	0.09	0.10	0.10	0.05	0.51	0.51	0.03	0.49	0.49
Sat Flow, veh/h	1781	1777	1585	1781	1819	1549	1781	3311	285	1781	2637	856
Grp Volume(v), veh/h	163	35	64	160	96	96	61	387	396	24	566	547
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1592	1781	1777	1819	1781	1777	1716
Q Serve(g_s), s	7.2	1.4	3.0	7.2	4.2	4.6	2.7	11.0	11.0	1.1	19.3	19.4
Cycle Q Clear(g_c), s	7.2	1.4	3.0	7.2	4.2	4.6	2.7	11.0	11.0	1.1	19.3	19.4
Prop In Lane	1.00		1.00	1.00		0.97	1.00		0.16	1.00		0.50
Lane Grp Cap(c), veh/h	204	215	191	166	177	158	91	902	923	51	862	832
V/C Ratio(X)	0.80	0.16	0.33	0.96	0.55	0.60	0.67	0.43	0.43	0.47	0.66	0.66
Avail Cap(c_a), veh/h	432	552	493	166	552	495	166	902	923	299	862	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	31.7	32.4	36.3	34.5	34.7	37.5	12.5	12.5	38.5	15.6	15.7
Incr Delay (d2), s/veh	7.0	0.4	1.0	58.7	2.6	3.7	8.4	1.5	1.5	6.8	3.9	4.0
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(95%),veh/ln	6.1	1.1	2.1	9.5	3.3	3.3	2.4	7.3	7.4	1.0	12.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.7	32.1	33.4	95.0	37.1	38.3	45.8	13.9	13.9	45.2	19.5	19.7
LnGrp LOS	D	C	C	F	D	D	D	B	B	D	B	B
Approach Vol, veh/h	262			352			844			1137		
Approach Delay, s/veh	38.4			63.7			16.2			20.2		
Approach LOS	D			E			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	46.6	12.1	14.8	8.7	44.8	13.8	13.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.1	4.6	5.8	4.6	5.1				
Max Green Setting (Gmax), s	13.5	40.0	7.5	25.0	7.5	39.0	19.5	25.0				
Max Q Clear Time (g_c+13), s	13.5	13.0	9.2	5.0	4.7	21.4	9.2	6.6				
Green Ext Time (p_c), s	0.0	4.7	0.0	0.4	0.0	6.5	0.3	0.9				

Intersection Summary												
HCM 7th Control Delay, s/veh	26.6											
HCM 7th LOS	C											

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

Intersection						
Int Delay, s/veh	247.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	601	98	50	182	422	245
Future Vol, veh/h	601	98	50	182	422	245
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	653	107	54	198	459	266

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	898	363	725	0	-	0
Stage 1	592	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 294	635	876	-	-	-
Stage 1	~ 517	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 276	635	876	-	-	-
Mov Cap-2 Maneuver	~ 276	-	-	-	-	-
Stage 1	~ 485	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$/veh	566.01	2.02	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	876	-	276	635	-	-
HCM Lane V/C Ratio	0.062	-	2.37	0.168	-	-
HCM Control Delay (s/veh)	9.4	-	\$ 656.4	11.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	51.9	0.6	-	-

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

Intersection						
Int Delay, s/veh	7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	102	16	34	20	10	177
Future Vol, veh/h	102	16	34	20	10	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	17	37	22	11	192

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	59	0	-	0	287 48
Stage 1	-	-	-	-	48 -
Stage 2	-	-	-	-	239 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1545	-	-	-	703 1021
Stage 1	-	-	-	-	975 -
Stage 2	-	-	-	-	801 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1545	-	-	-	653 1021
Mov Cap-2 Maneuver	-	-	-	-	653 -
Stage 1	-	-	-	-	905 -
Stage 2	-	-	-	-	801 -

Approach	EB	WB	SB
HCM Control Delay, s/v	6.49	0	9.41
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1545	-	-	-	653	1021
HCM Lane V/C Ratio	0.072	-	-	-	0.017	0.188
HCM Control Delay (s/veh)	7.5	-	-	-	10.6	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0.7

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↗↘	
Traffic Vol, veh/h	0	41	0	784	643	90
Future Vol, veh/h	0	41	0	784	643	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	45	0	852	699	98

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	398	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-
Pot Cap-1 Maneuver	0	602	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	602	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.46	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	602	-	-
HCM Lane V/C Ratio	-	0.074	-	-
HCM Control Delay (s/veh)	-	11.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	6	535	43	23	262	12	86	0	90	74	0	14
Future Vol, veh/h	6	535	43	23	262	12	86	0	90	74	0	14
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	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	582	47	25	285	13	93	0	98	80	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	298	0	0	628	0	0	810	966	314	645	983	149
Stage 1	-	-	-	-	-	-	618	618	-	341	341	-
Stage 2	-	-	-	-	-	-	192	348	-	304	641	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1260	-	-	950	-	-	271	253	682	357	247	871
Stage 1	-	-	-	-	-	-	443	479	-	647	637	-
Stage 2	-	-	-	-	-	-	791	633	-	681	467	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1260	-	-	950	-	-	258	245	682	296	240	871
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	245	-	296	240	-
Stage 1	-	-	-	-	-	-	441	477	-	630	620	-
Stage 2	-	-	-	-	-	-	757	616	-	580	465	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.08			0.69			23.85			20.24		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	378	1260	-	-	950	-	-	331
HCM Lane V/C Ratio	0.506	0.005	-	-	0.026	-	-	0.289
HCM Control Delay (s/veh)	23.9	7.9	-	-	8.9	-	-	20.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2.7	0	-	-	0.1	-	-	1.2

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	6	354	43	23	329	12	86	0	90	73	0	14
Future Vol, veh/h	6	354	43	23	329	12	86	0	90	73	0	14
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	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	385	47	25	358	13	93	0	98	79	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	432	0	0	650	842	216	620	859	185
Stage 1	-	-	-	-	-	-	421	421	-	414	414	-
Stage 2	-	-	-	-	-	-	229	421	-	205	445	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1184	-	-	1124	-	-	354	299	789	372	293	825
Stage 1	-	-	-	-	-	-	581	587	-	586	591	-
Stage 2	-	-	-	-	-	-	753	587	-	777	573	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1184	-	-	1124	-	-	338	291	789	317	285	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	338	291	-	317	285	-
Stage 1	-	-	-	-	-	-	577	584	-	573	578	-
Stage 2	-	-	-	-	-	-	723	574	-	677	570	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.12			0.52			17.48			18.93		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	478	1184	-	-	1124	-	-	352
HCM Lane V/C Ratio	0.401	0.006	-	-	0.022	-	-	0.269
HCM Control Delay (s/veh)	17.5	8.1	-	-	8.3	-	-	18.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.9	0	-	-	0.1	-	-	1.1

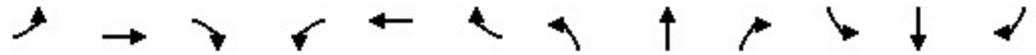
Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	291	83	14	68	121	44	10	26	11	91	52	295
Future Vol, veh/h	291	83	14	68	121	44	10	26	11	91	52	295
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	316	90	15	74	132	48	11	28	12	99	57	321
Number of Lanes	1	1	0	1	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	20.7	13.6	11.4	17.1
HCM LOS	C	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	44%	0%	86%	0%	73%	0%	100%	6%
Vol Right, %	0%	0%	56%	0%	14%	0%	27%	0%	0%	94%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	17	20	291	97	68	165	91	35	312
LT Vol	10	0	0	291	0	68	0	91	0	0
Through Vol	0	17	9	0	83	0	121	0	35	17
RT Vol	0	0	11	0	14	0	44	0	0	295
Lane Flow Rate	11	19	21	316	105	74	179	99	38	339
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.027	0.044	0.047	0.661	0.203	0.164	0.363	0.212	0.075	0.616
Departure Headway (Hd)	8.901	8.385	7.98	7.524	6.921	7.984	7.292	7.72	7.209	6.533
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	427	448	481	519	449	493	466	497	553
Service Time	6.657	6.14	5.735	5.263	4.659	5.726	5.034	5.457	4.946	4.27
HCM Lane V/C Ratio	0.027	0.044	0.047	0.657	0.202	0.165	0.363	0.212	0.076	0.613
HCM Control Delay, s/veh	11.9	11.5	11.1	23.8	11.4	12.3	14.2	12.5	10.5	19.2
HCM Lane LOS	B	B	B	C	B	B	B	B	B	C
HCM 95th-tile Q	0.1	0.1	0.1	4.7	0.8	0.6	1.6	0.8	0.2	4.2

HCM 7th Signalized Intersection Summary
 2: Pedrick Rd & I-80 EB Ramps/Sparling Ln



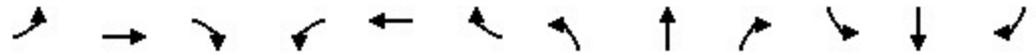
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	176	0	76	1	0	1	271	289	0	0	454	8
Future Volume (veh/h)	176	0	76	1	0	1	271	289	0	0	454	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	191	0	83	1	0	1	295	314	0	0	493	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	0	224	4	0	3	401	421	357	553	581	
Arrive On Green	0.14	0.00	0.14	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.31	0.00
Sat Flow, veh/h	1781	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	191	0	83	1	0	1	295	314	0	0	493	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.6	0.0	3.0	0.0	0.0	0.0	9.8	10.0	0.0	0.0	15.8	0.0
Cycle Q Clear(g_c), s	6.6	0.0	3.0	0.0	0.0	0.0	9.8	10.0	0.0	0.0	15.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	0	224	4	0	3	401	421	357	553	581	
V/C Ratio(X)	0.76	0.00	0.37	0.26	0.00	0.29	0.74	0.75	0.00	0.00	0.85	
Avail Cap(c_a), veh/h	360	0	320	151	0	134	686	720	610	741	778	
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	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	0.0	24.9	31.8	0.0	31.8	23.0	23.0	0.0	0.0	20.6	0.0
Incr Delay (d2), s/veh	5.7	0.0	1.0	31.6	0.0	40.5	2.6	2.6	0.0	0.0	6.7	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(95%),veh/ln	5.5	0.0	2.1	0.1	0.0	0.1	7.6	8.0	0.0	0.0	11.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.1	0.0	25.9	63.5	0.0	72.4	25.6	25.7	0.0	0.0	27.4	0.0
LnGrp LOS	C		C	E		E	C	C			C	
Approach Vol, veh/h		274			2			609			493	
Approach Delay, s/veh		30.2			67.9			25.7			27.4	
Approach LOS		C			E			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.8		14.1		25.2		4.7				
Change Period (Y+Rc), s		5.4		5.1		5.4		4.6				
Max Green Setting (Gmax), s		24.6		12.9		26.6		5.4				
Max Q Clear Time (g_c+I1), s		12.0		8.6		17.8		2.0				
Green Ext Time (p_c), s		2.4		0.5		2.1		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh		27.2
HCM 7th LOS		C

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

HCM 7th Signalized Intersection Summary
 1: Pedrick Rd & Sievers Rd/I-80 WB Ramps

MITIG8 2040 PM
 11/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↑	↗	↗	↗	↗
Traffic Volume (veh/h)	1	53	43	434	6	1	111	213	23	164	111	1
Future Volume (veh/h)	1	53	43	434	6	1	111	213	23	164	111	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	58	0	472	7	1	121	232	0	178	121	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	109		565	8	510	300	315		245	255	2
Arrive On Green	0.06	0.06	0.00	0.32	0.32	0.32	0.17	0.17	0.00	0.14	0.14	0.14
Sat Flow, veh/h	32	1837	1585	1756	26	1585	1781	1870	1585	1781	1852	15
Grp Volume(v), veh/h	59	0	0	479	0	1	121	232	0	178	0	122
Grp Sat Flow(s),veh/h/ln	1869	0	1585	1783	0	1585	1781	1870	1585	1781	0	1868
Q Serve(g_s), s	2.1	0.0	0.0	17.0	0.0	0.0	4.1	8.1	0.0	6.5	0.0	4.1
Cycle Q Clear(g_c), s	2.1	0.0	0.0	17.0	0.0	0.0	4.1	8.1	0.0	6.5	0.0	4.1
Prop In Lane	0.02		1.00	0.99		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	110	0		574	0	510	300	315		245	0	257
V/C Ratio(X)	0.53	0.00		0.83	0.00	0.00	0.40	0.74		0.73	0.00	0.47
Avail Cap(c_a), veh/h	270	0		910	0	809	641	673		500	0	524
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	0.00	1.00
Uniform Delay (d), s/veh	31.3	0.0	0.0	21.5	0.0	15.7	25.4	27.0	0.0	28.3	0.0	27.2
Incr Delay (d2), s/veh	4.0	0.0	0.0	3.9	0.0	0.0	0.9	3.3	0.0	4.1	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.0	0.0	11.7	0.0	0.0	3.2	6.8	0.0	5.4	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.2	0.0	0.0	25.4	0.0	15.7	26.2	30.3	0.0	32.3	0.0	28.6
LnGrp LOS	D			C		B	C	C		C		C
Approach Vol, veh/h		59			480			353			300	
Approach Delay, s/veh		35.2			25.4			28.9			30.8	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.9		9.1		15.2		27.1				
Change Period (Y+Rc), s		5.4		5.1		5.8		5.1				
Max Green Setting (Gmax), s		24.6		9.9		19.2		34.9				
Max Q Clear Time (g_c+I1), s		10.1		4.1		8.5		19.0				
Green Ext Time (p_c), s		1.5		0.1		0.9		3.0				

Intersection Summary		
HCM 7th Control Delay, s/veh		28.3
HCM 7th LOS		C

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

HCM 7th Signalized Intersection Summary
 2: Pedrick Rd & I-80 EB Ramps/Sparling Ln

MITIG8 2040 PM
 11/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖ ↗	↖ ↗		↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	186	4	67	8	7	9	344	152	2	4	574	9
Future Volume (veh/h)	186	4	67	8	7	9	344	152	2	4	574	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	202	4	73	9	8	10	374	165	2	4	624	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	5	246	20	18	33	447	921	780	8	879	14
Arrive On Green	0.16	0.16	0.16	0.02	0.02	0.02	0.25	0.49	0.49	0.00	0.25	0.25
Sat Flow, veh/h	1748	35	1585	965	857	1585	1781	1870	1585	1781	3580	57
Grp Volume(v), veh/h	206	0	73	17	0	10	374	165	2	4	310	324
Grp Sat Flow(s),veh/h/ln	1783	0	1585	1822	0	1585	1781	1870	1585	1781	1777	1860
Q Serve(g_s), s	6.6	0.0	2.5	0.6	0.0	0.4	12.0	3.0	0.0	0.1	9.6	9.6
Cycle Q Clear(g_c), s	6.6	0.0	2.5	0.6	0.0	0.4	12.0	3.0	0.0	0.1	9.6	9.6
Prop In Lane	0.98		1.00	0.53		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	277	0	246	38	0	33	447	921	780	8	436	457
V/C Ratio(X)	0.74	0.00	0.30	0.44	0.00	0.30	0.84	0.18	0.00	0.52	0.71	0.71
Avail Cap(c_a), veh/h	471	0	418	106	0	92	1076	1767	1497	118	723	756
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	22.5	29.1	0.0	29.0	21.4	8.5	7.8	29.9	20.8	20.8
Incr Delay (d2), s/veh	4.0	0.0	0.7	7.8	0.0	4.9	4.2	0.1	0.0	45.8	2.1	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	1.6	0.6	0.0	0.3	8.9	1.9	0.0	0.3	7.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.3	0.0	23.2	36.9	0.0	33.9	25.6	8.6	7.8	75.7	22.9	22.8
LnGrp LOS	C		C	D		C	C	A	A	E	C	C
Approach Vol, veh/h		279			27			541			638	
Approach Delay, s/veh		26.9			35.8			20.3			23.2	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	35.1		14.5	19.7	20.2		5.9				
Change Period (Y+Rc), s	4.6	5.4		5.1	4.6	5.4		4.6				
Max Green Setting (Gmax), s	4.0	56.9		15.9	36.4	24.5		3.5				
Max Q Clear Time (g_c+1/2), s	1.0	5.0		8.6	14.0	11.6		2.6				
Green Ext Time (p_c), s	0.0	1.1		0.8	1.2	3.2		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			23.1									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr

MITIG8 2040 PM
11/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔↔	↑	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (veh/h)	103	31	98	337	22	274	65	616	231	212	602	76
Future Volume (veh/h)	103	31	98	337	22	274	65	616	231	212	602	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	34	107	366	24	298	71	670	251	230	654	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	308	261	471	412	349	119	994	443	258	1164	519
Arrive On Green	0.08	0.16	0.16	0.14	0.22	0.22	0.07	0.28	0.28	0.07	0.33	0.33
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	112	34	107	366	24	298	71	670	251	230	654	83
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.0	1.0	3.9	6.6	0.7	11.6	2.5	10.8	8.7	4.2	9.8	2.4
Cycle Q Clear(g_c), s	2.0	1.0	3.9	6.6	0.7	11.6	2.5	10.8	8.7	4.2	9.8	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	308	261	471	412	349	119	994	443	258	1164	519
V/C Ratio(X)	0.40	0.11	0.41	0.78	0.06	0.85	0.59	0.67	0.57	0.89	0.56	0.16
Avail Cap(c_a), veh/h	397	456	386	827	822	697	205	2053	916	258	2053	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	22.9	24.1	26.9	19.8	24.1	29.2	20.6	19.8	29.5	17.8	15.4
Incr Delay (d2), s/veh	0.3	0.1	0.4	1.1	0.0	2.3	1.8	0.8	1.1	29.1	0.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.8	2.6	4.8	0.5	7.8	1.9	7.1	5.7	4.8	6.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.5	22.9	24.5	27.9	19.8	26.4	30.9	21.4	21.0	58.7	18.3	15.5
LnGrp LOS	C	C	C	C	B	C	C	C	C	E	B	B
Approach Vol, veh/h		253		688		992		967				
Approach Delay, s/veh		26.0		27.0		22.0		27.6				
Approach LOS		C		C		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	23.8	13.4	15.2	8.9	26.9	9.8	18.8				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	1.8	37.2	15.4	15.7	7.4	37.2	7.4	28.3				
Max Q Clear Time (g_c+10), s	10.2	12.8	8.6	5.9	4.5	11.8	4.0	13.6				
Green Ext Time (p_c), s	0.0	5.2	0.2	0.2	0.0	4.5	0.0	0.6				

Intersection Summary												
HCM 7th Control Delay, s/veh				25.4								
HCM 7th LOS				C								

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

HCM 7th Signalized Intersection Summary
 6: Pedrick Rd & Professional Dr

MITIG8 2040 PM
 11/22/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	327	1	1	166	436	213
Future Volume (veh/h)	327	1	1	166	436	213
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	355	1	1	180	474	232
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	434	1	3	1020	541	265
Arrive On Green	0.25	0.25	0.00	0.55	0.46	0.46
Sat Flow, veh/h	1771	5	1781	1870	1186	580
Grp Volume(v), veh/h	357	0	1	180	0	706
Grp Sat Flow(s),veh/h/ln	1781	0	1781	1870	0	1766
Q Serve(g_s), s	9.9	0.0	0.0	2.5	0.0	18.9
Cycle Q Clear(g_c), s	9.9	0.0	0.0	2.5	0.0	18.9
Prop In Lane	0.99	0.00	1.00			0.33
Lane Grp Cap(c), veh/h	437	0	3	1020	0	806
V/C Ratio(X)	0.82	0.00	0.29	0.18	0.00	0.88
Avail Cap(c_a), veh/h	1022	0	185	1020	0	989
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	26.0	6.0	0.0	12.8
Incr Delay (d2), s/veh	3.8	0.0	41.6	0.1	0.0	7.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.1	0.0	0.1	1.1	0.0	11.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	22.4	0.0	67.6	6.0	0.0	20.5
LnGrp LOS	C		E	A		C
Approach Vol, veh/h	357			181	706	
Approach Delay, s/veh	22.4			6.4	20.5	
Approach LOS	C			A	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		34.2		17.9	4.7	29.6
Change Period (Y+Rc), s		5.8		5.1	4.6	5.8
Max Green Setting (Gmax), s		14.2		29.9	5.4	29.2
Max Q Clear Time (g_c+I1), s		4.5		11.9	2.0	20.9
Green Ext Time (p_c), s		0.5		1.0	0.0	2.9
Intersection Summary						
HCM 7th Control Delay, s/veh			19.0			
HCM 7th LOS			B			

HCM 7th Signalized Intersection Summary
 2: Pedrick Rd & I-80 EB Ramps/Sparling Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗	↘		↗	↘	↘	↑	↗	↘	↗↘	
Traffic Volume (veh/h)	185	11	270	1	1	1	312	141	6	7	498	2
Future Volume (veh/h)	185	11	270	1	1	1	312	141	6	7	498	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	201	12	293	1	1	1	339	153	7	8	541	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	23	359	3	3	5	399	781	662	15	734	3
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.22	0.42	0.42	0.01	0.20	0.20
Sat Flow, veh/h	1685	101	1585	912	912	1585	1781	1870	1585	1781	3631	13
Grp Volume(v), veh/h	213	0	293	2	0	1	339	153	7	8	265	278
Grp Sat Flow(s),veh/h/ln	1786	0	1585	1825	0	1585	1781	1870	1585	1781	1777	1868
Q Serve(g_s), s	6.0	0.0	10.0	0.1	0.0	0.0	10.4	3.0	0.1	0.3	8.0	8.0
Cycle Q Clear(g_c), s	6.0	0.0	10.0	0.1	0.0	0.0	10.4	3.0	0.1	0.3	8.0	8.0
Prop In Lane	0.94		1.00	0.50		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	405	0	359	6	0	5	399	781	662	15	359	378
V/C Ratio(X)	0.53	0.00	0.82	0.34	0.00	0.19	0.85	0.20	0.01	0.54	0.74	0.74
Avail Cap(c_a), veh/h	652	0	578	127	0	111	945	1679	1422	124	776	815
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	21.0	28.5	0.0	28.5	21.3	10.6	9.8	28.3	21.4	21.4
Incr Delay (d2), s/veh	0.4	0.0	2.0	11.8	0.0	6.6	2.0	0.0	0.0	10.7	1.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	0.0	6.4	0.1	0.0	0.0	7.0	1.7	0.1	0.3	5.3	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	0.0	23.0	40.3	0.0	35.1	23.3	10.6	9.8	39.0	22.5	22.5
LnGrp LOS	B		C	D		D	C	B	A	D	C	C
Approach Vol, veh/h		506			3			499			551	
Approach Delay, s/veh		21.7			38.6			19.2			22.7	
Approach LOS		C			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	29.3		18.1	17.4	17.0		4.8				
Change Period (Y+Rc), s	4.6	5.4		5.1	4.6	5.4		4.6				
Max Green Setting (Gmax), s	4.0	51.4		20.9	30.4	25.0		4.0				
Max Q Clear Time (g_c+I1), s	2.3	5.0		12.0	12.4	10.0		2.1				
Green Ext Time (p_c), s	0.0	0.5		1.0	0.4	1.6		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			21.3									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary
6: Pedrick Rd & Professional Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	191	12	127	271	205	320
Future Volume (veh/h)	191	12	127	271	205	320
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	208	13	138	295	223	348
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	329	292	180	1010	573	511
Arrive On Green	0.18	0.18	0.10	0.54	0.32	0.32
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	208	13	138	295	223	348
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1585
Q Serve(g_s), s	4.3	0.3	3.0	3.4	3.8	7.5
Cycle Q Clear(g_c), s	4.3	0.3	3.0	3.4	3.8	7.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	329	292	180	1010	573	511
V/C Ratio(X)	0.63	0.04	0.77	0.29	0.39	0.68
Avail Cap(c_a), veh/h	1347	1199	469	1010	1312	1170
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	13.3	17.3	5.0	10.4	11.6
Incr Delay (d2), s/veh	2.0	0.1	6.7	0.2	0.4	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	2.3	1.0	1.9	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.9	13.3	24.0	5.1	10.8	13.2
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	221			433	571	
Approach Delay, s/veh	16.7			11.1	12.3	
Approach LOS	B			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		27.1		12.4	8.6	18.5
Change Period (Y+Rc), s		5.8		5.1	4.6	5.8
Max Green Setting (Gmax), s		14.2		29.9	10.4	29.2
Max Q Clear Time (g_c+I1), s		5.4		6.3	5.0	9.5
Green Ext Time (p_c), s		1.0		0.6	0.1	3.2
Intersection Summary						
HCM 7th Control Delay, s/veh			12.7			
HCM 7th LOS			B			

HCM 7th Signalized Intersection Summary
 1: Pedrick Rd & Sievers Rd/I-80 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↑	↗	↗	↗	↗
Traffic Volume (veh/h)	1	55	42	481	6	1	120	228	162	175	100	1
Future Volume (veh/h)	1	55	42	481	6	1	120	228	162	175	100	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	60	0	523	7	1	130	248	0	190	109	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	106		602	8	542	307	323		248	258	2
Arrive On Green	0.06	0.06	0.00	0.34	0.34	0.34	0.17	0.17	0.00	0.14	0.14	0.14
Sat Flow, veh/h	31	1838	1585	1759	24	1585	1781	1870	1585	1781	1850	17
Grp Volume(v), veh/h	61	0	0	530	0	1	130	248	0	190	0	110
Grp Sat Flow(s),veh/h/ln	1869	0	1585	1782	0	1585	1781	1870	1585	1781	0	1867
Q Serve(g_s), s	2.4	0.0	0.0	20.7	0.0	0.0	4.8	9.4	0.0	7.6	0.0	4.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	20.7	0.0	0.0	4.8	9.4	0.0	7.6	0.0	4.0
Prop In Lane	0.02		1.00	0.99		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	108	0		610	0	542	307	323		248	0	260
V/C Ratio(X)	0.56	0.00		0.87	0.00	0.00	0.42	0.77		0.77	0.00	0.42
Avail Cap(c_a), veh/h	249	0		838	0	745	590	620		461	0	483
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	0.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	0.0	22.9	0.0	16.1	27.4	29.3	0.0	30.8	0.0	29.2
Incr Delay (d2), s/veh	4.5	0.0	0.0	7.4	0.0	0.0	0.9	3.9	0.0	4.9	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.0	0.0	14.1	0.0	0.0	3.7	7.7	0.0	6.0	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.6	0.0	0.0	30.3	0.0	16.1	28.3	33.1	0.0	35.7	0.0	30.3
LnGrp LOS	D			C		B	C	C		D		C
Approach Vol, veh/h		61			531			378			300	
Approach Delay, s/veh		38.6			30.2			31.5			33.7	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.2		9.4		16.1		30.5				
Change Period (Y+Rc), s		5.4		5.1		5.8		5.1				
Max Green Setting (Gmax), s		24.6		9.9		19.2		34.9				
Max Q Clear Time (g_c+I1), s		11.4		4.4		9.6		22.7				
Green Ext Time (p_c), s		1.4		0.1		0.7		2.7				

Intersection Summary		
HCM 7th Control Delay, s/veh		31.8
HCM 7th LOS		C

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

HCM 7th Signalized Intersection Summary
 2: Pedrick Rd & I-80 EB Ramps/Sparling Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↑	↖	↖	↕	↕
Traffic Volume (veh/h)	178	3	112	8	6	9	462	323	3	4	611	8
Future Volume (veh/h)	178	3	112	8	6	9	462	323	3	4	611	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	3	122	9	7	10	502	351	3	4	664	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	4	227	20	16	32	554	1013	858	8	842	11
Arrive On Green	0.14	0.14	0.14	0.02	0.02	0.02	0.31	0.54	0.54	0.00	0.23	0.23
Sat Flow, veh/h	1755	27	1585	1023	796	1585	1781	1870	1585	1781	3590	49
Grp Volume(v), veh/h	196	0	122	16	0	10	502	351	3	4	329	344
Grp Sat Flow(s),veh/h/ln	1783	0	1585	1819	0	1585	1781	1870	1585	1781	1777	1862
Q Serve(g_s), s	7.2	0.0	4.8	0.6	0.0	0.4	18.3	7.2	0.1	0.2	11.8	11.8
Cycle Q Clear(g_c), s	7.2	0.0	4.8	0.6	0.0	0.4	18.3	7.2	0.1	0.2	11.8	11.8
Prop In Lane	0.98		1.00	0.56		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	255	0	227	36	0	32	554	1013	858	8	417	437
V/C Ratio(X)	0.77	0.00	0.54	0.44	0.00	0.32	0.91	0.35	0.00	0.52	0.79	0.79
Avail Cap(c_a), veh/h	419	0	372	94	0	82	958	1572	1333	105	643	674
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	26.9	32.8	0.0	32.7	22.4	8.8	7.1	33.6	24.3	24.3
Incr Delay (d2), s/veh	1.8	0.0	0.7	3.1	0.0	2.1	3.6	0.1	0.0	19.1	1.6	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.5	0.0	3.2	0.5	0.0	0.3	12.3	4.7	0.0	0.2	8.4	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.8	0.0	27.7	35.9	0.0	34.8	25.9	8.8	7.1	52.7	25.9	25.8
LnGrp LOS	C		C	D		C	C	A	A	D	C	C
Approach Vol, veh/h		318			26			856			677	
Approach Delay, s/veh		29.0			35.4			18.9			26.0	
Approach LOS		C			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	42.1		14.8	25.7	21.3		6.0				
Change Period (Y+Rc), s	4.6	5.4		5.1	4.6	5.4		4.6				
Max Green Setting (Gmax), s	4.0	56.9		15.9	36.4	24.5		3.5				
Max Q Clear Time (g_c+1/2), s	12.2	9.2		9.2	20.3	13.8		2.6				
Green Ext Time (p_c), s	0.0	1.6		0.5	0.8	2.1		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			23.4									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary
4: N 1st St & Dorset Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	101	34	97	359	25	273	65	592	241	204	590	74
Future Volume (veh/h)	101	34	97	359	25	273	65	592	241	204	590	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	37	105	390	27	297	71	643	262	222	641	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	295	250	496	412	349	120	969	432	262	1144	510
Arrive On Green	0.08	0.16	0.16	0.14	0.22	0.22	0.07	0.27	0.27	0.08	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	110	37	105	390	27	297	71	643	262	222	641	80
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.9	1.1	3.8	6.9	0.7	11.4	2.5	10.2	9.1	4.0	9.5	2.3
Cycle Q Clear(g_c), s	1.9	1.1	3.8	6.9	0.7	11.4	2.5	10.2	9.1	4.0	9.5	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	295	250	496	412	349	120	969	432	262	1144	510
V/C Ratio(X)	0.39	0.13	0.42	0.79	0.07	0.85	0.59	0.66	0.61	0.85	0.56	0.16
Avail Cap(c_a), veh/h	403	463	393	840	835	708	208	2086	930	262	2086	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	22.9	24.1	26.2	19.5	23.7	28.7	20.5	20.1	28.9	17.8	15.3
Incr Delay (d2), s/veh	0.3	0.1	0.4	1.1	0.0	2.3	1.7	0.8	1.4	21.2	0.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.8	2.5	5.0	0.6	7.6	1.8	6.7	6.0	4.1	6.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.0	23.0	24.5	27.2	19.6	26.0	30.4	21.3	21.5	50.1	18.2	15.5
LnGrp LOS	C	C	C	C	B	C	C	C	C	D	B	B
Approach Vol, veh/h		252		714		976		943				
Approach Delay, s/veh		25.8		26.4		22.0		25.5				
Approach LOS		C		C		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	23.1	13.7	14.6	8.9	26.2	9.7	18.6				
Change Period (Y+Rc), s	7.2	5.8	4.6	4.6	4.6	5.8	4.6	4.6				
Max Green Setting (Gmax), s	1.8	37.2	15.4	15.7	7.4	37.2	7.4	28.3				
Max Q Clear Time (g_c+10), s	10.0	12.2	8.9	5.8	4.5	11.5	3.9	13.4				
Green Ext Time (p_c), s	0.0	5.1	0.2	0.2	0.0	4.4	0.0	0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	24.6
HCM 7th LOS	C

Notes

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

HCM 7th Signalized Intersection Summary
6: Pedrick Rd & Professional Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	601	98	50	182	422	245
Future Volume (veh/h)	601	98	50	182	422	245
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	653	107	54	198	459	266
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	725	646	71	763	630	363
Arrive On Green	0.41	0.41	0.04	0.41	0.29	0.29
Sat Flow, veh/h	1781	1585	1781	1870	2265	1250
Grp Volume(v), veh/h	653	107	54	198	375	350
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1645
Q Serve(g_s), s	20.2	2.5	1.8	4.1	11.2	11.3
Cycle Q Clear(g_c), s	20.2	2.5	1.8	4.1	11.2	11.3
Prop In Lane	1.00	1.00	1.00			0.76
Lane Grp Cap(c), veh/h	725	646	71	763	515	477
V/C Ratio(X)	0.90	0.17	0.76	0.26	0.73	0.73
Avail Cap(c_a), veh/h	903	804	163	763	880	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	11.1	28.0	11.6	18.8	18.9
Incr Delay (d2), s/veh	10.3	0.1	15.3	0.2	2.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	5.1	1.8	2.5	7.4	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.6	11.2	43.3	11.7	20.8	21.1
LnGrp LOS	C	B	D	B	C	C
Approach Vol, veh/h	760			252	725	
Approach Delay, s/veh	24.5			18.5	20.9	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		29.8		29.1	6.9	22.9
Change Period (Y+Rc), s		5.8		5.1	4.6	5.8
Max Green Setting (Gmax), s		14.2		29.9	5.4	29.2
Max Q Clear Time (g_c+I1), s		6.1		22.2	3.8	13.3
Green Ext Time (p_c), s		0.5		1.8	0.0	3.8
Intersection Summary						
HCM 7th Control Delay, s/veh			22.1			
HCM 7th LOS			C			

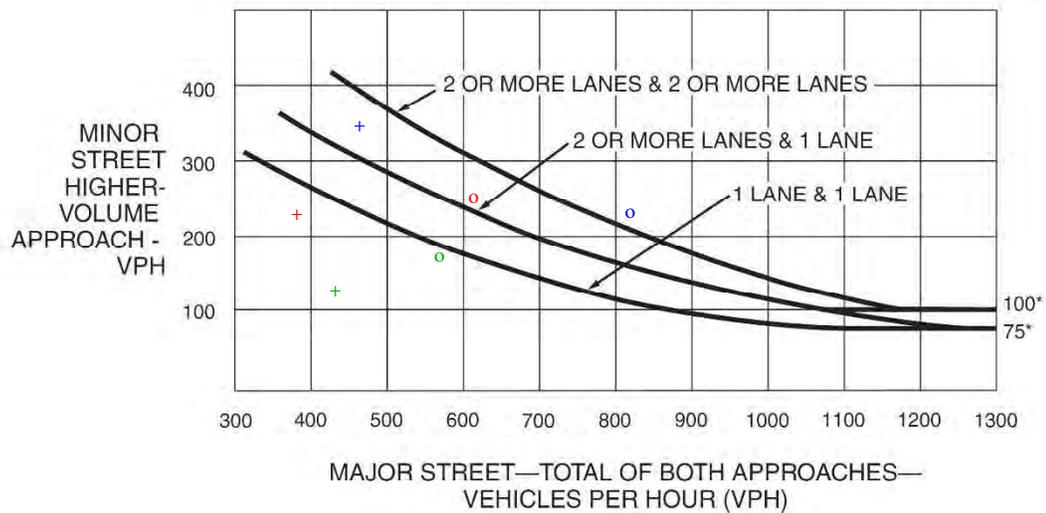
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

I-80 WB Ramps / Pedrick Rd

I-80 EB Ramps / Pedrick Rd

Pedrick Rd / Vaughn Rd

+ - AM
 o - PM

+ - AM
 o - PM

+ - AM
 o - PM

EXISTING

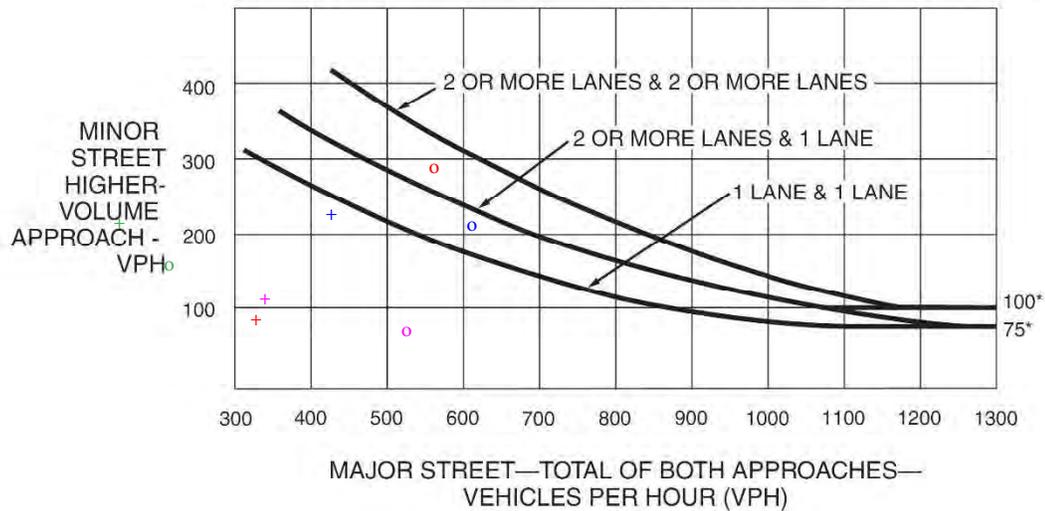
Figure 4C-3. Warrant 3, Peak Hour



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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

I-80 WB Ramps / Pedrick Rd

I-80 EB Ramps / Pedrick Rd

Pedrick Rd / Professional Dr

Vaughn Dr / Professional Dr

+ - AM
 o - PM

+ - AM
 o - PM

+ - AM
 o - PM

+ - AM
 o - PM

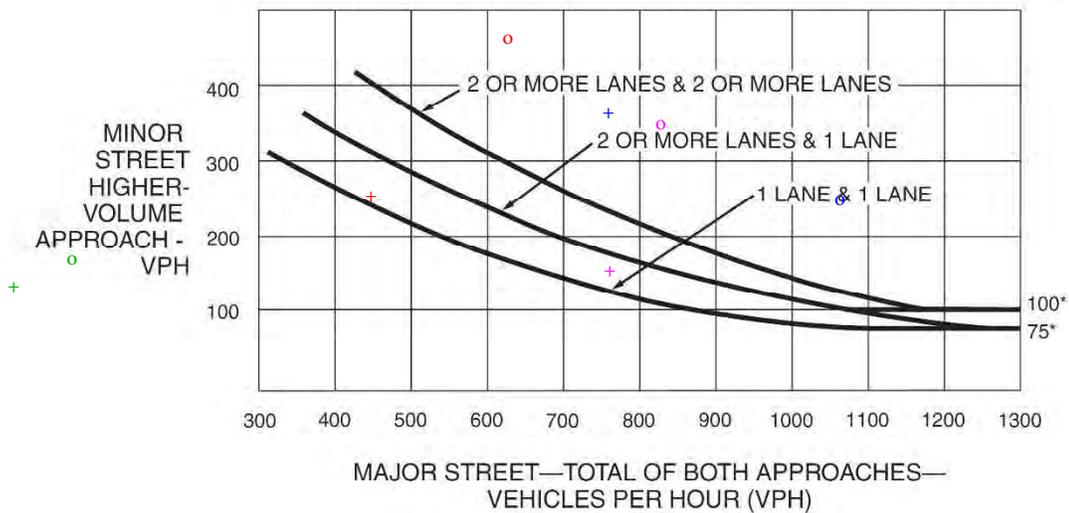
Figure 4C-3. Warrant 3, Peak Hour



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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

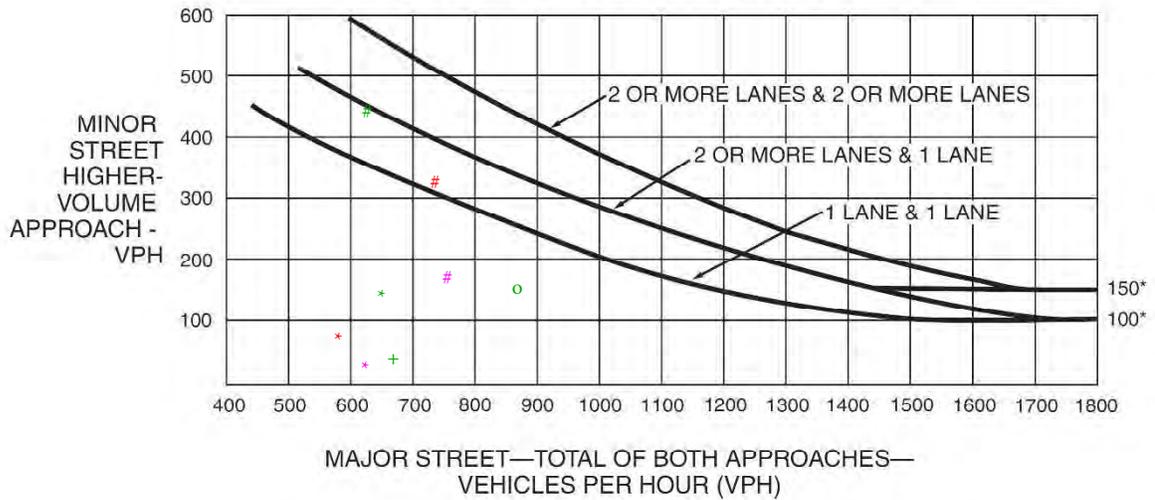
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

<u>I-80 WB Ramps / Pedrick Rd</u>	<u>I-80 EB Ramps / Pedrick Rd</u>	<u>Pedrick Rd / Professional Dr</u>	<u>Professional Dr / Vaughn Rd</u>	<u>Professional Dr / Dorset Dr</u>
+ - AM o - PM	+ - AM o - PM	+ - AM o - PM	+ - AM o - PM	* - AM # - PM
	<u>Professional Dr / DIC (E)</u>	<u>Professional Dr / DIC (W)</u>		
	* - AM # - PM	* - AM # - PM		

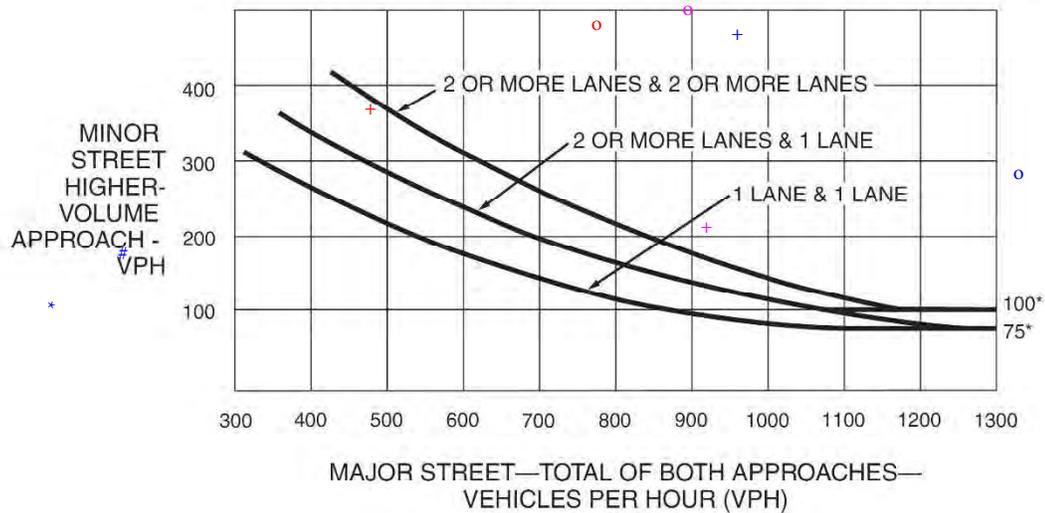
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

<u>I-80 WB Ramps / Pedrick Rd</u>	<u>I-80 EB Ramps / Pedrick Rd</u>	<u>Pedrick Rd / Professional Dr</u>	<u>Professional Dr / DIC (E)</u>	<u>Professional Dr / Dorset Dr</u>
+ - AM	+ - AM	+ - AM	+ - AM	* - AM
o - PM	o - PM	o - PM	o - PM	# - PM
<u>Vaughn Rd / Professional Dr</u>	<u>Professional Dr / DIC (W)</u>			
* - AM	* - AM			
# - PM	# - PM			

