

TRANSPORTATION IMPACT STUDY

Stafford Logistics Center

Aurora, Colorado

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I. INTRODUCTION

Ware Malcomb, on behalf of NorthPoint Development, is proposing to develop approximately 350 acres primarily in the southwest quadrant of the Picadilly Road and Colfax Avenue intersection in Aurora, Colorado. **Figure 1** illustrates the location of the site and the adjacent primary roadway network (existing and future planned roadways).

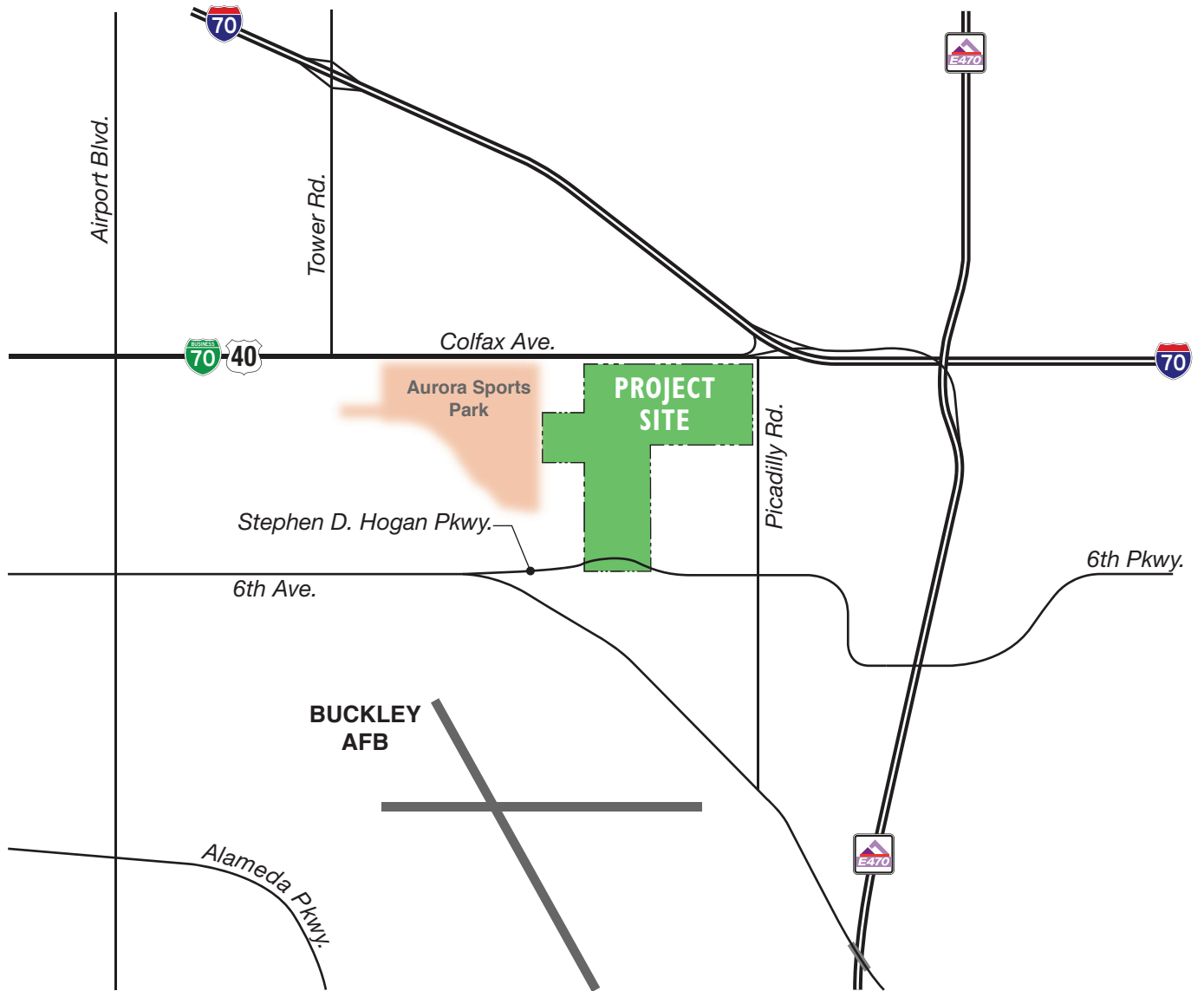
The proposed industrial development would consist of approximately 4.2 million square feet of industrial park, approximately 160,000 square feet of mixed retail including a bank and a supermarket, a gas station, and two hotels with a total of 200 rooms. **Figure 2** depicts the current site plan concept.

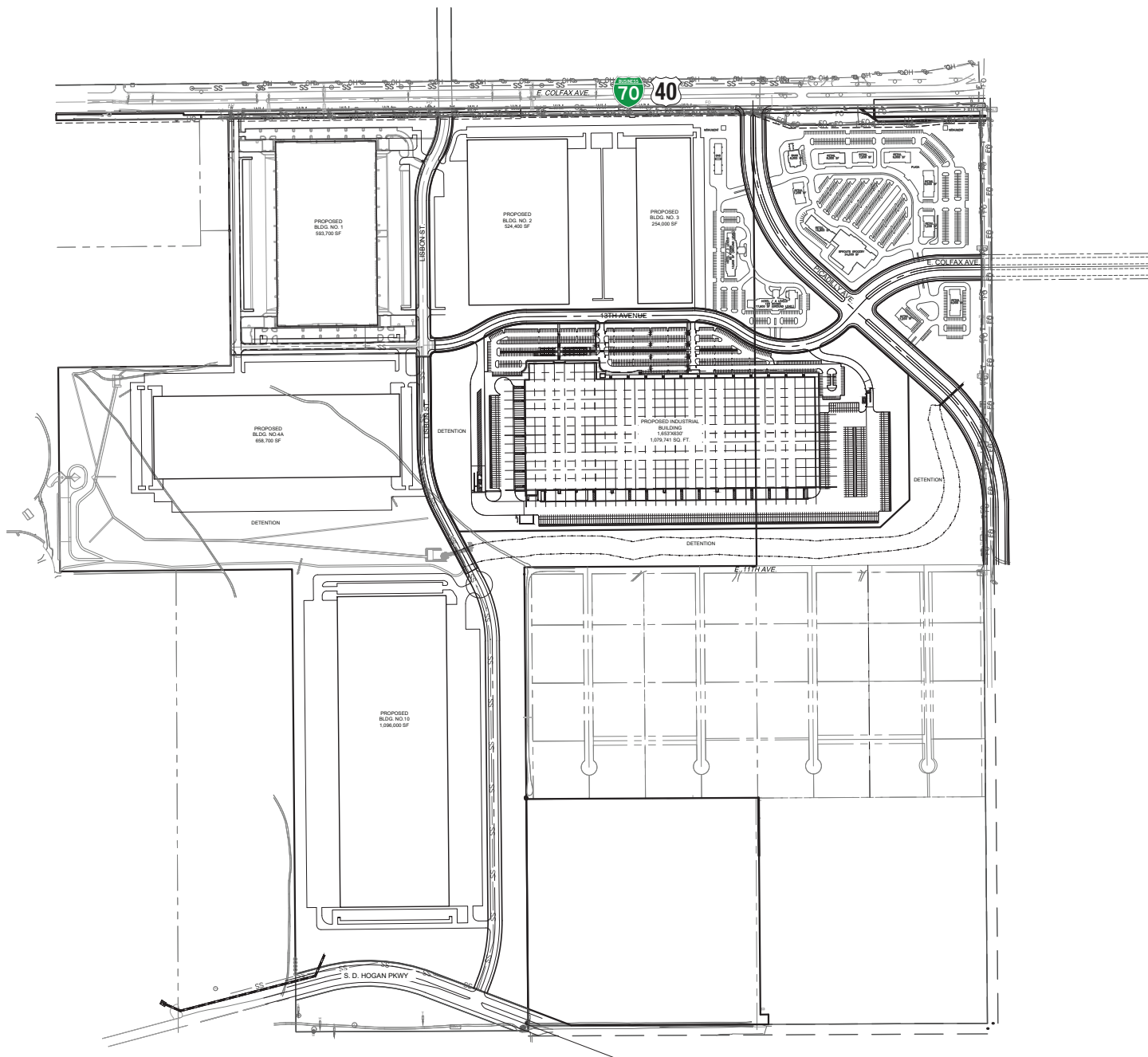
The purpose of this Transportation Impact Study (TIS) is to estimate the potential impacts specific to the proposed development and to identify any resultant required roadway and/or intersection improvements and traffic control needs. Two future planning horizons were evaluated:

- **Short-Term Future.** This scenario examines the traffic impacts of the construction of the first three industrial buildings, the first of which is currently under construction, which totals approximately 2.2 million square feet of industrial park including a single user fulfillment center that will occupy approximately 1.1 million square feet. This scenario assumes the realignment of Picadilly Road and construction of realigned Colfax Avenue east into the Horizon Uptown development. The estimated build year of this scenario is 2022, prior to the construction of the new I-70/Picadilly Road interchange.
- **Long-Term Future.** This scenario examines the traffic impacts within the context of the year 2040 horizon and full buildout of the project site.

This study leverages the planning effort currently underway in support of the I-70/Picadilly Road interchange. Specifically, the City of Aurora is currently in the midst of reevaluating the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) originally prepared in 2007, which includes updating the past effort with respect to traffic operations. As part of the City's interchange study, year 2040 traffic projections have been developed, and this TIS was conducted in conformance with the interchange effort. The interchange recently received a \$25 million grant from the USDOT, and City of Aurora and CDOT now plan for construction to begin in 2021 with completion in 2023.

This TIS provides operational information including intersection level of service (LOS) and peak hour queue lengths, both of which inform recommendations in achieving short- and long-term functionality. This serves as an update to the Stafford Logistics Center Traffic Study completed in January 2020.





II. EXISTING CONDITIONS

II.A. Land Use

The proposed site is undeveloped. Limited development around the site exists, including the Aurora Sports Park and M & M Auto to its west, single-family housing to its north (which is set back from Colfax), and large-lot residential development southeast of the site. An approved mixed use development, referred to as Horizon Uptown, is planned east of the site across Picadilly Road.

II.B. Roadway System

Roadways near the site are further described as follows:

- **Colfax Avenue** is a four-lane divided east-west state highway (US 40 and Business I-70) along the site's northern boundary. This roadway is currently a four-lane median-separated highway adjacent to the site and extends west through Aurora to downtown Denver and further to Golden. To the east, Colfax Avenue directly merges with I-70. Drivers also have the option of using the I-70 Frontage Road along the south side of Colfax Avenue, which connects through the I-70/E-470 interchange and parallels I-70 along its south side to the east. The posted speed limit adjacent to the site is 55 miles per hour (MPH).
- **Picadilly Road** is a two-lane north-south road that currently extends along the site's east side. Picadilly Road extends approximately 2 miles south from the I-70 Frontage Road to SH 30. Longer term, this roadway's alignment is planned to shift west near Colfax Avenue, extend north to a new interchange with I-70, and connect with the existing Picadilly Road north of Smith Road. Its ultimate cross-section is planned to be a six-lane major arterial facility. Adjacent to the site, the existing posted speed limit is 45 MPH.

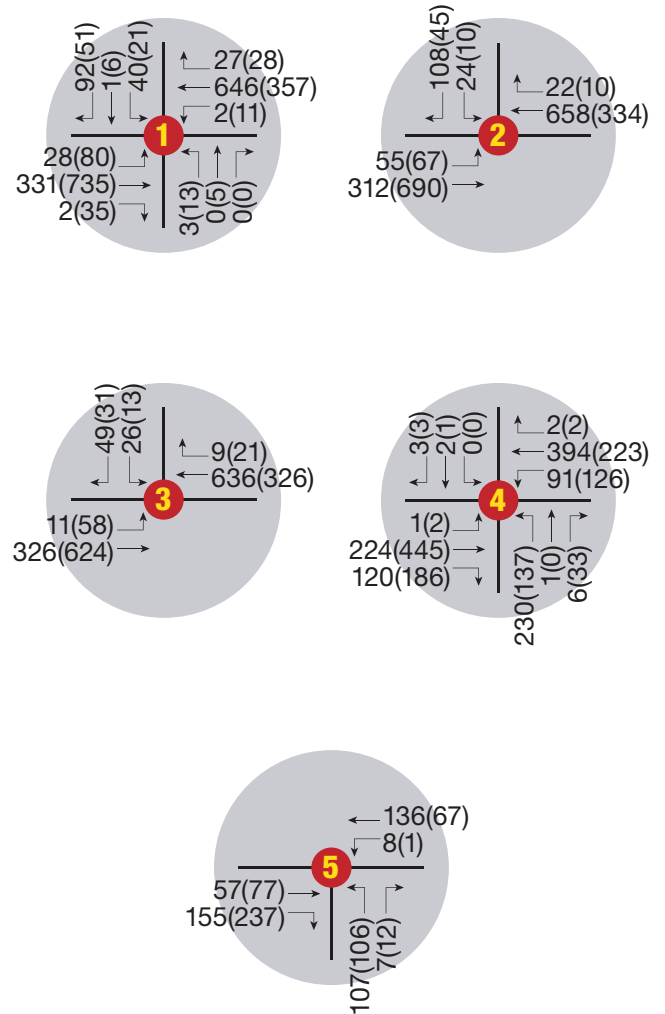
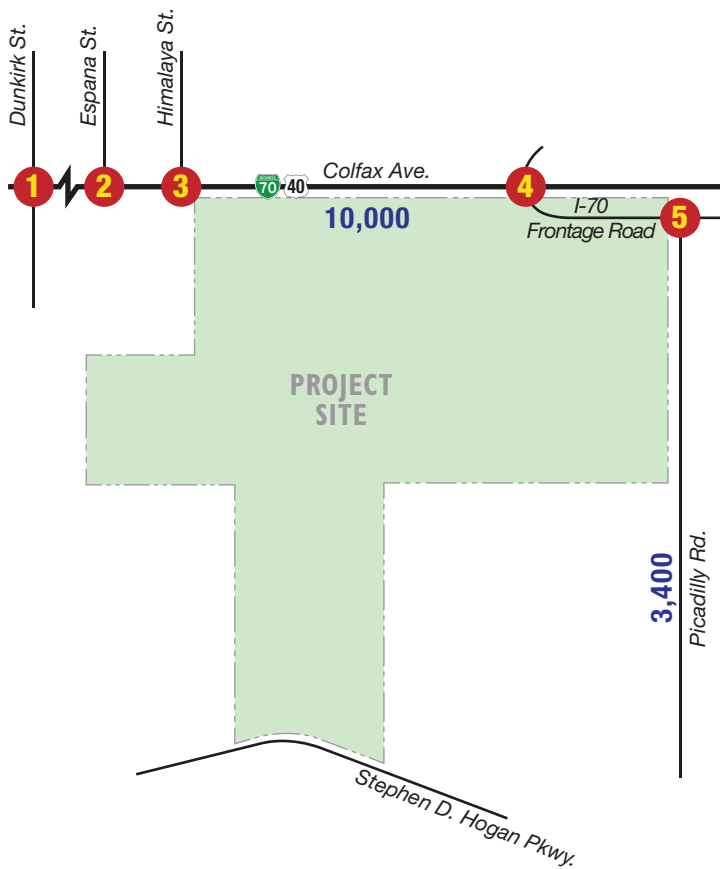
Another key future roadway in the area is Stephen D. Hogan Parkway. This roadway is currently under construction and will connect SH 30 (near the northeast corner of the Buckley Air Force Base) to the E-470/6th Parkway interchange. This roadway is initially being constructed as a two-lane facility, but long-term plans include eventual widening to a six-lane major arterial roadway.

II.C. Traffic Volumes and Operations

Weekday AM and PM peak hour turning movement counts were recently collected along Colfax Avenue. Traffic counts data along Picadilly were obtained from the 6th Avenue Extension study in support of the Stephen D. Hogan Parkway. **Figure 3** shows the data. These improvements have been developed based on the current understanding of the I-70/Picadilly Road interchange project. It is acknowledged that results of the interchange project study may provide additional recommendations at arterial intersections in the study area. **Appendix A** contains count data sheets.

As shown, Colfax Avenue serves 10,000 vehicles per day (VPD). Turning movements at the Colfax Avenue/Dunkirk Street and the Colfax Avenue/I-70 Frontage Road intersections show that Colfax Avenue serves 900 to 1,200 vehicles per hour during the peak hours. Picadilly Road serves a fraction of the traffic that Colfax Avenue serves at 3,400 VPD and approximately 300 vehicles per hour during the peak hours. Turning movements at the Picadilly Road/I-70 Frontage Road and the Colfax Avenue/I-70 Frontage Road intersections indicate a strong pattern between Colfax Avenue to the west and Picadilly Road to the south.

KEY MAP



LEGEND

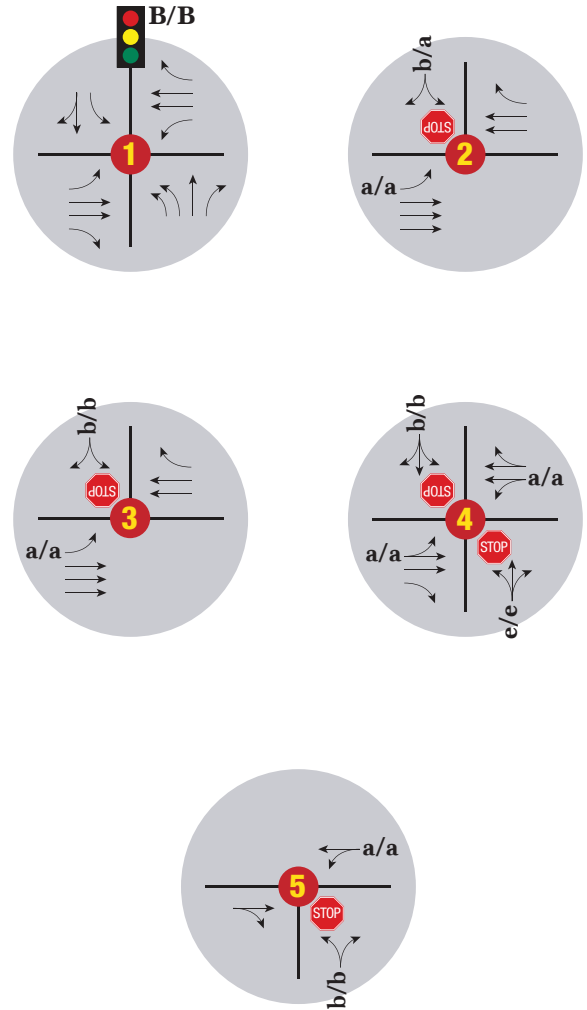
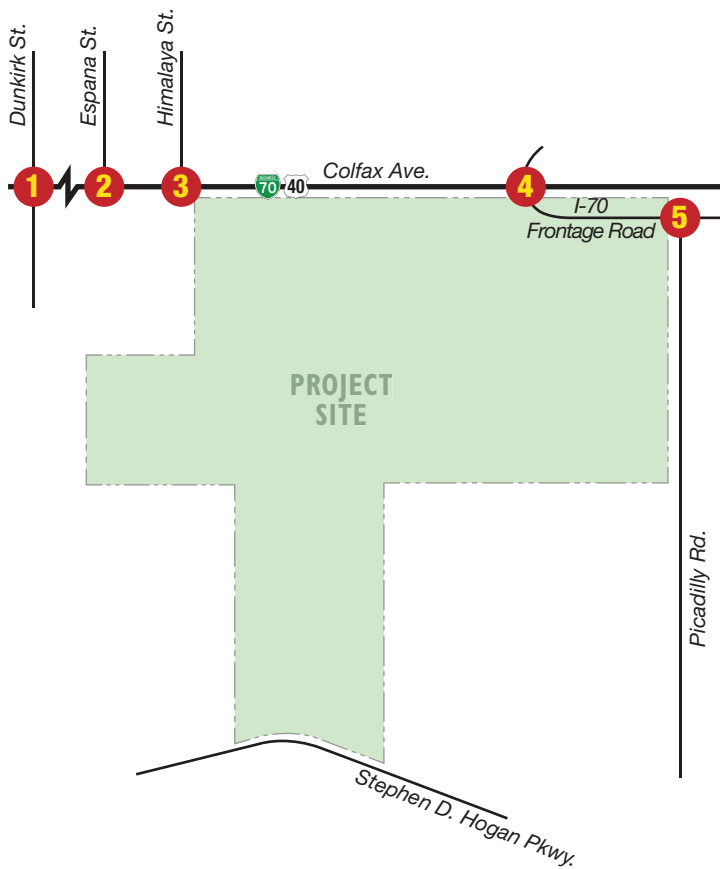
xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

Traffic operations within the study area were evaluated according to techniques documented in the Highway Capacity Manual, 6th Edition (Transportation Research Board, 2016) using the existing traffic volumes, intersection geometry, and traffic control. LOS is a qualitative measure of traffic operational conditions based on roadway capacity and vehicle delay. LOS is described by a letter designation ranging from A to F, with LOS A representing almost free-flow travel, while LOS F represents congested conditions. For STOP controlled intersections, LOS is calculated for each movement that must yield the right-of-way. In urbanized areas, LOS D is typically considered to be acceptable for peak hour traffic operations and is the standard set in the City of Aurora TIS Guidelines.

Figure 4 shows the existing traffic control, intersection geometry, and results of the LOS analyses. **Appendix B** includes the analysis worksheets. As indicated, all intersections currently operate within acceptable parameters, at LOS B or better, during peak times with the exception of the northbound approach at the Colfax Avenue/I-70 Frontage Road, which operates at LOS E during both the AM and PM Peak hours due to heavy northbound left turns. Peak hour and four-hour warrants provided in **Appendix H** indicate that signalization at the intersection of Colfax Avenue/I-70 Frontage Road is warranted under current conditions. However, CDOT does not support signalization of this location as this intersection will be eliminated upon realignment of Picadilly Road, and the new intersection of Picadilly Road/Colfax Avenue should be signalized upon construction of the realignment.

KEY MAP



LEGEND

- X/X** = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x** = AM/PM Peak Hour Unsignalized Intersection Level of Service
- = Stop Sign
- = Traffic Signal

III. PROPOSED CONDITIONS

III.A. Site Trip Generation

The current development proposal consists of approximately 4.2 million square feet of industrial park uses and related retail/commercial/hotel uses once built out with approximately 1.1 million square feet being dedicated to a single user fulfillment center. Phase I of the development will include the first three industrial park buildings, the first of which is currently under construction, and the third building is planned to be dedicated to a single user fulfillment center. NorthPoint Development does not intend to build the retail portions of the site until the Horizon Uptown development is well underway or construction of the Picadilly/I-70 interchange is nearly complete as the retail uses will not be supported under current surrounding land use and regional access conditions. A trip generation analysis for the proposed site plan was conducted using average weekday data contained in Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017. **Table 1** shows the trip generation estimates.

Table 1. Stafford Trip Generation Estimates

Land Use	ITE Code	Quantity	Units	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Industrial Park (Bldg. 1 & 2) ³	130	1,118.1	KSF	3,295	362	85	447	93	354	447
Single User Fulfillment Center ³	Custom	1,079.7	KSF	2,128	161	119	280	240	254	494
Industrial Park (Total)	130	3,124.8	KSF	5,622	1,012	238	1,250	262	988	1,250
Shopping Center	820	75.6	KSF	4,971	118	72	190	212	230	442
Supermarket	850	34	KSF	3,623	78	52	130	178	171	349
Drive-in Bank	912	6	KSF	614	33	24	57	61	62	123
Hotel	310	200	Rooms	1,672	56	39	95	63	61	124
Gas/Service Station	945	16	Pumps	2,752	82	82	164	112	112	224
Short-Term Total Trips				5,423	523	204	727	333	608	941
Long-Term Total Trips				21,382	1,540	626	2,166	1,128	1,878	3,006
Internal Capture Reduction¹				380	5	5	10	19	19	38
Pass by Reduction²				1,376	41	41	82	56	56	112
Total New External Trips				19,626	1,494	580	2,074	1,053	1,803	2,856

Notes:

1. Daily internal capture is assumed to be 10 times the PM value as calculated using ITE methodology. See text relative to Peak Hour internal trip-making.

2. Pass by reduction of 50% for Gas/Service Station is assumed from traffic passing the site along Picadilly Road.

3. Use is part of the short-term timeframe development.

NCHRP 684 provides methodology for internal capture reductions based on the interactions of different land uses within mixed-use developments, including office, retail, restaurant, residential, cinema, and hotel. The methodology considers that mixed-use developments will keep a portion of the trips generated internal to the site, thus reducing impacts to the adjacent roadway network. Internal capture worksheets can be found in **Appendix C**.

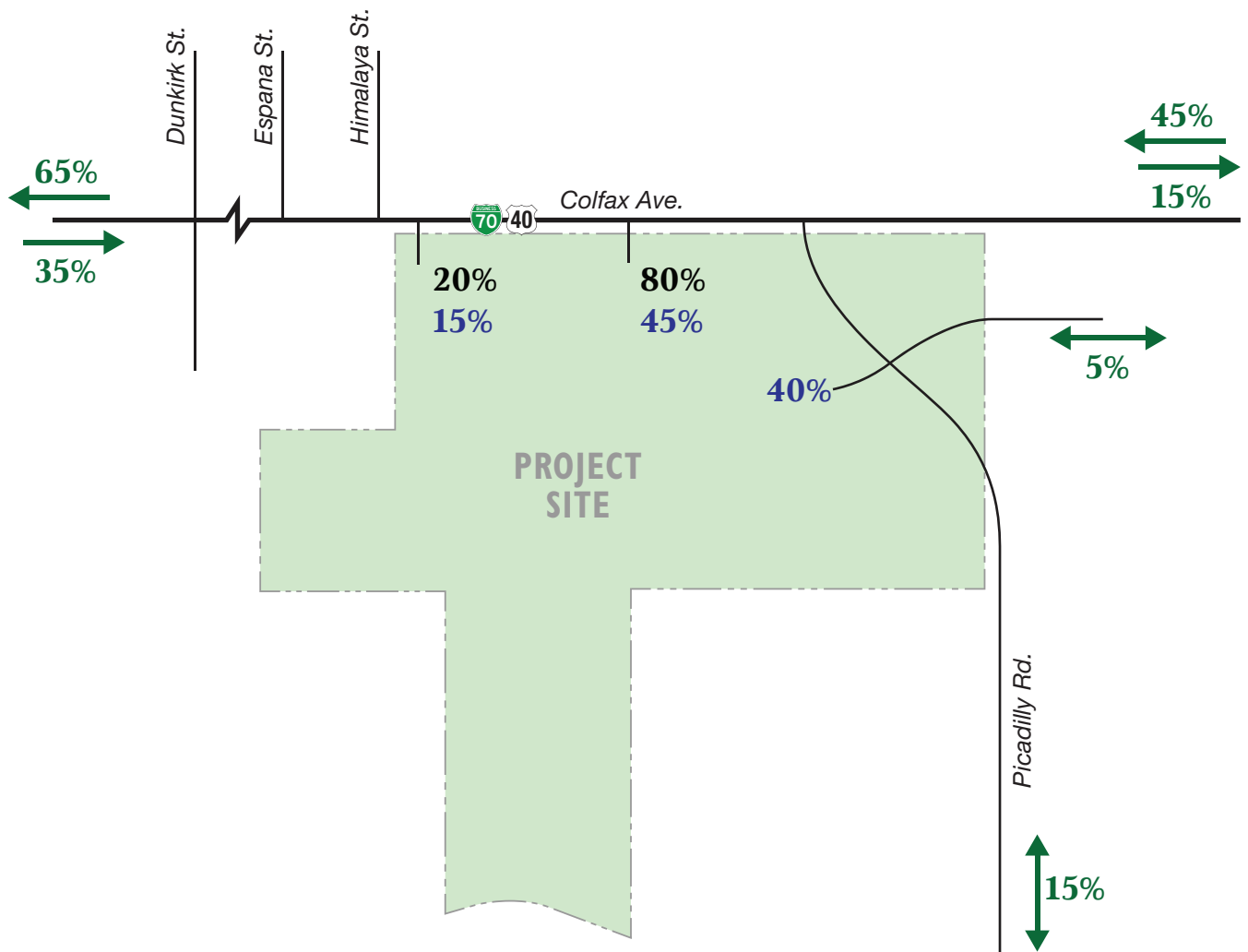
As can be seen, the proposed development would generate approximately 19,600 external trips per day, with about 2,100 AM peak hour trips and about 2,900 PM peak hour external trips. The first phase of development includes the first two industrial park buildings, plus the single user fulfillment center, which generates about 5,400 trips per day. Approximately 10 percent of the trip generation associated with the industrial park uses will be larger trucks based on data for warehousing and industrial parks provided in the Trip Generation Handbook, 3rd Edition, ITE, 2014.

III.B. Trip Distribution and Traffic Assignment

Trip distribution percentages for this site were based, in part, on the turning movement counts and on the Northeast Aurora Transportation Study (NEATS) travel demand model. While not fully in the NEATS study area, the site is immediately adjacent to the NEATS study area and City of Aurora has requested that land use model be used for this project. The geographic distribution is varied between the short- and long-term planning horizons realizing that the development will only be partially complete in the short-term, and access will be limited to one right-in/right-out and two full movement accesses (one onto Colfax Avenue and one onto Picadilly Road). Over the short-term, site traffic will rely on Colfax Avenue and Picadilly Road for access. The short-term analysis further reflects a scenario in which the I-70/Picadilly Road interchange would not yet be built nor will the continuity of Picadilly Road across I-70 be established. Access to Picadilly Road is provided only in the third year of the short-term scenario. Longer term, site traffic will have more options including Picadilly Road's full connection to I-70 and an access onto Stephen D. Hogan Parkway along the site's south side.

Figure 5 shows the short-term site-trip distribution percentages, and **Figure 6** shows the short-term trip assignment resulting from applying the percentages. As indicated, the development's greatest impact in the short-term is expected to be onto Colfax Avenue, adding 2,300 VPD onto this roadway to the site's east and west upon completion of the first three buildings. Entering and exiting trips along Colfax Avenue differ due to the existing interchange not providing access onto westbound I-70, resulting in heavier exiting trips to the west to access I-70 via Tower Road.

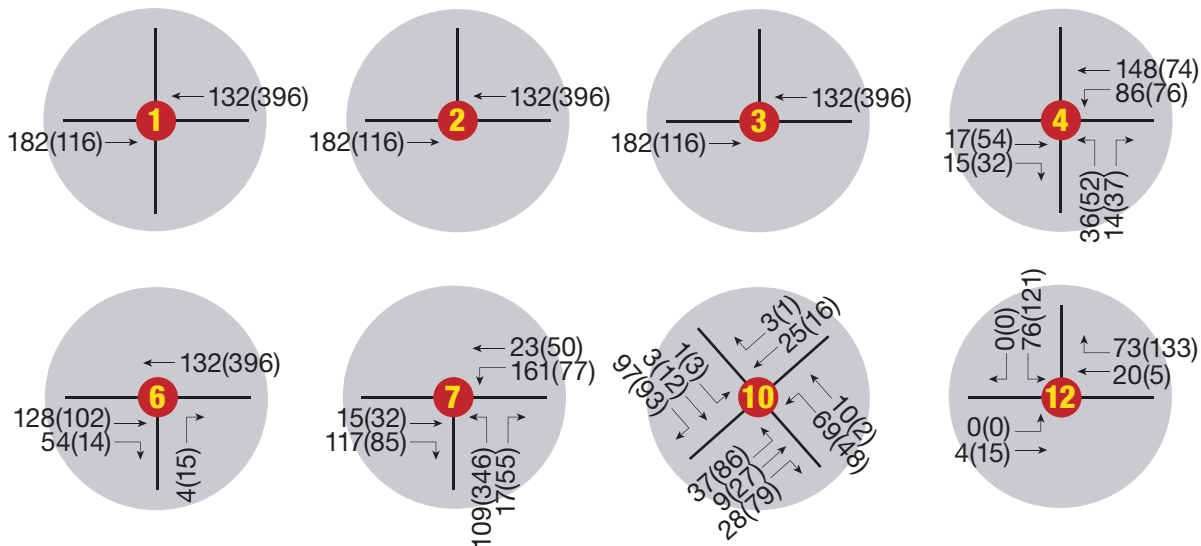
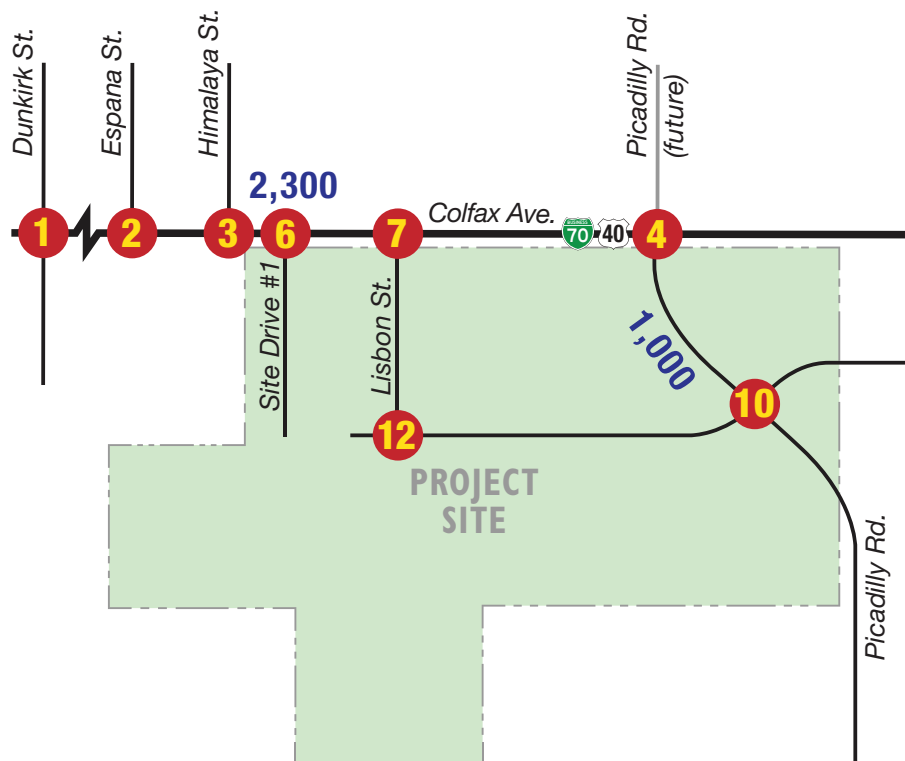
Figure 7 and **Figure 8** show the long-term site-trip distribution percentages for the industrial and retail portions of the site, respectively. These vary as the industrial portion of the site will have more of a regional distribution while the retail will be focused more locally. **Figure 9** and **Figure 10** show the long-term trip assignments resulting from applying the percentages for the industrial and retail portions of the site, respectively. As indicated, from combining traffic volumes from **Figure 9** and **Figure 10**, the development's greatest impact in the long-term is expected to be onto Picadilly Road to the north, adding 7,400 VPD. Picadilly Road to the south would serve 3,900 VPD, Colfax Avenue to the west would serve 5,600 VPD, Colfax Avenue to the east would serve 3,400 VPD, and Stephen D. Hogan Parkway would serve 1,900 VPD.



LEGEND

- = Site Trip Distribution
- XX%** = Access Distribution 1 & 2
- XX%** = Access Distribution 3

KEY MAP

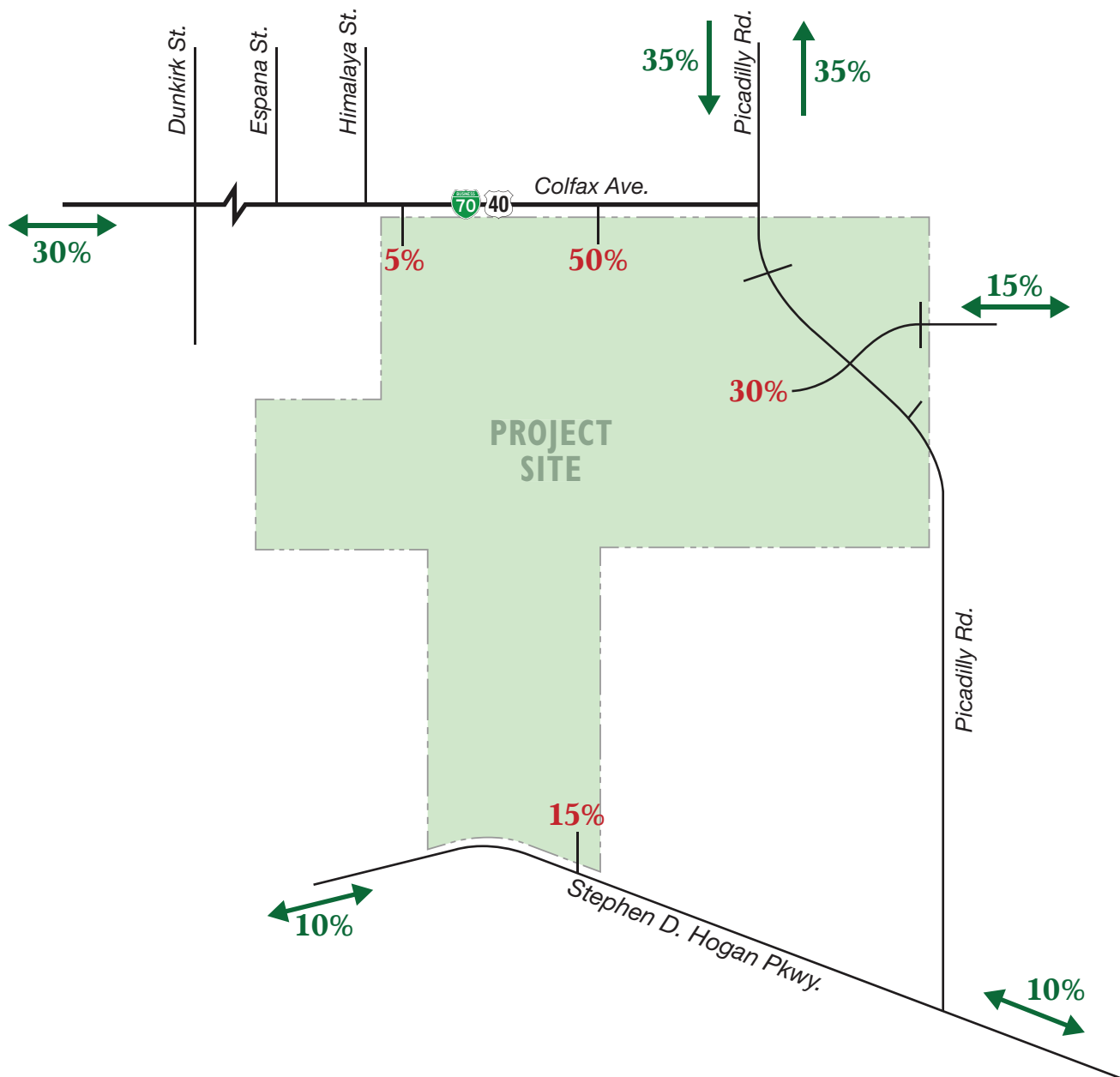


LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

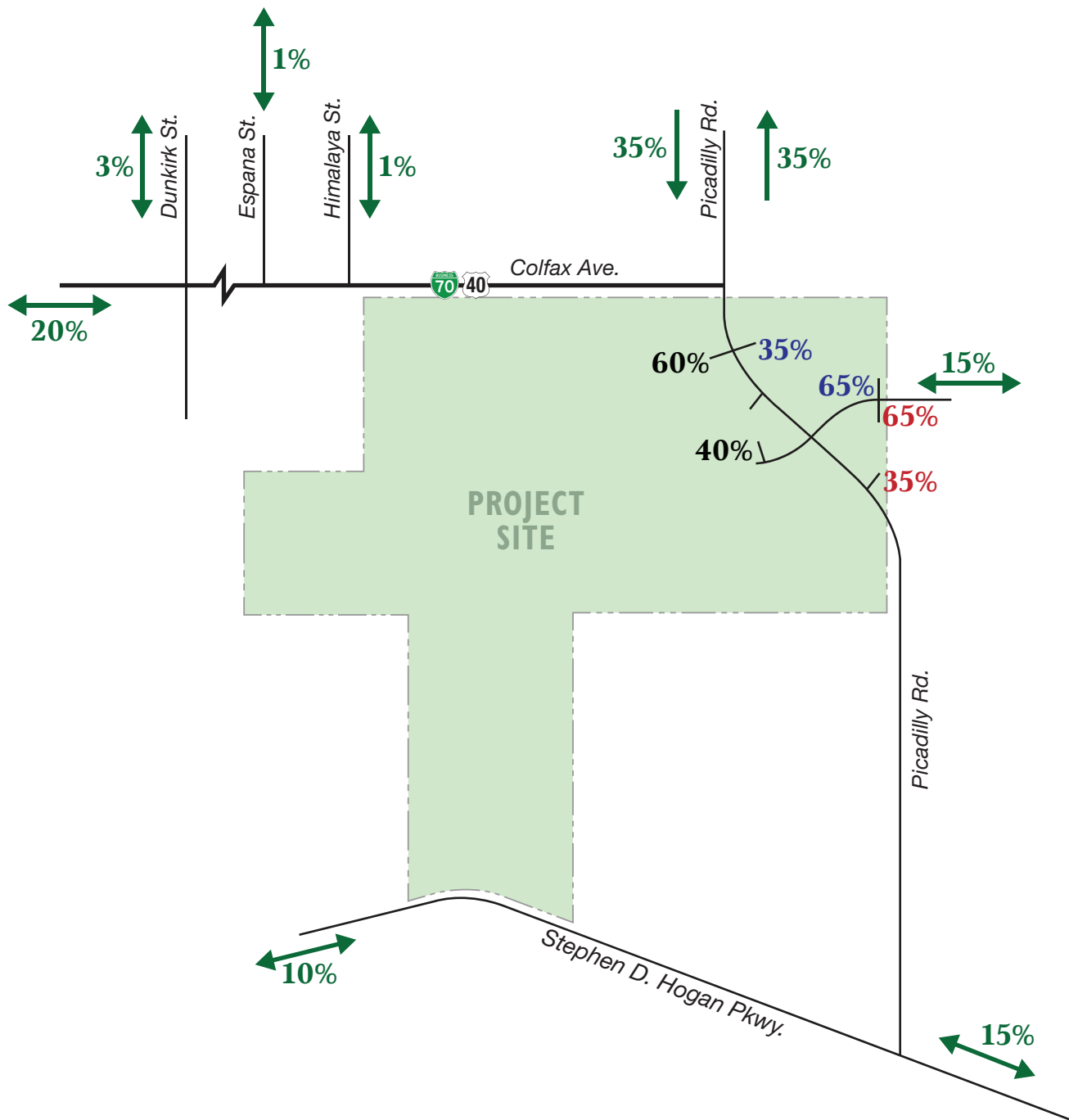
XXXX = Daily Traffic Volumes

NOTE: ADT volumes may double count some trips due to trip routing



LEGEND

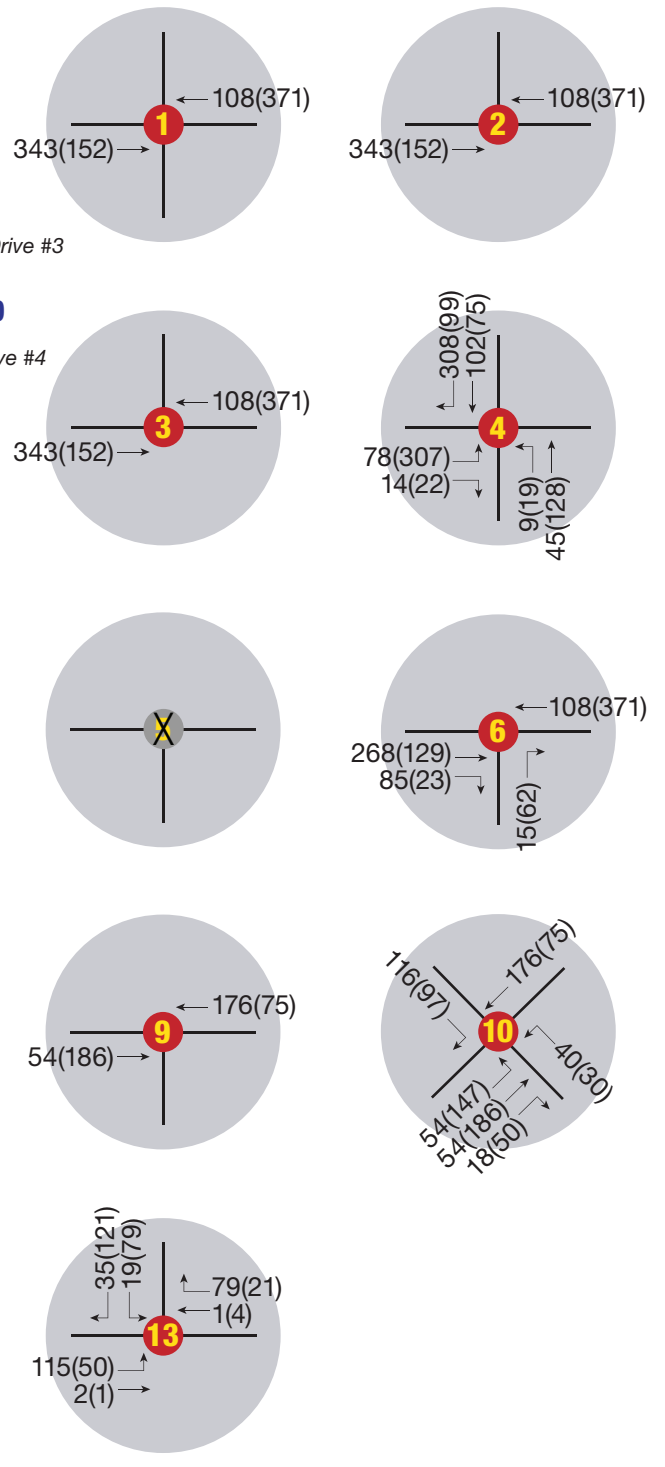
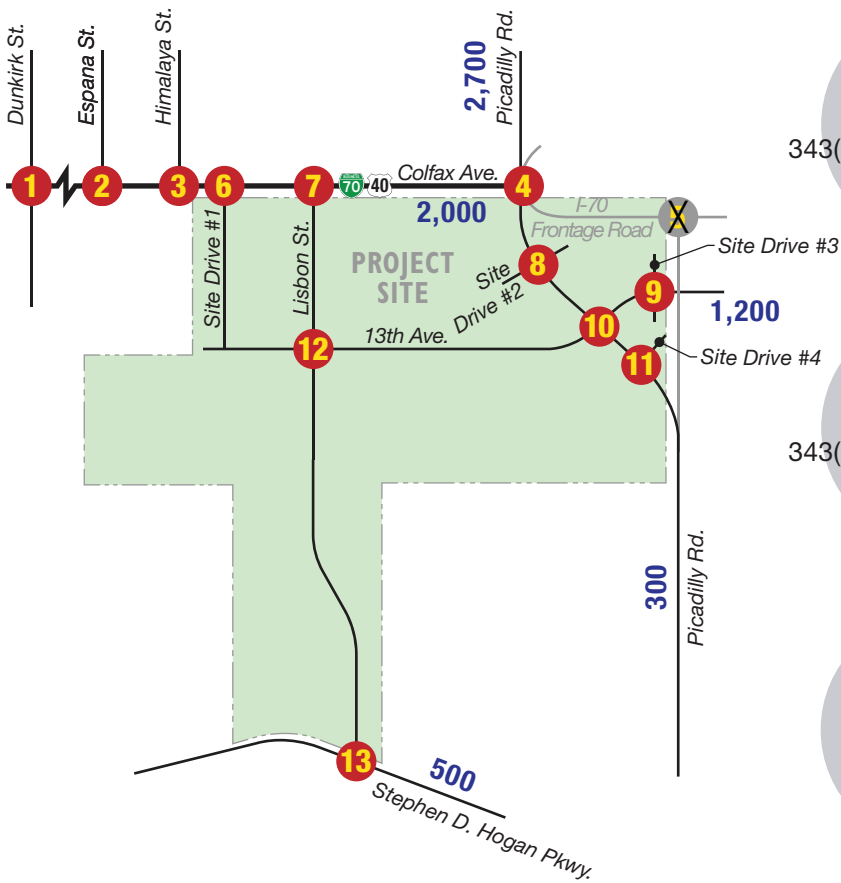
- = Site Trip Distribution
- = Access Distribution



LEGEND

- XX% = Site Trip Distribution
- XX% = Gas Station & Hotels Access Distribution
- XX% = Grocery, Restaurants & Retail Access Distribution
- XX% = Retail Access Distribution

KEY MAP



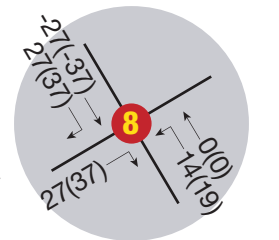
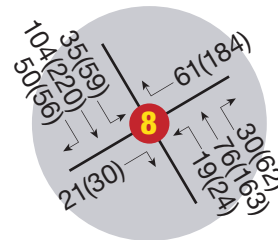
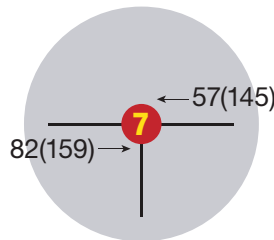
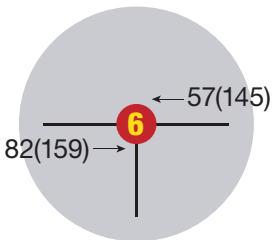
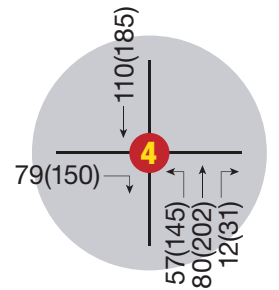
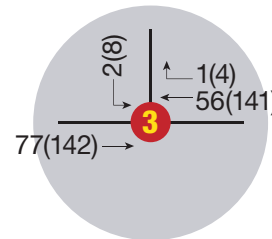
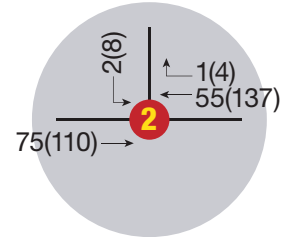
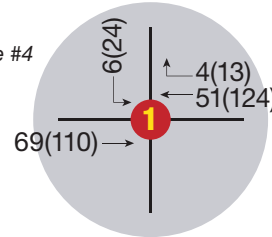
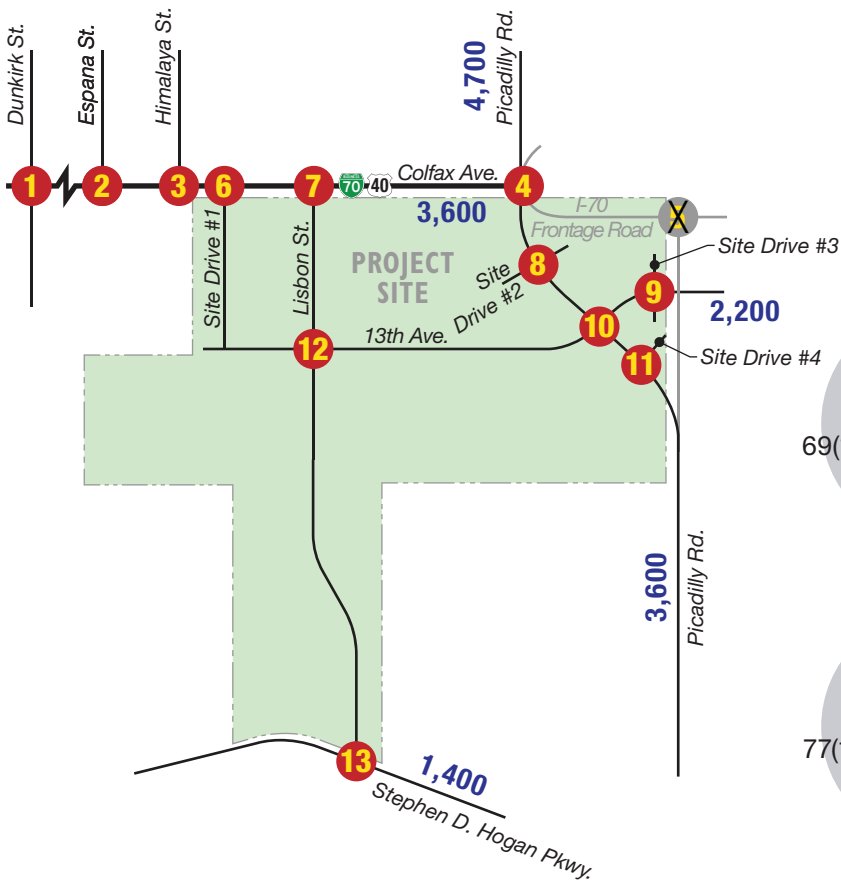
LEGEND

xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

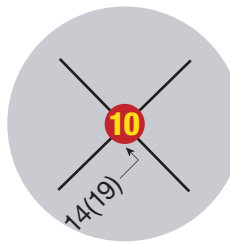
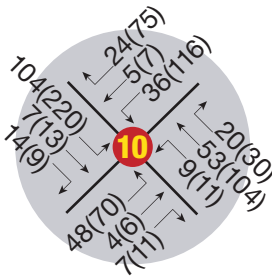
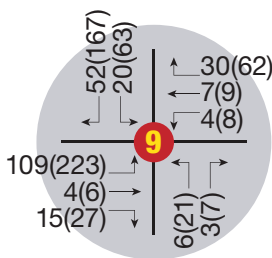
xxxx = Daily Traffic Volumes

NOTE: ADT volumes may double count some trips due to trip routing

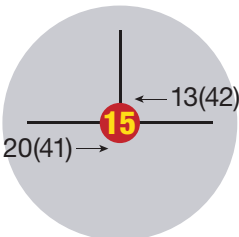
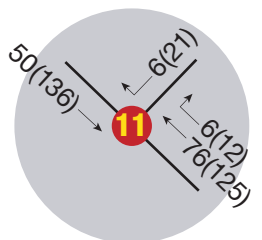
KEY MAP



Pass-By Trips



Pass-By Trips



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

NOTE: ADT volumes may double count some trips due to trip routing

IV. FUTURE CONDITIONS

IV.A. Short-Term Future Background

Roadway System

The short-term scenario evaluates the first three years of the Stafford Logistics Center. Improvements associated with the I-70/Picadilly interchange are not anticipated in this timeline; however, the realignment of Picadilly Road is anticipated during year three.

Traffic Volumes

Phase I of the development will consist of the first three buildings of the industrial park portion of the site, the first of which is currently under construction, and the third building is dedicated to the single user fulfillment center. Access will be provided onto Colfax Avenue via one right-in/right-out and one full movement access, and upon completion of the Picadilly Road realignment, one full movement access onto Picadilly Road via I 3th Avenue/realigned Colfax Avenue. The right-in/right-out access onto Colfax Avenue is intended to provide shared access with the adjacent property to the west. The key intersections of analysis include Colfax Avenue/Dunkirk Street, Colfax Avenue/Espana Street, Colfax Avenue/Himalaya Street, Picadilly Road/Colfax, and Picadilly Road/I 3th Avenue/realigned Colfax. The I-70/Picadilly Road interchange is not assumed to be constructed within the short-term timeframe. The signalization of Colfax Avenue/I-70 Frontage Road will be warranted with background traffic and it is assumed Picadilly Road/Colfax Avenue will be signalized upon realignment of Picadilly Road as that intersection will replace the existing intersection.

Background traffic is the component of roadway volumes that would use the adjacent roadway system regardless of site development. Along Colfax Avenue adjacent to the site, moderate to heavy growth is expected over the next few years based on data from the NEATS model and other developments near the site. For this analysis, a 6 percent annual growth was assumed for the entire study area.

Figure 11 illustrates short-term background traffic volumes.

Traffic Control

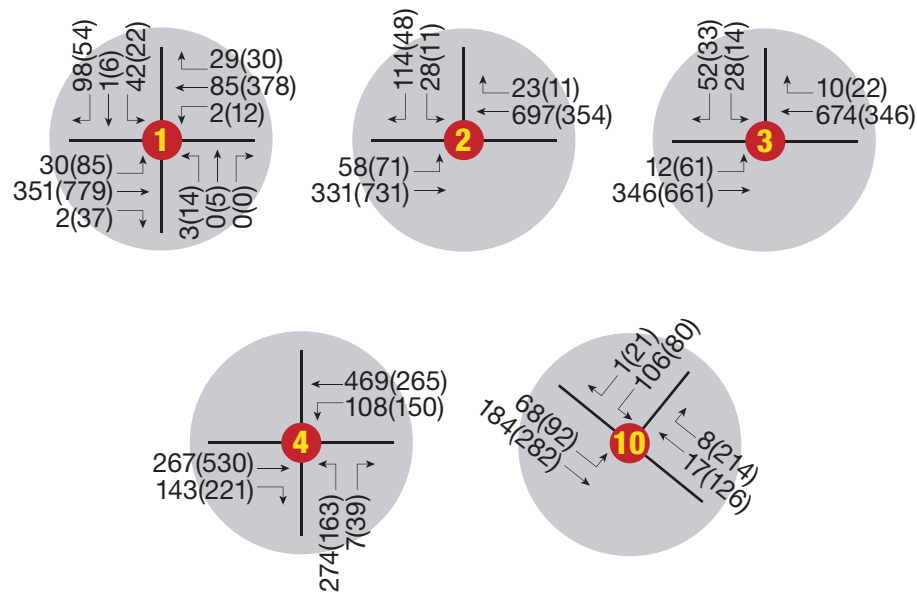
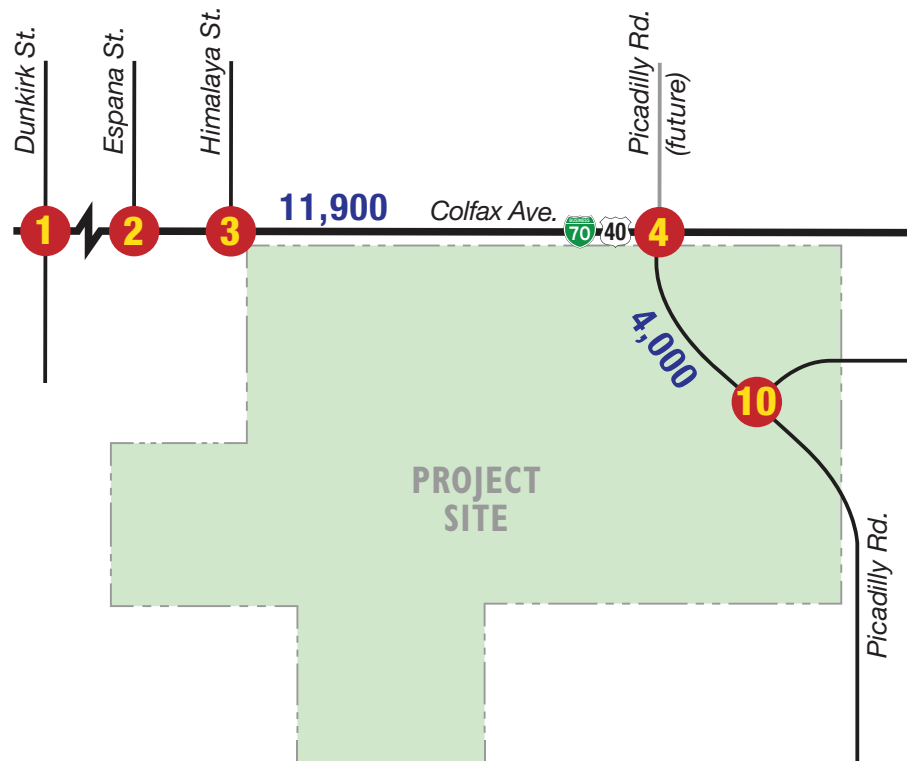
The short-term background traffic is not anticipated to trigger any additional signalization warrants. All intersections are assumed to be side-street-stop controlled except Colfax Avenue/Dunkirk Street, which is signalized under existing conditions, and Colfax Avenue/Picadilly Road, which meets warrants under existing conditions as the intersection of the Colfax Avenue/I-70 Frontage Road. The signalization of Colfax Avenue/Picadilly Road should be closely coordinated with the I-70/Picadilly Road interchange project to ensure that the initial design considers the subsequent geometric shift when Colfax Avenue is eliminated to the east and Picadilly Road continues north to the relocated interchange.

Traffic Operations

The short-term background traffic volume magnitudes are only marginally greater than existing conditions. As such, short-term traffic operations are similar to those of existing conditions. As indicated, all intersections are projected to operate within acceptable parameters, at LOS C or better.

Short-term future background traffic volumes were used as the basis for intersection capacity analyses, the results of which are shown on **Figure 12**, and LOS worksheets can be found in **Appendix G**. No LOS issues will exist in the short-term planning horizon given background traffic, assuming the traffic control and lane geometry described herein.

KEY MAP

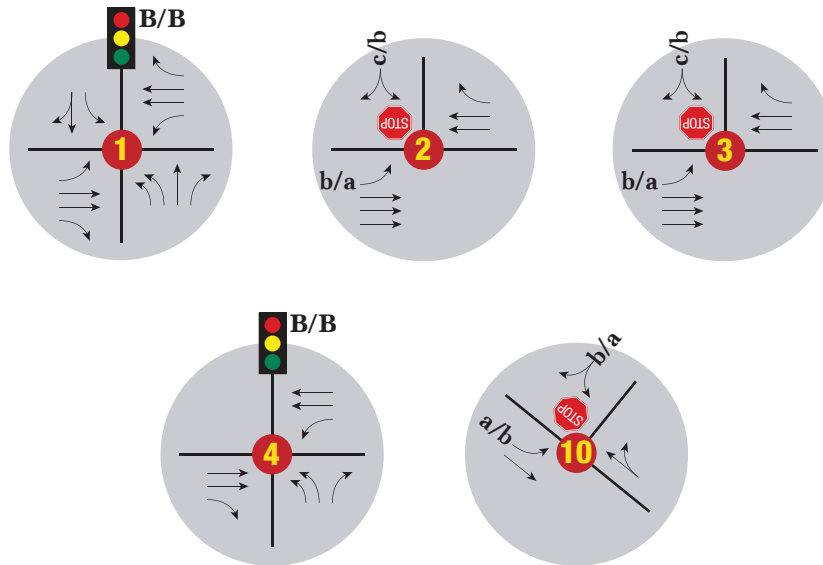
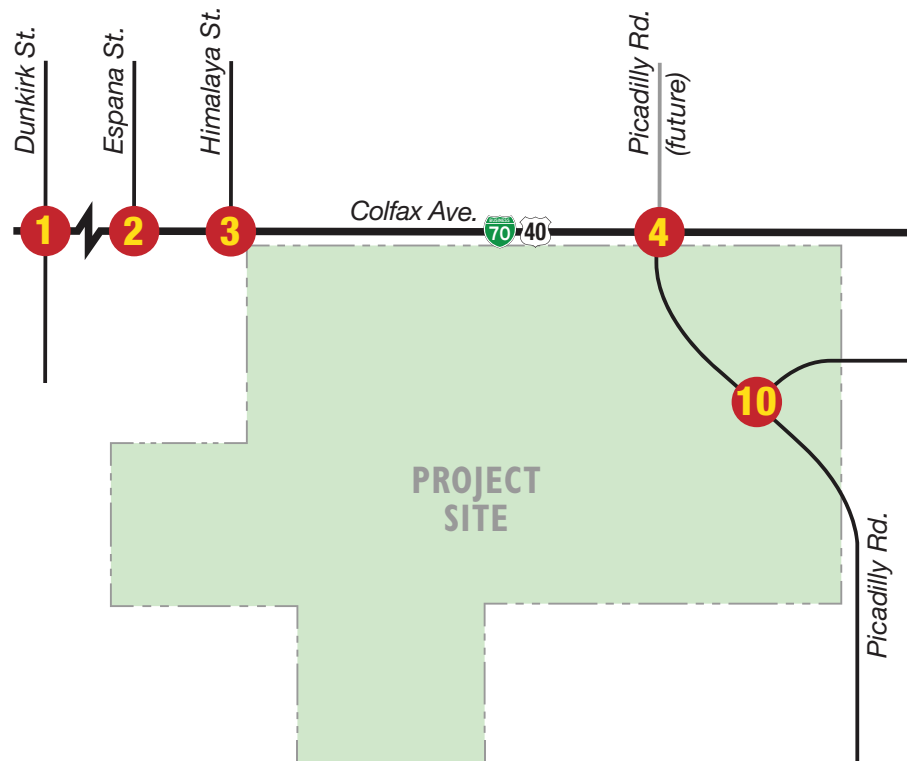


LEGEND

xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

KEY MAP



LEGEND

xxx(XXX) = AM(PM) Peak Hour Traffic Volumes

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

= Stop Sign

= Traffic Signal

IV.B. Long-term Future Background

Roadway System

By year 2040, Stafford is assumed to be built out. This includes the existing roadways, as well as:

- Realignment of Picadilly Road to the west at Colfax Avenue.
- Extension of Picadilly Road north of Colfax Avenue crossing over I-70 and connecting with Picadilly Road at Smith Road.
- A reconfigured interchange between I-70 and Picadilly Road providing all movements to/from I-70 (not all are provided today), and removal of the east leg of the Colfax Avenue/Picadilly Road intersection that currently serves the existing ramps.
- The completion of the Stephen D. Hogan Parkway along the site's south side. This will be completed as a four-lane cross section in the short-term scenario and a six-lane cross section in the long-term scenario.

Traffic Volumes

Long-term background traffic has been estimated from traffic projections developed in support of the I-70/Picadilly Road projections prepared by HDR, Inc. for the I-70/Picadilly Road interchange study. These projections were based on the current Denver Regional Council of Governments (DRCOG) travel demand model. In developing background traffic for the Stafford TIS, adjustments were made to the interchange projections to remove trips associated with the 350 acres associated with the Stafford development. Volumes were also added entering and exiting the southbound legs of intersections along Colfax Avenue to account for the undeveloped strip of land between Colfax Avenue and the residential development to the north and the 65-acre parcel between Lisbon Street and Picadilly Road, which are all zoned for commercial use. ITE land use 820 (Shopping Center) with an FAR of 0.2 was assumed for these properties.

Results of the above adjustments provided background traffic forecasts illustrated on **Figure I3**. Picadilly Road is estimated to serve the greatest amount of background traffic reaching up to 41,500 VPD immediately north of the site. Stephen D. Hogan Parkway will also serve a significant amount of traffic reaching as much as 38,400 VPD. Picadilly Road to the south is projected to serve 22,500 VPD, Colfax Avenue to the west is projected to serve 28,000 VPD, and Colfax Avenue to the east is projected to serve 20,400 VPD.

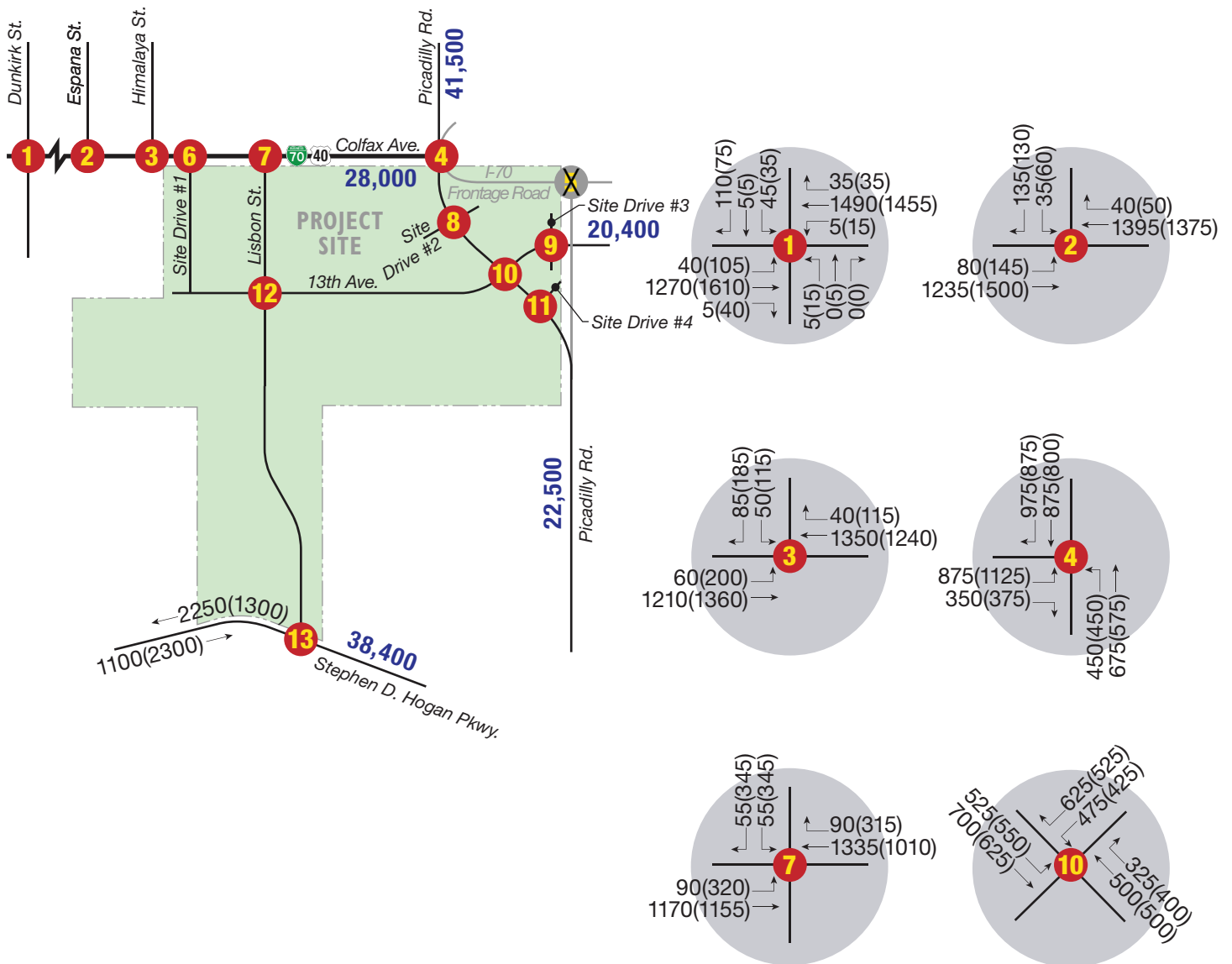
Traffic Control

Signalization of several intersections along Colfax Avenue is assumed in the long term. Future background traffic levels are projected to warrant signalization at the following intersections within the study area:

- Colfax Avenue/Picadilly Road
- Colfax Avenue/Himalaya Street
- Colfax Avenue/Lisbon Street
- Picadilly Road/relocated Colfax Avenue (south of Colfax Avenue section line)

Colfax Avenue/Picadilly Road and Picadilly Road/relocated Colfax Avenue are assumed to be signalized based on the I-70/Picadilly Road project. Peak hour and four-hour signal warrants are met at Colfax Avenue/Himalaya Street and at Colfax Avenue/Lisbon Street and are provided in **Appendix H**. The Colfax Avenue/Espana Street intersection was not evaluated as CDOT does not support signalization due to the proximity to Colfax Avenue/Dunkirk Street to the west.

KEY MAP



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

Traffic Operations

Long-term future background traffic volumes were used as the basis for intersection capacity analyses, the results of which are shown on **Figure 14** (**Appendix G** includes LOS worksheets).

As indicated, all intersections are projected to operate within acceptable parameters, at LOS D or better, during peak times with the exception of the southbound left-turn movement at Colfax Avenue/Espana Street, which is projected to operate at LOS E during both peak hours. This includes significant widening of the intersections to include numerous auxiliary lanes as well as signalization. Key laneage needs include four-laning of Picadilly Road and four-laning of the off-alignment Colfax Avenue east of Picadilly Road. The major intersections, such as Colfax Avenue/Picadilly Road and Picadilly Road/relocated Colfax Avenue, will also need dual left turn lanes and separate right turn lanes along select approaches due to background traffic demands alone.

IV.C. Total Traffic Conditions

Short-term Future

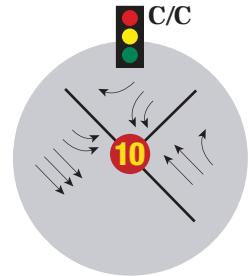
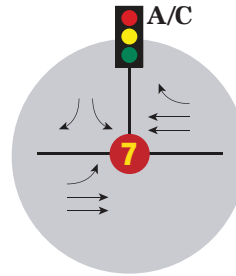
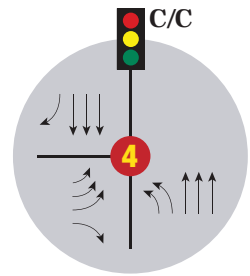
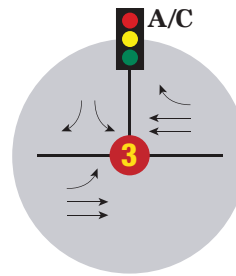
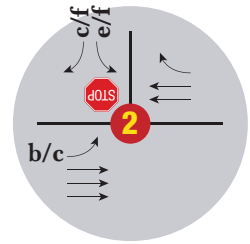
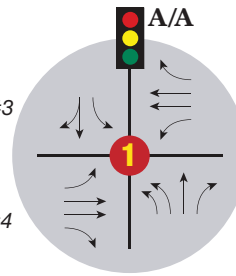
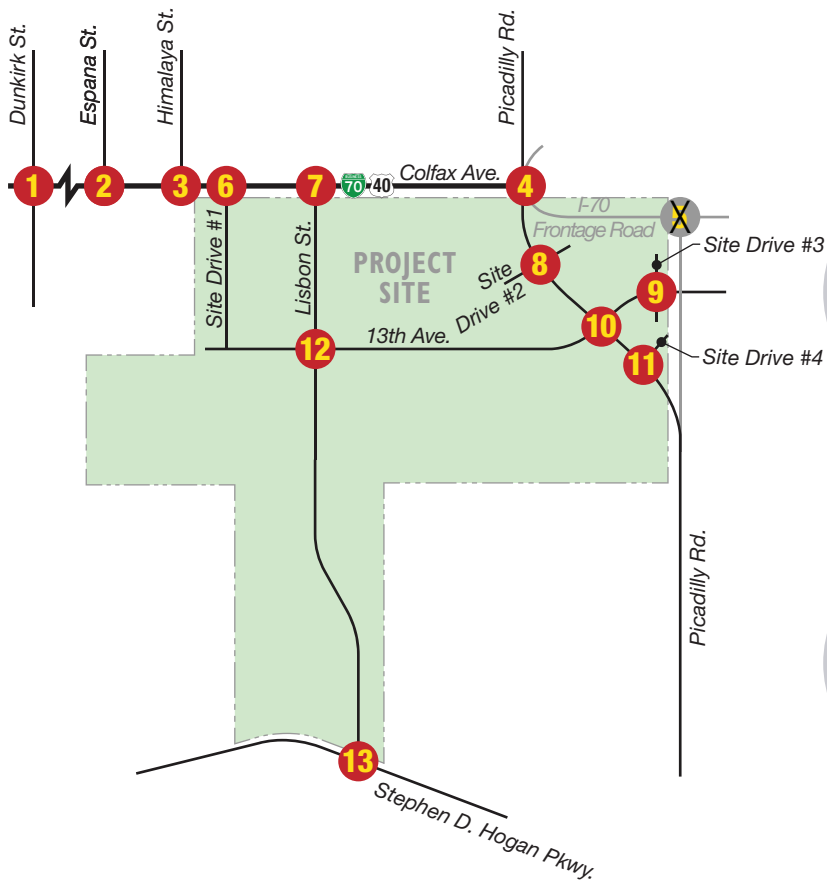
The short-term site generated traffic volumes (**Figure 5**) were added to the corresponding background volumes (**Figure 11**) to produce the short-term future total traffic volumes shown on **Figure 15**. As shown, traffic volumes along Colfax Avenue would reach as much as 14,200 VPD upon completion of the first three buildings, of which the first phase of Stafford would make up 16 percent of the total traffic. Traffic volumes along Picadilly Road would reach as much as 5,000 VPD, of which the first phase of Stafford would make up 20 percent of the total traffic. In the short-term scenario, access to the site will be provided by one right-in/right-out and one full movement access onto Colfax Avenue and one full movement access onto Picadilly Road.

Intersection capacity analyses were conducted using the short-term total peak hour volumes and intersection geometrics as illustrated on **Figure 16**. A 10 percent heavy vehicle was used throughout the study area with an increase to 25 percent for all movements entering and exiting the site.

Appendix F includes analysis worksheets. As indicated, traffic operations would remain acceptable at LOS D or better. Picadilly Road daily volumes would indicate that the segment south of Colfax Avenue will continue to maintain an LOS of C or better with a two-lane cross-section based on volume thresholds presented in the NEATS study.

Short-term total traffic volumes will warrant signalization at Colfax Avenue/Lisbon Street (Full Access Site Driveway). Dual left turns for the northbound approach of the Colfax Avenue/Lisbon Street intersection are recommended for the short-term total conditions along with a northbound channelized right turn with acceleration lane. The intersection of Picadilly Road/Realigned Colfax Avenue is not anticipated to meet warrants in the short-term total scenario but should continue to be monitored as Stafford continues to develop as well as Horizon Uptown to the east. The peak hour and four-hour warrants are provided in **Appendix H**, and 70 percent warrants were used as the current posted speed on Colfax Avenue is 55 MPH and 45 MPH on Picadilly Road.

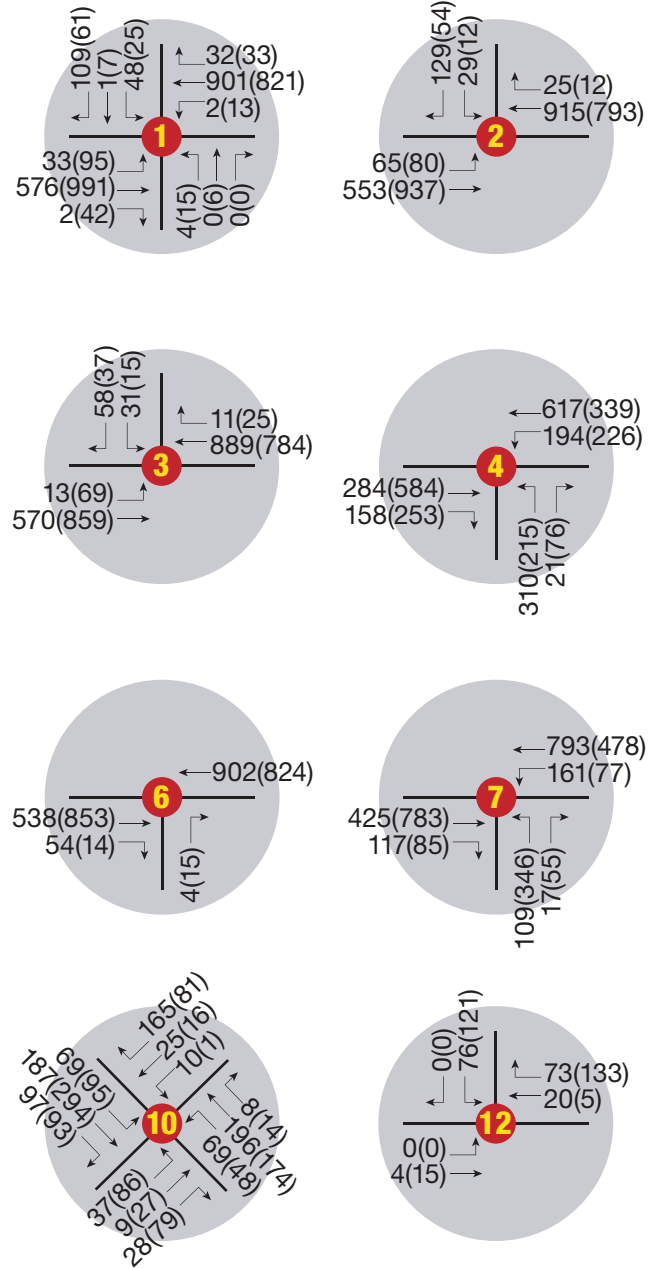
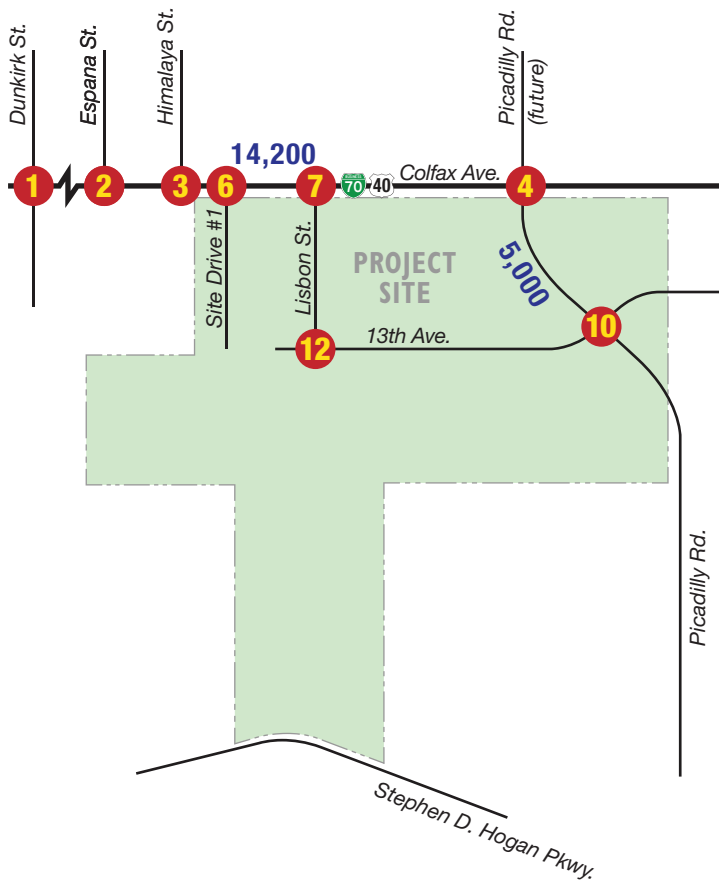
KEY MAP



LEGEND

- X/X** = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x** = AM/PM Peak Hour Unsignalized Intersection Level of Service
- = Stop Sign
- = Traffic Signal

KEY MAP

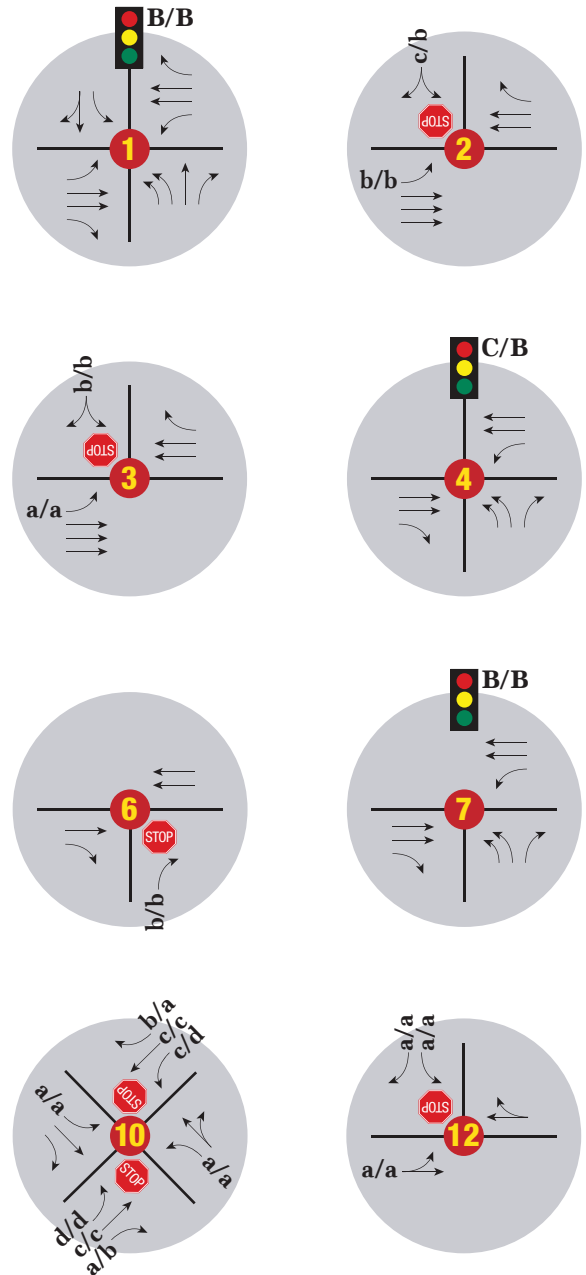
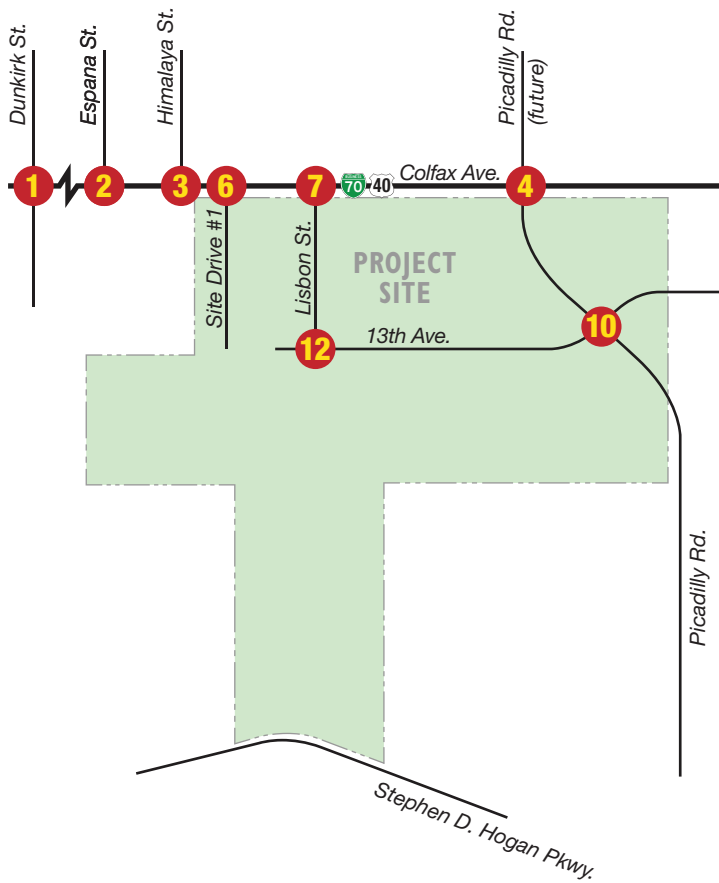


LEGEND

xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

KEY MAP





LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Stop Sign

 = Traffic Signal

Additional traffic growth is needed on side street approaches before signal warrants are satisfied at the Colfax Avenue/Himalaya Street intersection, and CDOT has stated that they do not support signalization of Colfax Avenue/Espana Street. The ultimate signalization of Colfax Avenue/Picadilly Road will replace the intersection of the Colfax Avenue/I-70 Frontage Road as part of the I-70/Picadilly Road interchange project. However, warrant analysis indicates signalization of the existing intersection is currently warranted under existing conditions. Interim signalization is assumed for the purposes of this study, but coordination with the I-70/Picadilly Road interchange project should be considered as the layout of this intersection will change with completion of that project.

Intersection movement queuing has also been assessed given the short-term traffic projections for year three. **Table 2** presents the results.

Table 2. Short-term Future 95th Percentile Queueing – Stafford

Intersection	Direction	95% Queue (ft)		
		Left	Thru	Right
Colfax Avenue/Dunkirk Street (Intersection #1)	Eastbound	25	175	0
	Westbound	25	200	25
	Northbound	25	25	0
	Southbound	75	175	
Colfax Avenue/Espana Street (Intersection #2)	Eastbound	25	--	
	Southbound		50	
Colfax Avenue/Himalaya Street (Intersection #3)	Eastbound	25	--	
	Southbound		25	
Colfax Avenue/Picadilly Road (Intersection #4)	Eastbound	--	175	200
	Westbound	325	100	--
	Northbound	225	--	125
Colfax Avenue/Stafford Site Driveway #1 (Intersection #6)	Northbound		25	
Colfax Avenue/Lisbon Street (Intersection #7)	Eastbound	--	125	50
	Westbound	250	50	--
	Northbound	250	--	0
Picadilly Road /Southern Colfax Avenue Alignment (Intersection #10)	Eastbound	50	25	25
	Westbound	25	25	25
	Northbound	25	--	
	Southbound	25	--	
Lisbon Street/Southern Colfax Avenue Alignment (Intersection #12)	Eastbound		25	--
	Westbound	--	25	
	Southbound	25	--	0

Long-Term Future

The 2040 site generated traffic volumes (**Figure 9** and **Figure 10**) were added to the long-term future background traffic volumes (**Figure 13**) to produce the year 2040 total traffic volumes illustrated on **Figure 17**. As shown, traffic volumes along Colfax Avenue will increase up to 33,600 VPD by 2040 once the area is built out. Picadilly Road could serve 26,400 VPD south of Colfax Avenue and 48,900 VPD north of Colfax Avenue.

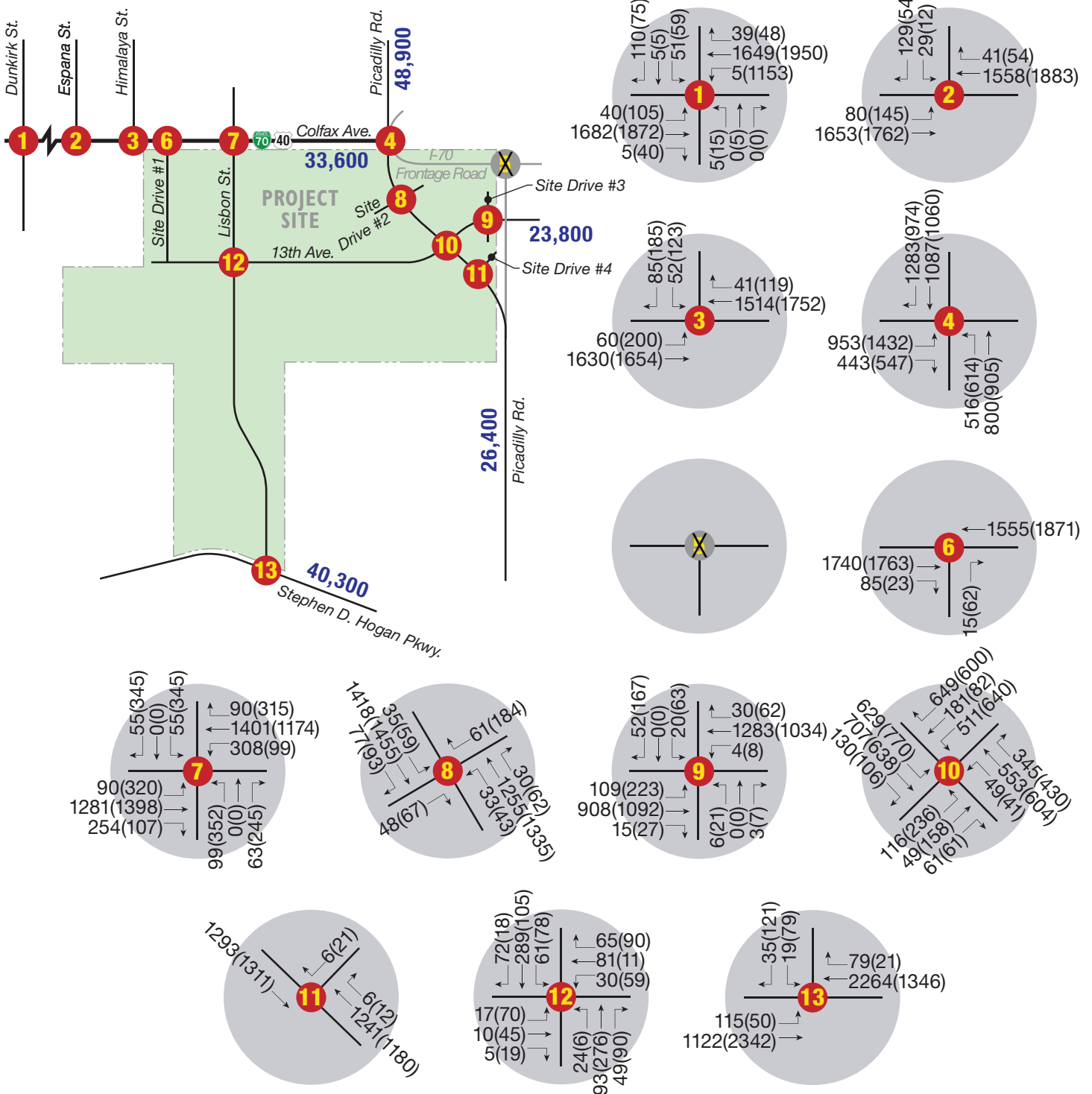
Intersection capacity analyses were conducted using the long-term total peak hour volumes and intersection geometrics, also shown on **Figure 18**. **Appendix G** includes the analysis worksheets. A

10 percent heavy vehicle was used throughout the study area with an increase to 25 percent for all movements entering and exiting or within the industrial portion of the site.

These improvements have been developed based on the current understanding of the I-70/Picadilly Road interchange project. It is acknowledged that the interchange project may provide additional recommendations at arterial intersections in the study area. Results for each intersection are summarized below:

- **Colfax Avenue/Dunkirk Street (Intersection #1)** – Signal (exists today). Colfax Avenue is a major arterial roadway. The intersection does not need any modification from the existing geometry.
- **Colfax Avenue/Espana Street (Intersection #2)** – Tee intersection. Colfax Avenue is a major arterial roadway. The intersection should be modified to include separate southbound left and right turn lanes. CDOT has indicated that this intersection is to remain unsignalized.
- **Colfax Avenue/Himalaya Street (Intersection #3)** – Signal tee intersection. Colfax Avenue is a major arterial roadway. The intersection should be modified to include separate southbound left and right turn lanes.
- **Colfax Avenue/Stafford Access Drive #1 (Intersection #6)** – Stop controlled right-in/right-out. Colfax Avenue is a four-lane major arterial. The intersection will need an eastbound right turn lane.
- **Colfax Avenue/Lisbon Street (Stafford full movement access) (Intersection #7)** – Signal. Colfax Avenue is a four-lane major arterial at the intersection. Lisbon Street will be a two-lane collector providing access to future retail and existing residential properties to the north and to the Stafford Logistics Center to the south. The intersection will need dual left turn lanes and separate right turn lanes along all four approaches. The northbound and southbound right turns should be channelized with acceleration lanes onto Colfax Avenue.
- **Colfax Avenue/Picadilly Road (Intersection #4)** – Signal. Colfax Avenue is a major arterial, and Picadilly Road is planned to be a major arterial that will have a new interchange with I-70. The Colfax Avenue realignment to the south dictates that this will be a “T” intersection. The intersection should include three through-lanes north-south, northbound dual left-turn lanes, triple left-turn lanes along the eastbound approach, and separate right turn lanes with overlap signal phasing along the southbound and eastbound approaches.
- **Picadilly Road/Stafford Access Drive #2 (Intersection #8)** – Stop controlled $\frac{3}{4}$ access. Picadilly Road is a planned six-lane major arterial. The northbound and southbound approaches should have separate left and right turn lanes.
- **Picadilly Road /Southern Colfax Avenue Alignment (Intersection #10)** – Signal. Picadilly Road is a planned six-lane major arterial. The west leg of the intersection will serve as a site access roadway, which will be 13th Avenue through the site. The east leg serves as the Southern Colfax Avenue alignment through the planned Horizon Uptown development. Separate right turn lanes should be included at all approaches with signal phasing overlaps included on the northbound approaches, channelization of the westbound approach right turn, and left turn lanes at all approaches with dual left for the southbound and westbound approaches.

KEY MAP



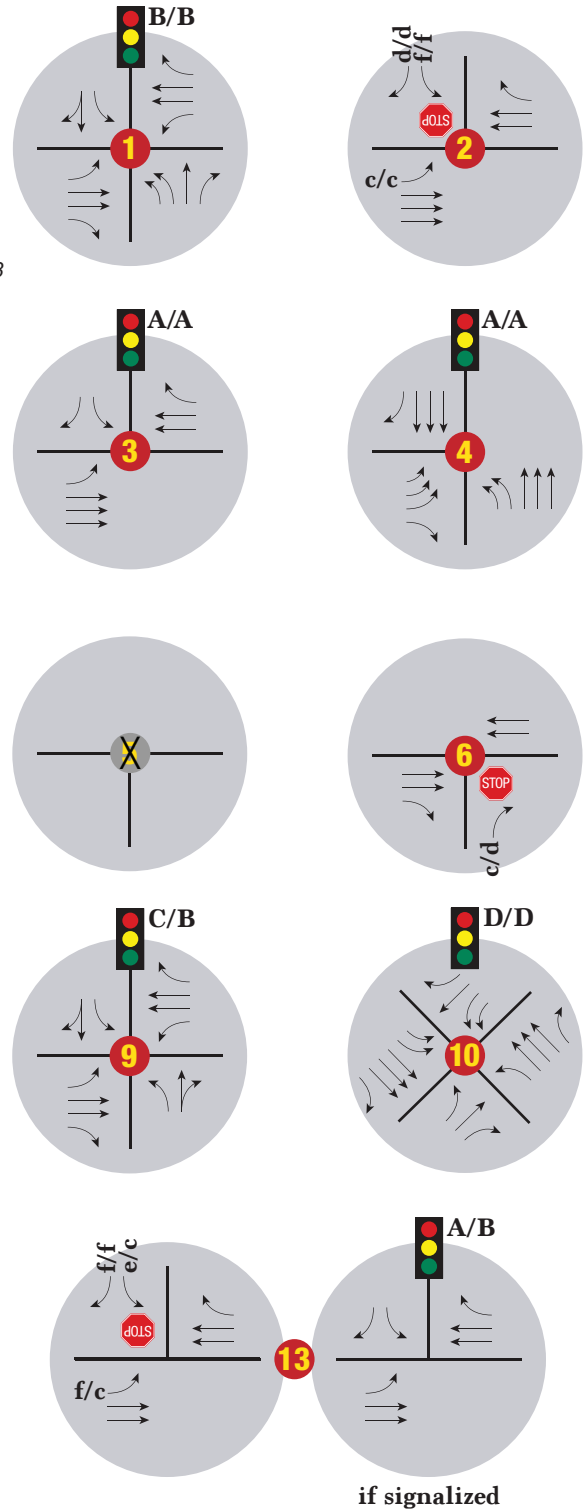
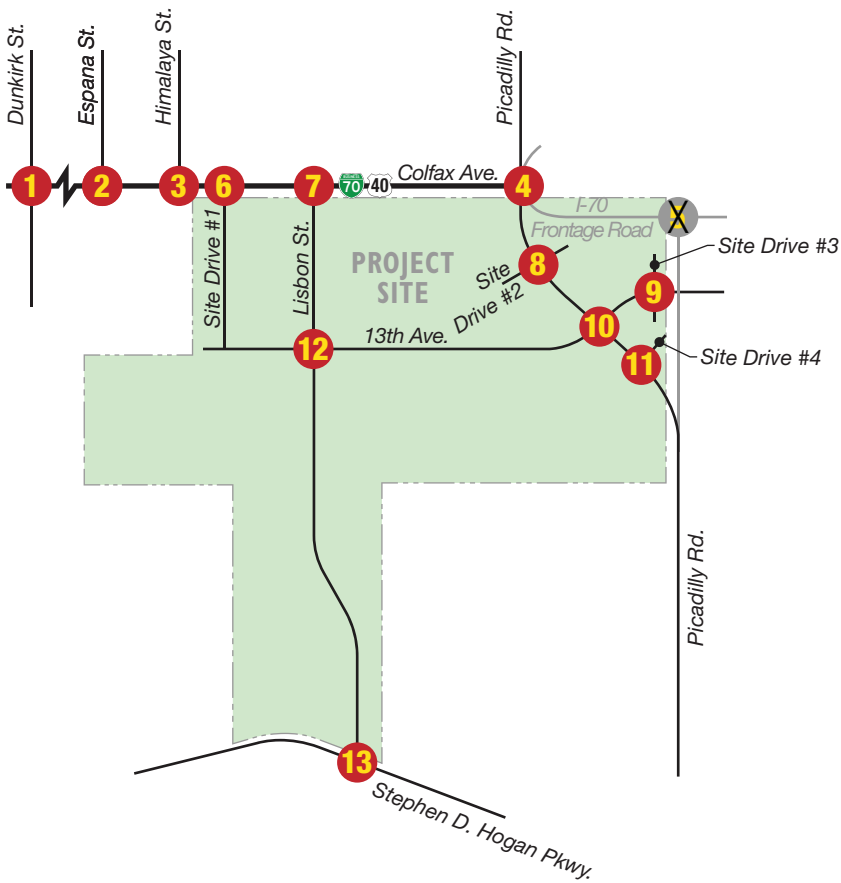
LEGEND

xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

NOTE: ADT volumes may double count some trips due to trip routing

KEY MAP



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

= Stop Sign

= Traffic Signal

- **Southern Colfax Avenue Alignment/Stafford Access Drive #3 (Intersection #9)** – Signal. The Southern Colfax Avenue alignment is a planned major arterial extending through the planned Horizon Uptown development and the I-70/E-470 interchange, becoming the I-70 South Frontage Road. Peak hour and 4-hour signal warrants were analyzed for the intersection and are provided in **Appendix H**. The PM peak hour narrowly falls below thresholds and a 4-hour warrant with the 2nd-4th highest hour being 90, 85, and 75 percent of the PM peak hour meets for 3 of 4 hours and narrowly misses meeting thresholds for the final hour. Signalization is recommended as even a slight increase in any of the site uses would likely cause warrants to be met. Without signalization, LOS F conditions are expected for the driveway, and this is the only access for the majority of the retail portion of Stafford Logistics Center allowing for movements to the east and south. Additionally, despite not meeting SHAC thresholds a westbound left turn lane is recommended to access the retail uses south of Colfax Avenue to eliminate queuing within a through travel lane. Queuing between this intersection and Picadilly Road/Southern Colfax Avenue Alignment should be considered; the 95th percentile queues between the two intersections require a minimum spacing of 500 feet or 600 feet if left turn lanes cannot be stacked side by side. City of Aurora standard is 660 feet between signalized intersections, which would indicate that the 95th percentile queuing would be adequately accommodated.
- **Picadilly Road/Stafford Access Drive #4 (Intersection #11)** – Stop controlled right-in/right-out tee intersection. Picadilly Road is a planned six-lane major arterial.
- **Stephen D. Hogan Parkway/Jebel Street (Stafford southern access) (Intersection #15)** – Stop controlled tee intersection. Stephen D. Hogan Parkway is a planned six-lane major arterial. The eastbound approach should have a separate left turn lane, the westbound approach should have a separate right turn lane, and the southbound approach should have separate left and right turn lanes. Peak hour and four-hour warrants were analyzed for the intersection and are provided in **Appendix H**. While side street volumes are low and do not approach meeting signal warrants, poor LOS is anticipated. Given the internal roadway network of the site and other signalized driveways, it is anticipated that some drivers will use capacity of other access points to enter and exit the site from Stephen D. Hogan Parkway via Picadilly Road. Due to the need for fire access to the southern portion of the site, it is recommended this be a full access movement despite the higher delay. Additionally median space provided for the eastbound left turn should provide the ability for southbound left turns to make the turn in two stages if necessary. While warrants are not met, the intersection analysis assuming signalization has also been provided at the request of City of Aurora staff.
- **Lisbon Street/13th Avenue (Intersection #13)** – All-way stop controlled. This intersection is internal to the site and a southbound left turn auxiliary lane is recommended. For an all-way stop warrant, the major street volume needs to average at least 300 vehicles per hour and the minor street volume needs to average at least 200 vehicles per hour for any 8 hours of an average day for this warrant to be satisfied. The AM and PM peak hours would experience 550 and 600 along the major (northbound) street and 200 and 300 vehicles per hour along the minor (east-west) street, respectively. Data provided in the December 2015 *Journal of Transportation of the Institute of Transportation Engineers* indicate that roughly 50 percent industrial uses is expected to have a daily distribution in which 10.5 and 10.8 percent of daily traffic is expected during the AM and PM peak hours, respectively, and have a 6.3 percent daily share for the 11 AM hour, which is expected to be the 8th highest hour. Applying these percentages and interpolating the other hours, the 8th highest hour would have a volume of approximately 340 per hour along the major street and 150 per hour along the minor street. It is anticipated that these volumes would satisfy the all-way stop warrant. The City of Aurora requests all intersections identified for all-way stop or signalization be evaluated as roundabouts. However, *NCHRP 672 Roundabouts: An Informational Guide* indicates alternatives to a roundabout should

not be considered when a high percentage of heavy vehicles exists. As such roundabouts are not considered in this study.

As indicated, traffic operations would remain acceptable at LOS D or better, with the following exceptions:

- Colfax Avenue/Espana Drive is projected to operate at LOS F for the stop-controlled southbound left-turn in both the AM and PM peak hours. CDOT does not support signalization due to the proximity to Colfax Avenue/Dunkirk Street to the west.
- Stephen D. Hogan Parkway/Lisbon Street is projected to operate at LOS F for the stop-controlled southbound right-turn in both the AM and PM peak hours, LOS E for the stop-controlled southbound left-turn in the AM peak hour, and LOS F for eastbound left turns in the AM peak hour. Volumes create a borderline condition for signalization based on the peak hour warrants in the PM peak hour and City of Aurora staff has previously indicated that they would support signalization at this location.

An intersection movement queuing analysis was also completed for the perimeter roadway intersections, and the results are shown in **Table 3**.

Table 3. Long-term Future 95th Percentile Queueing – Stafford

Intersection	Direction	95% Queue (ft)		
		Left	Thru	Right
Colfax Avenue/Dunkirk Street (Intersection #1), signal	Eastbound	50	650	0
	Westbound	25	150	0
	Northbound	25	25	0
	Southbound	100	200	
Colfax Avenue/Espana Street (Intersection #2)	Eastbound	50	--	
	Southbound	150	--	75
Colfax Avenue/Himalaya Street (Intersection #3), signal	Eastbound	75	50	--
	Westbound	--	75	25
	Southbound	175	--	525
Picadilly Road/Colfax Avenue (Intersection #4), signal	Eastbound	425	--	825
	Northbound	425	350	--
	Southbound	--	400	0
Picadilly Road /Southern Colfax Avenue Alignment (Intersection #10), signal	Eastbound	275	275	125
	Westbound	400	250	0
	Northbound	50	250	400
	Southbound	450	300	200
Colfax Avenue/Stafford Site Drive #1 (Intersection #6)	Northbound	--		50
Colfax Avenue/Lisbon Street (Site Drive) (Intersection #7), signal	Eastbound	50	25	25
	Westbound	25	225	125
	Northbound	275	0	0
	Southbound	250	0	0

Intersection	Direction	95% Queue (ft)		
		Left	Thru	Right
Picadilly Road/Stafford Site Drive #2 (Intersection #8)	Eastbound	--		25
	Westbound	--		50
	Northbound	25	--	
	Southbound	25	--	
Southern Colfax Avenue Alignment/ Stafford Site Drive #3 (Intersection #9), signal	Eastbound	100	400	25
	Westbound	25	500	50
	Northbound	50	25	
	Southbound	100	275	
Picadilly Road/Stafford Site Drive #4 (Intersection #11)	Westbound	--		25
Stephen D. Hogan/Lisbon Street (Site Drive) (Intersection #13) As TWSC	Eastbound	350	--	
	Southbound	325	--	50
Stephen D. Hogan/Lisbon Street (Site Drive) (Intersection #13) As Signal	Eastbound	150	775	--
	Westbound	--	325	25
	Southbound	125	--	350
Lisbon Street/12 th Avenue (Internal Site Intersection) (Intersection #12)	Eastbound	50		
	Westbound	50		
	Northbound	125		
	Southbound	125		

Queue lengths are based on lane geometries depicted on **Figure 16**.

The City of Aurora bases the need for auxiliary turn lanes on the CDOT SHAC. CDOT classifies Colfax Avenue as an access category NR-A facility. Based on a speed limit of 55 MPH and the projected volumes presented on **Figure 14**, right turn lanes shall be provided at both site entrance locations along Colfax Avenue and a left turn at the Colfax Avenue/Lisbon Street intersection. These auxiliary lanes shall be sized based on deceleration length plus storage for left turn lanes and deceleration length for right turns. Taper lengths are included in the recommended deceleration length from the SHAC and shall be constructed with a 18.5:1 taper for 55 MPH.

Picadilly Road, realigned southern Colfax Avenue, and Stephen D. Hogan Parkway are planned arterials that would be classified as access category NR-B with 40 MPH posted speed limits. Left and right turn auxiliary lanes are required at all site access points based on the projected volumes presented on **Figure 14** and summarized in **Table 4**. These auxiliary lanes shall be sized based on storage plus taper length using a 12:1 taper according to the SHAC. Storage lengths are recommended at 1 foot per vehicle during the maximum volume in the peak hours rounded up to the nearest 25 feet.

Table 4. Site Driveway Recommended Auxiliary Lane Length

Intersection	Direction	SHAC Recommended Auxiliary Lane Length
Picadilly Road /Southern Colfax Avenue Alignment (Intersection #10)	Northbound Left	75-foot storage plus 150-foot taper
	Southbound Right	200-foot storage plus 150-foot taper
Colfax Avenue/Stafford Site Drive #1 (Intersection #6)	Eastbound Right	600-foot deceleration (includes 225-foot taper)
Colfax Avenue/Lisbon Street (Site Drive) (Intersection #7)	Eastbound Right	600-foot deceleration (includes 225-foot taper)
	Westbound Left ¹	250-foot storage plus 600-foot deceleration (includes 225-foot taper)
Picadilly Road/Stafford Site Drive #2 (Intersection #8)	Northbound Right	75-foot storage plus 150-foot taper
	Northbound Left	50-foot storage plus 150-foot taper
	Southbound Right	125-foot storage plus 150-foot taper
	Southbound Left	75-foot storage plus 150-foot taper
Southern Colfax Avenue Alignment/ Stafford Site Drive #3 (Intersection #9)	Eastbound Right	50-foot storage plus 150-foot taper
	Eastbound Left	250-foot storage plus 150-foot taper
	Westbound Right	75-foot storage plus 150-foot taper
	Westbound Left	Volume does not meet threshold
Picadilly Road/Stafford Site Drive #4 (Intersection #11)	Northbound Right	Volume does not meet threshold
Stephen D. Hogan/Lisbon Street (Site Drive) (Intersection #15)	Eastbound Left	175-foot storage plus 150-foot taper
	Westbound Right	125-foot storage plus 150-foot taper

¹Dual turn lane, storage value is per plane

While the Southern Colfax Avenue Alignment/Stafford Site Drive #3 intersection westbound approach does not meet SHAC criteria for warranting a left turn lane, one is recommended to keep turning vehicles from queuing into the through lane. A 50-foot storage plus 150-foot taper is recommended for that movement.

Colfax Progression Analysis

CDOT requested a progression analysis of Colfax Avenue to determine if signal progression is satisfactory given the reduction of signal spacing from 1/2 mile spacing to as low as 1/3 mile spacing near the main site entrance on Lisbon Street. Progression was analyzed for the four signals between Dunkirk Street and Picadilly Road. The analysis used a projected cycle length of 120 seconds and the existing 55 MPH speed limit.

Eastbound

The eastbound progression was analyzed from Dunkirk Street through movements to the Picadilly Road eastbound left turn movement for traffic heading towards the new I-70 interchange. The AM eastbound progression achieves a bandwidth of 39 seconds, representing the entire eastbound green time at the Picadilly Road/Colfax Avenue intersection for an efficiency of 32.5 percent. The PM peak hour progression in the dominant eastbound direction achieves a bandwidth of 37 seconds for an efficiency of 30.8 percent.

Westbound

The westbound progression considered both the northbound lefts from Picadilly Road and through movements beginning at Lisbon Street. This consideration is to account for the fact that the northbound left volumes do not warrant progressing a bandwidth from the tee intersection at Picadilly Road west that would satisfy SHAC recommendations due to heavy north-south volumes that are also of concern given that Picadilly Road is a planned major arterial roadway. Progression percentages presented are from Lisbon Street west. The AM peak hour progression in the dominant westbound direction finds that the entire 25 seconds of northbound left green time at Picadilly Road/Colfax Avenue intersection can progress through the remaining three study area signals. Progression from Lisbon Street west indicated that a bandwidth of 36 seconds could be progressed through the remaining two signals, which provides an efficiency of 30 percent. The PM peak hour progression in the westbound direction finds that the entire 27 seconds of northbound left green time at Picadilly Road/Colfax Avenue intersection can progress through the remaining three study area signals. Progression from Lisbon Street west was determined to be a bandwidth of 32 seconds of green time and could be progressed through the remaining two signals, which provides an efficiency of 26.7 percent.

The average progression for both directions (eastbound for the entire corridor and westbound from Lisbon Street) is 31.8 percent in the AM peak hour and 28.8 percent in the PM peak hour. While these progression efficiencies fall slightly below the 35 percent guideline from the SHAC, it should be considered that this is anticipated to be an urban environment and Picadilly Road will be a six-lane arterial that will require substantial split time to operate efficiently. The entire northbound left from Picadilly Road progresses through the entire corridor in both peak hours and the entire eastbound left progresses through the intersection at Picadilly Road for the AM peak hour. Traffic conditions along Picadilly Road are the limiting factor in not achieving the preferred 35 percent outlined in the SHAC. The proposed 1/3 mile signal spacing allows optimal progression as constrained by the Colfax Avenue/Picadilly Road intersection, and lane geometry can be implemented to accommodate projected queues without hindering traffic flow at adjacent signals. Progression diagrams are presented in **Appendix I**.

V. SUMMARY AND RECOMMENDATIONS

NorthPoint Development is proposing a 350-acre development consisting of approximately 4.2 million square feet of industrial uses, approximately 160,000 square feet of mixed retail including a bank and supermarket, a gas station, and two hotels with a total of 200 rooms. The development will be phased as the market allows, and the initial development phase includes development of three buildings along the northern end of the industrial park portions of the site. These three buildings will provide approximately 2.2 million square feet of space with about half being dedicated to a large single user fulfillment center. Primary access to the site will be via Colfax Avenue, particularly through initial development. As the property develops, an internal road system will evolve providing circulation around the site as well as providing access onto Colfax Avenue, Picadilly Road (which will ultimately interchange with I-70), and Stephen D. Hogan Parkway.

The proposed Stafford development is estimated to generate approximately 19,600 external trips per day when built out, with about 2,100 occurring during the AM peak hour and 2,900 occurring during the PM peak hour. Phase I of the development will generate approximately 5,400 daily trips, with about 2,100 occurring during the AM peak hour and 2,900 occurring during the PM peak hour.

The potential traffic impacts of the development were evaluated under both short-term future (2022) and long-term future (2040) conditions. The 2022 conditions include the development's first phase, of all industrial park buildings, with relatively little other development in the area. The long-term analysis reflects buildout of Stafford and the surrounding area per travel demand modeling represented in the I-70/Picadilly Road interchange study, which accounts for a full interchange at I-70/Picadilly Road as well as the continuity of Picadilly Road north of Colfax Avenue, across I-70, and connecting with Picadilly Road at Smith Road.

NorthPoint does not intend to develop any of the retail portions of the Stafford Logistics Center prior to the realignment of Picadilly Road. The retail uses will develop once more residential development in the area occurs, which is not expected to mature to the point that Picadilly Road requires widening in short-term scenarios.

Short-term future needs in the area to accommodate Phase I of the Stafford development include the following:

- Providing auxiliary left and right turn lanes and signalization of the Colfax Avenue/Lisbon Street (Stafford full access drive)
- Providing an auxiliary right turn lane at the Colfax Avenue/Stafford Access Drive #1
- Realigning Picadilly Road simultaneously with construction of the large single user fulfillment center and the signalization of the new Colfax Avenue/Picadilly Road at that time.

Long-term future (2040) traffic reflects buildout of the area, and traffic volumes are anticipated to increase noticeably. The following roadway sections are needed to accommodate future traffic.

- Colfax Avenue will be realigned to the southeast of Picadilly Road and is projected to need a four-lane cross section.
- Picadilly Road will be continued to the north providing an interchange with I-70 and is projected to need a six-lane cross section.
- The intersections of Colfax Avenue/Himalaya Street, Colfax Avenue/Lisbon Street, Colfax Avenue/Picadilly Road, Picadilly Road/Realigned Southern Colfax Avenue alignment, and Realigned Southern Colfax Avenue alignment/Stafford Access Drive #3 are all projected to be signalized. CDOT will not allow the signalization of Colfax Avenue/Espana Street.

- The internal site intersections of Lisbon Street/13th Avenue will be all-way stop controlled.
- The average progression for both directions is 31.8 percent in the AM peak hour and 28.8 percent in the PM peak hour. Traffic conditions along Picadilly Road are the limiting factor in not achieving the desired progression levels outlined in the SHAC and not the placement of signals at intervals below 1/2 mile along Colfax Avenue.

The City of Aurora bases the need for auxiliary turn lanes on the CDOT SHAC (and Colfax Avenue being a state highway already requires the SHAC's application). Ultimate turn lane storage lengths are shown in **Table 3** for auxiliary lanes at site access points.

These improvements have been developed based on the current understanding of the I-70/Picadilly Road interchange project. It is acknowledged that results of the interchange project study may provide additional recommendations at arterial intersections in the study area.

APPENDIX A. TRAFFIC COUNTS

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 6
Station ID: 6
COLFAX AVE W.O. I70 FRONTAGE RD

Start Time	11-Dec-18 Tue	EB	WB							Total
12:00 AM		38	22							60
01:00		19	46							65
02:00		9	18							27
03:00		11	23							34
04:00		59	62							121
05:00		108	180							288
06:00		268	398							666
07:00		357	573							930
08:00		250	391							641
09:00		190	262							452
10:00		187	260							447
11:00		182	267							449
12:00 PM		247	242							489
01:00		191	217							408
02:00		323	269							592
03:00		454	382							836
04:00		536	322							858
05:00		608	343							951
06:00		330	241							571
07:00		176	112							288
08:00		127	91							218
09:00		75	70							145
10:00		58	53							111
11:00		37	43							80
Total		4840	4887							9727
Percent		49.8%	50.2%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	357	573	-	-	-	-	-	-	930
PM Peak	-	17:00	15:00	-	-	-	-	-	-	17:00
Vol.	-	608	382	-	-	-	-	-	-	951

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 6
Station ID: 6
COLFAX AVE W.O. I70 FRONTAGE RD

Start Time	12-Dec-18 Wed	EB	WB							Total
12:00 AM		37	40							77
01:00		12	54							66
02:00		12	24							36
03:00		14	30							44
04:00		42	57							99
05:00		114	200							314
06:00		282	443							725
07:00		369	658							1027
08:00		221	415							636
09:00		194	309							503
10:00		180	247							427
11:00		195	228							423
12:00 PM		235	231							466
01:00		240	247							487
02:00		354	279							633
03:00		489	389							878
04:00		581	326							907
05:00		612	376							988
06:00		295	217							512
07:00		174	119							293
08:00		168	92							260
09:00		90	80							170
10:00		55	34							89
11:00		40	34							74
Total		5005	5129							10134
Percent		49.4%	50.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	369	658	-	-	-	-	-	-	1027
PM Peak	-	17:00	15:00	-	-	-	-	-	-	17:00
Vol.	-	612	389	-	-	-	-	-	-	988

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 6
Station ID: 6
COLFAX AVE W.O. I70 FRONTAGE RD

Start Time	13-Dec-18 Thu	EB	WB							Total
12:00 AM		36	41							77
01:00		15	36							51
02:00		15	28							43
03:00		13	22							35
04:00		55	65							120
05:00		112	186							298
06:00		246	407							653
07:00		397	644							1041
08:00		223	422							645
09:00		147	261							408
10:00		166	217							383
11:00		178	228							406
12:00 PM		212	227							439
01:00		226	230							456
02:00		367	257							624
03:00		504	341							845
04:00		602	383							985
05:00		646	374							1020
06:00		354	243							597
07:00		187	132							319
08:00		134	106							240
09:00		124	70							194
10:00		71	46							117
11:00		47	49							96
Total		5077	5015							10092
Percent		50.3%	49.7%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	397	644	-	-	-	-	-	-	1041
PM Peak	-	17:00	16:00	-	-	-	-	-	-	17:00
Vol.	-	646	383	-	-	-	-	-	-	1020
Grand Total		14922	15031							29953
Percent		49.8%	50.2%							
ADT		ADT 9,984	AADT 9,984							

All Traffic Data Services
Wheat Ridge, CO 80033

Page 1

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

Start Time	11-Dec-18 Tue	NB	SB							Total
12:00 AM		4	14							18
01:00		6	8							14
02:00		10	4							14
03:00		5	7							12
04:00		21	20							41
05:00		50	43							93
06:00		88	149							237
07:00		102	166							268
08:00		94	111							205
09:00		66	78							144
10:00		53	75							128
11:00		69	95							164
12:00 PM		55	88							143
01:00		63	101							164
02:00		84	136							220
03:00		110	207							317
04:00		113	243							356
05:00		115	228							343
06:00		49	155							204
07:00		31	86							117
08:00		22	66							88
09:00		23	37							60
10:00		10	45							55
11:00		10	29							39
Total		1253	2191							3444
Percent		36.4%	63.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	102	166	-	-	-	-	-	-	268
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	115	243	-	-	-	-	-	-	356

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

Start Time	12-Dec-18 Wed	NB	SB							Total
12:00 AM		3	14							17
01:00		4	9							13
02:00		8	7							15
03:00		11	5							16
04:00		19	17							36
05:00		61	50							111
06:00		92	145							237
07:00		112	166							278
08:00		75	107							182
09:00		59	78							137
10:00		47	88							135
11:00		52	74							126
12:00 PM		49	90							139
01:00		72	100							172
02:00		86	167							253
03:00		99	194							293
04:00		118	242							360
05:00		100	231							331
06:00		47	133							180
07:00		41	83							124
08:00		30	85							115
09:00		17	45							62
10:00		14	33							47
11:00		12	34							46
Total		1228	2197							3425
Percent		35.9%	64.1%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	112	166	-	-	-	-	-	-	278
PM Peak	-	16:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	118	242	-	-	-	-	-	-	360

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

Start Time	13-Dec-18 Thu	NB	SB							Total
12:00 AM		6	13							19
01:00		4	10							14
02:00		11	4							15
03:00		6	5							11
04:00		18	20							38
05:00		59	51							110
06:00		82	136							218
07:00		109	167							276
08:00		86	114							200
09:00		57	83							140
10:00		56	73							129
11:00		49	76							125
12:00 PM		47	103							150
01:00		57	100							157
02:00		65	120							185
03:00		118	221							339
04:00		114	244							358
05:00		105	242							347
06:00		57	155							212
07:00		31	74							105
08:00		23	65							88
09:00		15	50							65
10:00		8	43							51
11:00		15	28							43
Total		1198	2197							3395
Percent		35.3%	64.7%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	109	167	-	-	-	-	-	-	276
PM Peak	-	15:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	118	244	-	-	-	-	-	-	358

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

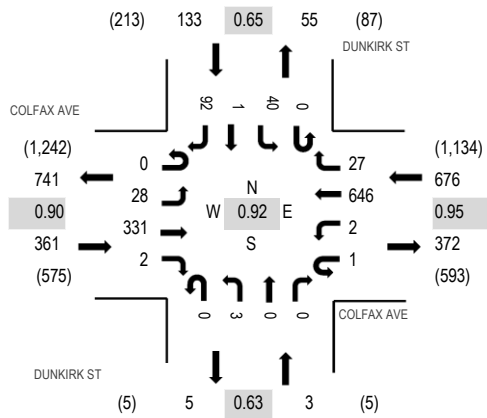
Start Time	14-Dec-18 Fri	NB	SB								Total
12:00 AM		4	14								18
01:00		6	8								14
02:00		10	4								14
03:00		5	7								12
04:00		21	20								41
05:00		50	43								93
06:00		88	149								237
07:00		102	166								268
08:00		94	111								205
09:00		66	78								144
10:00		53	75								128
11:00		69	95								164
12:00 PM		*	*								*
01:00		*	*								*
02:00		*	*								*
03:00		*	*								*
04:00		*	*								*
05:00		*	*								*
06:00		*	*								*
07:00		*	*								*
08:00		*	*								*
09:00		*	*								*
10:00		*	*								*
11:00		*	*								*
Total		568	770								1338
Percent		42.5%	57.5%								
AM Peak	-	07:00	07:00	-	-	-	-	-	-	-	07:00
Vol.	-	102	166	-	-	-	-	-	-	-	268
PM Peak	-	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-	-
Grand Total		4247	7355								11602
Percent		36.6%	63.4%								
ADT		ADT 3,429	AADT 3,429								



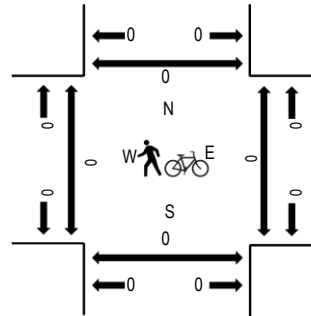
(303) 216-2439
www.alltrafficdata.net

Location: 1 DUNKIRK ST & COLFAX AVE AM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				DUNKIRK ST Northbound				DUNKIRK ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	8	91	1	0	1	163	5	0	0	0	0	0	21	0	30	320	1,173	0	0	0	0
7:15 AM	0	8	90	0	0	0	167	10	0	1	0	0	0	3	0	23	302	1,086	0	0	0	0
7:30 AM	0	5	74	1	1	1	165	11	0	0	0	0	0	10	0	25	293	989	0	0	0	0
7:45 AM	0	7	76	0	0	0	151	1	0	2	0	0	0	6	1	14	258	872	0	0	0	0
8:00 AM	0	6	53	0	0	0	140	4	0	1	1	0	0	8	0	20	233	754	0	0	1	0
8:15 AM	0	4	56	0	0	0	122	7	0	0	0	0	0	4	0	12	205		0	0	0	0
8:30 AM	0	3	44	0	0	0	107	2	0	0	0	0	0	4	0	16	176		0	0	0	0
8:45 AM	1	1	46	0	0	0	72	4	0	0	0	0	0	6	0	10	140		0	0	0	0
Count Total	1	42	530	2	1	2	1,087	44	0	4	1	0	0	62	1	150	1,927		0	0	1	0
Peak Hour	0	28	331	2	1	2	646	27	0	3	0	0	0	40	1	92	1,173		0	0	0	0



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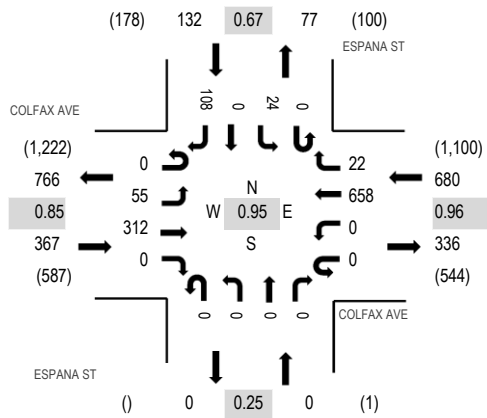
Location: 2 ESPANA ST & COLFAX AVE AM

Date and Start Time: Wednesday, December 12, 2018

Peak Hour: 07:00 AM - 08:00 AM

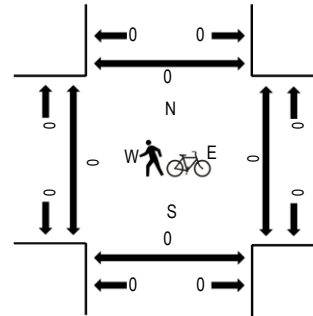
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

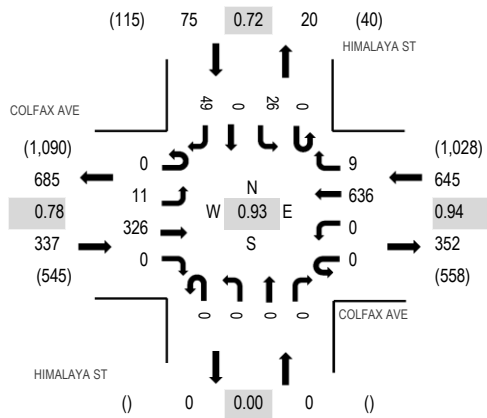
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				ESPANA ST Northbound				ESPANA ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	12	96	0	0	0	159	7	0	0	0	0	0	9	0	24	307	1,179	0	0	0	0
7:15 AM	0	19	76	0	0	0	162	9	0	0	0	0	0	6	0	19	291	1,084	0	0	0	0
7:30 AM	0	13	70	0	0	0	171	6	0	0	0	0	0	8	0	41	309	983	0	0	0	0
7:45 AM	0	11	70	0	0	0	166	0	0	0	0	0	0	1	0	24	272	831	0	0	0	0
8:00 AM	1	7	55	0	0	0	128	0	0	0	0	0	0	7	0	14	212	687	0	0	0	0
8:15 AM	0	5	54	0	0	0	121	3	0	0	0	0	0	1	0	6	190		0	0	0	0
8:30 AM	0	4	40	0	0	0	99	1	0	1	0	0	0	0	0	12	157		0	0	0	0
8:45 AM	0	3	51	0	0	0	68	0	0	0	0	0	0	0	0	6	128		0	0	0	1
Count Total	1	74	512	0	0	0	1,074	26	0	1	0	0	0	32	0	146	1,866		0	0	0	1
Peak Hour	0	55	312	0	0	0	658	22	0	0	0	0	0	24	0	108	1,179		0	0	0	0



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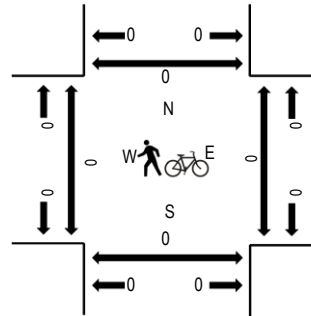
Location: 3 HIMALAYA ST & COLFAX AVE AM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

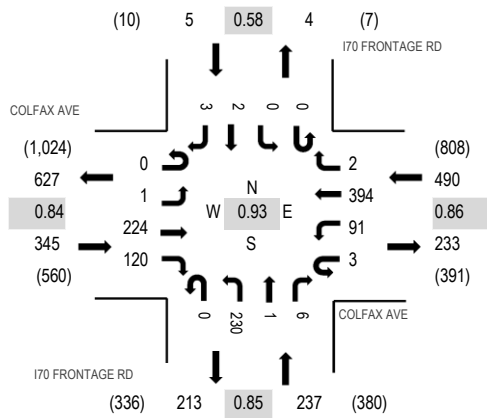
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				HIMALAYA ST Northbound				HIMALAYA ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	6	102	0	0	0	0	146	5	0	0	0	0	13	0	13	285	1,057	0	0	0	0
7:15 AM	0	1	79	0	0	0	0	162	0	0	0	0	0	6	0	19	267	965	0	0	0	0
7:30 AM	0	2	79	0	0	0	0	168	3	0	0	0	0	2	0	8	262	878	0	0	0	0
7:45 AM	0	2	66	0	0	0	0	160	1	0	0	0	0	5	0	9	243	752	0	0	0	0
8:00 AM	0	5	58	0	0	0	0	114	3	0	0	0	0	6	0	7	193	631	0	0	0	0
8:15 AM	0	3	47	0	0	0	0	114	3	0	0	0	0	4	0	9	180		0	0	0	0
8:30 AM	0	2	41	0	0	0	0	85	0	0	0	0	0	0	0	8	136		0	0	0	0
8:45 AM	0	3	49	0	0	0	0	63	1	0	0	0	0	1	0	5	122		0	0	0	0
Count Total	0	24	521	0	0	0	0	1,012	16	0	0	0	0	37	0	78	1,688		0	0	0	0
Peak Hour	0	11	326	0	0	0	0	636	9	0	0	0	0	26	0	49	1,057		0	0	0	0



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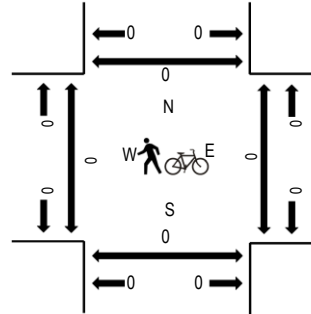
Location: 4 I70 FRONTAGE RD & COLFAX AVE AM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

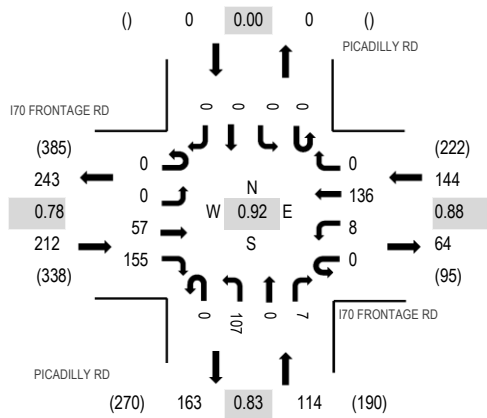
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				I70 FRONTAGE RD Northbound				I70 FRONTAGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	71	31	1	25	99	0	0	46	0	3	0	0	0	1	278	1,077	0	0	0	0
7:15 AM	0	0	60	32	1	33	107	1	0	53	1	0	0	0	0	1	289	1,017	0	0	0	0
7:30 AM	0	0	47	30	1	17	104	0	0	67	0	3	0	0	2	0	271	914	0	0	0	0
7:45 AM	0	0	46	27	0	16	84	1	0	64	0	0	0	0	0	1	239	790	0	0	0	0
8:00 AM	0	1	47	24	1	12	82	2	0	46	0	2	0	0	0	1	218	681	0	0	0	0
8:15 AM	0	0	32	16	3	15	72	0	0	43	0	2	0	1	0	2	186		0	0	0	0
8:30 AM	0	0	28	16	0	14	58	0	0	30	0	1	0	0	0	0	147		0	0	0	0
8:45 AM	0	0	36	15	5	11	43	0	0	19	0	0	0	0	0	1	130		0	0	0	0
Count Total	0	2	367	191	12	143	649	4	0	368	1	11	0	1	2	7	1,758		0	0	0	0
Peak Hour	0	1	224	120	3	91	394	2	0	230	1	6	0	0	2	3	1,077		0	0	0	0



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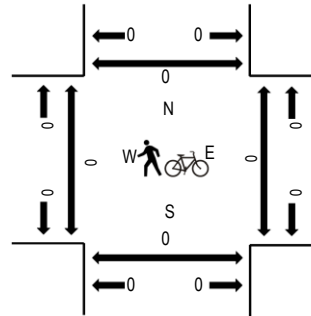
Location: 5 PICADILLY RD & I70 FRONTAGE RD AM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

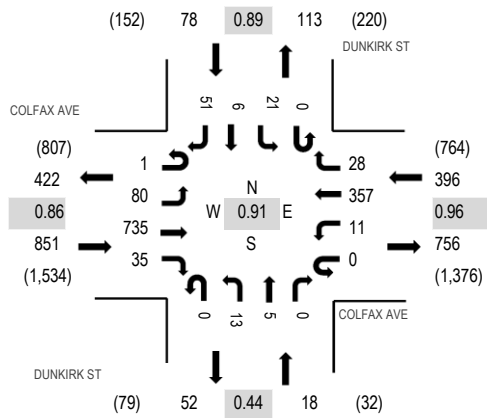
Interval Start Time	I70 FRONTAGE RD Eastbound				I70 FRONTAGE RD Westbound				PICADILLY RD Northbound				PICADILLY RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	16	38	0	1	31	0	0	22	0	1	0	0	0	0	109	470	0	0	0	0
7:15 AM	0	0	17	51	0	4	35	0	0	19	0	2	0	0	0	0	128	448	0	0	0	0
7:30 AM	0	0	13	35	0	1	40	0	0	30	0	4	0	0	0	0	123	400	0	0	0	0
7:45 AM	0	0	11	31	0	2	30	0	0	36	0	0	0	0	0	0	110	338	0	0	0	0
8:00 AM	0	0	12	26	0	3	22	0	0	23	0	1	0	0	0	0	87	280	0	0	0	0
8:15 AM	0	0	5	26	0	2	21	0	0	25	0	1	0	0	0	0	80		0	0	0	0
8:30 AM	0	0	3	27	0	1	15	0	0	14	0	1	0	0	0	0	61		0	0	0	0
8:45 AM	0	0	7	20	0	2	12	0	0	10	0	1	0	0	0	0	52		0	0	0	0
Count Total	0	0	84	254	0	16	206	0	0	179	0	11	0	0	0	0	750		0	0	0	0
Peak Hour	0	0	57	155	0	8	136	0	0	107	0	7	0	0	0	0	470		0	0	0	0



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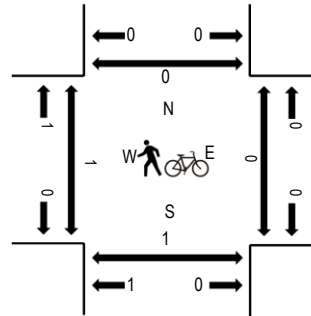
Location: 1 DUNKIRK ST & COLFAX AVE PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

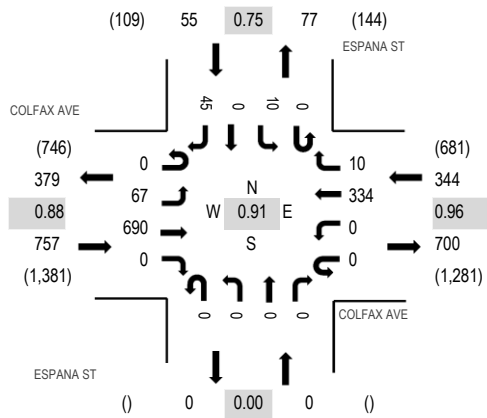
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				DUNKIRK ST Northbound				DUNKIRK ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	1	16	143	0	0	0	84	13	0	0	0	0	0	6	1	11	275	1,183	0	0	0	0
4:15 PM	0	16	167	4	0	0	72	9	0	3	2	0	0	9	4	10	296	1,278	0	0	0	0
4:30 PM	0	17	188	0	0	1	87	6	0	2	1	0	0	5	1	10	318	1,343	0	0	0	0
4:45 PM	0	24	149	2	0	0	84	9	0	0	3	0	0	5	3	15	294	1,333	0	0	0	0
5:00 PM	0	22	213	11	0	1	97	7	0	0	0	0	0	4	0	15	370	1,299	0	0	0	0
5:15 PM	1	17	185	22	0	9	89	6	0	11	1	0	0	7	2	11	361		1	0	1	0
5:30 PM	1	19	150	9	0	3	89	11	0	5	1	0	0	3	1	16	308		0	0	0	0
5:45 PM	0	16	136	5	0	0	85	2	0	0	2	1	0	5	0	8	260		0	0	0	0
Count Total	3	147	1,331	53	0	14	687	63	0	21	10	1	0	44	12	96	2,482		1	0	1	0
Peak Hour	1	80	735	35	0	11	357	28	0	13	5	0	0	21	6	51	1,343		1	0	1	0



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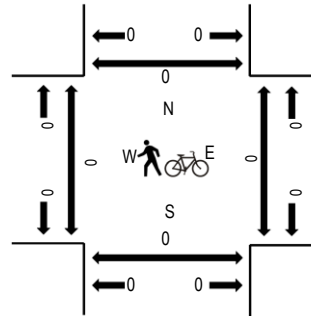
Location: 2 ESPANA ST & COLFAX AVE PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

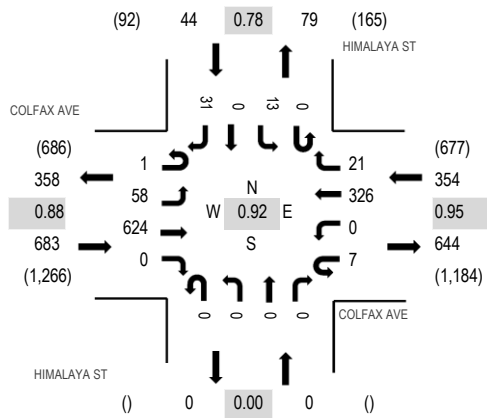
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				ESPANA ST Northbound				ESPANA ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	15	133	0	0	0	0	80	6	0	0	0	0	7	0	15	256	1,057	0	0	0	0
4:15 PM	1	15	160	0	0	0	0	70	0	0	0	0	0	3	0	11	260	1,118	0	0	0	0
4:30 PM	0	23	171	0	0	0	0	76	3	0	0	0	0	4	0	15	292	1,156	0	0	0	0
4:45 PM	0	12	141	0	0	0	0	84	1	0	0	0	0	2	0	9	249	1,125	0	0	0	0
5:00 PM	0	15	199	0	0	0	0	88	3	0	0	0	0	1	0	11	317	1,114	0	0	0	0
5:15 PM	0	17	179	0	0	0	0	86	3	0	0	0	0	3	0	10	298		0	0	0	0
5:30 PM	0	11	144	0	0	0	0	92	2	0	0	0	0	1	0	11	261		0	0	0	0
5:45 PM	0	13	132	0	0	0	0	82	5	0	0	0	0	1	0	5	238		0	0	0	0
Count Total	1	121	1,259	0	0	0	0	658	23	0	0	0	0	22	0	87	2,171		0	0	0	0
Peak Hour	0	67	690	0	0	0	0	334	10	0	0	0	0	10	0	45	1,156		0	0	0	0



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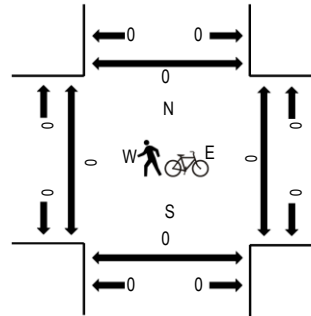
Location: 3 HIMALAYA ST & COLFAX AVE PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

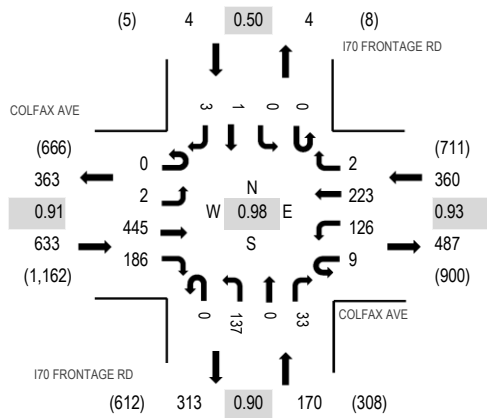
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				HIMALAYA ST Northbound				HIMALAYA ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	2	13	124	0	1	0	72	5	0	0	0	0	0	2	0	12	231	986	0	0	0	0
4:15 PM	0	15	151	0	0	0	61	7	0	0	0	0	0	1	0	7	242	1,050	0	0	0	0
4:30 PM	0	16	154	0	0	0	80	4	0	0	0	0	0	3	0	7	264	1,081	0	0	0	0
4:45 PM	0	10	138	0	1	0	82	5	0	0	0	0	0	4	0	9	249	1,074	0	0	0	0
5:00 PM	1	16	177	0	5	0	82	6	0	0	0	0	0	2	0	6	295	1,049	0	0	0	0
5:15 PM	0	16	155	0	1	0	82	6	0	0	0	0	0	4	0	9	273		0	0	0	0
5:30 PM	0	14	135	0	0	0	88	9	0	0	0	0	0	5	0	6	257		0	0	0	0
5:45 PM	0	17	112	0	2	0	72	6	0	0	0	0	0	7	0	8	224		0	0	0	0
Count Total	3	117	1,146	0	10	0	619	48	0	0	0	0	0	28	0	64	2,035		0	0	0	0
Peak Hour	1	58	624	0	7	0	326	21	0	0	0	0	0	13	0	31	1,081		0	0	0	0



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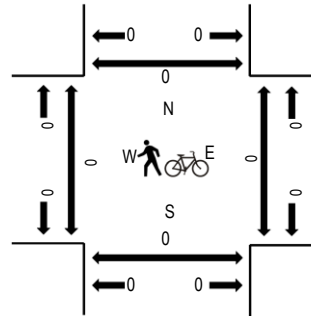
Location: 4 I70 FRONTAGE RD & COLFAX AVE PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

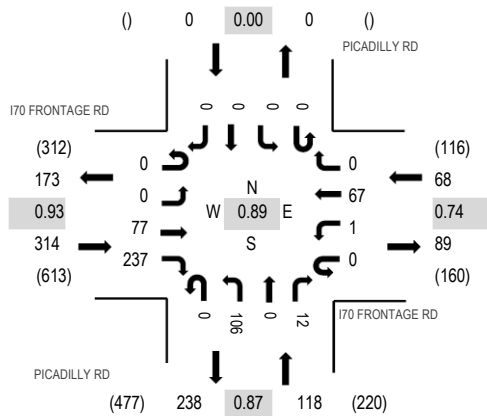
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				I70 FRONTAGE RD Northbound				I70 FRONTAGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	93	35	2	36	45	0	0	30	0	6	0	1	0	0	248	1,088	0	0	0	0
4:15 PM	0	1	106	38	1	41	39	1	0	27	0	13	0	0	0	0	267	1,137	0	0	0	0
4:30 PM	0	1	112	43	1	39	55	1	0	31	0	9	0	0	0	1	293	1,167	0	0	0	0
4:45 PM	0	0	100	46	2	32	61	0	0	31	0	8	0	0	0	0	280	1,156	0	0	0	0
5:00 PM	0	1	126	47	2	22	52	1	0	37	0	7	0	0	0	2	297	1,098	0	0	0	0
5:15 PM	0	0	107	50	4	33	55	0	0	38	0	9	0	0	1	0	297		0	0	0	0
5:30 PM	0	0	107	40	1	40	54	2	0	33	0	5	0	0	0	0	282		0	0	0	0
5:45 PM	0	0	71	38	2	31	56	0	0	19	0	5	0	0	0	0	222		0	0	0	0
Count Total	0	3	822	337	15	274	417	5	0	246	0	62	0	1	1	3	2,186		0	0	0	0
Peak Hour	0	2	445	186	9	126	223	2	0	137	0	33	0	0	1	3	1,167		0	0	0	0



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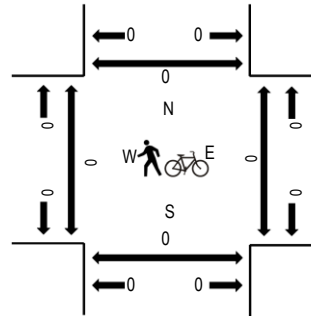
Location: 5 PICADILLY RD & I70 FRONTAGE RD PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk























Traffic Counts

Interval Start Time	I70 FRONTAGE RD Eastbound				I70 FRONTAGE RD Westbound				PICADILLY RD Northbound				PICADILLY RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	10	60	0	0	10	0	0	24	0	3	0	0	0	0	107	474	0	0	0	0
4:15 PM	0	0	17	62	0	0	10	0	0	32	0	2	0	0	0	0	123	482	0	0	0	0
4:30 PM	0	0	22	57	0	0	16	0	0	24	0	1	0	0	0	0	120	500	0	0	0	0
4:45 PM	0	0	16	64	0	1	13	0	0	26	0	4	0	0	0	0	124	497	0	0	0	0
5:00 PM	0	0	15	56	0	0	15	0	0	27	0	2	0	0	0	0	115	475	0	0	0	0
5:15 PM	0	0	24	60	0	0	23	0	0	29	0	5	0	0	0	0	141		0	0	0	0
5:30 PM	0	0	20	58	0	2	12	0	0	24	0	1	0	0	0	0	117		0	0	0	0
5:45 PM	0	0	17	55	0	2	12	0	0	15	0	1	0	0	0	0	102		0	0	0	0
Count Total	0	0	141	472	0	5	111	0	0	201	0	19	0	0	0	0	949		0	0	0	0
Peak Hour	0	0	77	237	0	1	67	0	0	106	0	12	0	0	0	0	500		0	0	0	0

APPENDIX B. EXISTING CONDITIONS LOS

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center
08/20/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBT	Ø8
Lane Configurations										
Traffic Volume (vph)	28	331	2	2	646	27	3	40	1	
Future Volume (vph)	28	331	2	2	646	27	3	40	1	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt	NA	
Protected Phases	5	2		1	6		3	7	4	8
Permitted Phases	2		2	6		6	8	4		
Detector Phase	5	2	2	1	6	6	3	7	4	
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	10.0	30.0	25.0
Total Split (s)	15.0	55.0	55.0	15.0	55.0	55.0	20.0	15.0	30.0	35.0
Total Split (%)	12.5%	45.8%	45.8%	12.5%	45.8%	45.8%	16.7%	12.5%	25.0%	29%
Yellow Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.0	9.0	9.0	5.0	9.0	9.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	96.3	94.1	94.1	94.9	87.9	87.9	5.2	9.9	7.8	
Actuated g/C Ratio	0.80	0.78	0.78	0.79	0.73	0.73	0.04	0.08	0.06	
v/c Ratio	0.05	0.13	0.00	0.00	0.27	0.02	0.02	0.30	0.52	
Control Delay	3.5	4.4	0.0	3.5	7.2	0.0	55.3	54.3	20.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.5	4.4	0.0	3.5	7.2	0.0	55.3	54.3	20.0	
LOS	A	A	A	A	A	A	E	D	C	
Approach Delay		4.3			6.9				30.3	
Approach LOS		A			A				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 8.9

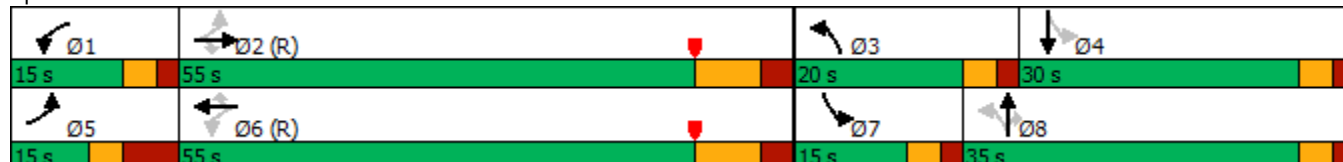
Intersection LOS: A

Intersection Capacity Utilization 43.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/20/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	331	2	2	646	27	3	0	0	40	1	92
Future Volume (veh/h)	28	331	2	2	646	27	3	0	0	40	1	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	360	0	2	702	29	3	0	0	43	1	100
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	528	2530		742	2357	1051	182	82		196	1	128
Arrive On Green	0.03	0.71	0.00	0.00	0.66	0.66	0.00	0.00	0.00	0.04	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	16	1572
Grp Volume(v), veh/h	30	360	0	2	702	29	3	0	0	43	0	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1587
Q Serve(g_s), s	0.6	3.9	0.0	0.0	9.9	0.8	0.1	0.0	0.0	2.7	0.0	7.5
Cycle Q Clear(g_c), s	0.6	3.9	0.0	0.0	9.9	0.8	0.1	0.0	0.0	2.7	0.0	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Lane Grp Cap(c), veh/h	528	2530		742	2357	1051	182	82		196	0	129
V/C Ratio(X)	0.06	0.14		0.00	0.30	0.03	0.02	0.00		0.22	0.00	0.78
Avail Cap(c_a), veh/h	585	2530		886	2357	1051	600	468		271	0	331
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	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	5.5	0.0	6.7	8.5	6.9	54.5	0.0	0.0	50.1	0.0	54.1
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0	7.4
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	0.4	2.1	0.0	0.0	5.9	0.5	0.1	0.0	0.0	2.2	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	5.7	0.0	6.7	8.8	7.0	54.5	0.0	0.0	50.5	0.0	61.5
LnGrp LOS	A	A		A	A	A	D	A		D	A	E
Approach Vol, veh/h	390		A	733			3		A	144		
Approach Delay, s/veh	5.7			8.7			54.5			58.2		
Approach LOS	A			A			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	94.4	5.5	14.8	11.2	88.6	10.0	10.3				
Change Period (Y+Rc), s	5.0	9.0	5.0	5.0	8.0	9.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	46.0	15.0	25.0	7.0	46.0	10.0	30.0				
Max Q Clear Time (g_c+I1), s	2.0	5.9	2.1	9.5	2.6	11.9	4.7	0.0				
Green Ext Time (p_c), s	0.0	4.3	0.0	0.4	0.0	9.4	0.0	0.0				







Intersection Summary







HCM 6th Ctrl Delay 13.5






HCM 6th LOS B

Notes

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




Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	312	658	22	24	108
Future Vol, veh/h	55	312	658	22	24	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	328	693	23	25	114
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	716	0	-	0	940	347
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	880	-	-	-	359	649
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	880	-	-	-	335	649
Mov Cap-2 Maneuver	-	-	-	-	335	-
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	909	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		13.6		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	880	-	-	-	555	
HCM Lane V/C Ratio	0.066	-	-	-	0.25	
HCM Control Delay (s)	9.4	-	-	-	13.6	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	1	

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	326	636	9	26	49
Future Vol, veh/h	11	326	636	9	26	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	200	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	351	684	10	28	53
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	694	0	-	0	884	342
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	200	-
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	897	-	-	-	*359	654
Stage 1	-	-	-	-	*462	-
Stage 2	-	-	-	-	*923	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	897	-	-	-	*355	654
Mov Cap-2 Maneuver	-	-	-	-	*355	-
Stage 1	-	-	-	-	*456	-
Stage 2	-	-	-	-	*923	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		13.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	897	-	-	-	506	
HCM Lane V/C Ratio	0.013	-	-	-	0.159	
HCM Control Delay (s)	9.1	-	-	-	13.5	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.6	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection												
Int Delay, s/veh	11.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	224	120	91	394	2	230	1	6	0	2	3
Future Vol, veh/h	1	224	120	91	394	2	230	1	6	0	2	3
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	-	-	325	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	241	129	98	424	2	247	1	6	0	2	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	370	0	0	652	865	121	744	993	213
Stage 1	-	-	-	-	-	-	243	243	-	621	621	-
Stage 2	-	-	-	-	-	-	409	622	-	123	372	-
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	1130	-	-	1185	-	-	353	290	908	303	244	792
Stage 1	-	-	-	-	-	-	739	703	-	442	477	-
Stage 2	-	-	-	-	-	-	590	477	-	868	617	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1130	-	-	1185	-	-	320	258	908	275	217	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	258	-	275	217	-
Stage 1	-	-	-	-	-	-	738	702	-	442	425	-
Stage 2	-	-	-	-	-	-	521	425	-	860	616	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.8			46.7			14.5		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	325	1130	-	-	1185	-	-	384				
HCM Lane V/C Ratio	0.784	0.001	-	-	0.083	-	-	0.014				
HCM Control Delay (s)	46.7	8.2	0	-	8.3	0.3	-	14.5				
HCM Lane LOS	E	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	6.3	0	-	-	0.3	-	-	0				

Intersection

Int Delay, s/veh 2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	155	8	136	107	7
Future Vol, veh/h	57	155	8	136	107	7
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	62	168	9	148	116	8
























Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	230
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1338
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1338
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	-	1338	-
HCM Lane V/C Ratio	0.18	-	-	0.006	-
HCM Control Delay (s)	11.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center
08/20/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		 			 		 			
Traffic Volume (vph)	80	735	35	11	357	28	13	5	21	6
Future Volume (vph)	80	735	35	11	357	28	13	5	21	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6		3	8	7	4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	25.0	10.0	30.0
Total Split (s)	15.0	55.0	55.0	15.0	55.0	55.0	20.0	35.0	15.0	30.0
Total Split (%)	12.5%	45.8%	45.8%	12.5%	45.8%	45.8%	16.7%	29.2%	12.5%	25.0%
Yellow Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	9.0	9.0	5.0	9.0	9.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	96.8	94.6	94.6	91.8	82.6	82.6	6.9	5.7	10.6	6.7
Actuated g/C Ratio	0.81	0.79	0.79	0.76	0.69	0.69	0.06	0.05	0.09	0.06
v/c Ratio	0.12	0.29	0.03	0.02	0.16	0.03	0.07	0.06	0.16	0.44
Control Delay	3.8	6.2	0.1	3.7	8.2	0.0	49.2	55.2	48.4	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	6.2	0.1	3.7	8.2	0.0	49.2	55.2	48.4	26.6
LOS	A	A	A	A	A	A	D	E	D	C
Approach Delay		5.7			7.5			50.7		32.4
Approach LOS		A			A			D		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 8.4

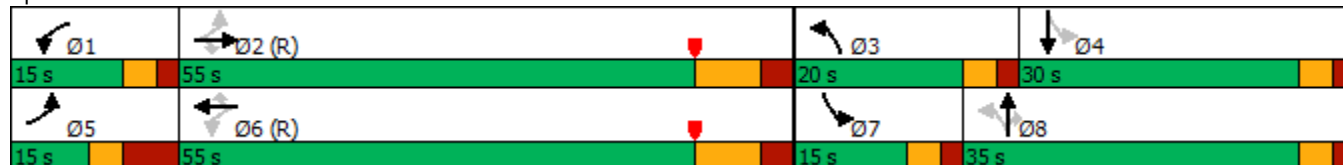
Intersection LOS: A

Intersection Capacity Utilization 48.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/20/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	735	35	11	357	28	13	5	0	21	6	51
Future Volume (veh/h)	80	735	35	11	357	28	13	5	0	21	6	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	808	0	12	392	31	14	5	0	23	7	56
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	722	2513		503	2333	1040	240	73		183	11	91
Arrive On Green	0.04	0.71	0.00	0.01	0.66	0.66	0.02	0.04	0.00	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	179	1433
Grp Volume(v), veh/h	88	808	0	12	392	31	14	5	0	23	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1612
Q Serve(g_s), s	1.9	10.3	0.0	0.3	5.1	0.8	0.5	0.3	0.0	1.4	0.0	4.6
Cycle Q Clear(g_c), s	1.9	10.3	0.0	0.3	5.1	0.8	0.5	0.3	0.0	1.4	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	722	2513		503	2333	1040	240	73		183	0	103
V/C Ratio(X)	0.12	0.32		0.02	0.17	0.03	0.06	0.07		0.13	0.00	0.61
Avail Cap(c_a), veh/h	756	2513		627	2333	1040	618	468		260	0	336
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	6.7	0.0	6.6	8.0	7.2	53.9	55.6	0.0	51.5	0.0	54.7
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.2	0.0	4.4
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	1.0	5.6	0.0	0.2	3.1	0.5	0.4	0.3	0.0	1.2	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	7.0	0.0	6.7	8.1	7.3	53.9	55.9	0.0	51.8	0.0	59.1
LnGrp LOS	A	A		A	A	A	D	E		D	A	E
Approach Vol, veh/h		896	A		435			19	A		86	
Approach Delay, s/veh		6.9			8.0			54.4			57.2	
Approach LOS		A			A			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	93.9	6.9	12.6	12.7	87.8	9.8	9.7				
Change Period (Y+Rc), s	5.0	9.0	5.0	5.0	8.0	9.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	46.0	15.0	25.0	7.0	46.0	10.0	30.0				
Max Q Clear Time (g_c+I1), s	2.3	12.3	2.5	6.6	3.9	7.1	3.4	2.3				
Green Ext Time (p_c), s	0.0	10.8	0.0	0.2	0.0	5.0	0.0	0.0				







Intersection Summary







HCM 6th Ctrl Delay 10.9

HCM 6th LOS B

Notes

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




Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	690	334	10	10	45
Future Vol, veh/h	67	690	334	10	10	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	758	367	11	11	49
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	378	0	-	0	818	184
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	451	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	1177	-	-	-	*741	827
Stage 1	-	-	-	-	*648	-
Stage 2	-	-	-	-	*816	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	1177	-	-	-	*695	827
Mov Cap-2 Maneuver	-	-	-	-	*695	-
Stage 1	-	-	-	-	*607	-
Stage 2	-	-	-	-	*816	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1177	-	-	-	-	799
HCM Lane V/C Ratio	0.063	-	-	-	-	0.076
HCM Control Delay (s)	8.3	-	-	-	-	9.9
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.2
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	58	624	326	21	13	31
Future Vol, veh/h	58	624	326	21	13	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	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	63	678	354	23	14	34
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	377	0	-	0	819	177
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	465	-
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	1178	-	-	-	*583	835
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*803	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	1178	-	-	-	*552	835
Mov Cap-2 Maneuver	-	-	-	-	*552	-
Stage 1	-	-	-	-	*645	-
Stage 2	-	-	-	-	*803	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		10.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1178	-	-	-	725	
HCM Lane V/C Ratio	0.054	-	-	-	0.066	
HCM Control Delay (s)	8.2	-	-	-	10.3	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗		↕↕			↕			↕	
Traffic Vol, veh/h	2	445	186	126	223	2	137	0	33	0	1	3
Future Vol, veh/h	2	445	186	126	223	2	137	0	33	0	1	3
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	-	-	325	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	454	190	129	228	2	140	0	34	0	1	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	644	0	0	831	946	227	718	1135	115
Stage 1	-	-	-	-	-	-	458	458	-	487	487	-
Stage 2	-	-	-	-	-	-	373	488	-	231	648	-
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	1335	-	-	937	-	-	262	260	776	316	201	916
Stage 1	-	-	-	-	-	-	552	565	-	531	549	-
Stage 2	-	-	-	-	-	-	620	548	-	751	464	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1335	-	-	937	-	-	228	218	776	265	169	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	218	-	265	169	-
Stage 1	-	-	-	-	-	-	551	564	-	530	462	-
Stage 2	-	-	-	-	-	-	519	461	-	717	463	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			41.4			13.4		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	264	1335	-	-	937	-	-	435				
HCM Lane V/C Ratio	0.657	0.002	-	-	0.137	-	-	0.009				
HCM Control Delay (s)	41.4	7.7	0	-	9.5	0.4	-	13.4				
HCM Lane LOS	E	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	4.2	0	-	-	0.5	-	-	0				

Intersection

Int Delay, s/veh 2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	237	1	67	106	12
Future Vol, veh/h	77	237	1	67	106	12
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	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	266	1	75	119	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	353
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1206
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1206
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	704	-	-	1206	-
HCM Lane V/C Ratio	0.188	-	-	0.001	-
HCM Control Delay (s)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

APPENDIX C. NCHRP 684 (INTERNAL CAPTURE) WORKSHEETS

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Stafford Buisness Park			Organization:	Felsburg, Holt & Ullevig
Project Location:	Aurora, CO			Performed By:	Philip Dunham
Scenario Description:	AM Street Peak Hour			Date:	12/4/2018
Analysis Year:	Long Term			Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	-	-	-	0	0	0
Retail	820, 850	110	KSF	320	196	124
Restaurant	-	-	-	0	0	0
Cinema/Entertainment	-	-	-	0	0	0
Residential	-	-	-	0	0	0
Hotel	310	200	Rooms	95	56	39
All Other Land Uses ²	130, 945, 912			1,992	1,549	443
				2,407	1,801	606

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	0.00	0%	0%	0.00	0%	0%
Retail	0.00	0%	0%	0.00	0%	0%
Restaurant	0.00	0%	0%	0.00	0%	0%
Cinema/Entertainment	0.00	0%	0%	0.00	0%	0%
Residential	0.00	0%	0%	0.00	0%	0%
Hotel	0.00	0%	0%	0.00	0%	0%
All Other Land Uses ²	0.00	0%	0%	0.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	5	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	2,407	1,801	606
Internal Capture Percentage	0%	0%	1%
External Vehicle-Trips ⁵	2,397	1,796	601
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	0%	13%

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Stafford Buisness Park			Organization:	Felsburg, Holt & Ullevig
Project Location:	Aurora, CO			Performed By:	Philip Dunham
Scenario Description:	PM Street Peak Hour			Date:	12/4/2018
Analysis Year:	Long Term			Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	-	-	-	0	0	0
Retail	820, 850	125	KSF	791	390	401
Restaurant	-	-	-	0	0	0
Cinema/Entertainment	-	-	-	0	0	0
Residential	-	-	-	0	0	0
Hotel	310	200	Rooms	124	63	61
All Other Land Uses ²	130, 944, 912			2,118	545	1,573
				3,033	998	2,035

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	0.00	0%	0%	0.00	0%	0%
Retail	0.00	0%	0%	0.00	0%	0%
Restaurant	0.00	0%	0%	0.00	0%	0%
Cinema/Entertainment	0.00	0%	0%	0.00	0%	0%
Residential	0.00	0%	0%	0.00	0%	0%
Hotel	0.00	0%	0%	0.00	0%	0%
All Other Land Uses ²	0.00	0%	0%	0.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1250	1000		-	
Retail					-	
Restaurant					-	
Cinema/Entertainment					-	
Residential		-	-			
Hotel					-	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	11
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	8	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	3,033	998	2,035
Internal Capture Percentage	1%	2%	1%
External Vehicle-Trips ⁵	2,995	979	2,016
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	2%	3%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	17%	13%





















¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

APPENDIX D. SHORT-TERM BACKGROUND LOS

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBT	Ø8
Lane Configurations										
Traffic Volume (vph)	33	394	2	2	769	32	4	48	1	
Future Volume (vph)	33	394	2	2	769	32	4	48	1	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt	NA	
Protected Phases	5	2		1	6		3	7	4	8
Permitted Phases	2		2	6		6	8	4		
Detector Phase	5	2	2	1	6	6	3	7	4	
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	10.0	31.0	26.0
Total Split (s)	12.0	65.0	65.0	12.0	65.0	65.0	12.0	12.0	31.0	31.0
Total Split (%)	10.0%	54.2%	54.2%	10.0%	54.2%	54.2%	10.0%	10.0%	25.8%	26%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	98.5	96.2	96.2	95.8	91.7	91.7	5.4	10.8	7.7	
Actuated g/C Ratio	0.82	0.80	0.80	0.80	0.76	0.76	0.04	0.09	0.06	
v/c Ratio	0.07	0.15	0.00	0.00	0.31	0.03	0.03	0.33	0.56	
Control Delay	3.1	3.9	0.0	3.0	4.0	0.0	55.2	54.2	20.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.1	3.9	0.0	3.0	4.0	0.0	55.2	54.2	20.2	
LOS	A	A	A	A	A	A	E	D	C	
Approach Delay		3.9			3.8				30.6	
Approach LOS		A			A				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 7.0

Intersection LOS: A

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	33	394	2	2	769	32	4	0	0	48	1	109		
Future Volume (veh/h)	33	394	2	2	769	32	4	0	0	48	1	109		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	36	428	0	2	836	35	4	0	0	52	1	118		
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	489	2542		714	2448	1092	187	104		216	1	147		
Arrive On Green	0.03	0.72	0.00	0.00	0.69	0.69	0.01	0.00	0.00	0.04	0.09	0.09		
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	13	1574		
Grp Volume(v), veh/h	36	428	0	2	836	35	4	0	0	52	0	119		
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1587		
Q Serve(g_s), s	0.7	4.7	0.0	0.0	11.5	0.8	0.1	0.0	0.0	3.2	0.0	8.8		
Cycle Q Clear(g_c), s	0.7	4.7	0.0	0.0	11.5	0.8	0.1	0.0	0.0	3.2	0.0	8.8		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99		
Lane Grp Cap(c), veh/h	489	2542		714	2448	1092	187	104		216	0	148		
V/C Ratio(X)	0.07	0.17		0.00	0.34	0.03	0.02	0.00		0.24	0.00	0.80		
Avail Cap(c_a), veh/h	541	2542		813	2448	1092	371	390		242	0	331		
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	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	5.4	5.5	0.0	5.7	7.6	5.9	53.1	0.0	0.0	48.8	0.0	53.3		
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.4	0.0	7.3		
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	0.4	2.5	0.0	0.0	6.5	0.5	0.1	0.0	0.0	2.6	0.0	6.9		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	5.5	5.7	0.0	5.7	8.0	6.0	53.1	0.0	0.0	49.2	0.0	60.6		
LnGrp LOS	A	A		A	A	A	D	A		D	A	E		
Approach Vol, veh/h	464		A	873			4		A	171				
Approach Delay, s/veh	5.7			7.9			53.1			57.1				
Approach LOS	A			A			D			E				
Timer - Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	5.3	91.8	5.6	17.2	8.5	88.7	10.2	12.6						
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0						
Max Green Setting (Gmax), s	7.0	59.0	7.0	25.0	7.0	59.0	7.0	25.0						
Max Q Clear Time (g_c+I1), s	2.0	6.7	2.1	10.8	2.7	13.5	5.2	0.0						
Green Ext Time (p_c), s	0.0	5.5	0.0	0.4	0.0	12.8	0.0	0.0						







Intersection Summary







HCM 6th Ctrl Delay 12.9

HCM 6th LOS B

Notes

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

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	371	783	26	29	129
Future Vol, veh/h	65	371	783	26	29	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	391	824	27	31	136
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	851	0	-	0	1116	412
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	783	-	-	-	*309	589
Stage 1	-	-	-	-	*381	-
Stage 2	-	-	-	-	*908	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	783	-	-	-	*282	589
Mov Cap-2 Maneuver	-	-	-	-	*282	-
Stage 1	-	-	-	-	*348	-
Stage 2	-	-	-	-	*908	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.5	0		16		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	783	-	-	-	-	491
HCM Lane V/C Ratio	0.087	-	-	-	-	0.339
HCM Control Delay (s)	10	-	-	-	-	16
HCM Lane LOS	B	-	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	-	1.5
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	388	757	11	31	58
Future Vol, veh/h	13	388	757	11	31	58
Conflicting Peds, #/hr	65	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	200	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	417	814	12	33	62
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	891	0	-	0	1116	472
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	237	-
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	757	-	-	-	*260	538
Stage 1	-	-	-	-	*366	-
Stage 2	-	-	-	-	*899	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	710	-	-	-	*224	505
Mov Cap-2 Maneuver	-	-	-	-	*224	-
Stage 1	-	-	-	-	*336	-
Stage 2	-	-	-	-	*843	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		19.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	710	-	-	-	351	
HCM Lane V/C Ratio	0.02	-	-	-	0.273	
HCM Control Delay (s)	10.2	-	-	-	19.1	
HCM Lane LOS	B	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/21/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘↗	↗
Traffic Volume (vph)	267	143	108	469	274	7
Future Volume (vph)	267	143	108	469	274	7
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2	6			4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	9.5	24.0	24.0	24.0
Total Split (s)	55.0	55.0	15.0	70.0	50.0	50.0
Total Split (%)	45.8%	45.8%	12.5%	58.3%	41.7%	41.7%
Yellow Time (s)	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	80.3	80.3	93.7	92.2	15.8	15.8
Actuated g/C Ratio	0.67	0.67	0.78	0.77	0.13	0.13
v/c Ratio	0.12	0.14	0.14	0.19	0.65	0.04
Control Delay	7.8	2.5	3.8	4.2	56.3	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	2.5	3.8	4.2	56.3	23.3
LOS	A	A	A	A	E	C
Approach Delay	5.9			4.1	55.4	
Approach LOS	A			A	E	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 95 (79%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 16.1

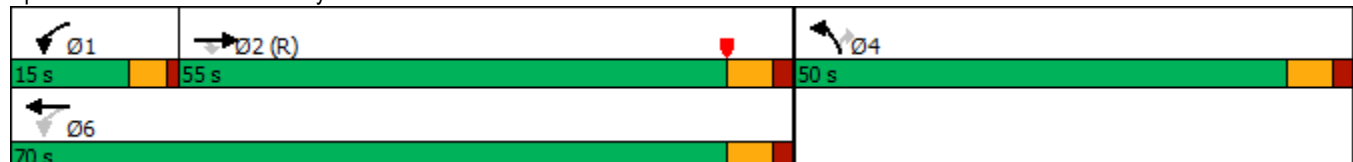
Intersection LOS: B

Intersection Capacity Utilization 34.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Picadilly Rd & Colfax Ave



HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave






Stafford Logistics Center

08/21/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (veh/h)	267	143	108	469	274	7
Future Volume (veh/h)	267	143	108	469	274	7
Initial Q (Qb), veh	0	0	0	0	0	0
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	287	154	116	504	295	8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2535	1131	785	2813	375	172
Arrive On Green	0.71	0.71	0.04	0.79	0.11	0.11
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	287	154	116	504	295	8
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	3.0	3.7	1.9	4.1	10.0	0.5
Cycle Q Clear(g_c), s	3.0	3.7	1.9	4.1	10.0	0.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2535	1131	785	2813	375	172
V/C Ratio(X)	0.11	0.14	0.15	0.18	0.79	0.05
Avail Cap(c_a), veh/h	2535	1131	868	2813	1267	581
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	5.4	5.5	3.5	3.0	52.2	47.9
Incr Delay (d2), s/veh	0.1	0.3	0.1	0.0	3.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	1.8	1.1	2.2	7.8	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.5	5.7	3.6	3.1	55.9	48.1
LnGrp LOS	A	A	A	A	E	D
Approach Vol, veh/h	441			620	303	
Approach Delay, s/veh	5.5			3.2	55.7	
Approach LOS	A			A	E	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.4	91.6		19.0		101.0
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	10.5	49.0		44.0		64.0
Max Q Clear Time (g_c+I1), s	3.9	5.7		12.0		6.1
Green Ext Time (p_c), s	0.1	2.1		1.0		3.9
Intersection Summary						
HCM 6th Ctrl Delay			15.6			
HCM 6th LOS			B			

Intersection

Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	162	127	8	68	184
Future Vol, veh/h	10	162	127	8	68	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	200	0	-	-	150	-
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	11	176	138	9	74	200





















Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	491	143	0
Stage 1	143	-	-
Stage 2	348	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	537	905	-
Stage 1	884	-	-
Stage 2	715	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	509	905	-
Mov Cap-2 Maneuver	509	-	-
Stage 1	884	-	-
Stage 2	678	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 509 905 1435	-	-
HCM Lane V/C Ratio	-	- 0.021 0.195 0.052	-	-
HCM Control Delay (s)	-	- 12.2 9.9 7.6	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.1 0.7 0.2	-	-

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center
08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	95	875	42	13	425	33	15	6	25	7
Future Volume (vph)	95	875	42	13	425	33	15	6	25	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6		3	8	7	4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	26.0	10.0	31.0
Total Split (s)	18.0	65.0	65.0	12.0	59.0	59.0	12.0	31.0	12.0	31.0
Total Split (%)	15.0%	54.2%	54.2%	10.0%	49.2%	49.2%	10.0%	25.8%	10.0%	25.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	99.1	96.1	96.1	93.9	87.6	87.6	7.4	5.8	11.4	6.7
Actuated g/C Ratio	0.83	0.80	0.80	0.78	0.73	0.73	0.06	0.05	0.10	0.06
v/c Ratio	0.14	0.34	0.04	0.03	0.18	0.03	0.07	0.08	0.18	0.49
Control Delay	3.4	6.1	0.0	2.8	4.6	0.1	48.6	55.7	47.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.4	6.1	0.0	2.8	4.6	0.1	48.6	55.7	47.8	26.5
LOS	A	A	A	A	A	A	D	E	D	C
Approach Delay		5.6			4.2			50.8		32.2
Approach LOS		A			A			D		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 7.3

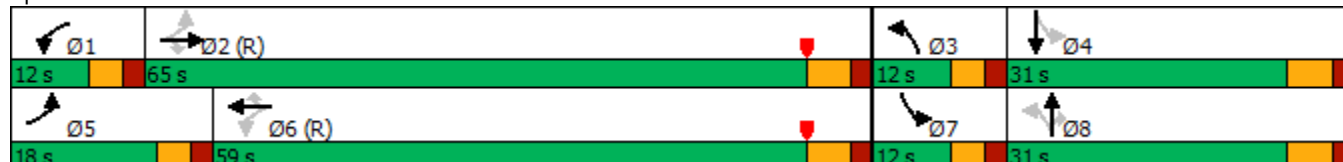
Intersection LOS: A

Intersection Capacity Utilization 50.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	875	42	13	425	33	15	6	0	25	7	61
Future Volume (veh/h)	95	875	42	13	425	33	15	6	0	25	7	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	951	0	14	462	36	16	7	0	27	8	66
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	717	2560		452	2472	1102	227	75		184	11	91
Arrive On Green	0.04	0.72	0.00	0.02	0.70	0.70	0.02	0.04	0.00	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	174	1437
Grp Volume(v), veh/h	103	951	0	14	462	36	16	7	0	27	0	74
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1612
Q Serve(g_s), s	1.9	12.3	0.0	0.3	5.5	0.8	0.5	0.4	0.0	1.7	0.0	5.4
Cycle Q Clear(g_c), s	1.9	12.3	0.0	0.3	5.5	0.8	0.5	0.4	0.0	1.7	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	717	2560		452	2472	1102	227	75		184	0	103
V/C Ratio(X)	0.14	0.37		0.03	0.19	0.03	0.07	0.09		0.15	0.00	0.72
Avail Cap(c_a), veh/h	838	2560		529	2472	1102	369	390		215	0	336
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.6	6.4	0.0	5.4	6.4	5.7	53.6	55.5	0.0	51.5	0.0	55.1
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.0	0.2	0.1	0.1	0.4	0.0	0.3	0.0	6.9
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	1.0	6.5	0.0	0.1	3.0	0.5	0.4	0.4	0.0	1.4	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.7	6.8	0.0	5.4	6.6	5.7	53.7	55.9	0.0	51.7	0.0	62.1
LnGrp LOS	A	A		A	A	A	D	E		D	A	E
Approach Vol, veh/h	1054		A	512				23	A	101		
Approach Delay, s/veh	6.6			6.5				54.4		59.3		
Approach LOS	A			A				D		E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	92.4	7.1	13.6	9.8	89.5	9.9	10.8				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	7.0	59.0	7.0	25.0	13.0	53.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	2.3	14.3	2.5	7.4	3.9	7.5	3.7	2.4				
Green Ext Time (p_c), s	0.0	14.7	0.0	0.3	0.1	6.2	0.0	0.0				







Intersection Summary







HCM 6th Ctrl Delay 10.4

HCM 6th LOS B

Notes

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

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	821	397	12	12	54
Future Vol, veh/h	80	821	397	12	12	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	864	418	13	13	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	431	0	-	0	932	209
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	514	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	1125	-	-	-	*708	797
Stage 1	-	-	-	-	*612	-
Stage 2	-	-	-	-	*793	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	1125	-	-	-	*655	797
Mov Cap-2 Maneuver	-	-	-	-	*655	-
Stage 1	-	-	-	-	*566	-
Stage 2	-	-	-	-	*793	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		10.2		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1125	-	-	-	767	
HCM Lane V/C Ratio	0.075	-	-	-	0.091	
HCM Control Delay (s)	8.5	-	-	-	10.2	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	743	388	25	15	37
Future Vol, veh/h	69	743	388	25	15	37
Conflicting Peds, #/hr	65	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	200	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	799	417	27	16	40
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	509	0	-	0	1030	274
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	548	-
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	1052	-	-	-	*469	724
Stage 1	-	-	-	-	*587	-
Stage 2	-	-	-	-	*756	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	987	-	-	-	*382	679
Mov Cap-2 Maneuver	-	-	-	-	*382	-
Stage 1	-	-	-	-	*510	-
Stage 2	-	-	-	-	*709	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		12.2		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	987	-	-	-	555	
HCM Lane V/C Ratio	0.075	-	-	-	0.101	
HCM Control Delay (s)	8.9	-	-	-	12.2	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings 4: Picadilly Rd & Colfax Ave

Stafford Logistics Center
08/21/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘↖	↗
Traffic Volume (vph)	530	221	150	265	163	39
Future Volume (vph)	530	221	150	265	163	39
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2	6			4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	9.5	24.0	24.0	24.0
Total Split (s)	55.0	55.0	15.0	70.0	50.0	50.0
Total Split (%)	45.8%	45.8%	12.5%	58.3%	41.7%	41.7%
Yellow Time (s)	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	84.0	84.0	98.0	96.5	11.5	11.5
Actuated g/C Ratio	0.70	0.70	0.82	0.80	0.10	0.10
v/c Ratio	0.23	0.20	0.23	0.10	0.53	0.22
Control Delay	4.3	1.1	3.3	2.8	57.2	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	1.1	3.3	2.8	57.2	17.2
LOS	A	A	A	A	E	B
Approach Delay	3.4			2.9	49.5	
Approach LOS	A			A	D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 85 (71%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 10.0

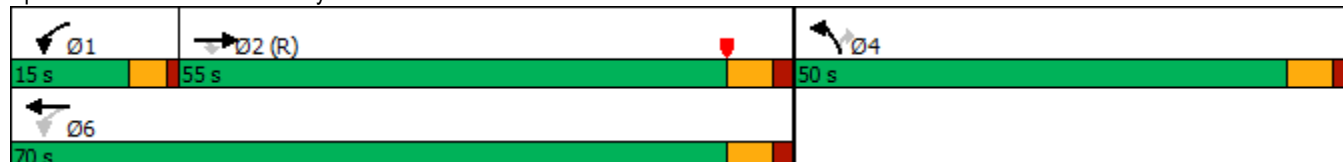
Intersection LOS: B

Intersection Capacity Utilization 41.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Picadilly Rd & Colfax Ave



HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave






Stafford Logistics Center

08/21/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (veh/h)	530	221	150	265	163	39
Future Volume (veh/h)	530	221	150	265	163	39
Initial Q (Qb), veh	0	0	0	0	0	0
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	570	238	161	285	175	42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2662	1187	607	2942	249	114
Arrive On Green	0.75	0.75	0.04	0.83	0.07	0.07
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	570	238	161	285	175	42
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	5.8	5.3	2.3	1.8	5.9	3.0
Cycle Q Clear(g_c), s	5.8	5.3	2.3	1.8	5.9	3.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2662	1187	607	2942	249	114
V/C Ratio(X)	0.21	0.20	0.27	0.10	0.70	0.37
Avail Cap(c_a), veh/h	2662	1187	689	2942	1267	581
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	4.5	4.4	2.8	1.9	54.4	53.1
Incr Delay (d2), s/veh	0.2	0.4	0.2	0.0	3.6	2.0
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	2.4	1.2	0.8	4.8	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.7	4.8	3.0	1.9	58.0	55.0
LnGrp LOS	A	A	A	A	E	E
Approach Vol, veh/h	808			446	217	
Approach Delay, s/veh	4.7			2.3	57.5	
Approach LOS	A			A	E	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.5	95.9		14.6		105.4
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	10.5	49.0		44.0		64.0
Max Q Clear Time (g_c+I1), s	4.3	7.8		7.9		3.8
Green Ext Time (p_c), s	0.2	4.4		0.7		2.1
Intersection Summary						
HCM 6th Ctrl Delay			11.8			
HCM 6th LOS			B			

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	80	126	14	92	282
Future Vol, veh/h	1	80	126	14	92	282
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	200	0	-	-	150	-
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	1	87	137	15	100	307

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	652	145	0
Stage 1	145	-	-
Stage 2	507	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	433	902	-
Stage 1	882	-	-
Stage 2	605	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	403	902	-
Mov Cap-2 Maneuver	403	-	-
Stage 1	882	-	-
Stage 2	563	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.9
HCM LOS	A		





















Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	403	902
HCM Lane V/C Ratio	-	-	0.003	0.096
HCM Control Delay (s)	-	-	14	9.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0.3

APPENDIX E. LONG-TERM BACKGROUND LOS

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBT	Ø8
Lane Configurations										
Traffic Volume (vph)	40	1270	5	5	1490	35	5	45	5	
Future Volume (vph)	40	1270	5	5	1490	35	5	45	5	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt	NA	
Protected Phases	5	2		1	6		3	7	4	8
Permitted Phases	2		2	6		6	8	4		
Detector Phase	5	2	2	1	6	6	3	7	4	
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	10.0	31.0	26.0
Total Split (s)	13.0	64.0	64.0	13.0	64.0	64.0	12.0	12.0	31.0	31.0
Total Split (%)	10.8%	53.3%	53.3%	10.8%	53.3%	53.3%	10.0%	10.0%	25.8%	26%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	98.8	96.5	96.5	95.1	90.0	90.0	5.4	10.4	7.3	
Actuated g/C Ratio	0.82	0.80	0.80	0.79	0.75	0.75	0.04	0.09	0.06	
v/c Ratio	0.19	0.48	0.00	0.02	0.61	0.03	0.03	0.32	0.60	
Control Delay	4.7	6.0	0.0	1.6	5.9	0.1	55.2	54.4	22.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.7	6.0	0.0	1.6	5.9	0.1	55.2	54.4	22.6	
LOS	A	A	A	A	A	A	E	D	C	
Approach Delay		6.0			5.7				31.5	
Approach LOS		A			A				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 7.3

Intersection LOS: A

Intersection Capacity Utilization 60.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020







												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1270	5	5	1490	35	5	0	0	45	5	110
Future Volume (veh/h)	40	1270	5	5	1490	35	5	0	0	45	5	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	1380	0	5	1620	38	5	0	0	49	5	120
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	321	2512		276	2422	1080	192	115		222	6	148
Arrive On Green	0.03	0.71	0.00	0.01	1.00	1.00	0.01	0.00	0.00	0.04	0.10	0.10
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	64	1531
Grp Volume(v), veh/h	43	1380	0	5	1620	38	5	0	0	49	0	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1595
Q Serve(g_s), s	0.9	22.3	0.0	0.1	0.0	0.0	0.2	0.0	0.0	3.0	0.0	9.2
Cycle Q Clear(g_c), s	0.9	22.3	0.0	0.1	0.0	0.0	0.2	0.0	0.0	3.0	0.0	9.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	321	2512		276	2422	1080	192	115		222	0	155
V/C Ratio(X)	0.13	0.55		0.02	0.67	0.04	0.03	0.00		0.22	0.00	0.81
Avail Cap(c_a), veh/h	384	2512		383	2422	1080	371	390		251	0	332
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	8.4	0.0	7.4	0.0	0.0	52.3	0.0	0.0	48.5	0.0	53.1
Incr Delay (d2), s/veh	0.1	0.9	0.0	0.0	1.5	0.1	0.0	0.0	0.0	0.4	0.0	7.3
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	0.5	11.1	0.0	0.1	0.9	0.0	0.1	0.0	0.0	2.5	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.2	9.3	0.0	7.4	1.5	0.1	52.3	0.0	0.0	48.8	0.0	60.3
LnGrp LOS	A	A		A	A	A	D	A		D	A	E
Approach Vol, veh/h	1423		A	1663			5		A	174		
Approach Delay, s/veh	9.2			1.5			52.3			57.1		
Approach LOS	A			A			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	90.8	5.8	17.6	8.8	87.8	10.0	13.4				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	8.0	58.0	7.0	25.0	8.0	58.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	2.1	24.3	2.2	11.2	2.9	2.0	5.0	0.0				
Green Ext Time (p_c), s	0.0	20.8	0.0	0.5	0.0	35.5	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

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

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	1235	1395	40	35	135
Future Vol, veh/h	80	1235	1395	40	35	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	1300	1468	42	37	142

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1510	0	0 2156 734
Stage 1	-	-	- 1468 -
Stage 2	-	-	- 688 -
Critical Hdwy	4.14	-	- 6.29 6.94
Critical Hdwy Stg 1	-	-	- 5.84 -
Critical Hdwy Stg 2	-	-	- 6.04 -
Follow-up Hdwy	2.22	-	- 3.67 3.32
Pot Cap-1 Maneuver	*751	-	- *153 *502
Stage 1	-	-	- *455 -
Stage 2	-	-	- *679 -
Platoon blocked, %	1	-	- 1 1
Mov Cap-1 Maneuver	*751	-	- *136 *502
Mov Cap-2 Maneuver	-	-	- *136 -
Stage 1	-	-	- *404 -
Stage 2	-	-	- *679 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	* 751	-	-	-	136	502
HCM Lane V/C Ratio	0.112	-	-	-	0.271	0.283
HCM Control Delay (s)	10.4	-	-	-	41	15
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1	1.2

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

Timings 3: Colfax Ave & Himalaya St

Stafford Logistics Center
08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	1210	1350	40	50	85
Future Volume (vph)	60	1210	1350	40	50	85
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	24.0	23.0	23.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	101.0	100.0	90.9	90.9	9.0	9.0
Actuated g/C Ratio	0.84	0.83	0.76	0.76	0.08	0.08
v/c Ratio	0.22	0.44	0.54	0.04	0.41	0.45
Control Delay	3.3	4.6	1.6	0.1	61.2	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.3	4.6	1.6	0.1	61.2	17.5
LOS	A	A	A	A	E	B
Approach Delay		4.6	1.6		33.8	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 91 (76%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 4.5

Intersection LOS: A

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Colfax Ave & Himalaya St

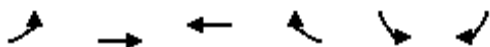


HCM 6th Signalized Intersection Summary

3: Colfax Ave & Himalaya St

Stafford Logistics Center





















08/21/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	1210	1350	40	50	85
Future Volume (veh/h)	60	1210	1350	40	50	85
Initial Q (Qb), veh	0	0	0	0	0	0
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	65	1301	1452	43	54	91
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	332	2962	2683	1197	133	119
Arrive On Green	0.04	0.83	0.75	0.75	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	65	1301	1452	43	54	91
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.9	11.5	20.3	0.8	3.5	6.8
Cycle Q Clear(g_c), s	0.9	11.5	20.3	0.8	3.5	6.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	332	2962	2683	1197	133	119
V/C Ratio(X)	0.20	0.44	0.54	0.04	0.41	0.77
Avail Cap(c_a), veh/h	370	2962	2683	1197	297	264
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	4.8	2.6	6.1	3.7	53.0	54.5
Incr Delay (d2), s/veh	0.3	0.5	0.8	0.1	2.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	3.2	9.2	0.4	3.0	10.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.1	3.1	6.9	3.8	54.9	64.4
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1366	1495		145	
Approach Delay, s/veh		3.2	6.8		60.9	
Approach LOS		A	A		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.0		14.0	9.4	96.6
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		89.0		20.0	7.0	77.0
Max Q Clear Time (g_c+I1), s		13.5		8.8	2.9	22.3
Green Ext Time (p_c), s		11.5		0.3	0.0	13.9
Intersection Summary						
HCM 6th Ctrl Delay			7.8			
HCM 6th LOS			A			

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center
08/21/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	  		  	  	  	
Traffic Volume (vph)	875	350	450	675	875	975
Future Volume (vph)	875	350	450	675	875	975
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	10.0	10.0	24.0	24.0	24.0
Total Split (s)	45.0	30.0	30.0	75.0	45.0	45.0
Total Split (%)	37.5%	25.0%	25.0%	62.5%	37.5%	37.5%
Yellow Time (s)	4.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effct Green (s)	39.0	66.9	21.9	69.0	42.1	87.1
Actuated g/C Ratio	0.32	0.56	0.18	0.58	0.35	0.73
v/c Ratio	0.58	0.42	0.77	0.25	0.53	0.90
Control Delay	27.4	14.0	48.3	15.2	32.8	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	14.0	48.3	15.2	32.8	25.9
LOS	C	B	D	B	C	C
Approach Delay	23.6			28.4	29.2	
Approach LOS	C			C	C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 6 (5%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 27.4

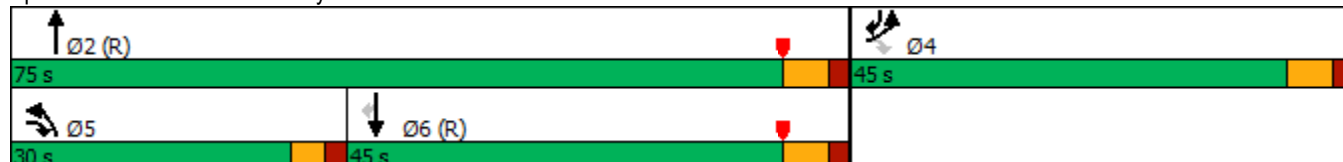
Intersection LOS: C

Intersection Capacity Utilization 82.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Picadilly Rd & Colfax Ave















HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

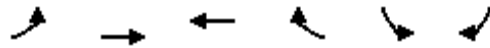
08/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	875	350	450	675	875	975
Future Volume (veh/h)	875	350	450	675	875	975
Initial Q (Qb), veh	0	0	0	0	0	0
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	941	376	484	726	941	1048
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1205	636	558	3370	2332	1104
Arrive On Green	0.24	0.24	0.16	0.66	0.46	0.46
Sat Flow, veh/h	5023	1585	3456	5274	5274	1585
Grp Volume(v), veh/h	941	376	484	726	941	1048
Grp Sat Flow(s),veh/h/ln	1674	1585	1728	1702	1702	1585
Q Serve(g_s), s	21.0	22.3	16.4	6.8	14.7	54.8
Cycle Q Clear(g_c), s	21.0	22.3	16.4	6.8	14.7	54.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1205	636	558	3370	2332	1104
V/C Ratio(X)	0.78	0.59	0.87	0.22	0.40	0.95
Avail Cap(c_a), veh/h	1633	771	720	3370	2332	1104
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	28.2	49.0	8.1	21.7	13.8
Incr Delay (d2), s/veh	1.6	0.8	8.9	0.1	0.5	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.9	27.2	12.1	4.0	10.0	47.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.3	29.0	57.9	8.2	22.2	31.1
LnGrp LOS	D	C	E	A	C	C
Approach Vol, veh/h	1317			1210	1989	
Approach Delay, s/veh	39.9			28.1	26.9	
Approach LOS	D			C	C	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	85.2		34.8		24.4	60.8
Change Period (Y+Rc), s	6.0		6.0		5.0	6.0
Max Green Setting (Gmax), s	69.0		39.0		25.0	39.0
Max Q Clear Time (g_c+I1), s	8.8		24.3		18.4	56.8
Green Ext Time (p_c), s	5.3		4.5		1.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			31.0			
HCM 6th LOS			C			

Timings
7: Colfax Ave & Lisbon St

Stafford Logistics Center

08/21/2020

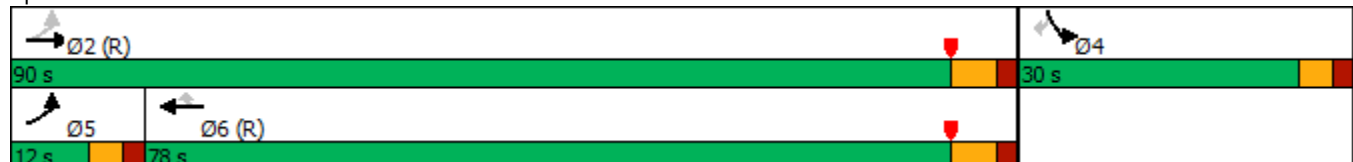


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	1170	1335	90	55	55
Future Volume (vph)	90	1170	1335	90	55	55
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	24.0	23.0	23.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0	30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	102.7	102.9	90.3	90.3	9.4	9.4
Actuated g/C Ratio	0.86	0.86	0.75	0.75	0.08	0.08
v/c Ratio	0.32	0.42	0.55	0.08	0.43	0.34
Control Delay	7.3	2.4	7.0	0.9	61.6	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	2.4	7.0	0.9	61.6	17.6
LOS	A	A	A	A	E	B
Approach Delay		2.8	6.6		39.6	
Approach LOS		A	A		D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 65 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.2
Intersection Capacity Utilization 59.4%
Analysis Period (min) 15
Intersection LOS: A
ICU Level of Service B

Splits and Phases: 7: Colfax Ave & Lisbon St



HCM 6th Signalized Intersection Summary

7: Colfax Ave & Lisbon St

Stafford Logistics Center



















08/21/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	1170	1335	90	55	55
Future Volume (veh/h)	90	1170	1335	90	55	55
Initial Q (Qb), veh	0	0	0	0	0	0
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	98	1272	1451	98	60	60
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	336	3032	2741	1223	98	87
Arrive On Green	0.08	1.00	0.77	0.77	0.06	0.06
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	98	1272	1451	98	60	60
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	1.2	0.0	18.9	1.8	4.0	4.5
Cycle Q Clear(g_c), s	1.2	0.0	18.9	1.8	4.0	4.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	336	3032	2741	1223	98	87
V/C Ratio(X)	0.29	0.42	0.53	0.08	0.61	0.69
Avail Cap(c_a), veh/h	369	3032	2741	1223	371	330
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.39	0.39	1.00	1.00
Uniform Delay (d), s/veh	4.2	0.0	5.3	3.3	55.4	55.7
Incr Delay (d2), s/veh	0.5	0.4	0.3	0.1	6.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.3	6.8	0.7	3.5	7.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.7	0.4	5.6	3.4	61.4	64.8
LnGrp LOS	A	A	A	A	E	E
Approach Vol, veh/h		1370	1549		120	
Approach Delay, s/veh		0.7	5.4		63.1	
Approach LOS		A	A		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		108.4		11.6	9.8	98.6
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		84.0		25.0	7.0	72.0
Max Q Clear Time (g_c+I1), s		2.0		6.5	3.2	20.9
Green Ext Time (p_c), s		11.1		0.3	0.1	14.1
Intersection Summary						
HCM 6th Ctrl Delay			5.6			
HCM 6th LOS			A			

Timings
10: Picadilly Rd & Realigned Colfax Ave

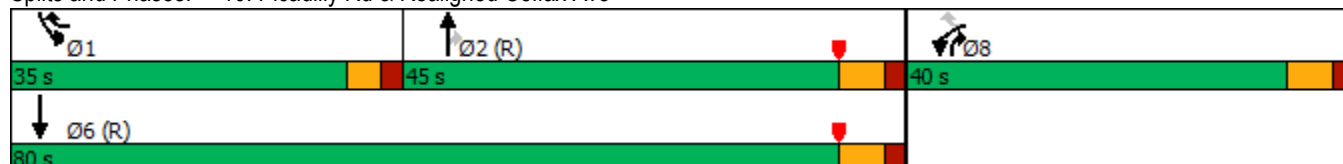
Stafford Logistics Center
08/21/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  		 	  
Traffic Volume (vph)	475	625	500	325	525	700
Future Volume (vph)	475	625	500	325	525	700
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	23.0	24.0	24.0	23.0	24.0
Total Split (s)	40.0	35.0	45.0	40.0	35.0	80.0
Total Split (%)	33.3%	29.2%	37.5%	33.3%	29.2%	66.7%
Yellow Time (s)	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.0	6.0	6.0	5.0	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	C-Min	None	None	C-Min
Act Effect Green (s)	24.0	55.6	53.4	83.4	25.6	84.0
Actuated g/C Ratio	0.20	0.46	0.44	0.70	0.21	0.70
v/c Ratio	0.75	0.85	0.24	0.32	0.78	0.21
Control Delay	52.2	33.5	22.6	7.4	36.4	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	33.5	22.6	7.4	36.4	4.2
LOS	D	C	C	A	D	A
Approach Delay	41.6		16.6			18.0
Approach LOS	D		B			B

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 92 (77%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.9
Intersection Capacity Utilization 57.5%
Analysis Period (min) 15
Intersection LOS: C
ICU Level of Service B

Splits and Phases: 10: Picadilly Rd & Realigned Colfax Ave




















HCM 6th Signalized Intersection Summary

10: Picadilly Rd & Realigned Colfax Ave

Stafford Logistics Center

08/21/2020
























						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  		 	  
Traffic Volume (veh/h)	475	625	500	325	525	700
Future Volume (veh/h)	475	625	500	325	525	700
Initial Q (Qb), veh	0	0	0	0	0	0
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	516	0	543	353	571	761
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	604		2547	1068	638	3703
Arrive On Green	0.17	0.00	0.50	0.50	0.37	1.00
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	516	0	543	353	571	761
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	17.4	0.0	7.2	11.2	18.7	0.0
Cycle Q Clear(g_c), s	17.4	0.0	7.2	11.2	18.7	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	604		2547	1068	638	3703
V/C Ratio(X)	0.85		0.21	0.33	0.89	0.21
Avail Cap(c_a), veh/h	979		2547	1068	864	3703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	16.9	8.2	36.7	0.0
Incr Delay (d2), s/veh	4.2	0.0	0.2	0.8	9.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.2	0.0	4.9	10.3	11.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.3	0.0	17.1	9.1	46.1	0.1
LnGrp LOS	D		B	A	D	A
Approach Vol, veh/h	516	A	896			1332
Approach Delay, s/veh	52.3		13.9			19.8
Approach LOS	D		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	27.2	65.9			93.0	27.0
Change Period (Y+Rc), s	5.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	30.0	39.0			74.0	34.0
Max Q Clear Time (g_c+I1), s	20.7	13.2			2.0	19.4
Green Ext Time (p_c), s	1.5	4.8			5.6	1.6
Intersection Summary						
HCM 6th Ctrl Delay			24.0			
HCM 6th LOS			C			

Notes

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

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center
08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		 			 		 			
Traffic Volume (vph)	105	1610	40	15	1455	35	15	5	35	5
Future Volume (vph)	105	1610	40	15	1455	35	15	5	35	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6		3	8	7	4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	26.0	10.0	31.0
Total Split (s)	12.0	65.0	65.0	12.0	65.0	65.0	12.0	31.0	12.0	31.0
Total Split (%)	10.0%	54.2%	54.2%	10.0%	54.2%	54.2%	10.0%	25.8%	10.0%	25.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	97.6	92.6	92.6	90.2	83.9	83.9	8.0	6.1	11.4	6.8
Actuated g/C Ratio	0.81	0.77	0.77	0.75	0.70	0.70	0.07	0.05	0.10	0.06
v/c Ratio	0.47	0.65	0.04	0.08	0.65	0.03	0.07	0.05	0.25	0.52
Control Delay	10.8	10.3	0.1	2.5	11.1	0.1	48.3	54.0	50.0	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	10.3	0.1	2.5	11.1	0.1	48.3	54.0	50.0	24.2
LOS	B	B	A	A	B	A	D	D	D	C
Approach Delay		10.1			10.8			49.7		32.0
Approach LOS		B			B			D		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.4

Intersection LOS: B

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1610	40	15	1455	35	15	5	0	35	5	75
Future Volume (veh/h)	105	1610	40	15	1455	35	15	5	0	35	5	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	1769	0	16	1599	38	16	5	0	38	5	82
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	2525		205	2441	1089	226	89		197	7	108
Arrive On Green	0.04	0.71	0.00	0.01	0.46	0.46	0.02	0.05	0.00	0.04	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	92	1507
Grp Volume(v), veh/h	115	1769	0	16	1599	38	16	5	0	38	0	87
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1599
Q Serve(g_s), s	2.3	34.4	0.0	0.3	41.7	1.6	0.5	0.3	0.0	2.4	0.0	6.4
Cycle Q Clear(g_c), s	2.3	34.4	0.0	0.3	41.7	1.6	0.5	0.3	0.0	2.4	0.0	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.94
Lane Grp Cap(c), veh/h	237	2525		205	2441	1089	226	89		197	0	115
V/C Ratio(X)	0.49	0.70		0.08	0.65	0.03	0.07	0.06		0.19	0.00	0.76
Avail Cap(c_a), veh/h	268	2525		278	2441	1089	368	390		228	0	333
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.4	10.0	0.0	9.8	21.4	10.6	52.8	54.6	0.0	50.9	0.0	54.7
Incr Delay (d2), s/veh	1.1	1.6	0.0	0.1	1.4	0.1	0.1	0.2	0.0	0.3	0.0	7.4
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	2.8	16.8	0.0	0.2	25.4	1.0	0.4	0.3	0.0	2.0	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	11.7	0.0	9.9	22.8	10.6	52.9	54.8	0.0	51.2	0.0	62.1
LnGrp LOS	B	B		A	C	B	D	D		D	A	E
Approach Vol, veh/h	1884		A	1653			21		A	125		
Approach Delay, s/veh	12.0			22.4			53.3			58.8		
Approach LOS	B			C			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	91.3	7.1	14.6	9.9	88.4	10.0	11.7				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	7.0	59.0	7.0	25.0	7.0	59.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	2.3	36.4	2.5	8.4	4.3	43.7	4.4	2.3				
Green Ext Time (p_c), s	0.0	19.3	0.0	0.3	0.0	13.0	0.0	0.0				







Intersection Summary

HCM 6th Ctrl Delay 18.5

HCM 6th LOS B

Notes

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

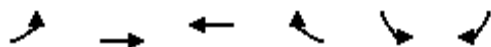
Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	145	1500	1375	50	60	130
Future Vol, veh/h	145	1500	1375	50	60	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	1648	1511	55	66	143
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1566	0	-	0	2488	756
Stage 1	-	-	-	-	1511	-
Stage 2	-	-	-	-	977	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	*772	-	-	-	*191	*516
Stage 1	-	-	-	-	*467	-
Stage 2	-	-	-	-	*606	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	*772	-	-	-	*152	*516
Mov Cap-2 Maneuver	-	-	-	-	*152	-
Stage 1	-	-	-	-	*371	-
Stage 2	-	-	-	-	*606	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		24.4		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	* 772	-	-	-	152	516
HCM Lane V/C Ratio	0.206	-	-	-	0.434	0.277
HCM Control Delay (s)	10.9	-	-	-	45.7	14.6
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.8	-	-	-	1.9	1.1
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings

3: Colfax Ave & Himalaya St

Stafford Logistics Center

08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	200	1360	1240	115	115	185
Future Volume (vph)	200	1360	1240	115	115	185
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	24.0	23.0	23.0
Total Split (s)	21.0	95.0	74.0	74.0	25.0	25.0
Total Split (%)	17.5%	79.2%	61.7%	61.7%	20.8%	20.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	96.2	95.2	79.3	79.3	13.8	13.8
Actuated g/C Ratio	0.80	0.79	0.66	0.66	0.12	0.12
v/c Ratio	0.63	0.53	0.58	0.12	0.62	0.56
Control Delay	18.6	2.4	3.9	0.2	63.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	2.4	3.9	0.2	63.1	12.6
LOS	B	A	A	A	E	B
Approach Delay		4.5	3.6		32.0	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 72 (60%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 6.6

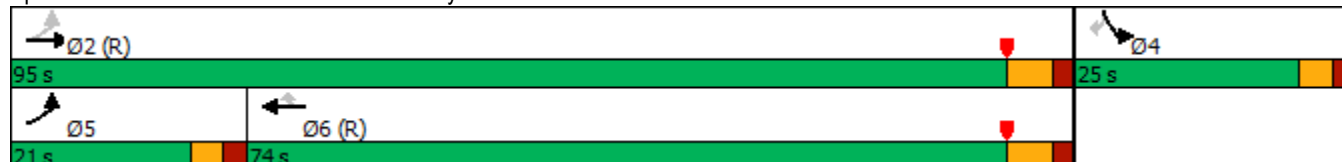
Intersection LOS: A

Intersection Capacity Utilization 65.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Colfax Ave & Himalaya St



HCM 6th Signalized Intersection Summary

3: Colfax Ave & Himalaya St

Stafford Logistics Center

08/21/2020















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	200	1360	1240	115	115	185
Future Volume (veh/h)	200	1360	1240	115	115	185
Initial Q (Qb), veh	0	0	0	0	0	0
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	217	1478	1348	125	125	201
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	282	2717	2359	1052	256	228
Arrive On Green	0.12	1.00	0.22	0.22	0.14	0.14
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	217	1478	1348	125	125	201
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	4.7	0.0	40.6	7.6	7.8	14.9
Cycle Q Clear(g_c), s	4.7	0.0	40.6	7.6	7.8	14.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	282	2717	2359	1052	256	228
V/C Ratio(X)	0.77	0.54	0.57	0.12	0.49	0.88
Avail Cap(c_a), veh/h	414	2717	2359	1052	297	264
HCM Platoon Ratio	2.00	2.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	31.6	18.7	47.3	50.4
Incr Delay (d2), s/veh	5.1	0.8	1.0	0.2	1.4	25.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	0.5	26.7	5.0	6.4	20.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.1	0.8	32.6	19.0	48.7	75.4
LnGrp LOS	C	A	C	B	D	E
Approach Vol, veh/h		1695	1473		326	
Approach Delay, s/veh		3.9	31.5		65.2	
Approach LOS		A	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		97.7		22.3	12.1	85.6
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		89.0		20.0	16.0	68.0
Max Q Clear Time (g_c+I1), s		2.0		16.9	6.7	42.6
Green Ext Time (p_c), s		16.2		0.3	0.4	11.0
Intersection Summary						
HCM 6th Ctrl Delay			21.2			
HCM 6th LOS			C			

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/21/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1125	375	450	575	800	875
Future Volume (vph)	1125	375	450	575	800	875
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	10.0	10.0	24.0	24.0	24.0
Total Split (s)	60.0	32.0	32.0	60.0	28.0	60.0
Total Split (%)	50.0%	26.7%	26.7%	50.0%	23.3%	50.0%
Yellow Time (s)	4.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effct Green (s)	53.7	81.4	21.7	54.3	27.6	87.3
Actuated g/C Ratio	0.45	0.68	0.18	0.45	0.23	0.73
v/c Ratio	0.51	0.36	0.74	0.25	0.70	0.76
Control Delay	24.6	9.1	50.2	24.3	47.0	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	9.1	50.2	24.3	47.0	15.5
LOS	C	A	D	C	D	B
Approach Delay	20.7			35.6	30.5	
Approach LOS	C			D	C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 28.3

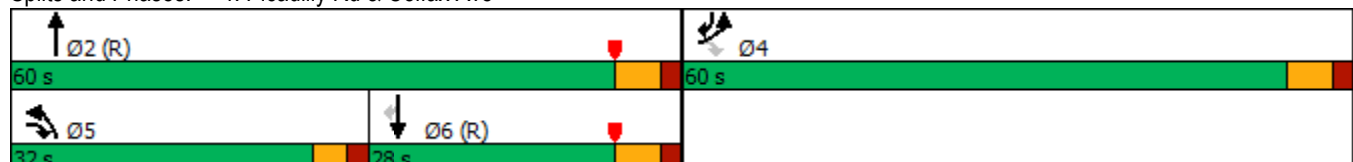
Intersection LOS: C

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: Picadilly Rd & Colfax Ave















HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1125	375	450	575	800	875
Future Volume (veh/h)	1125	375	450	575	800	875
Initial Q (Qb), veh	0	0	0	0	0	0
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	1148	383	459	587	816	893
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1426	700	545	3146	2127	1110
Arrive On Green	0.28	0.28	0.05	0.20	0.42	0.42
Sat Flow, veh/h	5023	1585	3456	5274	5274	1585
Grp Volume(v), veh/h	1148	383	459	587	816	893
Grp Sat Flow(s),veh/h/ln	1674	1585	1728	1702	1702	1585
Q Serve(g_s), s	25.5	21.3	15.8	11.4	13.3	46.4
Cycle Q Clear(g_c), s	25.5	21.3	15.8	11.4	13.3	46.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1426	700	545	3146	2127	1110
V/C Ratio(X)	0.81	0.55	0.84	0.19	0.38	0.80
Avail Cap(c_a), veh/h	2260	963	778	3146	2127	1110
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.76	0.76	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	24.7	55.4	22.9	24.3	12.3
Incr Delay (d2), s/veh	0.9	0.5	5.8	0.1	0.5	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.8	26.4	12.3	8.6	9.3	38.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.8	25.2	61.2	23.0	24.8	18.6
LnGrp LOS	D	C	E	C	C	B
Approach Vol, veh/h	1531			1046	1709	
Approach Delay, s/veh	36.9			39.8	21.5	
Approach LOS	D			D	C	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	79.9		40.1		23.9	56.0
Change Period (Y+Rc), s	6.0		6.0		5.0	6.0
Max Green Setting (Gmax), s	54.0		54.0		27.0	22.0
Max Q Clear Time (g_c+I1), s	13.4		27.5		17.8	48.4
Green Ext Time (p_c), s	4.0		6.6		1.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			31.5			
HCM 6th LOS			C			

Timings
7: Colfax Ave & Lisbon St

Stafford Logistics Center
08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	320	1155	1010	315	345	345
Future Volume (vph)	320	1155	1010	315	345	345
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	23.0	23.0	23.0	23.0	23.0
Total Split (s)	30.0	82.0	52.0	52.0	38.0	38.0
Total Split (%)	25.0%	68.3%	43.3%	43.3%	31.7%	31.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	81.6	80.6	55.1	55.1	29.4	29.4
Actuated g/C Ratio	0.68	0.67	0.46	0.46	0.24	0.24
v/c Ratio	0.80	0.53	0.68	0.38	0.87	0.56
Control Delay	42.0	13.5	25.9	4.7	63.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	13.5	25.9	4.7	63.4	6.9
LOS	D	B	C	A	E	A
Approach Delay		19.7	20.8		35.2	
Approach LOS		B	C		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 24 (20%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 23.2

Intersection LOS: C

Intersection Capacity Utilization 76.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Colfax Ave & Lisbon St

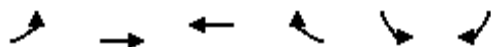


HCM 6th Signalized Intersection Summary

7: Colfax Ave & Lisbon St

Stafford Logistics Center



















08/21/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	320	1155	1010	315	345	345
Future Volume (veh/h)	320	1155	1010	315	345	345
Initial Q (Qb), veh	0	0	0	0	0	0
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	348	1255	1098	342	375	375
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	384	2349	1793	800	455	405
Arrive On Green	0.08	0.44	0.50	0.50	0.26	0.26
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	348	1255	1098	342	375	375
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	12.0	30.9	26.6	16.4	23.8	27.7
Cycle Q Clear(g_c), s	12.0	30.9	26.6	16.4	23.8	27.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	384	2349	1793	800	455	405
V/C Ratio(X)	0.91	0.53	0.61	0.43	0.82	0.93
Avail Cap(c_a), veh/h	551	2349	1793	800	490	436
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.57	0.57	1.00	1.00
Uniform Delay (d), s/veh	25.6	19.9	21.3	18.8	42.1	43.6
Incr Delay (d2), s/veh	14.2	0.9	0.9	1.0	10.3	24.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.8	19.6	14.5	8.9	17.3	32.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.8	20.8	22.2	19.7	52.5	68.4
LnGrp LOS	D	C	C	B	D	E
Approach Vol, veh/h		1603	1440		750	
Approach Delay, s/veh		24.9	21.6		60.4	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		84.3		35.7	18.8	65.6
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0
Max Green Setting (Gmax), s		77.0		33.0	26.0	47.0
Max Q Clear Time (g_c+I1), s		32.9		29.7	14.0	28.6
Green Ext Time (p_c), s		11.2		1.0	0.8	8.3
Intersection Summary						
HCM 6th Ctrl Delay			30.7			
HCM 6th LOS			C			

Timings
10: Picadilly Rd & Realigned Colfax Ave

Stafford Logistics Center
08/21/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  		 	  
Traffic Volume (vph)	425	525	500	400	550	625
Future Volume (vph)	425	525	500	400	550	625
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	23.0	24.0	24.0	23.0	24.0
Total Split (s)	39.0	44.0	37.0	37.0	44.0	81.0
Total Split (%)	32.5%	36.7%	30.8%	30.8%	36.7%	67.5%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	6.0	5.0	6.0
Lead/Lag		Lead	Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effect Green (s)	21.5	53.9	55.1	55.1	27.4	87.5
Actuated g/C Ratio	0.18	0.45	0.46	0.46	0.23	0.73
v/c Ratio	0.75	0.77	0.23	0.45	0.76	0.18
Control Delay	54.5	30.7	21.5	4.1	30.0	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	30.7	21.5	4.1	30.0	2.0
LOS	D	C	C	A	C	A
Approach Delay	41.3		13.8			15.1
Approach LOS	D		B			B

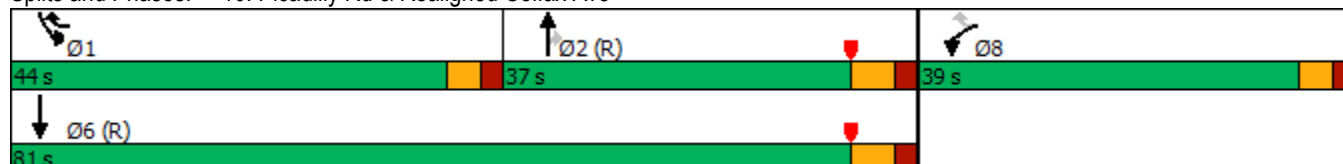
Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 23.0
 Intersection Capacity Utilization 51.3%
 Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service A

Splits and Phases: 10: Picadilly Rd & Realigned Colfax Ave




















HCM 6th Signalized Intersection Summary

10: Picadilly Rd & Realigned Colfax Ave

Stafford Logistics Center

08/21/2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  		 	  
Traffic Volume (veh/h)	425	525	500	400	550	625
Future Volume (veh/h)	425	525	500	400	550	625
Initial Q (Qb), veh	0	0	0	0	0	0
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	462	0	543	435	598	679
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	550		2598	806	686	3825
Arrive On Green	0.16	0.00	0.51	0.51	0.26	1.00
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	462	0	543	435	598	679
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	15.6	0.0	7.0	22.3	19.8	0.1
Cycle Q Clear(g_c), s	15.6	0.0	7.0	22.3	19.8	0.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	550		2598	806	686	3825
V/C Ratio(X)	0.84		0.21	0.54	0.87	0.18
Avail Cap(c_a), veh/h	979		2598	806	1123	3825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	0.0	16.2	20.0	42.7	0.1
Incr Delay (d2), s/veh	3.5	0.0	0.2	2.6	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.3	0.0	4.7	13.0	12.8	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.5	0.0	16.4	22.5	47.1	0.2
LnGrp LOS	D		B	C	D	A
Approach Vol, veh/h	462	A	978			1277
Approach Delay, s/veh	52.5		19.1			22.1
Approach LOS	D		B			C
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	28.8	67.1			95.9	24.1
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	39.0	31.0			75.0	34.0
Max Q Clear Time (g_c+I1), s	21.8	24.3			2.1	17.6
Green Ext Time (p_c), s	2.0	2.8			4.9	1.5
Intersection Summary						
HCM 6th Ctrl Delay			26.2			
HCM 6th LOS			C			

Notes





















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

APPENDIX F. SHORT-TERM TOTAL TRAFFIC LOS

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/25/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBT	Ø8
Lane Configurations										
Traffic Volume (vph)	33	576	2	2	901	32	4	48	1	
Future Volume (vph)	33	576	2	2	901	32	4	48	1	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt	NA	
Protected Phases	5	2		1	6		3	7	4	8
Permitted Phases	2		2	6		6	8	4		
Detector Phase	5	2	2	1	6	6	3	7	4	
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	10.0	31.0	26.0
Total Split (s)	13.0	64.0	64.0	13.0	64.0	64.0	12.0	12.0	31.0	31.0
Total Split (%)	10.8%	53.3%	53.3%	10.8%	53.3%	53.3%	10.0%	10.0%	25.8%	26%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	98.5	96.2	96.2	95.8	91.7	91.7	5.4	10.8	7.7	
Actuated g/C Ratio	0.82	0.80	0.80	0.80	0.76	0.76	0.04	0.09	0.06	
v/c Ratio	0.08	0.22	0.00	0.00	0.36	0.03	0.03	0.33	0.56	
Control Delay	3.2	4.2	0.0	5.0	8.8	0.3	55.2	54.2	20.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.2	4.2	0.0	5.0	8.8	0.3	55.2	54.2	20.2	
LOS	A	A	A	A	A	A	E	D	C	
Approach Delay		4.1			8.5				30.6	
Approach LOS		A			A				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 114 (95%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 9.1

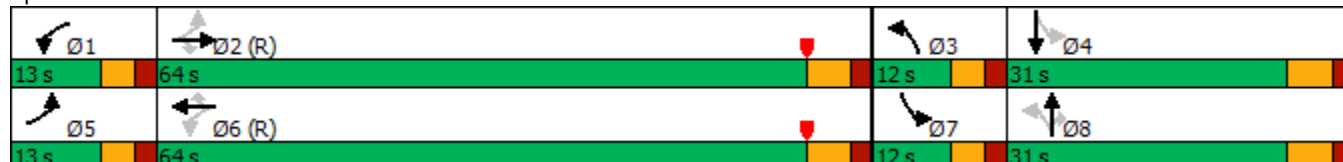
Intersection LOS: A

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/25/2020

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	33	576	2	2	901	32	4	0	0	48	1	109		
Future Volume (veh/h)	33	576	2	2	901	32	4	0	0	48	1	109		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	36	626	0	2	979	35	4	0	0	52	1	118		
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	429	2542		588	2448	1092	187	104		216	1	147		
Arrive On Green	0.03	0.72	0.00	0.00	0.69	0.69	0.01	0.00	0.00	0.04	0.09	0.09		
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	13	1574		
Grp Volume(v), veh/h	36	626	0	2	979	35	4	0	0	52	0	119		
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1587		
Q Serve(g_s), s	0.7	7.3	0.0	0.0	14.2	0.8	0.1	0.0	0.0	3.2	0.0	8.8		
Cycle Q Clear(g_c), s	0.7	7.3	0.0	0.0	14.2	0.8	0.1	0.0	0.0	3.2	0.0	8.8		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99		
Lane Grp Cap(c), veh/h	429	2542		588	2448	1092	187	104		216	0	148		
V/C Ratio(X)	0.08	0.25		0.00	0.40	0.03	0.02	0.00		0.24	0.00	0.80		
Avail Cap(c_a), veh/h	496	2542		702	2448	1092	371	390		242	0	331		
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	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	5.7	5.9	0.0	5.8	8.0	5.9	53.1	0.0	0.0	48.8	0.0	53.3		
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.4	0.0	7.3		
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	0.4	3.9	0.0	0.0	7.9	0.5	0.1	0.0	0.0	2.6	0.0	6.9		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	5.8	6.1	0.0	5.8	8.5	6.0	53.1	0.0	0.0	49.2	0.0	60.6		
LnGrp LOS	A	A		A	A	A	D	A		D	A	E		
Approach Vol, veh/h	662		A	1016			4		A	171				
Approach Delay, s/veh	6.1			8.4			53.1			57.1				
Approach LOS	A			A			D			E				
Timer - Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	5.3	91.8	5.6	17.2	8.5	88.7	10.2	12.6						
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0						
Max Green Setting (Gmax), s	8.0	58.0	7.0	25.0	8.0	58.0	7.0	25.0						
Max Q Clear Time (g_c+I1), s	2.0	9.3	2.1	10.8	2.7	16.2	5.2	0.0						
Green Ext Time (p_c), s	0.0	8.6	0.0	0.4	0.0	15.4	0.0	0.0						







Intersection Summary







HCM 6th Ctrl Delay 12.2

HCM 6th LOS B

Notes

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

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	553	915	26	29	129
Future Vol, veh/h	65	553	915	26	29	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	582	963	27	31	136
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	990	0	-	0	1332	482
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	694	-	-	-	*274	530
Stage 1	-	-	-	-	*323	-
Stage 2	-	-	-	-	*862	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	694	-	-	-	*248	530
Mov Cap-2 Maneuver	-	-	-	-	*248	-
Stage 1	-	-	-	-	*291	-
Stage 2	-	-	-	-	*862	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		18.2		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	694	-	-	-	438	
HCM Lane V/C Ratio	0.099	-	-	-	0.38	
HCM Control Delay (s)	10.8	-	-	-	18.2	
HCM Lane LOS	B	-	-	-	C	
HCM 95th %tile Q(veh)	0.3	-	-	-	1.7	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	570	889	11	31	58
Future Vol, veh/h	13	570	889	11	31	58
Conflicting Peds, #/hr	65	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	200	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	613	956	12	33	62
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1033	0	-	0	1356	543
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	335	-
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	1031	-	-	-	*465	*725
Stage 1	-	-	-	-	*651	-
Stage 2	-	-	-	-	*803	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	967	-	-	-	*404	*680
Mov Cap-2 Maneuver	-	-	-	-	*404	-
Stage 1	-	-	-	-	*602	-
Stage 2	-	-	-	-	*754	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		12.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	967	-	-	-	549	
HCM Lane V/C Ratio	0.014	-	-	-	0.174	
HCM Control Delay (s)	8.8	-	-	-	12.9	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.6	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center
08/25/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘↘	↘
Traffic Volume (vph)	284	158	194	617	310	21
Future Volume (vph)	284	158	194	617	310	21
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2		6		8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	10.0	10.0
Total Split (s)	40.0	40.0	45.0	85.0	35.0	35.0
Total Split (%)	33.3%	33.3%	37.5%	70.8%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	Min	None	None
Act Effect Green (s)	67.4	67.4	19.6	92.0	17.0	17.0
Actuated g/C Ratio	0.56	0.56	0.16	0.77	0.14	0.14
v/c Ratio	0.15	0.18	0.72	0.24	0.69	0.09
Control Delay	7.3	1.9	61.3	4.5	56.3	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	1.9	61.3	4.5	56.3	16.7
LOS	A	A	E	A	E	B
Approach Delay	5.4			18.1	53.7	
Approach LOS	A			B	D	

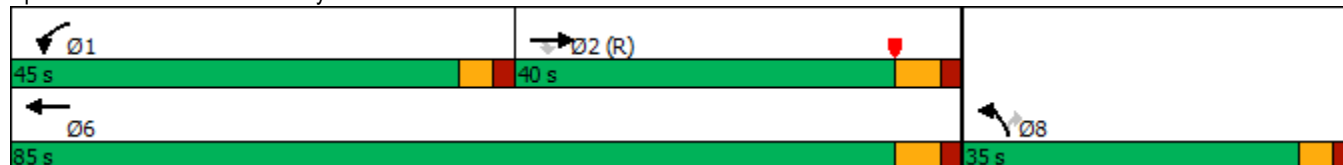
Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 22.0
 Intersection Capacity Utilization 40.8%
 Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service A

Splits and Phases: 4: Picadilly Rd & Colfax Ave



HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/25/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘↖	↗
Traffic Volume (veh/h)	284	158	194	617	310	21
Future Volume (veh/h)	284	158	194	617	310	21
Initial Q (Qb), veh	0	0	0	0	0	0
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	305	170	209	663	333	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2171	968	243	2803	413	189
Arrive On Green	0.20	0.20	0.14	0.79	0.12	0.12
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	305	170	209	663	333	23
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	8.5	10.7	13.8	5.8	11.3	1.6
Cycle Q Clear(g_c), s	8.5	10.7	13.8	5.8	11.3	1.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2171	968	243	2803	413	189
V/C Ratio(X)	0.14	0.18	0.86	0.24	0.81	0.12
Avail Cap(c_a), veh/h	2171	968	594	2803	864	396
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	22.9	50.7	3.3	51.5	47.2
Incr Delay (d2), s/veh	0.1	0.4	8.7	0.0	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	7.4	11.0	3.1	8.6	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.1	23.3	59.5	3.3	55.2	47.5
LnGrp LOS	C	C	E	A	E	D
Approach Vol, veh/h	475			872	356	
Approach Delay, s/veh	22.6			16.8	54.7	
Approach LOS	C			B	D	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.3	79.3			100.7	19.3
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	40.0	34.0			79.0	30.0
Max Q Clear Time (g_c+I1), s	15.8	12.7			7.8	13.3
Green Ext Time (p_c), s	0.6	2.1			5.4	1.1
Intersection Summary						
HCM 6th Ctrl Delay			26.3			
HCM 6th LOS			C			

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	538	54	0	902	0	4
Future Vol, veh/h	538	54	0	902	0	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	-	150	-	-	-	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	585	59	0	980	0	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	293
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	703
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	703
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.2	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	703	-	-	-		
HCM Lane V/C Ratio	0.006	-	-	-		
HCM Control Delay (s)	10.2	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Timings
7: Lisbon St & Colfax Ave

Stafford Logistics Center

08/25/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↘
Traffic Volume (vph)	425	117	161	793	109	17
Future Volume (vph)	425	117	161	793	109	17
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	9.5	24.0	23.0	23.0
Total Split (s)	55.0	55.0	35.0	90.0	30.0	30.0
Total Split (%)	45.8%	45.8%	29.2%	75.0%	25.0%	25.0%
Yellow Time (s)	4.0	4.0	3.5	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	None	None
Act Effect Green (s)	77.8	77.8	17.2	99.5	9.5	9.5
Actuated g/C Ratio	0.65	0.65	0.14	0.83	0.08	0.08
v/c Ratio	0.20	0.12	0.69	0.29	0.44	0.13
Control Delay	11.3	4.2	75.0	1.7	57.3	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	4.2	75.0	1.7	57.3	22.3
LOS	B	A	E	A	E	C
Approach Delay	9.8			14.1	52.7	
Approach LOS	A			B	D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 37.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Lisbon St & Colfax Ave



HCM 6th Signalized Intersection Summary

7: Lisbon St & Colfax Ave












Stafford Logistics Center

08/25/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (veh/h)	425	117	161	793	109	17
Future Volume (veh/h)	425	117	161	793	109	17
Initial Q (Qb), veh	0	0	0	0	0	0
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	462	127	175	862	118	0
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	2499	1115	206	3044	179	
Arrive On Green	0.70	0.70	0.12	0.86	0.05	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	462	127	175	862	118	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	5.3	3.1	11.6	5.5	4.0	0.0
Cycle Q Clear(g_c), s	5.3	3.1	11.6	5.5	4.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2499	1115	206	3044	179	
V/C Ratio(X)	0.18	0.11	0.85	0.28	0.66	
Avail Cap(c_a), veh/h	2499	1115	453	3044	720	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.93	0.93	1.00	0.00
Uniform Delay (d), s/veh	6.1	5.7	52.0	1.6	55.9	0.0
Incr Delay (d2), s/veh	0.2	0.2	8.7	0.2	4.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	1.6	9.1	1.0	3.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.2	6.0	60.7	1.8	60.0	0.0
LnGrp LOS	A	A	E	A	E	
Approach Vol, veh/h	589			1037	118	A
Approach Delay, s/veh	6.2			11.8	60.0	
Approach LOS	A			B	E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.4	90.4			108.8	11.2
Change Period (Y+Rc), s	4.5	6.0			6.0	5.0
Max Green Setting (Gmax), s	30.5	49.0			84.0	25.0
Max Q Clear Time (g_c+I1), s	13.6	7.3			7.5	6.0
Green Ext Time (p_c), s	0.4	3.2			6.1	0.3
Intersection Summary						
HCM 6th Ctrl Delay			13.1			
HCM 6th LOS			B			





Notes

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

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	37	9	28	10	25	165	69	196	8	69	192	98
Future Vol, veh/h	37	9	28	10	25	165	69	196	8	69	192	98
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	200	-	200	200	-	0	250	-	-	150	-	150
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	40	10	30	11	27	179	75	213	9	75	209	107
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	740	731	209	801	834	218	316	0	0	222	0	0
Stage 1	359	359	-	368	368	-	-	-	-	-	-	-
Stage 2	381	372	-	433	466	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	333	349	831	303	304	822	1244	-	-	1347	-	-
Stage 1	659	627	-	652	621	-	-	-	-	-	-	-
Stage 2	641	619	-	601	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	220	310	831	260	270	822	1244	-	-	1347	-	-
Mov Cap-2 Maneuver	220	310	-	260	270	-	-	-	-	-	-	-
Stage 1	619	592	-	613	584	-	-	-	-	-	-	-
Stage 2	449	582	-	538	531	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB		SB		SB	
HCM Control Delay, s	18.2		12.2		2		1.5					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1244	-	-	220	310	831	260	270	822	1347	-	-
HCM Lane V/C Ratio	0.06	-	-	0.183	0.032	0.037	0.042	0.101	0.218	0.056	-	-
HCM Control Delay (s)	8.1	-	-	25	17	9.5	19.4	19.8	10.6	7.8	-	-
HCM Lane LOS	A	-	-	D	C	A	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.1	0.1	0.1	0.3	0.8	0.2	-	-

Intersection

Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	20	73	76	0
Future Vol, veh/h	0	4	20	73	76	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	25	25	25	25	25	25
Mvmt Flow	0	4	22	79	83	0
Number of Lanes	0	1	1	0	1	1





















Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	7.7	7.6	9.2
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%
Vol Thru, %	100%	22%	0%	100%
Vol Right, %	0%	78%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	93	76	0
LT Vol	0	0	76	0
Through Vol	4	20	0	0
RT Vol	0	73	0	0
Lane Flow Rate	4	101	83	0
Geometry Grp	2	2	7	7
Degree of Util (X)	0.006	0.115	0.129	0
Departure Headway (Hd)	4.68	4.113	5.611	5.11
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	769	876	637	0
Service Time	2.683	2.114	3.364	2.863
HCM Lane V/C Ratio	0.005	0.115	0.13	0
HCM Control Delay	7.7	7.6	9.2	7.9
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	0	0.4	0.4	0

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/25/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	95	991	42	13	821	33	15	6	25	7
Future Volume (vph)	95	991	42	13	821	33	15	6	25	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6		3	8	7	4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	26.0	10.0	31.0
Total Split (s)	15.0	64.0	64.0	13.0	62.0	62.0	12.0	31.0	12.0	31.0
Total Split (%)	12.5%	53.3%	53.3%	10.8%	51.7%	51.7%	10.0%	25.8%	10.0%	25.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	99.1	96.1	96.1	93.9	87.6	87.6	7.4	5.8	11.4	6.7
Actuated g/C Ratio	0.83	0.80	0.80	0.78	0.73	0.73	0.06	0.05	0.10	0.06
v/c Ratio	0.21	0.38	0.04	0.03	0.35	0.03	0.07	0.08	0.18	0.49
Control Delay	4.0	6.4	0.0	3.8	7.4	0.1	48.6	55.7	47.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	6.4	0.0	3.8	7.4	0.1	48.6	55.7	47.8	26.5
LOS	A	A	A	A	A	A	D	E	D	C
Approach Delay		6.0			7.0			50.8		32.2
Approach LOS		A			A			D		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 114 (95%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 8.0

Intersection LOS: A

Intersection Capacity Utilization 53.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St

































HCM 6th Signalized Intersection Summary







1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/25/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	991	42	13	821	33	15	6	0	25	7	61
Future Volume (veh/h)	95	991	42	13	821	33	15	6	0	25	7	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	1077	0	14	892	36	16	7	0	27	8	66
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	490	2560		401	2472	1102	227	75		184	11	91
Arrive On Green	0.04	0.72	0.00	0.02	0.70	0.70	0.02	0.04	0.00	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	174	1437
Grp Volume(v), veh/h	103	1077	0	14	892	36	16	7	0	27	0	74
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	0	1612
Q Serve(g_s), s	1.9	14.6	0.0	0.3	12.2	0.8	0.5	0.4	0.0	1.7	0.0	5.4
Cycle Q Clear(g_c), s	1.9	14.6	0.0	0.3	12.2	0.8	0.5	0.4	0.0	1.7	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	490	2560		401	2472	1102	227	75		184	0	103
V/C Ratio(X)	0.21	0.42		0.03	0.36	0.03	0.07	0.09		0.15	0.00	0.72
Avail Cap(c_a), veh/h	566	2560		492	2472	1102	369	390		215	0	336
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	6.7	0.0	5.6	7.4	5.7	53.6	55.5	0.0	51.5	0.0	55.1
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.0	0.4	0.1	0.1	0.4	0.0	0.3	0.0	6.9
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	1.0	7.7	0.0	0.1	6.9	0.5	0.4	0.4	0.0	1.4	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	7.2	0.0	5.7	7.8	5.7	53.7	55.9	0.0	51.7	0.0	62.1
LnGrp LOS	A	A		A	A	A	D	E		D	A	E
Approach Vol, veh/h		1180	A		942			23	A		101	
Approach Delay, s/veh		7.1			7.7			54.4			59.3	
Approach LOS		A			A			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	92.4	7.1	13.6	9.8	89.5	9.9	10.8				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	8.0	58.0	7.0	25.0	10.0	56.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	2.3	16.6	2.5	7.4	3.9	14.2	3.7	2.4				
Green Ext Time (p_c), s	0.0	17.0	0.0	0.3	0.1	13.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									
Notes												
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	937	793	12	12	54
Future Vol, veh/h	80	937	793	12	12	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	986	835	13	13	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	848	0	-	0	1397	418
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	4.14	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.22	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	785	-	-	-	*384	584
Stage 1	-	-	-	-	*376	-
Stage 2	-	-	-	-	*770	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	785	-	-	-	*343	584
Mov Cap-2 Maneuver	-	-	-	-	*343	-
Stage 1	-	-	-	-	*336	-
Stage 2	-	-	-	-	*770	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		13		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	785	-	-	-	518	
HCM Lane V/C Ratio	0.107	-	-	-	0.134	
HCM Control Delay (s)	10.1	-	-	-	13	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile Q(veh)	0.4	-	-	-	0.5	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	859	784	25	15	37
Future Vol, veh/h	69	859	784	25	15	37
Conflicting Peds, #/hr	65	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	200	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	924	843	27	16	40
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	935	0	-	0	1518	487
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	610	-
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	1053	-	-	-	*417	*776
Stage 1	-	-	-	-	*670	-
Stage 2	-	-	-	-	*708	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	987	-	-	-	*340	*728
Mov Cap-2 Maneuver	-	-	-	-	*340	-
Stage 1	-	-	-	-	*581	-
Stage 2	-	-	-	-	*664	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		12.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	987	-	-	-	548	
HCM Lane V/C Ratio	0.075	-	-	-	0.102	
HCM Control Delay (s)	8.9	-	-	-	12.3	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center
08/25/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘↘	↘
Traffic Volume (vph)	684	253	226	339	215	76
Future Volume (vph)	684	253	226	339	215	76
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1		8	
Permitted Phases		2		6		8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	10.0	10.0
Total Split (s)	53.0	53.0	37.0	90.0	30.0	30.0
Total Split (%)	44.2%	44.2%	30.8%	75.0%	25.0%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	Min	Min	None	None
Act Effect Green (s)	67.9	67.9	21.7	95.6	13.4	13.4
Actuated g/C Ratio	0.57	0.57	0.18	0.80	0.11	0.11
v/c Ratio	0.37	0.27	0.76	0.13	0.60	0.33
Control Delay	9.7	1.7	61.5	3.1	57.2	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	1.7	61.5	3.1	57.2	13.7
LOS	A	A	E	A	E	B
Approach Delay	7.5			26.4	45.8	
Approach LOS	A			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 19.7
 Intersection Capacity Utilization 51.7%
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 4: Picadilly Rd & Colfax Ave



HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/25/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (veh/h)	684	253	226	339	215	76
Future Volume (veh/h)	684	253	226	339	215	76
Initial Q (Qb), veh	0	0	0	0	0	0
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	735	272	243	365	231	82
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2183	974	276	2911	308	141
Arrive On Green	1.00	1.00	0.15	0.82	0.09	0.09
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	735	272	243	365	231	82
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	0.0	0.0	16.0	2.5	7.8	6.0
Cycle Q Clear(g_c), s	0.0	0.0	16.0	2.5	7.8	6.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2183	974	276	2911	308	141
V/C Ratio(X)	0.34	0.28	0.88	0.13	0.75	0.58
Avail Cap(c_a), veh/h	2183	974	460	2911	720	330
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	49.6	2.2	53.3	52.5
Incr Delay (d2), s/veh	0.4	0.7	10.5	0.0	3.7	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.3	12.5	1.2	6.3	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.4	0.7	60.1	2.2	57.0	56.2
LnGrp LOS	A	A	E	A	E	E
Approach Vol, veh/h	1007			608	313	
Approach Delay, s/veh	0.5			25.4	56.8	
Approach LOS	A			C	E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	24.6	79.7			104.3	15.7
Change Period (Y+Rc), s	6.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	31.0	47.0			84.0	25.0
Max Q Clear Time (g_c+I1), s	18.0	2.0			4.5	9.8
Green Ext Time (p_c), s	0.6	6.0			2.7	0.9
Intersection Summary						
HCM 6th Ctrl Delay			17.5			
HCM 6th LOS			B			

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	853	14	0	824	0	15
Future Vol, veh/h	853	14	0	824	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	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	927	15	0	896	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	464
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	545
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	545
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	545	-	-	-		
HCM Lane V/C Ratio	0.03	-	-	-		
HCM Control Delay (s)	11.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Timings
7: Lisbon St & Colfax Ave

Stafford Logistics Center
08/25/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘↘	↘
Traffic Volume (vph)	783	85	77	478	346	55
Future Volume (vph)	783	85	77	478	346	55
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	9.5	24.0	23.0	23.0
Total Split (s)	65.0	65.0	15.0	80.0	40.0	40.0
Total Split (%)	54.2%	54.2%	12.5%	66.7%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	3.5	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	None	None
Act Effect Green (s)	78.7	78.7	9.5	90.5	18.5	18.5
Actuated g/C Ratio	0.66	0.66	0.08	0.75	0.15	0.15
v/c Ratio	0.37	0.09	0.60	0.19	0.71	0.20
Control Delay	17.9	8.5	90.1	2.8	55.6	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	8.5	90.1	2.8	55.6	11.9
LOS	B	A	F	A	E	B
Approach Delay	17.0			15.0	49.6	
Approach LOS	B			B	D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 23.5

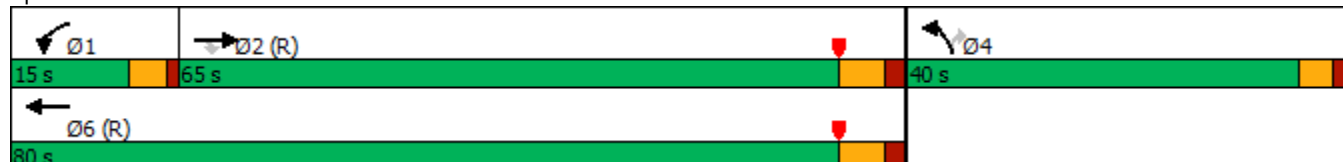
Intersection LOS: C

Intersection Capacity Utilization 48.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Lisbon St & Colfax Ave



HCM 6th Signalized Intersection Summary
7: Lisbon St & Colfax Ave












Stafford Logistics Center

08/25/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (veh/h)	783	85	77	478	346	55
Future Volume (veh/h)	783	85	77	478	346	55
Initial Q (Qb), veh	0	0	0	0	0	0
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	851	92	84	520	376	0
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	2409	1075	106	2755	460	
Arrive On Green	0.68	0.68	0.06	0.78	0.13	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	851	92	84	520	376	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	12.2	2.4	5.6	4.6	12.7	0.0
Cycle Q Clear(g_c), s	12.2	2.4	5.6	4.6	12.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2409	1075	106	2755	460	
V/C Ratio(X)	0.35	0.09	0.79	0.19	0.82	
Avail Cap(c_a), veh/h	2409	1075	156	2755	1008	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.96	0.96	1.00	0.00
Uniform Delay (d), s/veh	8.2	6.6	55.7	3.6	50.6	0.0
Incr Delay (d2), s/veh	0.4	0.2	14.7	0.1	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	1.3	5.1	2.0	9.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.6	6.8	70.4	3.7	54.2	0.0
LnGrp LOS	A	A	E	A	D	
Approach Vol, veh/h	943			604	376	A
Approach Delay, s/veh	8.4			13.0	54.2	
Approach LOS	A			B	D	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.7	87.4		21.0		99.0
Change Period (Y+Rc), s	4.5	6.0		5.0		6.0
Max Green Setting (Gmax), s	10.5	59.0		35.0		74.0
Max Q Clear Time (g_c+I1), s	7.6	14.2		14.7		6.6
Green Ext Time (p_c), s	0.0	6.2		1.3		3.2
Intersection Summary						
HCM 6th Ctrl Delay			18.8			
HCM 6th LOS			B			





Notes

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

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	27	79	1	16	81	48	174	14	95	294	93
Future Vol, veh/h	86	27	79	1	16	81	48	174	14	95	294	93
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	200	-	200	200	-	0	200	-	-	150	-	150
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	93	29	86	1	17	88	52	189	15	103	320	101
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	835	834	320	935	928	197	421	0	0	204	0	0
Stage 1	526	526	-	301	301	-	-	-	-	-	-	-
Stage 2	309	308	-	634	627	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	287	304	721	246	268	844	1138	-	-	1368	-	-
Stage 1	535	529	-	708	665	-	-	-	-	-	-	-
Stage 2	701	660	-	467	476	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	221	268	721	181	236	844	1138	-	-	1368	-	-
Mov Cap-2 Maneuver	221	268	-	181	236	-	-	-	-	-	-	-
Stage 1	510	489	-	675	634	-	-	-	-	-	-	-
Stage 2	583	630	-	358	440	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB		SB		SB	
HCM Control Delay, s	21.9		11.9		1.7		1.5		1.5		1.5	
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	221	268	721	181	236	844	1368	-	-
HCM Lane V/C Ratio	0.046	-	-	0.423	0.11	0.119	0.006	0.074	0.104	0.075	-	-
HCM Control Delay (s)	8.3	-	-	32.7	20.1	10.7	25	21.5	9.8	7.8	-	-
HCM Lane LOS	A	-	-	D	C	B	D	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2	0.4	0.4	0	0.2	0.3	0.2	-	-

Intersection

Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	5	133	121	0
Future Vol, veh/h	0	15	5	133	121	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	25	25	25	25	25	25
Mvmt Flow	0	16	5	145	132	0
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8	8.1	10
HCM LOS	A	A	A





















Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%
Vol Thru, %	100%	4%	0%	100%
Vol Right, %	0%	96%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	138	121	0
LT Vol	0	0	121	0
Through Vol	15	5	0	0
RT Vol	0	133	0	0
Lane Flow Rate	16	150	132	0
Geometry Grp	2	2	7	7
Degree of Util (X)	0.022	0.174	0.209	0
Departure Headway (Hd)	4.893	4.178	5.714	5.213
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	864	622	0
Service Time	2.9	2.179	3.51	3.008
HCM Lane V/C Ratio	0.022	0.174	0.212	0
HCM Control Delay	8	8.1	10	8
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	0.1	0.6	0.8	0

APPENDIX G. LONG-TERM TOTAL TRAFFIC LOS

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBT	Ø8
Lane Configurations										
Traffic Volume (vph)	40	1682	5	5	1649	39	5	51	5	
Future Volume (vph)	40	1682	5	5	1649	39	5	51	5	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt	NA	
Protected Phases	5	2		1	6		3	7	4	8
Permitted Phases	2		2	6		6	8	4		
Detector Phase	5	2	2	1	6	6	3	7	4	
Switch Phase										
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	10.0	31.0	26.0
Total Split (s)	12.0	65.0	65.0	12.0	65.0	65.0	12.0	12.0	31.0	31.0
Total Split (%)	10.0%	54.2%	54.2%	10.0%	54.2%	54.2%	10.0%	10.0%	25.8%	26%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effect Green (s)	98.7	96.3	96.3	94.8	89.7	89.7	5.4	10.6	7.5	
Actuated g/C Ratio	0.82	0.80	0.80	0.79	0.75	0.75	0.04	0.09	0.06	
v/c Ratio	0.26	0.70	0.00	0.03	0.74	0.04	0.03	0.39	0.61	
Control Delay	6.7	9.7	0.0	4.8	9.2	0.2	55.2	56.9	23.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.7	9.7	0.0	4.8	9.2	0.2	55.2	56.9	23.4	
LOS	A	A	A	A	A	A	E	E	C	
Approach Delay		9.7			9.0				33.7	
Approach LOS		A			A				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 10.5

Intersection LOS: B

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	40	1682	5	5	1649	39	5	0	0	51	5	110		
Future Volume (veh/h)	40	1682	5	5	1649	39	5	0	0	51	5	110		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752		
Adj Flow Rate, veh/h	44	1848	0	5	1812	43	5	0	0	56	5	121		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91		
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10		
Cap, veh/h	270	2333		147	2248	1003	187	109		221	6	148		
Arrive On Green	0.03	0.70	0.00	0.01	1.00	1.00	0.01	0.00	0.00	0.05	0.10	0.10		
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	3237	1752	1485	1668	59	1434		
Grp Volume(v), veh/h	44	1848	0	5	1812	43	5	0	0	56	0	126		
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1618	1752	1485	1668	0	1494		
Q Serve(g_s), s	0.9	44.8	0.0	0.1	0.0	0.0	0.2	0.0	0.0	3.6	0.0	9.9		
Cycle Q Clear(g_c), s	0.9	44.8	0.0	0.1	0.0	0.0	0.2	0.0	0.0	3.6	0.0	9.9		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.96		
Lane Grp Cap(c), veh/h	270	2333		147	2248	1003	187	109		221	0	154		
V/C Ratio(X)	0.16	0.79		0.03	0.81	0.04	0.03	0.00		0.25	0.00	0.82		
Avail Cap(c_a), veh/h	314	2333		234	2248	1003	355	365		240	0	311		
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	5.3	12.1	0.0	13.4	0.0	0.0	52.2	0.0	0.0	47.6	0.0	52.7		
Incr Delay (d2), s/veh	0.2	2.9	0.0	0.1	3.2	0.1	0.0	0.0	0.0	0.4	0.0	7.8		
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	0.5	20.4	0.0	0.1	1.8	0.0	0.1	0.0	0.0	2.8	0.0	7.3		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	5.5	14.9	0.0	13.5	3.2	0.1	52.3	0.0	0.0	48.0	0.0	60.6		
LnGrp LOS	A	B		B	A	A	D	A		D	A	E		
Approach Vol, veh/h	1892		A	1860			5		A	182				
Approach Delay, s/veh	14.7			3.2			52.3			56.7				
Approach LOS	B			A			D			E				
Timer - Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	5.8	90.1	5.8	18.3	8.8	87.0	10.6	13.5						
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0						
Max Green Setting (Gmax), s	7.0	59.0	7.0	25.0	7.0	59.0	7.0	25.0						
Max Q Clear Time (g_c+I1), s	2.1	46.8	2.2	11.9	2.9	2.0	5.6	0.0						
Green Ext Time (p_c), s	0.0	11.2	0.0	0.5	0.0	42.8	0.0	0.0						







Intersection Summary

HCM 6th Ctrl Delay 11.2

HCM 6th LOS B

Notes

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

Intersection						
Int Delay, s/veh	11.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	1653	1558	41	37	135
Future Vol, veh/h	80	1653	1558	41	37	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	88	1816	1712	45	41	148
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1757	0	-	0	2614	856
Stage 1	-	-	-	-	1712	-
Stage 2	-	-	-	-	902	-
Critical Hdwy	4.3	-	-	-	6.45	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.3	-	-	-	3.75	3.4
Pot Cap-1 Maneuver	319	-	-	-	~ 26	285
Stage 1	-	-	-	-	119	-
Stage 2	-	-	-	-	313	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	319	-	-	-	~ 19	285
Mov Cap-2 Maneuver	-	-	-	-	~ 19	-
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	313	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		228.2		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	319	-	-	-	19	285
HCM Lane V/C Ratio	0.276	-	-	-	2.14	0.521
HCM Control Delay (s)	20.5	-	-	-	\$ 949.2	30.6
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	1.1	-	-	-	5.5	2.8
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings 3: Colfax Ave & Himalaya St

Stafford Logistics Center
08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	1630	1514	41	52	85
Future Volume (vph)	60	1630	1514	41	52	85
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	24.0	23.0	23.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	100.5	99.5	90.3	90.3	9.5	9.5
Actuated g/C Ratio	0.84	0.83	0.75	0.75	0.08	0.08
v/c Ratio	0.28	0.65	0.67	0.04	0.44	0.46
Control Delay	5.1	8.3	6.4	1.6	62.4	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	8.3	6.4	1.6	62.4	17.7
LOS	A	A	A	A	E	B
Approach Delay		8.2	6.3		34.8	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 112 (93%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 8.4
 Intersection Capacity Utilization 63.2%
 Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

Splits and Phases: 3: Colfax Ave & Himalaya St



HCM 6th Signalized Intersection Summary

3: Colfax Ave & Himalaya St

Stafford Logistics Center

08/21/2020























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	1630	1514	41	52	85
Future Volume (veh/h)	60	1630	1514	41	52	85
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	65	1772	1646	45	57	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	10	10	10
Cap, veh/h	326	2759	2498	1114	132	118
Arrive On Green	0.05	1.00	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1668	3416	3416	1485	1668	1485
Grp Volume(v), veh/h	65	1772	1646	45	57	92
Grp Sat Flow(s),veh/h/ln	1668	1664	1664	1485	1668	1485
Q Serve(g_s), s	1.0	0.0	0.0	0.0	3.9	7.3
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.0	3.9	7.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	326	2759	2498	1114	132	118
V/C Ratio(X)	0.20	0.64	0.66	0.04	0.43	0.78
Avail Cap(c_a), veh/h	362	2759	2498	1114	278	247
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.4	0.0	0.0	0.0	52.7	54.2
Incr Delay (d2), s/veh	0.3	1.2	1.4	0.1	2.2	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.8	0.9	0.0	3.1	10.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.7	1.2	1.4	0.1	54.8	64.8
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1837	1691		149	
Approach Delay, s/veh		1.2	1.3		61.0	
Approach LOS		A	A		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		105.5		14.5	9.4	96.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		89.0		20.0	7.0	77.0
Max Q Clear Time (g_c+I1), s		2.0		9.3	3.0	2.0
Green Ext Time (p_c), s		24.5		0.3	0.0	20.7
Intersection Summary						
HCM 6th Ctrl Delay			3.7			
HCM 6th LOS			A			

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

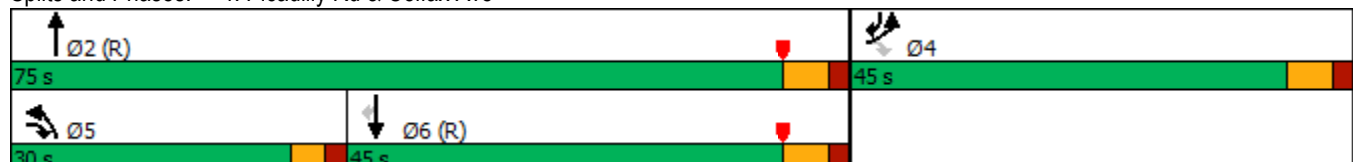
08/21/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	  		  	  	  	
Traffic Volume (vph)	953	443	516	800	1087	1283
Future Volume (vph)	953	443	516	800	1087	1283
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	10.0	10.0	24.0	24.0	24.0
Total Split (s)	45.0	30.0	30.0	75.0	45.0	45.0
Total Split (%)	37.5%	25.0%	25.0%	62.5%	37.5%	37.5%
Yellow Time (s)	4.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effect Green (s)	39.0	68.5	23.5	69.0	40.5	85.5
Actuated g/C Ratio	0.32	0.57	0.20	0.58	0.34	0.71
v/c Ratio	0.65	0.54	0.84	0.30	0.70	1.24
Control Delay	28.9	17.6	48.1	9.0	37.6	136.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	17.6	48.1	9.0	37.6	136.5
LOS	C	B	D	A	D	F
Approach Delay	25.3			24.3	91.2	
Approach LOS	C			C	F	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 80 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.24
Intersection Signal Delay: 55.8
Intersection Capacity Utilization 103.3%
Analysis Period (min) 15
Intersection LOS: E
ICU Level of Service G

Splits and Phases: 4: Picadilly Rd & Colfax Ave



HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←←	→	←←	↑↑↑	↑↑↑	→
Traffic Volume (veh/h)	953	443	516	800	1087	1283
Future Volume (veh/h)	953	443	516	800	1087	1283
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	972	452	527	816	1109	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	10	10	10	10	10	10
Cap, veh/h	1330	693	597	2952	1871	
Arrive On Green	0.28	0.28	0.06	0.20	0.39	0.00
Sat Flow, veh/h	4705	1485	3237	4940	4940	1485
Grp Volume(v), veh/h	972	452	527	816	1109	0
Grp Sat Flow(s),veh/h/ln	1568	1485	1618	1594	1594	1485
Q Serve(g_s), s	22.4	28.0	19.4	17.3	22.1	0.0
Cycle Q Clear(g_c), s	22.4	28.0	19.4	17.3	22.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1330	693	597	2952	1871	
V/C Ratio(X)	0.73	0.65	0.88	0.28	0.59	
Avail Cap(c_a), veh/h	1529	756	674	2952	1871	
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.78	0.78	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.9	24.5	55.1	25.2	29.0	0.0
Incr Delay (d2), s/veh	1.2	1.4	12.2	0.2	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.7	30.3	14.4	11.8	13.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.1	25.9	67.2	25.4	30.3	0.0
LnGrp LOS	D	C	E	C	C	
Approach Vol, veh/h	1424			1343	1109	A
Approach Delay, s/veh	35.6			41.8	30.3	
Approach LOS	D			D	C	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	80.1		39.9		27.1	52.9
Change Period (Y+Rc), s	6.0		6.0		5.0	6.0
Max Green Setting (Gmax), s	69.0		39.0		25.0	39.0
Max Q Clear Time (g_c+I1), s	19.3		30.0		21.4	24.1
Green Ext Time (p_c), s	6.1		3.9		0.7	7.0

Intersection Summary

HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes























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

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	1740	85	0	1555	0	15
Future Vol, veh/h	1740	85	0	1555	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	1891	92	0	1690	0	16
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	-	-	-	946
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	-	-	0	-	0	*354
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*354
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		15.7		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	354	-	-	-		
HCM Lane V/C Ratio	0.046	-	-	-		
HCM Control Delay (s)	15.7	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings
7: Lisbon St & Colfax Ave

Stafford Logistics Center

08/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	Ø4	Ø8
Lane Configurations												
Traffic Volume (vph)	90	1281	154	308	1401	90	99	63	55	55		
Future Volume (vph)	90	1281	154	308	1401	90	99	63	55	55		
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+ov	pm+pt	pm+ov		
Protected Phases	5	2		1	6		3	1	7	5	4	8
Permitted Phases	2		2	6		6	8	8	4	4		
Detector Phase	5	2	2	1	6	6	3	1	7	5		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	23.0	23.0	9.5	23.0	23.0	9.5	9.5	23.0	9.5	23.0	22.5
Total Split (s)	12.0	45.0	45.0	30.0	63.0	63.0	15.0	30.0	15.0	12.0	30.0	30.0
Total Split (%)	10.0%	37.5%	37.5%	25.0%	52.5%	52.5%	12.5%	25.0%	12.5%	10.0%	25%	25%
Yellow Time (s)	3.0	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.0	3.0	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.0	5.0	5.0	4.5	5.0	5.0	4.5	4.5	5.0	4.0		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effect Green (s)	89.6	82.6	82.6	101.7	91.4	91.4	9.1	16.5	8.5	6.0		
Actuated g/C Ratio	0.75	0.69	0.69	0.85	0.76	0.76	0.08	0.14	0.07	0.05		
v/c Ratio	0.20	0.62	0.18	0.56	0.61	0.09	0.45	0.25	0.27	0.31		
Control Delay	3.0	12.3	2.5	7.2	6.5	0.8	58.8	7.4	55.1	4.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	3.0	12.3	2.5	7.2	6.5	0.8	58.8	7.4	55.1	4.2		
LOS	A	B	A	A	A	A	E	A	E	A		
Approach Delay		10.8			6.3							
Approach LOS		B			A							

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.4

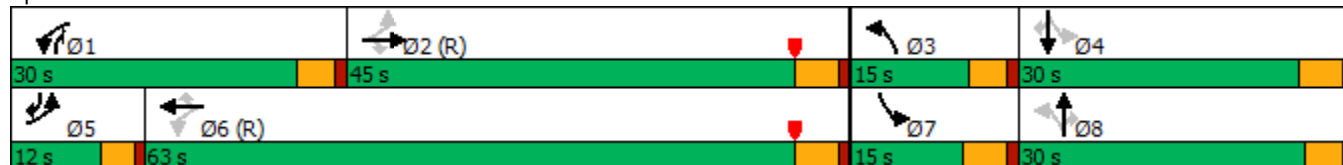
Intersection LOS: B

Intersection Capacity Utilization 65.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: Lisbon St & Colfax Ave



























HCM 6th Signalized Intersection Summary

7: Lisbon St & Colfax Ave

Stafford Logistics Center

08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1281	154	308	1401	90	99	0	63	55	0	55
Future Volume (veh/h)	90	1281	154	308	1401	90	99	0	63	55	0	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1752	1752	1530	1530	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	98	1392	169	338	1523	98	109	0	0	60	0	0
Peak Hour Factor	0.92	0.92	0.91	0.91	0.92	0.92	0.91	0.91	0.91	0.92	0.91	0.92
Percent Heavy Veh, %	10	10	25	25	10	10	10	10	10	10	10	10
Cap, veh/h	605	2614	1018	668	2656	1185	280	1		254	1	
Arrive On Green	0.08	1.00	1.00	0.05	0.80	0.80	0.05	0.00	0.00	0.04	0.00	0.00
Sat Flow, veh/h	3237	3328	1296	2826	3328	1485	3237	1752	1485	3237	1752	1485
Grp Volume(v), veh/h	98	1392	169	338	1523	98	109	0	0	60	0	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1296	1413	1664	1485	1618	1752	1485	1618	1752	1485
Q Serve(g_s), s	0.6	0.0	0.0	2.7	20.4	1.7	4.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	2.7	20.4	1.7	4.0	0.0	0.0	2.2	0.0	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	605	2614	1018	668	2656	1185	280	1		254	1	
V/C Ratio(X)	0.16	0.53	0.17	0.51	0.57	0.08	0.39	0.00		0.24	0.00	
Avail Cap(c_a), veh/h	691	2614	1018	1132	2656	1185	403	372		390	365	
HCM Platoon Ratio	2.00	2.00	2.00	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	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.5	0.0	0.0	1.9	4.5	2.6	56.0	0.0	0.0	56.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.4	0.1	0.1	0.0	0.9	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.5	0.2	0.7	5.5	0.7	3.0	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.6	0.8	0.4	1.9	4.6	2.6	56.9	0.0	0.0	56.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A		E	A	
Approach Vol, veh/h	1659				1959				109		A	
Approach Delay, s/veh	0.9				4.0				56.9		56.5	
Approach LOS	A				A				E		E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	99.3	10.4	0.0	8.8	100.8	10.0	0.4				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.0	5.0	5.0	* 5				
Max Green Setting (Gmax), s	25.5	40.0	10.5	25.0	8.0	58.0	10.0	* 26				
Max Q Clear Time (g_c+I1), s	4.7	2.0	6.0	0.0	2.6	22.4	4.2	0.0				
Green Ext Time (p_c), s	1.1	13.9	0.1	0.0	0.1	15.1	0.1	0.0				

Intersection Summary

HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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





















Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↘	↑↑↑	↗	↘	↑↑↑	↗
Traffic Vol, veh/h	0	0	48	0	0	61	33	1255	30	35	1418	77
Future Vol, veh/h	0	0	48	0	0	61	33	1255	30	35	1418	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	150	-	150	150	-	150
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	0	0	52	0	0	66	36	1364	33	38	1541	84
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	771	-	-	682	1625	0	0	1397	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.3	-	-	7.3	5.5	-	-	5.5	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	4	-	-	4	3.2	-	-	3.2	-	-
Pot Cap-1 Maneuver	0	0	*577	0	0	*619	707	-	-	*774	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	-	-	1	-	-
Mov Cap-1 Maneuver	-	-	*577	-	-	*619	707	-	-	*774	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.9		11.5		0.3		0.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	707	-	-	577	619	*774	-	-				
HCM Lane V/C Ratio	0.051	-	-	0.09	0.107	0.049	-	-				
HCM Control Delay (s)	10.4	-	-	11.9	11.5	9.9	-	-				
HCM Lane LOS	B	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.2	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Timings

9: Realigned Colfax Ave & Site Driveway #3

Stafford Logistics Center

08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	109	908	15	4	1283	30	6	0	20	0
Future Volume (vph)	109	908	15	4	1283	30	6	0	20	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	10.0	23.0	10.0	23.0
Total Split (s)	15.0	71.0	71.0	12.0	68.0	68.0	12.0	25.0	12.0	25.0
Total Split (%)	12.5%	59.2%	59.2%	10.0%	56.7%	56.7%	10.0%	20.8%	10.0%	20.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Max	None	Max
Act Effect Green (s)	82.7	79.7	79.7	75.1	68.5	68.5	23.8	20.0	26.1	24.7
Actuated g/C Ratio	0.69	0.66	0.66	0.63	0.57	0.57	0.20	0.17	0.22	0.21
v/c Ratio	0.56	0.45	0.02	0.01	0.74	0.04	0.03	0.01	0.08	0.12
Control Delay	36.1	4.2	0.0	7.8	23.8	0.1	33.0	0.0	34.4	0.5
Queue Delay	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	4.6	0.0	7.8	23.9	0.1	33.0	0.0	34.4	0.6
LOS	D	A	A	A	C	A	C	A	C	A
Approach Delay		7.8			23.3			23.1		10.0
Approach LOS		A			C			C		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 26 (22%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.3

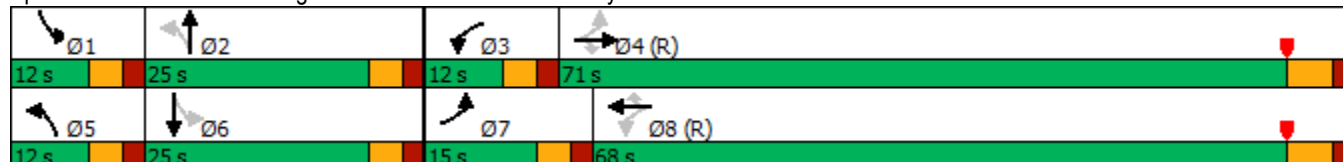
Intersection LOS: B

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: Realigned Colfax Ave & Site Driveway #3

























HCM 6th Signalized Intersection Summary

9: Realigned Colfax Ave & Site Driveway #3

Stafford Logistics Center

























08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	908	15	4	1283	30	6	0	3	20	0	52
Future Volume (veh/h)	109	908	15	4	1283	30	6	0	3	20	0	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	118	987	16	4	1395	33	7	0	3	22	0	57
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	237	2102	937	289	1976	881	260	0	247	315	0	267
Arrive On Green	0.03	0.42	0.42	0.01	0.59	0.59	0.01	0.00	0.17	0.02	0.00	0.18
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	118	987	16	4	1395	33	7	0	3	22	0	57
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1668	0	1485	1668	0	1485
Q Serve(g_s), s	3.2	25.6	0.8	0.1	35.2	1.1	0.4	0.0	0.2	1.3	0.0	3.9
Cycle Q Clear(g_c), s	3.2	25.6	0.8	0.1	35.2	1.1	0.4	0.0	0.2	1.3	0.0	3.9
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	237	2102	937	289	1976	881	260	0	247	315	0	267
V/C Ratio(X)	0.50	0.47	0.02	0.01	0.71	0.04	0.03	0.00	0.01	0.07	0.00	0.21
Avail Cap(c_a), veh/h	305	2102	937	377	1976	881	343	0	247	376	0	267
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.65	0.65	0.65	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	20.1	13.0	11.5	17.1	10.1	41.0	0.0	41.8	40.1	0.0	42.0
Incr Delay (d2), s/veh	1.0	0.5	0.0	0.0	2.2	0.1	0.0	0.0	0.1	0.1	0.0	1.8
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	2.5	15.2	0.4	0.1	19.4	0.7	0.3	0.0	0.1	1.0	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	20.6	13.0	11.6	19.2	10.2	41.0	0.0	41.8	40.2	0.0	43.8
LnGrp LOS	B	C	B	B	B	B	D	A	D	D	A	D
Approach Vol, veh/h	1121		1432				10		79			
Approach Delay, s/veh	20.2		19.0				41.3		42.8			
Approach LOS	C		B				D		D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	25.0	5.6	81.8	6.0	26.6	10.2	77.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	6.0	5.0	5.0	5.0	6.0				
Max Green Setting (Gmax), s	7.0	20.0	7.0	65.0	7.0	20.0	10.0	62.0				
Max Q Clear Time (g_c+I1), s	3.3	2.2	2.1	27.6	2.4	5.9	5.2	37.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.0	0.0	0.2	0.1	12.4				
Intersection Summary												
HCM 6th Ctrl Delay	20.3											
HCM 6th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

Timings
10: Picadilly Rd & 13th Ave/Realigned Colfax Ave

Stafford Logistics Center

08/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	49	61	511	181	649	49	553	345	629	707	130
Future Volume (vph)	116	49	61	511	181	649	49	553	345	629	707	130
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	24.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	18.0	25.0	25.0	28.0	35.0	35.0	10.0	32.0	28.0	35.0	57.0	57.0
Total Split (%)	15.0%	20.8%	20.8%	23.3%	29.2%	29.2%	8.3%	26.7%	23.3%	29.2%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	C-Min
Act Effect Green (s)	26.6	15.7	15.7	24.1	25.8	25.8	38.6	32.6	62.7	28.7	58.3	58.3
Actuated g/C Ratio	0.22	0.13	0.13	0.20	0.22	0.22	0.32	0.27	0.52	0.24	0.49	0.49
v/c Ratio	0.49	0.27	0.19	0.87	0.61	0.95	0.26	0.47	0.40	0.90	0.34	0.20
Control Delay	34.6	48.1	1.2	48.8	55.9	51.8	21.7	39.8	4.6	43.2	13.8	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	19.6	0.0	0.0	0.0	0.9	0.0	0.0
Total Delay	34.6	48.1	1.2	48.8	55.9	71.4	21.7	39.8	4.6	44.0	13.8	4.0
LOS	C	D	A	D	E	E	C	D	A	D	B	A
Approach Delay		28.5			60.7			26.0			25.9	
Approach LOS		C			E			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 16 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 37.8

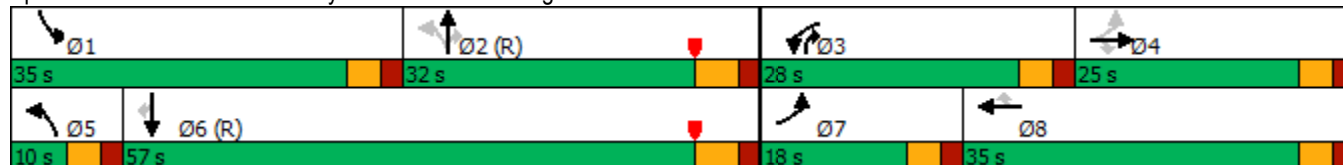
Intersection LOS: D

Intersection Capacity Utilization 70.6%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 10: Picadilly Rd & 13th Ave/Realigned Colfax Ave



HCM 6th Signalized Intersection Summary
10: Picadilly Rd & 13th Ave/Realigned Colfax Ave

Stafford Logistics Center

08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	49	61	511	181	649	49	553	345	629	707	130
Future Volume (veh/h)	116	49	61	511	181	649	49	553	345	629	707	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1530	1530	1752	1530	1752	1530	1752	1752	1752	1752	1530
Adj Flow Rate, veh/h	127	54	67	555	199	0	54	601	375	684	768	143
Peak Hour Factor	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92	0.92	0.91
Percent Heavy Veh, %	25	25	25	10	25	10	25	10	10	10	10	25
Cap, veh/h	232	107	91	610	249		278	1595	775	755	2544	689
Arrive On Green	0.10	0.07	0.07	0.06	0.05	0.00	0.03	0.33	0.33	0.08	0.18	0.18
Sat Flow, veh/h	1457	1530	1296	3237	1530	1485	1457	4782	1485	3237	4782	1296
Grp Volume(v), veh/h	127	54	67	555	199	0	54	601	375	684	768	143
Grp Sat Flow(s),veh/h/ln	1457	1530	1296	1618	1530	1485	1457	1594	1485	1618	1594	1296
Q Serve(g_s), s	9.6	4.1	6.1	20.5	15.4	0.0	2.9	11.5	19.4	25.2	16.8	11.3
Cycle Q Clear(g_c), s	9.6	4.1	6.1	20.5	15.4	0.0	2.9	11.5	19.4	25.2	16.8	11.3
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	232	107	91	610	249		278	1595	775	755	2544	689
V/C Ratio(X)	0.55	0.50	0.74	0.91	0.80		0.19	0.38	0.48	0.91	0.30	0.21
Avail Cap(c_a), veh/h	251	255	216	620	382		288	1595	775	809	2544	689
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.59	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	53.8	54.7	55.3	54.8	0.0	24.9	30.5	18.4	54.1	30.1	27.8
Incr Delay (d2), s/veh	2.1	3.6	11.1	11.5	4.0	0.0	0.3	0.7	2.2	13.3	0.3	0.7
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	6.5	3.0	4.1	13.8	9.9	0.0	1.8	7.8	11.3	18.0	11.6	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	57.4	65.8	66.8	58.8	0.0	25.2	31.2	20.5	67.4	30.4	28.5
LnGrp LOS	D	E	E	E	E		C	C	C	E	C	C
Approach Vol, veh/h	248				754		A		1030		1595	
Approach Delay, s/veh	54.8				64.7				27.0		46.1	
Approach LOS	D				E				C		D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.0	46.0	27.6	13.4	9.2	69.8	16.4	24.6				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gmax), s	30.0	26.0	23.0	20.0	5.0	51.0	13.0	30.0				
Max Q Clear Time (g_c+I1), s	27.2	21.4	22.5	8.1	4.9	18.8	11.6	17.4				
Green Ext Time (p_c), s	0.8	2.1	0.1	0.3	0.0	6.0	0.0	0.8				

Intersection Summary

HCM 6th Ctrl Delay 45.1

HCM 6th LOS D

Notes

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






Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	6	1241	6	0	1293
Future Vol, veh/h	0	6	1241	6	0	1293
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	7	1349	7	0	1405

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	678	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.3	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	4	-
Pot Cap-1 Maneuver	0	324	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	324	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.3	0	0
HCM LOS	C		







Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	324
HCM Lane V/C Ratio	-	-	0.02
HCM Control Delay (s)	-	-	16.3
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	10	5	30	81	65	24	93	49	61	289	72
Future Vol, veh/h	17	10	5	30	81	65	24	93	49	61	289	72
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	19	11	5	33	89	71	26	102	54	67	318	79
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	10	11.8	11	16.8
HCM LOS	A	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	53%	17%	100%	0%
Vol Thru, %	56%	31%	46%	0%	80%
Vol Right, %	30%	16%	37%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	166	32	176	61	361
LT Vol	24	17	30	61	0
Through Vol	93	10	81	0	289
RT Vol	49	5	65	0	72
Lane Flow Rate	182	35	193	67	397
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.288	0.064	0.319	0.119	0.633
Departure Headway (Hd)	5.679	6.507	5.941	6.389	5.743
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	633	550	605	562	631
Service Time	3.708	4.552	3.976	4.112	3.466
HCM Lane V/C Ratio	0.288	0.064	0.319	0.119	0.629
HCM Control Delay	11	10	11.8	10	17.9
HCM Lane LOS	B	A	B	A	C
HCM 95th-tile Q	1.2	0.2	1.4	0.4	4.5

Intersection						
Int Delay, s/veh	30.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	115	1122	2264	79	19	35
Future Vol, veh/h	115	1122	2264	79	19	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	10	10	25	25	25
Mvmt Flow	125	1220	2461	86	21	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	2547	0	-	0	3199	1231
Stage 1	-	-	-	-	2461	-
Stage 2	-	-	-	-	738	-
Critical Hdwy	5.8	-	-	-	6.2	7.6
Critical Hdwy Stg 1	-	-	-	-	7.1	-
Critical Hdwy Stg 2	-	-	-	-	6.5	-
Follow-up Hdwy	3.35	-	-	-	4.05	4.15
Pot Cap-1 Maneuver	~ 46	-	-	-	~ 13	121
Stage 1	-	-	-	-	~ 20	-
Stage 2	-	-	-	-	345	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	~ 46	-	-	-	0	121
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	345	-
Approach	EB	WB		SB		
HCM Control Delay, s	89.7	0				
HCM LOS	-					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	~ 46	-	-	-	-	121
HCM Lane V/C Ratio	2.717	-	-	-	-	0.314
HCM Control Delay (s)	\$ 964.7	-	-	-	-	47.8
HCM Lane LOS	F	-	-	-	-	E
HCM 95th %tile Q(veh)	13.4	-	-	-	-	1.2
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings
13: Stephen D Hogan Pkwy & Lisbon St

Stafford Logistics Center

08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (vph)	115	1122	2264	79	19	35
Future Volume (vph)	115	1122	2264	79	19	35
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	15.0	90.0	75.0	75.0	30.0	30.0
Total Split (%)	12.5%	75.0%	62.5%	62.5%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	105.6	106.5	90.0	90.0	7.4	7.4
Actuated g/C Ratio	0.88	0.89	0.75	0.75	0.06	0.06
v/c Ratio	0.68	0.29	0.70	0.09	0.24	0.33
Control Delay	45.0	1.6	10.6	3.2	59.4	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	1.6	10.6	3.2	59.4	24.1
LOS	D	A	B	A	E	C
Approach Delay		5.6	10.4		36.6	
Approach LOS		A	B		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 9.1

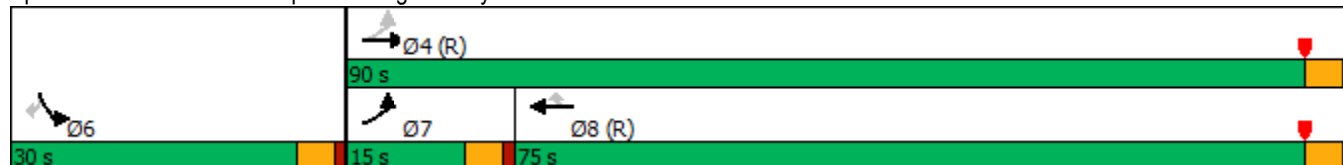
Intersection LOS: A

Intersection Capacity Utilization 65.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 13: Stephen D Hogan Pkwy & Lisbon St

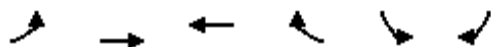


HCM 6th Signalized Intersection Summary

13: Stephen D Hogan Pkwy & Lisbon St

Stafford Logistics Center























08/21/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (veh/h)	115	1122	2264	79	19	35
Future Volume (veh/h)	115	1122	2264	79	19	35
Initial Q (Qb), veh	0	0	0	0	0	0
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	1530	1752	1752	1530	1530	1530
Adj Flow Rate, veh/h	125	1220	2461	86	21	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	10	10	25	25	25
Cap, veh/h	181	4232	3856	1045	58	52
Arrive On Green	0.04	0.88	0.81	0.81	0.04	0.04
Sat Flow, veh/h	1457	4940	4940	1296	1457	1296
Grp Volume(v), veh/h	125	1220	2461	86	21	38
Grp Sat Flow(s),veh/h/ln	1457	1594	1594	1296	1457	1296
Q Serve(g_s), s	1.5	4.7	24.6	1.7	1.7	3.5
Cycle Q Clear(g_c), s	1.5	4.7	24.6	1.7	1.7	3.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	181	4232	3856	1045	58	52
V/C Ratio(X)	0.69	0.29	0.64	0.08	0.36	0.73
Avail Cap(c_a), veh/h	249	4232	3856	1045	310	275
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	24.1	1.1	4.6	2.4	56.1	56.9
Incr Delay (d2), s/veh	4.7	0.2	0.8	0.2	3.7	17.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.9	1.1	10.5	0.7	1.2	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.8	1.2	5.5	2.6	59.8	74.6
LnGrp LOS	C	A	A	A	E	E
Approach Vol, veh/h		1345	2547		59	
Approach Delay, s/veh		3.8	5.4		69.3	
Approach LOS		A	A		E	
Timer - Assigned Phs			4		6	7 8
Phs Duration (G+Y+Rc), s			110.7		9.3	9.4 101.3
Change Period (Y+Rc), s			4.5		4.5	4.5 4.5
Max Green Setting (Gmax), s			85.5		25.5	10.5 70.5
Max Q Clear Time (g_c+I1), s			6.7		5.5	3.5 26.6
Green Ext Time (p_c), s			12.9		0.1	0.2 33.6
Intersection Summary						
HCM 6th Ctrl Delay			5.8			
HCM 6th LOS			A			

Timings
1: Colfax Ave & Dunkirk St

Stafford Logistics Center
08/21/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	105	1872	40	15	1950	48	15	5	59	5	
Future Volume (vph)	105	1872	40	15	1950	48	15	5	59	5	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8		4		
Detector Phase	5	2	2	1	6	6	3	8	7	4	
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	13.0	29.0	29.0	10.0	29.0	29.0	10.0	26.0	10.0	31.0	
Total Split (s)	12.0	65.0	65.0	12.0	65.0	65.0	12.0	31.0	12.0	31.0	
Total Split (%)	10.0%	54.2%	54.2%	10.0%	54.2%	54.2%	10.0%	25.8%	10.0%	25.8%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	
Act Effct Green (s)	96.0	92.2	92.2	91.0	84.7	84.7	8.0	6.2	11.7	7.1	
Actuated g/C Ratio	0.80	0.77	0.77	0.76	0.71	0.71	0.07	0.05	0.10	0.06	
v/c Ratio	0.76	0.82	0.04	0.12	0.92	0.05	0.07	0.06	0.45	0.53	
Control Delay	53.1	15.7	0.1	7.8	30.9	1.8	48.2	53.8	57.5	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.1	15.7	0.1	7.8	30.9	1.8	48.2	53.8	57.5	24.6	
LOS	D	B	A	A	C	A	D	D	E	C	
Approach Delay		17.3			30.1			49.5		38.7	
Approach LOS		B			C			D		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 24.3

Intersection LOS: C

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Colfax Ave & Dunkirk St



























HCM 6th Signalized Intersection Summary

1: Colfax Ave & Dunkirk St

Stafford Logistics Center

08/21/2020

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	105	1872	40	15	1950	48	15	5	0	59	5	75		
Future Volume (veh/h)	105	1872	40	15	1950	48	15	5	0	59	5	75		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752		
Adj Flow Rate, veh/h	115	2057	0	16	2143	53	16	5	0	65	5	82		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91		
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10		
Cap, veh/h	241	2350		133	2272	1013	221	71		198	7	107		
Arrive On Green	0.04	0.71	0.00	0.03	1.00	1.00	0.02	0.04	0.00	0.05	0.08	0.08		
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	3237	1752	1485	1668	86	1412		
Grp Volume(v), veh/h	115	2057	0	16	2143	53	16	5	0	65	0	87		
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1618	1752	1485	1668	0	1498		
Q Serve(g_s), s	2.5	57.1	0.0	0.3	0.0	0.0	0.6	0.3	0.0	4.4	0.0	6.8		
Cycle Q Clear(g_c), s	2.5	57.1	0.0	0.3	0.0	0.0	0.6	0.3	0.0	4.4	0.0	6.8		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.94		
Lane Grp Cap(c), veh/h	241	2350		133	2272	1013	221	71		198	0	114		
V/C Ratio(X)	0.48	0.88		0.12	0.94	0.05	0.07	0.07		0.33	0.00	0.76		
Avail Cap(c_a), veh/h	271	2350		201	2272	1013	354	365		207	0	312		
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	4.9	13.6	0.0	18.5	0.0	0.0	53.6	55.4	0.0	50.1	0.0	54.4		
Incr Delay (d2), s/veh	1.1	4.9	0.0	0.3	9.6	0.1	0.1	0.3	0.0	0.7	0.0	7.6		
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	1.4	25.5	0.0	0.4	5.4	0.0	0.4	0.3	0.0	3.4	0.0	5.1		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	6.0	18.5	0.0	18.8	9.6	0.1	53.7	55.7	0.0	50.8	0.0	62.0		
LnGrp LOS	A	B		B	A	A	D	E		D	A	E		
Approach Vol, veh/h	2172		A	2212			21		A	152				
Approach Delay, s/veh	17.8			9.4			54.1			57.2				
Approach LOS	B			A			D			E				
Timer - Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	7.1	90.7	7.1	15.1	9.9	87.9	11.3	10.9						
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0						
Max Green Setting (Gmax), s	7.0	59.0	7.0	25.0	7.0	59.0	7.0	25.0						
Max Q Clear Time (g_c+I1), s	2.3	59.1	2.6	8.8	4.5	2.0	6.4	2.3						
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	49.8	0.0	0.0						

Intersection Summary

HCM 6th Ctrl Delay 15.2

HCM 6th LOS B

Notes

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

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

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↱	↱↱↱	↱↱	↱	↱	↱
Traffic Vol, veh/h	145	1762	1883	54	68	130
Future Vol, veh/h	145	1762	1883	54	68	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	350	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	159	1936	2069	59	75	143

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	2128	0	0 3161 1035
Stage 1	-	-	- 2069 -
Stage 2	-	-	- 1092 -
Critical Hdwy	4.3	-	- 6.45 7.1
Critical Hdwy Stg 1	-	-	- 6 -
Critical Hdwy Stg 2	-	-	- 6.2 -
Follow-up Hdwy	2.3	-	- 3.75 3.4
Pot Cap-1 Maneuver	*451	-	- *305
Stage 1	-	-	- *276 -
Stage 2	-	-	- *525 -
Platoon blocked, %	1	-	- 2 1
Mov Cap-1 Maneuver	*451	-	- *305
Mov Cap-2 Maneuver	-	-	- -
Stage 1	-	-	- *179 -
Stage 2	-	-	- *525 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	
HCM LOS			-

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	* 451	-	-	-	-	305
HCM Lane V/C Ratio	0.353	-	-	-	-	0.468
HCM Control Delay (s)	17.3	-	-	-	-	26.8
HCM Lane LOS	C	-	-	-	-	D
HCM 95th %tile Q(veh)	1.6	-	-	-	-	2.4

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

Timings 3: Colfax Ave & Himalaya St

Stafford Logistics Center
08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	200	1654	1752	119	123	185
Future Volume (vph)	200	1654	1752	119	123	185
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	24.0	23.0	23.0
Total Split (s)	21.0	95.0	74.0	74.0	25.0	25.0
Total Split (%)	17.5%	79.2%	61.7%	61.7%	20.8%	20.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	95.1	94.1	75.0	75.0	14.9	14.9
Actuated g/C Ratio	0.79	0.78	0.62	0.62	0.12	0.12
v/c Ratio	0.86	0.70	0.93	0.14	0.66	0.56
Control Delay	53.2	9.5	27.1	4.4	65.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	9.5	27.1	4.4	65.2	12.6
LOS	D	A	C	A	E	B
Approach Delay		14.2	25.7		33.6	
Approach LOS		B	C		C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 8 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 21.0

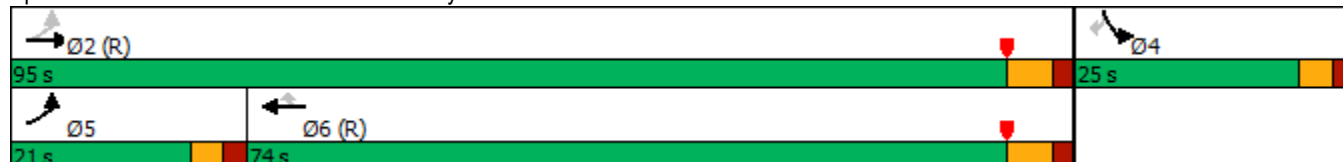
Intersection LOS: C

Intersection Capacity Utilization 79.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Colfax Ave & Himalaya St

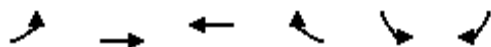


HCM 6th Signalized Intersection Summary

3: Colfax Ave & Himalaya St

Stafford Logistics Center

08/21/2020















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	200	1654	1752	119	123	185
Future Volume (veh/h)	200	1654	1752	119	123	185
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	217	1798	1904	129	134	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	10	10	10
Cap, veh/h	290	2519	2177	971	253	225
Arrive On Green	0.08	1.00	1.00	1.00	0.15	0.15
Sat Flow, veh/h	1668	3416	3416	1485	1668	1485
Grp Volume(v), veh/h	217	1798	1904	129	134	201
Grp Sat Flow(s),veh/h/ln	1668	1664	1664	1485	1668	1485
Q Serve(g_s), s	5.0	0.0	0.0	0.0	8.9	15.9
Cycle Q Clear(g_c), s	5.0	0.0	0.0	0.0	8.9	15.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	290	2519	2177	971	253	225
V/C Ratio(X)	0.75	0.71	0.87	0.13	0.53	0.89
Avail Cap(c_a), veh/h	410	2519	2177	971	278	247
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	0.0	0.0	0.0	47.0	49.9
Incr Delay (d2), s/veh	4.7	1.8	5.3	0.3	1.7	29.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	1.1	2.9	0.1	6.9	20.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.9	1.8	5.3	0.3	48.7	79.2
LnGrp LOS	B	A	A	A	D	E
Approach Vol, veh/h		2015	2033		335	
Approach Delay, s/veh		3.0	5.0		67.0	
Approach LOS		A	A		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		96.8		23.2	12.3	84.5
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		89.0		20.0	16.0	68.0
Max Q Clear Time (g_c+I1), s		2.0		17.9	7.0	2.0
Green Ext Time (p_c), s		25.3		0.3	0.4	28.3
Intersection Summary						
HCM 6th Ctrl Delay			8.8			
HCM 6th LOS			A			

Timings
4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/21/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1432	547	614	905	1060	974
Future Volume (vph)	1432	547	614	905	1060	974
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	10.0	10.0	24.0	24.0	24.0
Total Split (s)	60.0	32.0	32.0	60.0	28.0	60.0
Total Split (%)	50.0%	26.7%	26.7%	50.0%	23.3%	50.0%
Yellow Time (s)	4.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effct Green (s)	54.0	86.4	26.4	54.0	22.6	82.6
Actuated g/C Ratio	0.45	0.72	0.22	0.45	0.19	0.69
v/c Ratio	0.70	0.53	0.90	0.44	1.22	0.98
Control Delay	27.7	10.2	54.2	23.3	150.0	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	10.2	54.2	23.3	150.0	41.7
LOS	C	B	D	C	F	D
Approach Delay	22.9			35.8	98.1	
Approach LOS	C			D	F	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 66 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 54.1

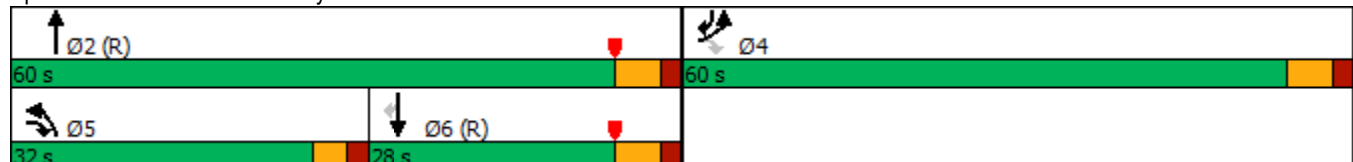
Intersection LOS: D

Intersection Capacity Utilization 87.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Picadilly Rd & Colfax Ave



HCM 6th Signalized Intersection Summary

4: Picadilly Rd & Colfax Ave

Stafford Logistics Center

08/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←←	→	←←	↑↑↑	↑↑↑	→
Traffic Volume (veh/h)	1432	547	614	905	1060	974
Future Volume (veh/h)	1432	547	614	905	1060	974
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	1461	558	627	923	1082	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	10	10	10	10	10	10
Cap, veh/h	1742	867	691	2533	1313	
Arrive On Green	0.37	0.37	0.07	0.17	0.27	0.00
Sat Flow, veh/h	4705	1485	3237	4940	4940	1485
Grp Volume(v), veh/h	1461	558	627	923	1082	0
Grp Sat Flow(s),veh/h/ln	1568	1485	1618	1594	1594	1485
Q Serve(g_s), s	34.0	30.1	23.1	20.4	25.5	0.0
Cycle Q Clear(g_c), s	34.0	30.1	23.1	20.4	25.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1742	867	691	2533	1313	
V/C Ratio(X)	0.84	0.64	0.91	0.36	0.82	
Avail Cap(c_a), veh/h	2117	985	728	2533	1313	
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.45	0.45	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	16.7	54.6	31.7	40.8	0.0
Incr Delay (d2), s/veh	1.2	0.5	14.8	0.4	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.4	32.1	16.9	13.6	16.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.7	17.2	69.4	32.1	46.8	0.0
LnGrp LOS	D	B	E	C	D	
Approach Vol, veh/h	2019			1550	1082	A
Approach Delay, s/veh	30.6			47.2	46.8	
Approach LOS	C			D	D	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	69.6		50.4		30.6	38.9
Change Period (Y+Rc), s	6.0		6.0		5.0	6.0
Max Green Setting (Gmax), s	54.0		54.0		27.0	22.0
Max Q Clear Time (g_c+I1), s	22.4		36.0		25.1	27.5
Green Ext Time (p_c), s	6.8		8.4		0.5	0.0

Intersection Summary

HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Notes





















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

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	1963	23	0	1871	0	62
Future Vol, veh/h	1963	23	0	1871	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	25	10	10	10	25
Mvmt Flow	2134	25	0	2034	0	67
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	1067
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.4
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.55
Pot Cap-1 Maneuver	-	-	0	-	0	*244
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*244
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		25.3		
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	244	-	-	-		
HCM Lane V/C Ratio	0.276	-	-	-		
HCM Control Delay (s)	25.3	-	-	-		
HCM Lane LOS	D	-	-	-		
HCM 95th %tile Q(veh)	1.1	-	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings
7: Lisbon St & Colfax Ave

Stafford Logistics Center

08/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	Ø4	Ø8
Lane Configurations												
Traffic Volume (vph)	320	1398	107	99	1174	315	352	245	345	345		
Future Volume (vph)	320	1398	107	99	1174	315	352	245	345	345		
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+ov	pm+pt	pm+ov		
Protected Phases	5	2		1	6		3	1	7	5	4	8
Permitted Phases	2		2	6		6	8	8	4	4		
Detector Phase	5	2	2	1	6	6	3	1	7	5		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	23.0	23.0	9.5	23.0	23.0	9.5	9.5	23.0	9.5	23.0	22.5
Total Split (s)	24.0	58.0	58.0	12.0	46.0	46.0	20.0	12.0	20.0	24.0	30.0	30.0
Total Split (%)	20.0%	48.3%	48.3%	10.0%	38.3%	38.3%	16.7%	10.0%	16.7%	20.0%	25%	25%
Yellow Time (s)	3.0	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.0	3.0	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.0	5.0	5.0	4.5	5.0	5.0	4.5	4.5	5.0	4.0		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effect Green (s)	96.0	83.0	83.0	79.0	71.0	71.0	15.5	7.5	15.0	20.0		
Actuated g/C Ratio	0.80	0.69	0.69	0.66	0.59	0.59	0.13	0.06	0.12	0.17		
v/c Ratio	0.42	0.67	0.13	0.26	0.66	0.35	1.07	1.55	0.94	1.20		
Control Delay	6.9	12.0	2.0	4.3	15.5	2.6	117.2	295.9	85.5	150.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	6.9	12.0	2.0	4.3	15.5	2.6	117.2	295.9	85.5	150.0		
LOS	A	B	A	A	B	A	F	F	F	F		
Approach Delay		10.5			12.2							
Approach LOS		B			B							

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.55

Intersection Signal Delay: 49.9

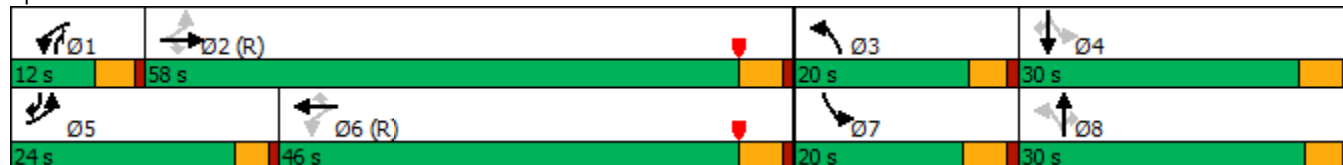
Intersection LOS: D

Intersection Capacity Utilization 75.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Lisbon St & Colfax Ave



























HCM 6th Signalized Intersection Summary

7: Lisbon St & Colfax Ave

Stafford Logistics Center

08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1398	107	99	1174	315	352	0	245	345	0	345
Future Volume (veh/h)	320	1398	107	99	1174	315	352	0	245	345	0	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1752	1752	1530	1530	1752	1752	1530	1530	1530	1752	1530	1752
Adj Flow Rate, veh/h	348	1520	118	109	1276	342	387	0	0	375	0	0
Peak Hour Factor	0.92	0.92	0.91	0.91	0.92	0.92	0.91	0.91	0.91	0.92	0.91	0.92
Percent Heavy Veh, %	10	10	25	25	10	10	25	25	25	10	25	10
Cap, veh/h	595	2375	925	576	2337	1042	485	1		525	1	
Arrive On Green	0.11	1.00	1.00	0.04	0.70	0.70	0.13	0.00	0.00	0.13	0.00	0.00
Sat Flow, veh/h	3237	3328	1296	2826	3328	1485	2826	1530	1296	3237	1530	1485
Grp Volume(v), veh/h	348	1520	118	109	1276	342	387	0	0	375	0	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1296	1413	1664	1485	1413	1530	1296	1618	1530	1485
Q Serve(g_s), s	3.7	0.0	0.0	1.2	22.2	10.7	15.5	0.0	0.0	13.7	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.2	22.2	10.7	15.5	0.0	0.0	13.7	0.0	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	595	2375	925	576	2337	1042	485	1		525	1	
V/C Ratio(X)	0.58	0.64	0.13	0.19	0.55	0.33	0.80	0.00		0.71	0.00	
Avail Cap(c_a), veh/h	953	2375	925	638	2337	1042	485	325		525	319	
HCM Platoon Ratio	2.00	2.00	2.00	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	0.22	0.22	0.22	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	0.0	4.1	8.6	6.9	52.6	0.0	0.0	51.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	1.3	0.3	0.0	0.2	0.2	9.1	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.8	0.1	0.5	8.6	4.5	10.6	0.0	0.0	9.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	1.3	0.3	4.2	8.8	7.1	61.7	0.0	0.0	56.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A		E	A	
Approach Vol, veh/h	1986				1727				387		A	
Approach Delay, s/veh	2.7				8.2				61.7		56.5	
Approach LOS	A				A				E		E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	90.6	20.0	0.0	10.7	89.3	20.0	0.0				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.0	5.0	5.0	* 5				
Max Green Setting (Gmax), s	7.5	53.0	15.5	25.0	20.0	41.0	15.0	* 26				
Max Q Clear Time (g_c+I1), s	3.2	2.0	17.5	0.0	5.7	24.2	15.7	0.0				
Green Ext Time (p_c), s	0.1	17.1	0.0	0.0	1.0	9.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	14.4											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

PM Long Term Total





















Synchro 10 Report
Page 10

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↘	↑↑↑	↗	↘	↑↑↑	↗
Traffic Vol, veh/h	0	0	67	0	0	184	43	1335	62	59	1455	93
Future Vol, veh/h	0	0	67	0	0	184	43	1335	62	59	1455	93
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	150	-	150	150	-	150
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	0	0	73	0	0	200	47	1451	67	64	1582	101
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	791	-	-	726	1683	0	0	1518	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.3	-	-	7.3	5.5	-	-	5.5	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	4	-	-	4	3.2	-	-	3.2	-	-
Pot Cap-1 Maneuver	0	0	*577	0	0	*598	640	-	-	734	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	-	-	1	-	-
Mov Cap-1 Maneuver	-	-	*577	-	-	*598	640	-	-	734	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.1		14		0.3		0.4					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	640	-	-	577	598	734	-	-				
HCM Lane V/C Ratio	0.073	-	-	0.126	0.334	0.087	-	-				
HCM Control Delay (s)	11.1	-	-	12.1	14	10.4	-	-				
HCM Lane LOS	B	-	-	B	B	B	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.4	1.5	0.3	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Timings
9: Realigned Colfax Ave & Site Driveway #3

Stafford Logistics Center

08/21/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	223	1092	27	8	1034	62	21	0	63	0
Future Volume (vph)	223	1092	27	8	1034	62	21	0	63	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	21.0	71.0	71.0	12.0	62.0	62.0	12.0	25.0	12.0	25.0
Total Split (%)	17.5%	59.2%	59.2%	10.0%	51.7%	51.7%	10.0%	20.8%	10.0%	20.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Min	None	Min
Act Effect Green (s)	95.9	93.8	93.8	85.1	79.5	79.5	11.1	5.5	12.7	8.0
Actuated g/C Ratio	0.80	0.78	0.78	0.71	0.66	0.66	0.09	0.05	0.11	0.07
v/c Ratio	0.62	0.46	0.02	0.03	0.52	0.07	0.18	0.03	0.47	0.49
Control Delay	18.2	3.9	0.0	4.0	12.5	0.1	47.9	0.1	57.3	4.5
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	4.2	0.0	4.0	12.5	0.1	47.9	0.1	57.3	4.5
LOS	B	A	A	A	B	A	D	A	E	A
Approach Delay		6.4			11.8			35.6		18.9
Approach LOS		A			B			D		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.0









Intersection LOS: A

Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15























Splits and Phases: 9: Realigned Colfax Ave & Site Driveway #3

			
Ø1	Ø2	Ø3	Ø4 (R)
12 s	25 s	12 s	71 s
			
Ø5	Ø6	Ø7	Ø8 (R)
12 s	25 s	21 s	62 s

HCM 6th Signalized Intersection Summary
9: Realigned Colfax Ave & Site Driveway #3

Stafford Logistics Center

























08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	1092	27	8	1034	62	21	0	7	63	0	167
Future Volume (veh/h)	223	1092	27	8	1034	62	21	0	7	63	0	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	242	1187	29	9	1124	67	23	0	8	68	0	182
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	369	2254	1005	341	2038	909	119	0	171	284	0	208
Arrive On Green	0.15	1.00	1.00	0.01	0.61	0.61	0.02	0.00	0.12	0.05	0.00	0.14
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	242	1187	29	9	1124	67	23	0	8	68	0	182
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1668	0	1485	1668	0	1485
Q Serve(g_s), s	6.7	0.0	0.0	0.2	23.7	2.2	1.4	0.0	0.6	4.3	0.0	14.4
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.2	23.7	2.2	1.4	0.0	0.6	4.3	0.0	14.4
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	369	2254	1005	341	2038	909	119	0	171	284	0	208
V/C Ratio(X)	0.66	0.53	0.03	0.03	0.55	0.07	0.19	0.00	0.05	0.24	0.00	0.88
Avail Cap(c_a), veh/h	472	2254	1005	428	2038	909	186	0	254	310	0	254
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	8.6	13.6	9.4	45.8	0.0	47.2	43.5	0.0	50.6
Incr Delay (d2), s/veh	1.0	0.4	0.0	0.0	1.1	0.2	0.8	0.0	0.1	0.4	0.0	24.0
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	3.6	0.2	0.0	0.2	13.7	1.3	1.1	0.0	0.4	3.2	0.0	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	0.4	0.0	8.6	14.7	9.6	46.6	0.0	47.3	44.0	0.0	74.6
LnGrp LOS	B	A	A	A	B	A	D	A	D	D	A	E
Approach Vol, veh/h		1458			1200			31			250	
Approach Delay, s/veh		2.3			14.4			46.8			66.3	
Approach LOS		A			B			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	18.3	5.8	85.8	7.2	21.3	13.6	78.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	20.5	7.5	66.5	7.5	20.5	16.5	57.5				
Max Q Clear Time (g_c+I1), s	6.3	2.6	2.2	2.0	3.4	16.4	8.7	25.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	13.0	0.0	0.4	0.4	10.6				
Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									

Timings
10: Picadilly Rd & 13th Ave/Realigned Colfax Ave

Stafford Logistics Center

08/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	158	61	640	82	600	41	604	430	770	638	106
Future Volume (vph)	236	158	61	640	82	600	41	604	430	770	638	106
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases	4		4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.0	23.0	24.0	24.0	23.0	10.0	24.0	24.0	23.0	24.0	24.0
Total Split (s)	30.0	25.0	25.0	35.0	30.0	30.0	12.0	30.0	35.0	30.0	48.0	48.0
Total Split (%)	25.0%	20.8%	20.8%	29.2%	25.0%	25.0%	10.0%	25.0%	29.2%	25.0%	40.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	C-Min
Act Effect Green (s)	37.3	17.5	17.5	29.2	26.8	56.8	35.0	27.3	62.5	58.3	47.8	47.8
Actuated g/C Ratio	0.31	0.15	0.15	0.24	0.22	0.47	0.29	0.23	0.52	0.49	0.40	0.40
v/c Ratio	0.66	0.79	0.20	0.90	0.27	0.81	0.21	0.61	0.56	0.95	0.37	0.20
Control Delay	32.8	73.5	1.4	66.8	58.8	22.0	22.9	45.3	16.2	27.0	14.8	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	73.5	1.4	66.8	58.8	22.1	22.9	45.3	16.2	27.0	14.8	2.6
LOS	C	E	A	E	E	C	C	D	B	C	B	A
Approach Delay		42.8			46.0			32.8			20.1	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 1 (1%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 33.5

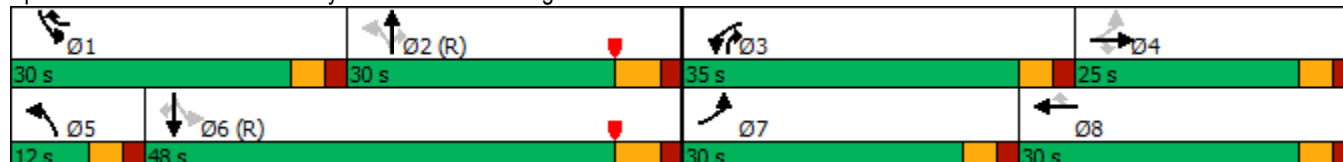
Intersection LOS: C

Intersection Capacity Utilization 77.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 10: Picadilly Rd & 13th Ave/Realigned Colfax Ave



























HCM 6th Signalized Intersection Summary

10: Picadilly Rd & 13th Ave/Realigned Colfax Ave

Stafford Logistics Center

08/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	158	61	640	82	600	41	604	430	770	638	106
Future Volume (veh/h)	236	158	61	640	82	600	41	604	430	770	638	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1530	1530	1752	1530	1752	1530	1752	1752	1752	1752	1530
Adj Flow Rate, veh/h	259	174	67	696	90	0	45	657	467	837	693	116
Peak Hour Factor	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92	0.92	0.91
Percent Heavy Veh, %	25	25	25	10	25	10	25	10	10	10	10	25
Cap, veh/h	449	202	171	752	297		250	1240	730	900	2048	555
Arrive On Green	0.17	0.13	0.13	0.31	0.26	0.00	0.03	0.26	0.26	0.07	0.14	0.14
Sat Flow, veh/h	1457	1530	1296	3237	1530	1485	1457	4782	1485	3237	4782	1296
Grp Volume(v), veh/h	259	174	67	696	90	0	45	657	467	837	693	116
Grp Sat Flow(s),veh/h/ln	1457	1530	1296	1618	1530	1485	1457	1594	1485	1618	1594	1296
Q Serve(g_s), s	18.1	13.4	5.7	25.0	5.7	0.0	2.7	14.2	28.0	21.6	15.7	9.5
Cycle Q Clear(g_c), s	18.1	13.4	5.7	25.0	5.7	0.0	2.7	14.2	28.0	21.6	15.7	9.5
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	449	202	171	752	297		250	1240	730	900	2048	555
V/C Ratio(X)	0.58	0.86	0.39	0.93	0.30		0.18	0.53	0.64	0.93	0.34	0.21
Avail Cap(c_a), veh/h	504	255	216	809	319		288	1240	730	923	2048	555
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	51.0	47.7	40.4	38.0	0.0	31.1	38.2	22.6	31.7	36.2	33.5
Incr Delay (d2), s/veh	1.3	20.9	1.5	13.9	0.5	0.0	0.3	1.6	4.3	15.3	0.4	0.9
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	10.8	10.4	3.4	15.8	3.9	0.0	1.7	9.4	15.7	16.5	11.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	71.9	49.1	54.4	38.5	0.0	31.4	39.8	26.9	46.9	36.6	34.4
LnGrp LOS	D	E	D	D	D		C	D	C	D	D	C
Approach Vol, veh/h	500			786			A			1169		
Approach Delay, s/veh	50.7			52.5			34.3			41.7		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.1	37.1	32.9	20.8	8.9	57.4	25.5	28.3				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	24.0	30.0	20.0	7.0	42.0	25.0	25.0				
Max Q Clear Time (g_c+I1), s	23.6	30.0	27.0	15.4	4.7	17.7	20.1	7.7				
Green Ext Time (p_c), s	0.6	0.0	0.9	0.5	0.0	5.0	0.4	0.4				

Intersection Summary

HCM 6th Ctrl Delay 42.8

HCM 6th LOS D

Notes

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

Intersection

Int Delay, s/veh 0.1






Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	21	1180	12	0	1311
Future Vol, veh/h	0	21	1180	12	0	1311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	23	1283	13	0	1425

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	648	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.3	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	4	-
Pot Cap-1 Maneuver	0	339	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	339	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	339
HCM Lane V/C Ratio	-	-	0.067
HCM Control Delay (s)	-	-	16.4
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	45	19	59	11	90	6	276	90	78	105	18
Future Vol, veh/h	70	45	19	59	11	90	6	276	90	78	105	18
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	77	49	21	65	12	99	7	303	99	86	115	20
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	12.1	12	18.9	11.3
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	52%	37%	100%	0%
Vol Thru, %	74%	34%	7%	0%	85%
Vol Right, %	24%	14%	56%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	372	134	160	78	123
LT Vol	6	70	59	78	0
Through Vol	276	45	11	0	105
RT Vol	90	19	90	0	18
Lane Flow Rate	409	147	176	86	135
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.651	0.268	0.304	0.169	0.243
Departure Headway (Hd)	5.735	6.563	6.223	7.08	6.468
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	630	545	575	505	553
Service Time	3.789	4.639	4.295	4.846	4.233
HCM Lane V/C Ratio	0.649	0.27	0.306	0.17	0.244
HCM Control Delay	18.9	12.1	12	11.3	11.3
HCM Lane LOS	C	B	B	B	B
HCM 95th-tile Q	4.8	1.1	1.3	0.6	0.9

Intersection

Int Delay, s/veh 106.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	2342	1346	21	79	121
Future Vol, veh/h	50	2342	1346	21	79	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	10	10	25	25	25
Mvmt Flow	54	2546	1463	23	86	132

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1486	0	0 2844 732
Stage 1	-	-	- 1463 -
Stage 2	-	-	- 1381 -
Critical Hdwy	4.6	-	- 7.3 7.4
Critical Hdwy Stg 1	-	-	- 6.3 -
Critical Hdwy Stg 2	-	-	- 6.3 -
Follow-up Hdwy	2.45	-	- 3.75 3.55
Pot Cap-1 Maneuver	350	-	- ~ 9 316
Stage 1	-	-	- 145 -
Stage 2	-	-	- 162 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	350	-	- ~ 8 316
Mov Cap-2 Maneuver	-	-	- ~ 8 -
Stage 1	-	-	- 123 -
Stage 2	-	-	- 162 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	\$ 2102.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	350	-	-	-	8	316
HCM Lane V/C Ratio	0.155	-	-	-	10.734	0.416
HCM Control Delay (s)	17.2	-	-	-	5285.2	24.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.5	-	-	-	12.3	2

Notes

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

Timings
13: Stephen D. Hogan Pkwy & Lisbon St

Stafford Logistics Center
08/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↱↱	↱↱	↰	↰	↰
Traffic Volume (vph)	50	2342	1346	21	79	121
Future Volume (vph)	50	2342	1346	21	79	121
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	15.0	90.0	75.0	75.0	30.0	30.0
Total Split (%)	12.5%	75.0%	62.5%	62.5%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Act Effect Green (s)	98.5	98.5	89.6	89.6	12.5	12.5
Actuated g/C Ratio	0.82	0.82	0.75	0.75	0.10	0.10
v/c Ratio	0.23	0.95	0.60	0.02	0.57	0.52
Control Delay	4.8	19.0	9.3	3.4	65.3	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.8	19.0	9.3	3.4	65.3	15.7
LOS	A	B	A	A	E	B
Approach Delay		18.7	9.2		35.2	
Approach LOS		B	A		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 16.3

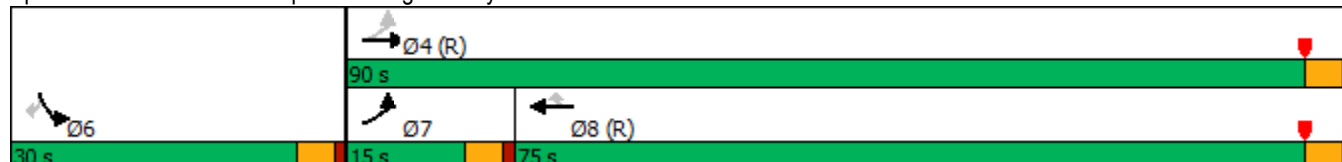
Intersection LOS: B

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 13: Stephen D. Hogan Pkwy & Lisbon St

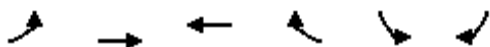


HCM 6th Signalized Intersection Summary

13: Stephen D. Hogan Pkwy & Lisbon St

Stafford Logistics Center

08/21/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	2342	1346	21	79	121
Future Volume (veh/h)	50	2342	1346	21	79	121
Initial Q (Qb), veh	0	0	0	0	0	0
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	1530	1752	1752	1530	1530	1530
Adj Flow Rate, veh/h	54	2546	1463	23	86	132
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	10	10	25	25	25
Cap, veh/h	262	2678	2437	949	176	156
Arrive On Green	0.03	0.80	0.73	0.73	0.12	0.12
Sat Flow, veh/h	1457	3416	3416	1296	1457	1296
Grp Volume(v), veh/h	54	2546	1463	23	86	132
Grp Sat Flow(s),veh/h/ln	1457	1664	1664	1296	1457	1296
Q Serve(g_s), s	1.0	76.4	25.2	0.6	6.6	12.0
Cycle Q Clear(g_c), s	1.0	76.4	25.2	0.6	6.6	12.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	262	2678	2437	949	176	156
V/C Ratio(X)	0.21	0.95	0.60	0.02	0.49	0.84
Avail Cap(c_a), veh/h	339	2678	2437	949	310	275
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	6.7	9.8	7.7	4.4	49.3	51.7
Incr Delay (d2), s/veh	0.4	9.2	1.1	0.0	2.1	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	31.0	13.0	0.3	4.5	13.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	18.9	8.8	4.4	51.4	63.3
LnGrp LOS	A	B	A	A	D	E
Approach Vol, veh/h		2600	1486		218	
Approach Delay, s/veh		18.7	8.7		58.6	
Approach LOS		B	A		E	
Timer - Assigned Phs			4		6	7
Phs Duration (G+Y+Rc), s			101.0		19.0	8.7
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			85.5		25.5	10.5
Max Q Clear Time (g_c+I1), s			78.4		14.0	3.0
Green Ext Time (p_c), s			6.8		0.5	0.0
Intersection Summary						
HCM 6th Ctrl Delay			17.3			
HCM 6th LOS			B			

APPENDIX H. SIGNAL WARRANTS

WARRANT 2: Colfax Ave/I-70 Frontage Rd
Existing Four-Hour Vehicular Volume (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 3: Colfax Ave/I-70 Frontage Rd
Existing Peak Hour (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 2: Colfax Avenue/Lisbon Street
Short-Term Total Traffic Four-Hour Vehicular Volume (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 3: Colfax Avenue/Lisbon Street
Short-Term Total Traffic Peak Hour (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 2: Picadilly Road/Realigned Colfax Avenue
Short-Term Total Traffic Four-Hour Vehicular Volume (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 3: Picadilly Road/Realigned Colfax Avenue
Short-Term Total Traffic Hour (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 2: Colfax Avenue/Himalaya Street
Long-Term Background Traffic Four-Hour Vehicular Volume (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

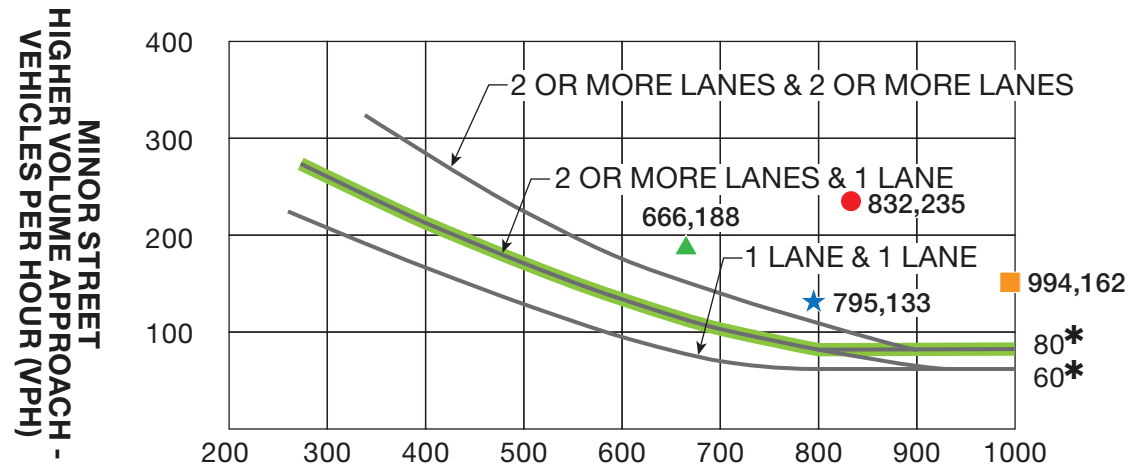
WARRANT 3: Colfax Avenue/Himalaya Street
Long-Term Background Traffic Peak Hour (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)

WARRANT 2: Colfax Avenue/Site Driveway #3
Long-Term Total Traffic Four-Hour Vehicular Volume

WARRANT 3: Colfax Avenue/Site Driveway #3
Long-Term Total Traffic Peak Hour

WARRANT 2: Stephen D. Hogan Parkway/Lisbon Street
Long-Term Total Traffic Four-Hour Vehicular Volume

WARRANT 3: Stephen D. Hogan Parkway/Lisbon Street
Long-Term Total Traffic Peak Hour

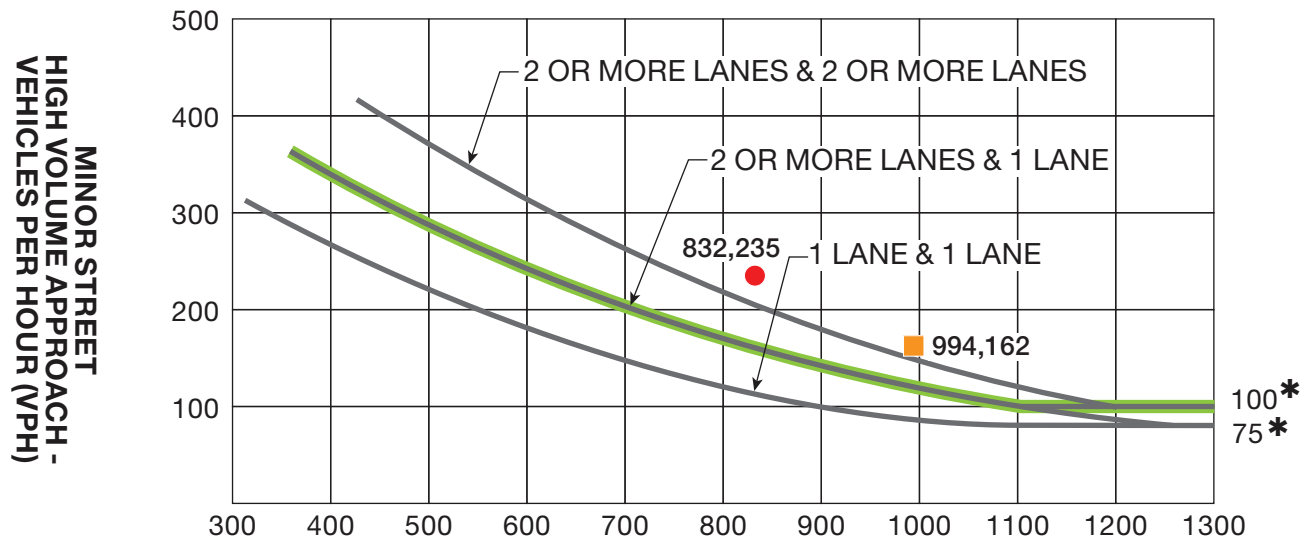


**MAJOR STREET - TOTAL OF BOTH APPROACHES -
VEHICLES PER HOUR (VPH)**

* Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

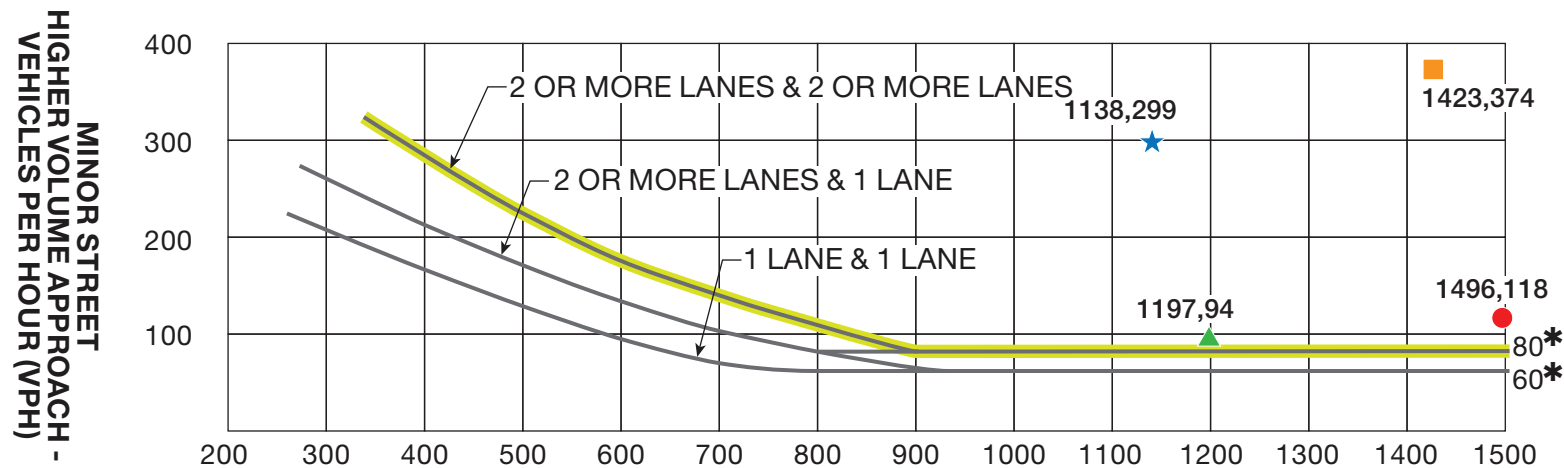
- = AM Peak Hour
- = PM Peak Hour
- ▲ = 80% AM Peak Hour
- ★ = 80% PM Peak Hour



* 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.

LEGEND

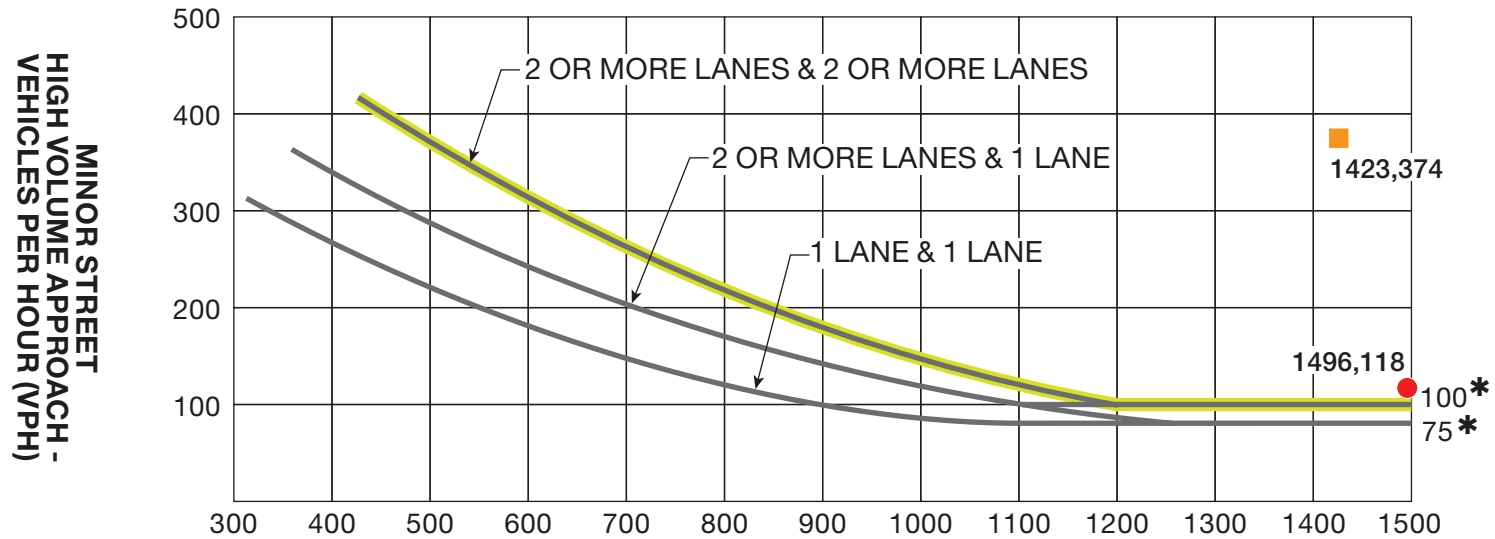
- = AM Peak Hour
- = PM Peak Hour



* Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

- = AM Peak Hour
- = PM Peak Hour
- ▲ = 80% of PM Peak Hour
- ★ = 80% of PM Peak Hour



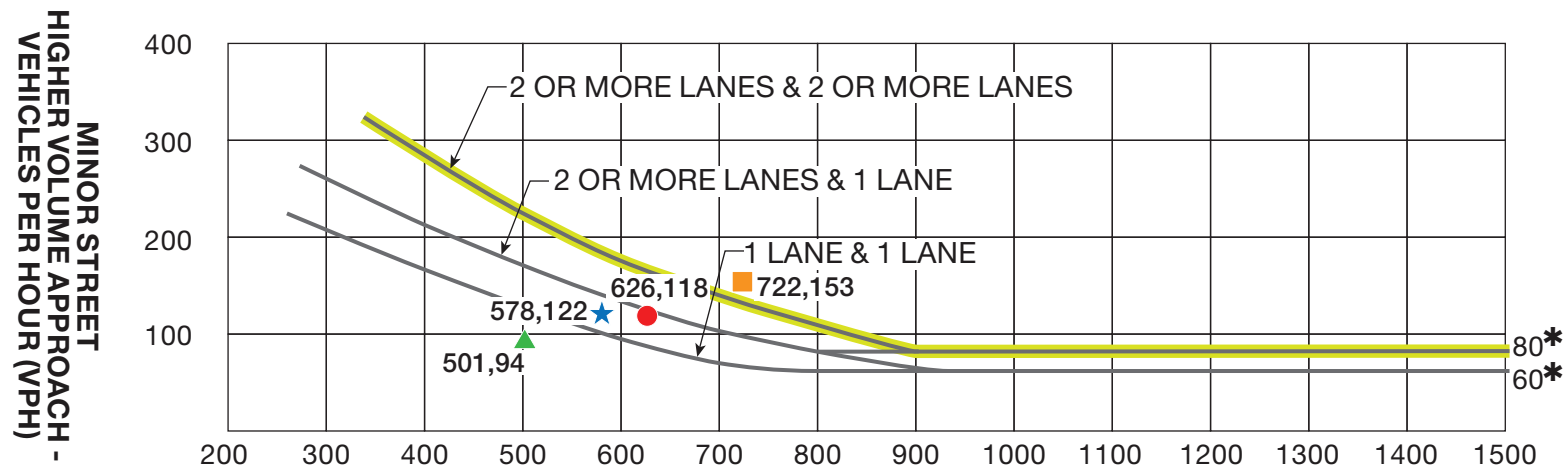
Stafford Logistics Center TIS - UPDATE 20-346 8/25/20

MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

* 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.

LEGEND

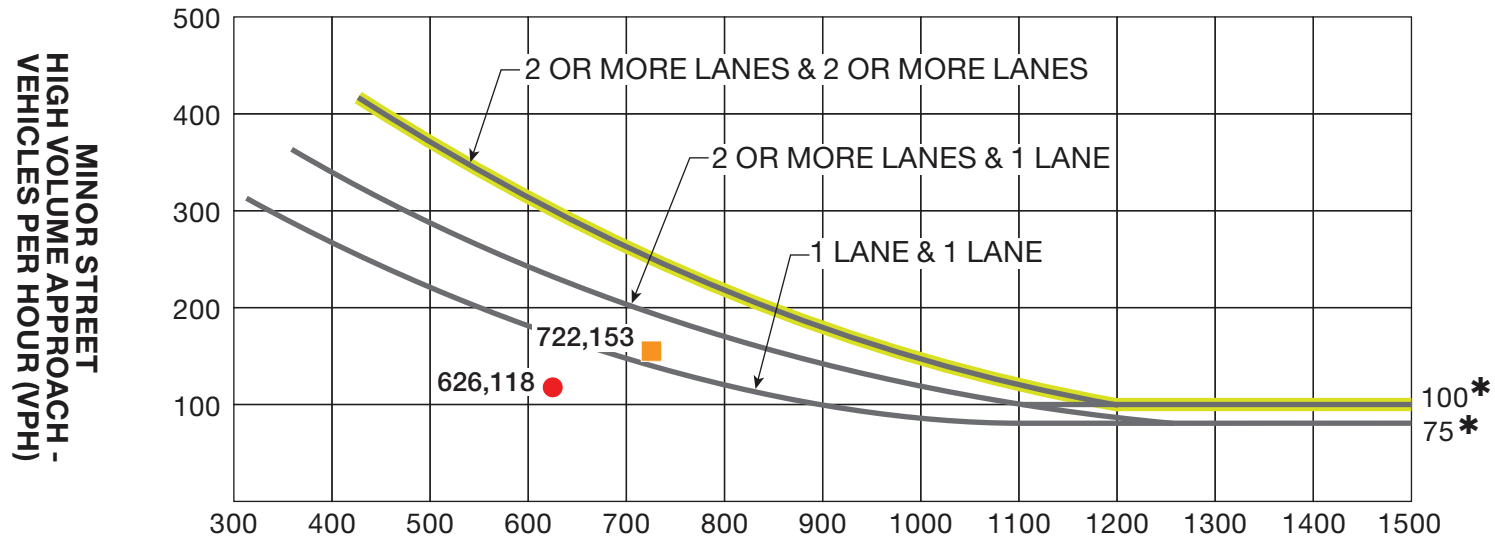
- = AM Peak Hour
- = PM Peak Hour



* Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

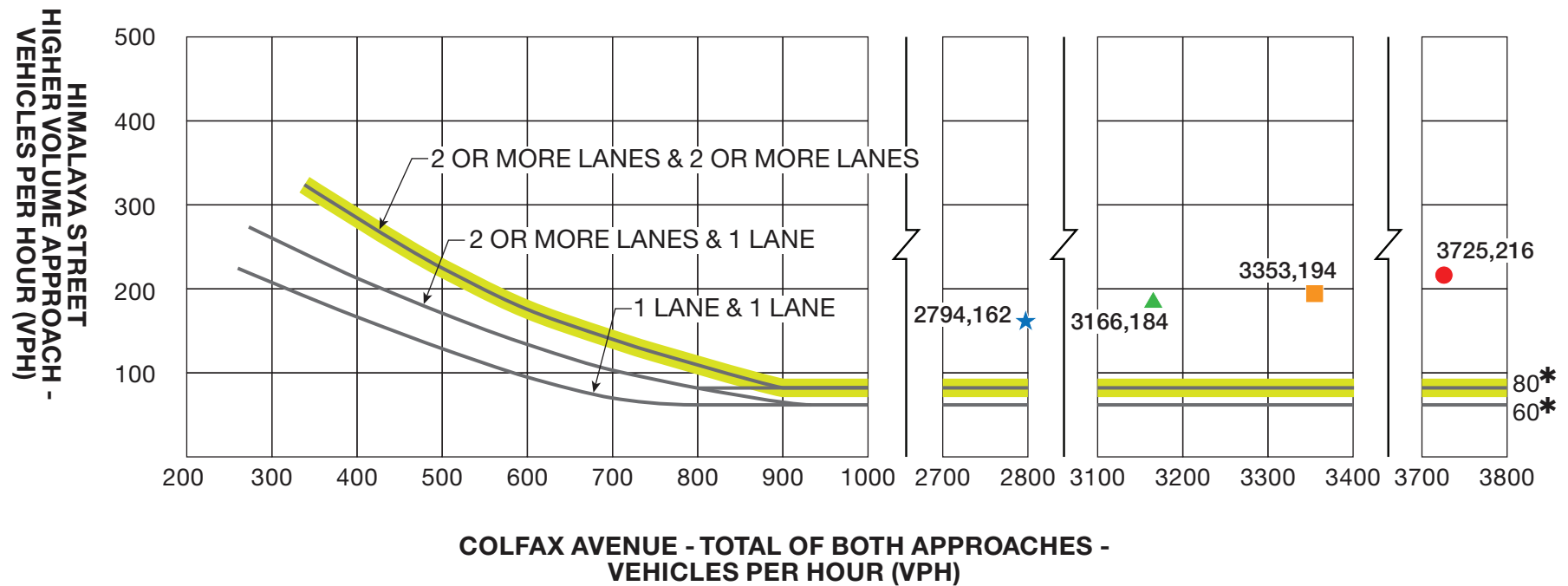
- = AM Peak Hour
- = PM Peak Hour
- ▲ = 80% of AM Peak Hour
- ★ = 80% of PM Peak Hour



* 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.

LEGEND

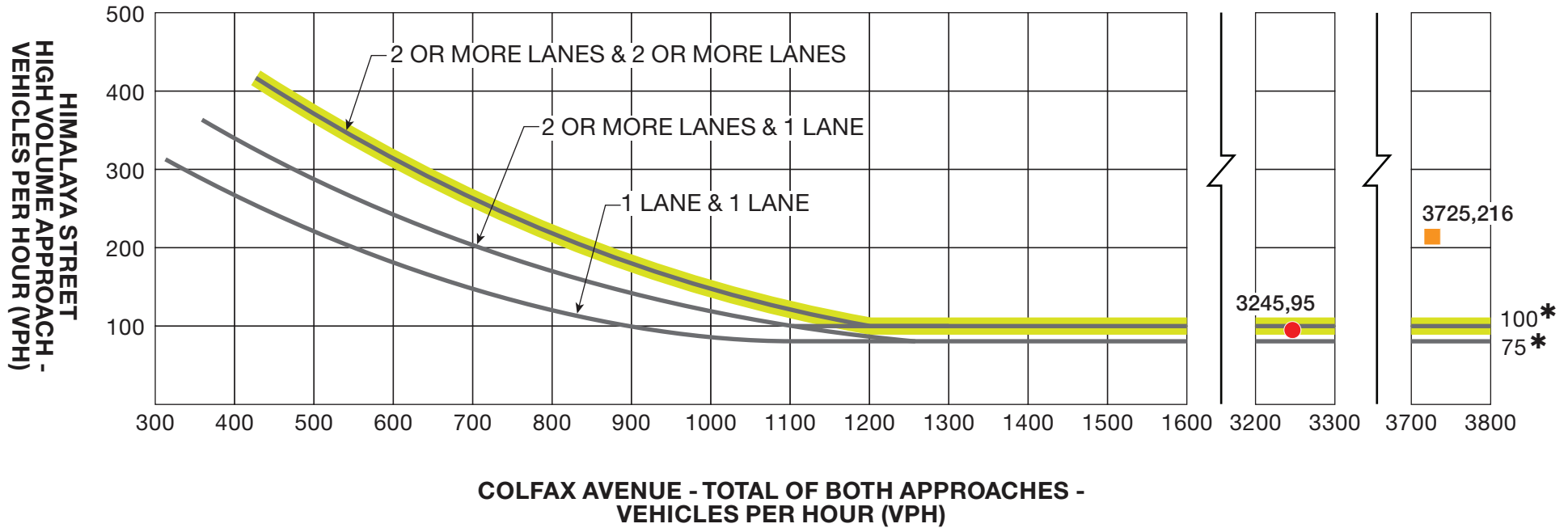
- = AM Peak Hour
- = PM Peak Hour



* Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

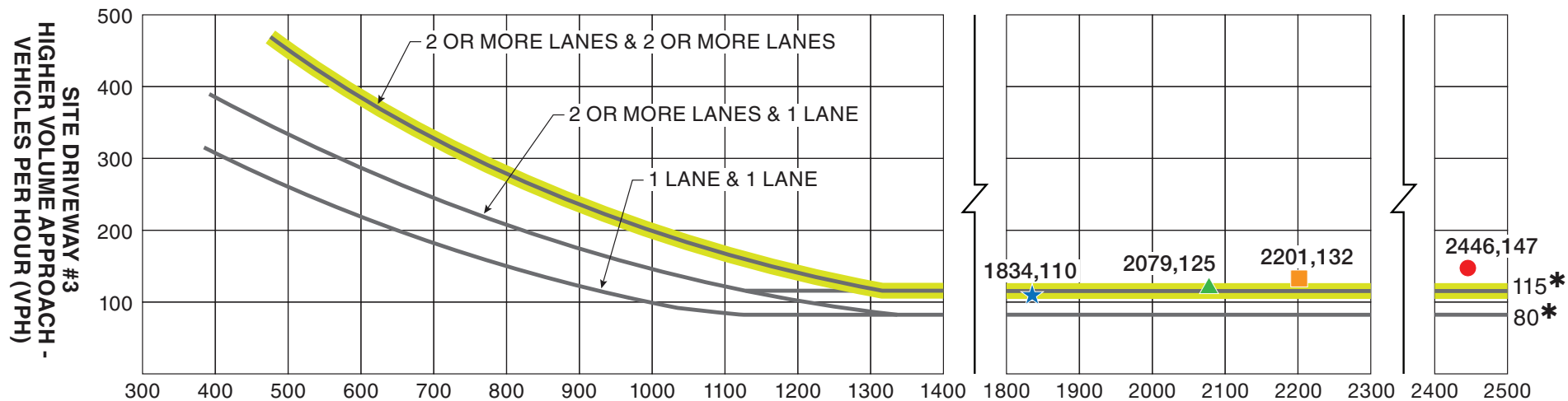
- = PM Peak Hour
- = 90% PM Peak Hour
- ▲ = 85% PM Peak Hour
- ★ = 75% PM Peak Hour



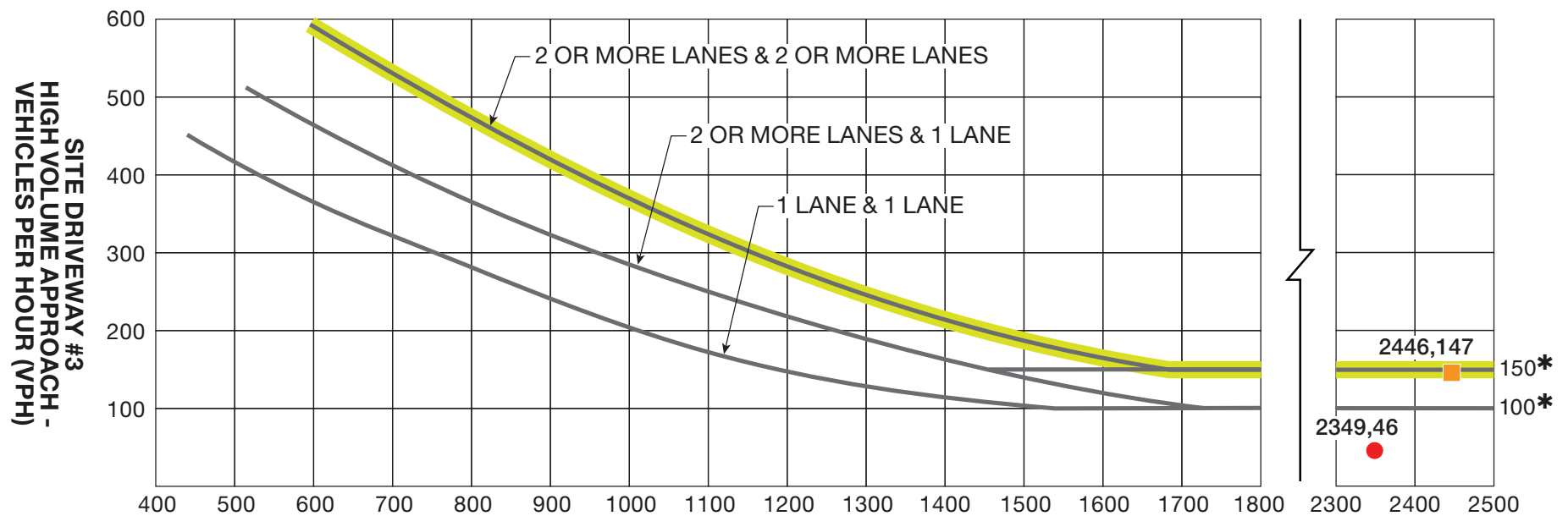
* Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

- = AM Peak Hour
- = PM Peak Hour



* Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

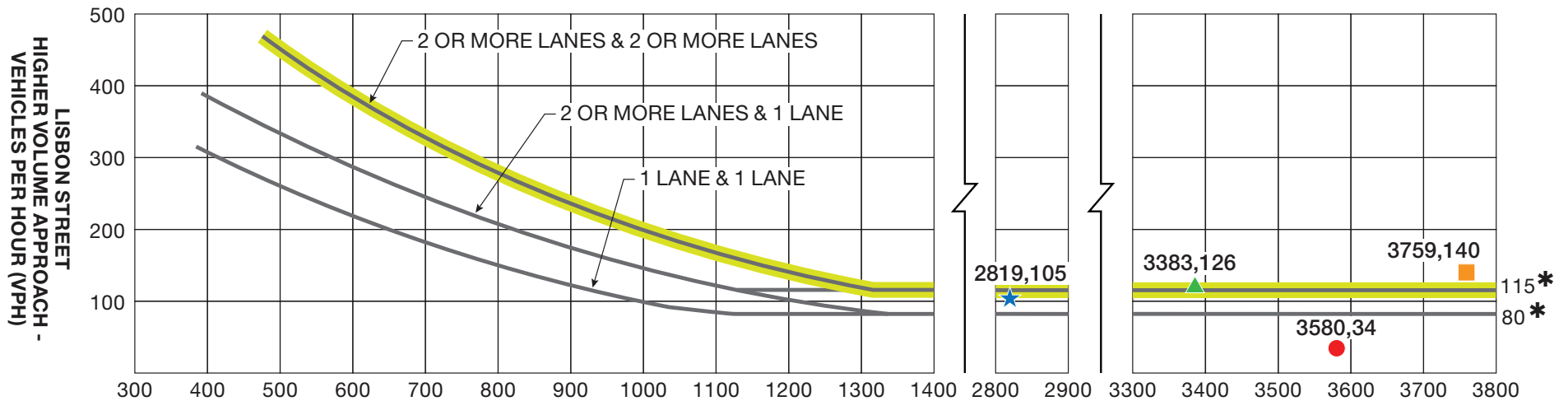


REALIGNED COLFAX AVENUE - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

* 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.

LEGEND

- = AM Peak Hour
- = PM Peak Hour

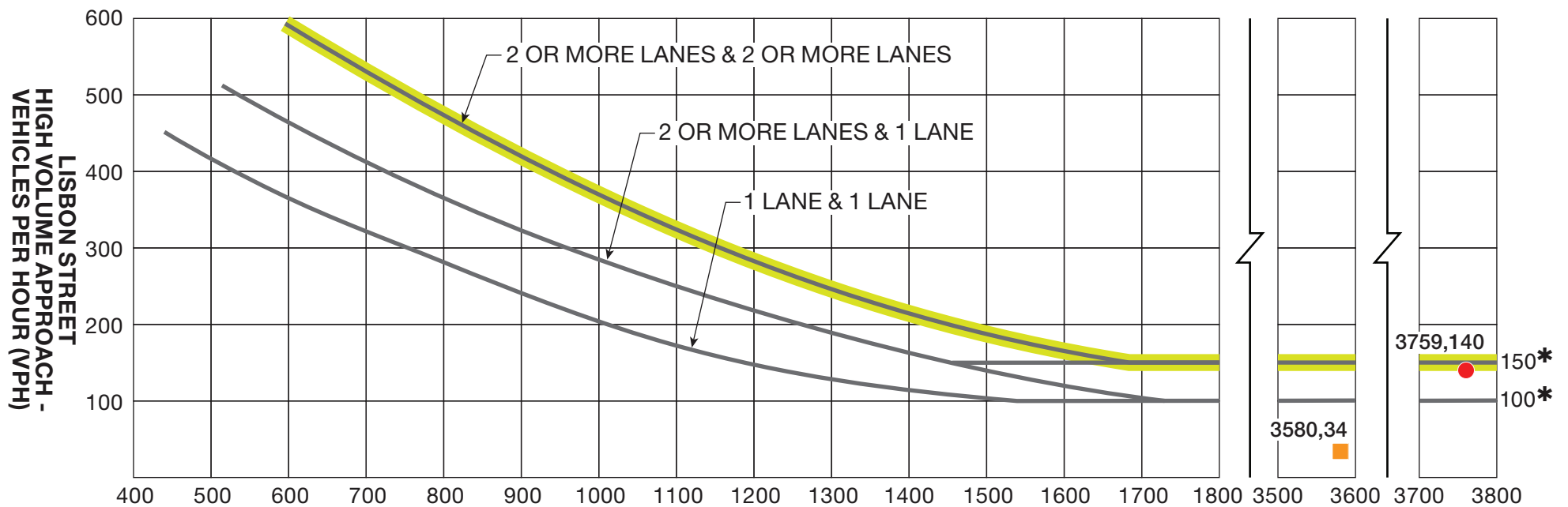


STEPHEN D. HOGAN PARKWAY - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

* Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

- = AM Peak Hour
- = PM Peak Hour
- ▲ = 90% PM Peak Hour
- ★ = 75% PM Peak Hour



STEPHEN D. HOGAN PARKWAY - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

* 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.

LEGEND

- = PM Peak Hour
- = AM Peak Hour

APPENDIX I. PROGRESSION ANALYSIS

