Kimley»Horn

TECHNICAL MEMORANDUM

To: Olga Beltsar, P.E.

From: Emily Moser, P.E., PTOE
Whitney DiGiantommaso, P.E.
Kimley-Horn and Associates, Inc.

Date: June 21, 2021

Subject: Granby Street Bike Lanes Traffic Study –
Admiral Taussig Boulevard to Willow Wood Drive

Introduction

Granby Street was identified as a high priority corridor for implementation of bicycle facilities in the City of Norfolk's *Bicycle and Pedestrian Strategic Plan*, which was adopted in 2015. The Strategic Plan for Segment 1 of Granby Street—from Admiral Taussig Boulevard to Willow Wood Drive—calls for repurposing one automobile lane in each direction to dedicated, buffered bicycle lanes, with the proposed typical lane configuration shown in **Figure 1**. This is the starting design concept for the Granby Street Bike Lanes project, which will be further developed as the project moves forward.

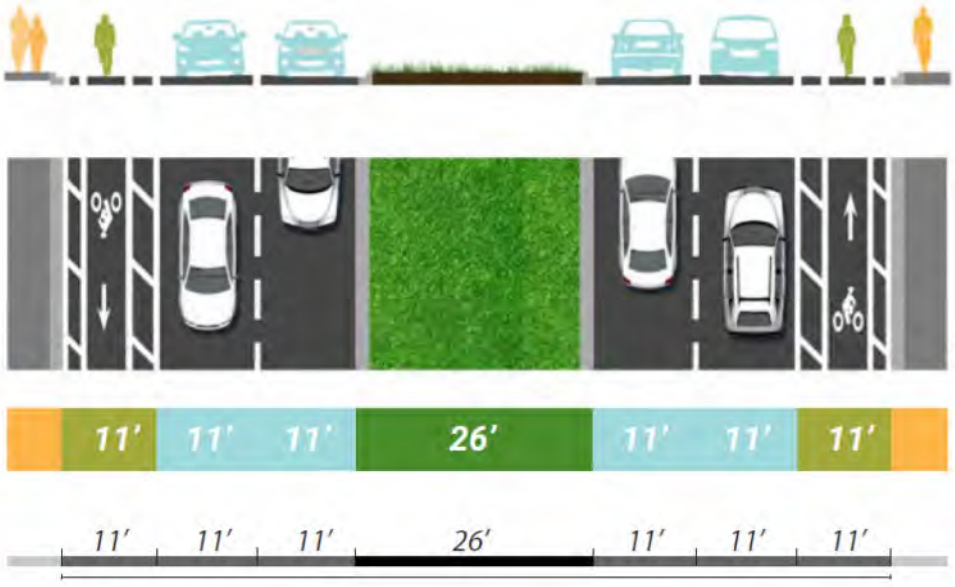


Figure 1. Proposed Typical Lane Configuration from Strategic Plan

The City later prepared an application for SMART Scale funding to implement improvements in this key segment, and they were notified by the Virginia Department of Transportation (VDOT) that the

project was selected for funding. Before formally accepting the state funding, the City desires to further evaluate the feasibility of the proposed lane repurposing with respect to traffic operations.

This traffic study was performed to evaluate potential traffic flow impacts resulting from the proposed lane repurposing and to provide information that could be used to refine the project design concept. This report provides a summary of the traffic study results.

Background

Study Area

The study area for Granby Street Bike Lanes Traffic Study consisted of an approximately 2.0-mile section of Granby Street from Admiral Taussig Boulevard to Willow Wood Drive. Within the study area, Granby Street is a six-lane, median divided roadway traversing in a north-south orientation. The study area intersections included the following existing traffic signals:

- Granby Street at Admiral Taussig Boulevard
- Granby Street at Little Creek Road
- Granby Street at Maycox Avenue/Louisiana Drive
- Granby Street at Thole Street
- Granby Street at Kingsley Lane
- Granby Street at Willow Wood Drive

Little Creek Road is a minor arterial roadway which provides direct access to Interstate 64 (I-64) just 1,600 feet east of Granby Street. Approximately 0.25-miles north of Little Creek Road is the intersection of Granby Street and Admiral Taussig Boulevard, which serves as an exit ramp for Interstate 564 (I-564). Just north of the study area, Granby Street has a direct interchange with I-64. Within the study area, there also exist many unsignalized local street intersections with Granby Street that are stop-controlled along the side street approaches. **Figure 2** illustrates the study area and highlights the study area intersections included in the operational analysis.

The City of Norfolk provided the existing signal timings and phasing for the study area intersections including the cycle lengths, splits, and offsets for the two coordinated intersections of Granby Street at Little Creek Road and Maycox Avenue/Louisiana Drive.

Land Use

A significant portion of the land use along the Granby Street corridor within the study area is single-family residential. Norfolk Collegiate, Granby High School, and Norfolk Christian Schools are in the approximate midpoint of the study area near Thole Street. A Norfolk Fire-Rescue Station exists at the intersection of Granby Street and Thole Street. Several churches also exist along Granby Street within the study area. Bon Secours DePaul Medical Center is located at the intersection of Granby Street and Kingsley Lane, though the in-patient facilities and many of the medical offices there were closed in April of 2021. The northern end of the study area at Wards Corner between Maycox Avenue/Louisiana Drive and Admiral Taussig Boulevard has numerous commercial developments. Future redevelopment is anticipated to be of similar land use.

Kimley»Horn	Granby Street Bike Lanes Traffic Study	Study Area	Figure 2

External Traffic Generator Influence

Naval Station Norfolk (NSN) Gate 22, I-64 (Hampton Roads Beltway), and I-564 (Admiral Taussig Boulevard) also influence traffic conditions along Granby Street within the study area. Gate 22 for NSN is located on Patrol Road, north of the study area, and is accessed from Granby Street. Traffic conditions along I-64 and I-564 can increase normal traffic volumes along Granby Street during periods of congestion. Additionally, Thole Street serves as a major collector route between Granby Street and I-64 to the east.

VDOT is currently working on two I-64 projects that may influence traffic conditions along Granby Street within the study area in the future: the Hampton Roads Bridge Tunnel (HRBT) Expansion and Hampton Roads Express Lanes (HREL).

The HRBT Expansion project is currently under construction and includes new twin, two-lane tunnels that will accommodate four lanes of traffic in addition to the existing tunnels for a total of eight lanes of capacity. The purpose of this project is to provide congestion relief through added capacity between Norfolk and Hampton, which has the potential to improve traffic conditions along the parallel roadways such as Granby Street.

The HREL project is currently under design and includes the expansion of the managed lanes network along I-64 from Bowers Hill in Chesapeake, through Norfolk and Hampton, to Jefferson Avenue in Newport News. The purpose of this project is to provide faster travel times, less congestion, and a more reliable transportation network on I-64. A traffic analysis study was completed prior to design to identify and evaluate the existing and future traffic conditions. The analysis extended to the adjacent arterial roadways within the cities of Norfolk and Hampton, which included several study area intersections along Granby Street. The traffic analysis methodology used in the HREL study was also used in this bike lane traffic analysis for consistency.

Pedestrians and Transit

Sidewalks exist along both sides of Granby Street throughout the study area. There are striped pedestrian crosswalks across Granby Street at each of the signalized study area intersections, as well as at several unsignalized locations. The intersection of Granby Street at Thole Street includes a dedicated pedestrian signal phase for Granby High School related pedestrian traffic.

Hampton Roads Transit (HRT) bus routes 1, 21, and 961 serve Granby Street between Admiral Taussig Boulevard and Willow Wood Drive. Route 1 is one of HRT's highest performing bus routes and provides service from the Downtown Norfolk Transit Center to Virginia Beach Town Center. Route 21 serves the military community and connects NSN to Joint Expeditionary Base Little Creek. Route 961 operates as a MAX service route connecting major employment centers in Norfolk and Newport News. These routes operate with 30-minute headways during the peak hours with exception of Route 1 (which operates with 15-minute headways during the peak hours) and stop at several key locations within the study area.

Data Collection

Field Observations Summary

Field observations were performed on March 11, 2021, from 7:00 AM to 11:30 AM and 3:30 PM to 5:00 PM along Granby Street from Admiral Taussig Boulevard to Willow Wood Drive. Lane widths, geometry, and signal phasing were verified during field observations.

Existing traffic flow, turning movement patterns, and operations were also observed throughout the study corridor during the AM and PM peak periods. **Table 1** summarizes the queue observations at the study area intersections during the AM and PM peak periods.

Table 1: Existing AM and PM Peak Period Queue Observations

Study Area Intersection	AM Peak Period	PM Peak Period
Granby Street at Admiral Taussig Boulevard	All queues within storage lanes	
Granby Street at Little Creek Road	All queues within storage lanes	WBL exceeded storage lanes NBTR extended to Maycox Avenue/ Louisiana Drive intersection
Granby Street at Maycox Avenue/ Louisiana Drive	All queues within storage lanes	SBTR extended to Little Creek Road intersection
Granby Street at Thole Street	WBL exceeded storage lanes	
Granby Street at Kingsley Lane	All queues within storage lanes	
Granby Street at Willow Wood Drive	Inside WBL exceeded storage lanes, blocking WBL/WBR	

WBL = Westbound left-turn
WBR = Westbound right-turn lane
NBTR = Northbound shared through/right-turn lane
SBTR = Southbound shared through/right-turn lane

Traffic Volumes

Due to the COVID-19 pandemic and associated school closures and non-essential employees working from home across the Commonwealth of Virginia, existing traffic volumes and trip patterns were significantly impacted and limited the ability to perform any new field traffic data collection. This study made use of the most recently available field data.

Turning movement count data for the AM and PM peak hours in 2019 were obtained for each of the following study area intersections from the City of Norfolk:

- Granby Street at Admiral Taussig Boulevard (November 6, 2019)
- Granby Street at Little Creek Road (October 29, 2019)
- Granby Street at Willow Wood Drive (March 21, 2019)

Based on the available count data for these intersections, the AM and PM peak hours were identified as 7:00 AM to 8:00 AM and 4:00 PM and 5:00 PM, respectively. These peak hours were consistent with the previously completed VDOT HREL study.

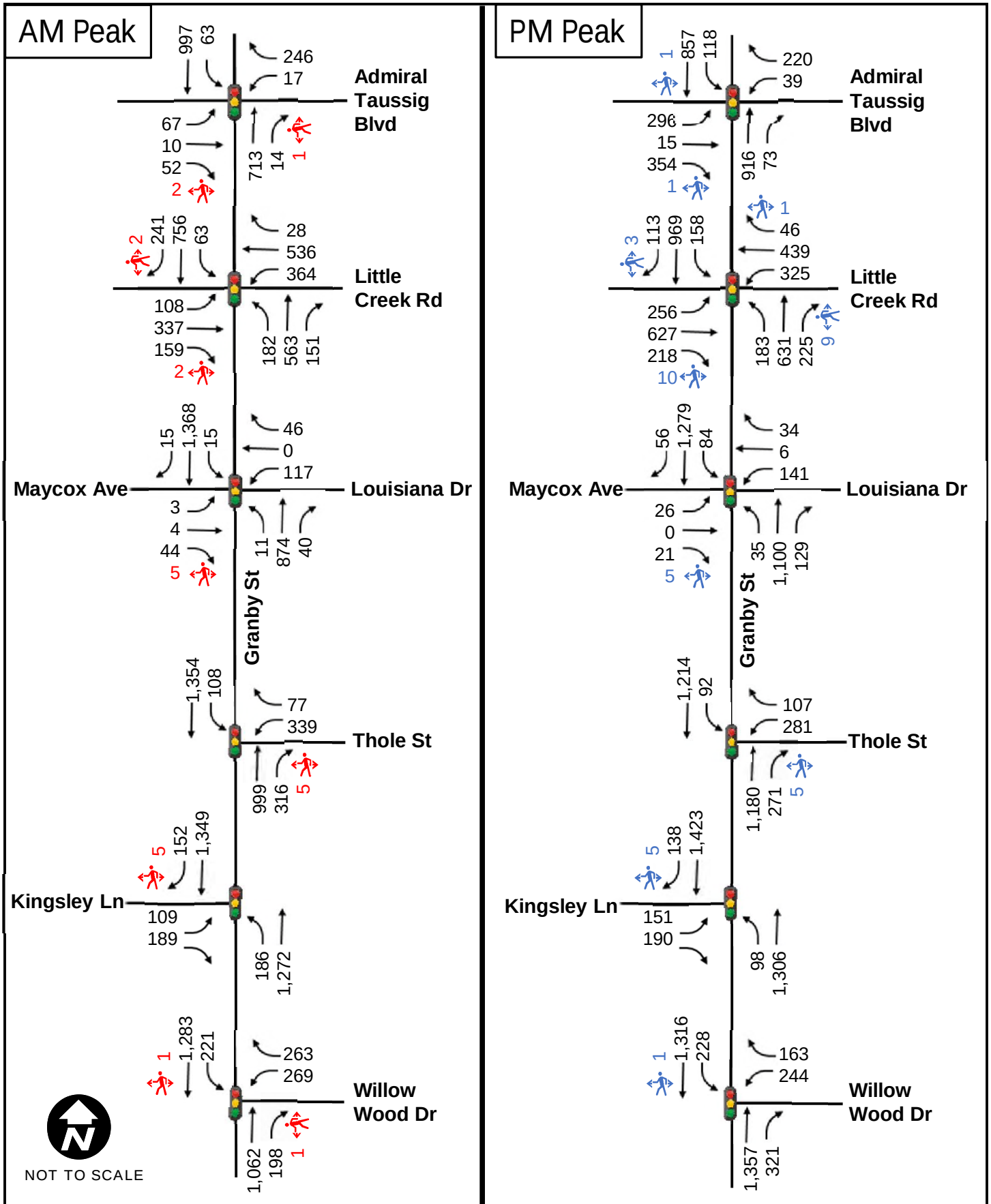
For the remaining study area intersections, traffic volumes were identified using data provided by StreetLight Data, Inc.:

- Granby Street at Maycox Avenue/Louisiana Drive
- Granby Street at Thole Street
- Granby Street at Kingsley Lane

StreetLight data is collected from origin-destination (O-D) smartphone data. The origin-destination data provided by StreetLight are not actual count data but results from a series of algorithms which translate anonymized location records from smart phones and navigation devices into travel routes between origin and destination "gates." VDOT has deemed StreetLight as an acceptable data source to be used for traffic analyses in conjunction with other available traffic data. The methodology used in the determination of traffic volumes for this study is consistent with the methodology of VDOT's HREL traffic study.

For the purposes of this study, StreetLight data was compiled for all the study area intersections during the weekdays in October 2019. StreetLight data was only used for comparison purposes for the three intersections with available turning movement count data. The StreetLight data was within ± 20% of the peak hour count data.

For the three intersections without available turning movement count data, StreetLight data was compared to 2019 annual average daily traffic (AADT) volumes published by VDOT. The StreetLight volumes were approximately 10% lower than the 2019 VDOT AADT volumes; therefore, a factor of 1.10 was applied to the StreetLight turning movement volumes to obtain comparable traffic data to the existing counts. Volumes were then balanced along the corridor and adjusted where necessary, by no more than ± 20%, while allowing for imbalances between signalized intersections due to the presence of unsignalized intersections and driveways. The resulting peak hour volumes were used for the existing conditions analysis and are shown in **Figure 3**.



Kimley»Horn	Granby Street Bike Lanes Traffic Study	Existing AM and PM Peak Hour Volumes	Figure 3

Analysis Approach

Iterative Analysis Process

The traffic analysis performed for this study consisted of an iterative process. The process started by analyzing and comparing traffic conditions for the existing roadway configuration (i.e., three general-purpose vehicle lanes in each direction along Granby Street) to the future roadway configuration after lane repurposing (i.e., two vehicle lanes in each direction along Granby Street). Traffic impacts resulting from the lane repurposing were evaluated with and without potential modifications to the future roadway configuration (i.e., project alternatives) to mitigate potential negative impacts. The process is iterated by comparing traffic conditions for each modified future roadway configuration to the existing roadway configuration.

Analysis Scenarios

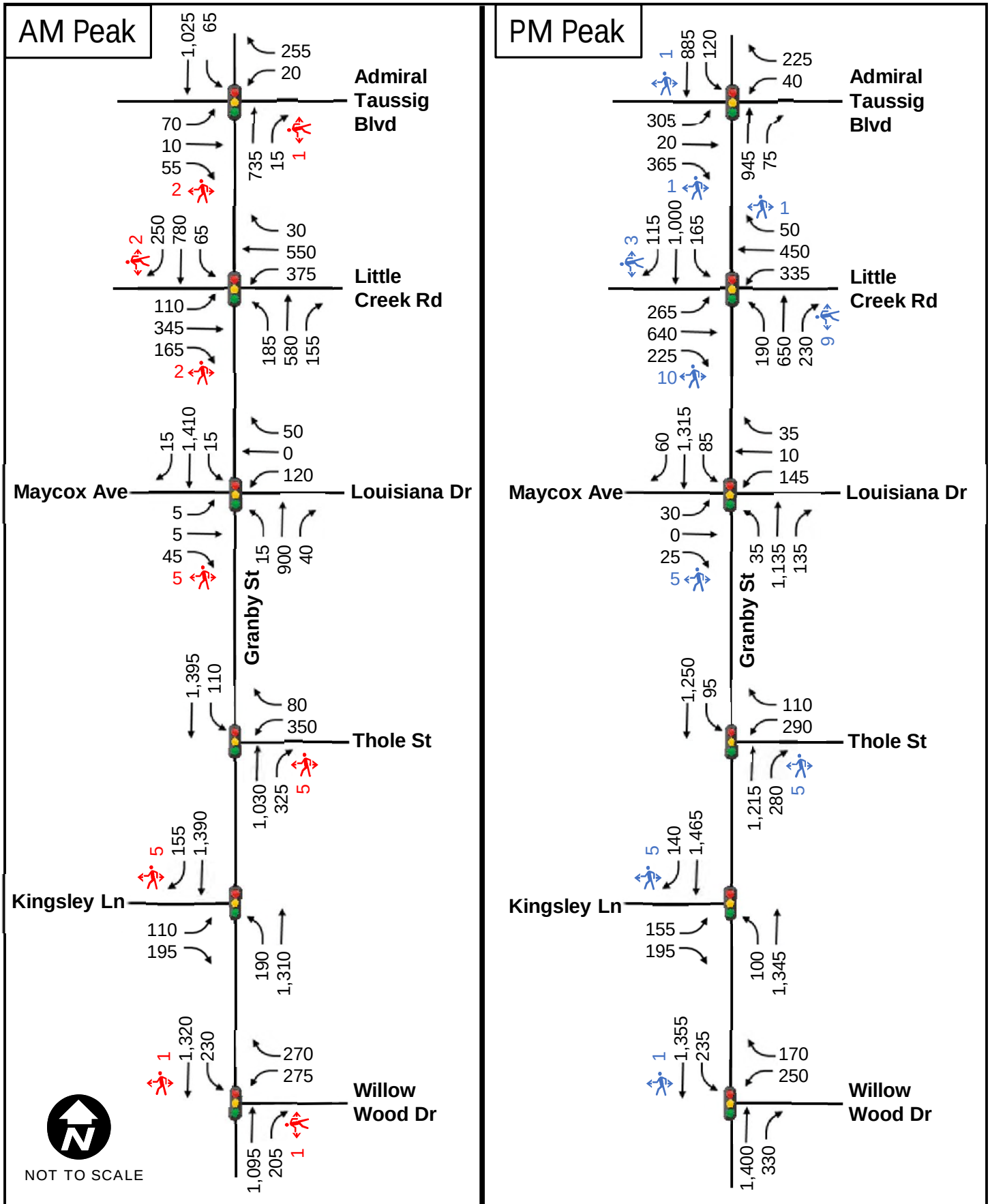
The following scenarios were analyzed under AM and PM peak hour conditions as part of this lane repurposing analysis:

- Existing Conditions: existing geometry with existing (2019) traffic volumes
- No Build Conditions: existing geometry with future (2025) traffic volumes
- Build Conditions: proposed Build ("base") geometry with lane repurposing and future (2025) traffic volumes
- Build 1 Alternative Conditions: proposed Build 1 alternative geometry with lane repurposing and future (2025) traffic volumes
- Build 2 Alternative Conditions: proposed Build 2 alternative geometry with lane repurposing and future (2025) traffic volumes

Future (2025) Traffic Projections

Future (2025) traffic projections were determined using identified growth rates from the Hampton Roads Travel Demand Model (TDM). The TDM is a macroscopic model used to forecast future regional travel behavior and growth based on input data that consists of anticipated land use, demographics, and transportation network characteristics. As part of the HREL study, the TDM was updated to reflect the improvements associated with the Hampton Roads Bridge Tunnel (HRBT) and HREL projects to account for potential changes in traffic patterns.

Growth rates were identified from the updated TDM for roadways within the City of Norfolk including Granby Street and Little Creek Road. These growth rates were compared to historical traffic data which shows little to no growth from 2016. An annualized growth rate of 0.5%, consistent with the VDOT HREL study, was applied to all movements of the existing traffic volumes to determine the future (2025) AM and PM peak hour volumes. **Figure 4** displays the resulting future (2025) AM and PM peak hour traffic volumes.



Kimley»Horn	Granby Street Bike Lanes Traffic Study	Future (2025) AM and PM Peak Hour Volumes	Figure 4

Future (2025) Background Improvements

As part of the future (2025) conditions, the following planned background improvements that are independent of the Granby Street Bike Lane project were identified and included in the future analysis models.

- Reduced the Granby Street posted speed limit from 35 mph to 30 mph
- Implemented a new, exclusive pedestrian phase at Kingsley Lane
- Optimized traffic signal timings and offsets including implementing coordination at all the study area intersections to account for increases in future traffic volumes and to prioritize progression along Granby Street

Future (2025) Build Geometry with Proposed Lane Repurposing

As previously mentioned, two Build alternatives were analyzed under the future (2025) AM and PM peak hour conditions. The Build alternative scenarios were compared to a "base" future roadway configuration, which is consistent with the concept proposed by the City of Norfolk in the SMART Scale funding application.

For the purposes of the traffic analysis, the extent of the lane repurposing in the "base" future roadway configuration (i.e., before any design modification iterations) included the following:

- Southbound Granby Street (**Figure 5**)
  - Lane repurposing transition from existing three-lanes to two-lanes anticipated to occur just south of the HRT Transfer Station where it is continued along Granby Street to Willow Wood Drive, thus connecting to the existing bike lane across the Granby Street bridge.
- Northbound Granby Street (**Figure 6**)
  - Lane repurposing transition from three-lanes to two-lanes anticipated to occur on the northbound approach of Willow Wood Drive along Granby Street to the northbound approach of Admiral Taussig Boulevard.
  - An off-roadway path is anticipated between Louisiana Drive and Little Creek Road in lieu of lane repurposing due to the existing constrained traffic operations.

Lane repurposing through the I-64 interchange, north of Admiral Taussig Boulevard, was beyond the scope of this project and has not been included in the analyses.

Southbound Granby Street – near HRT Transfer Station

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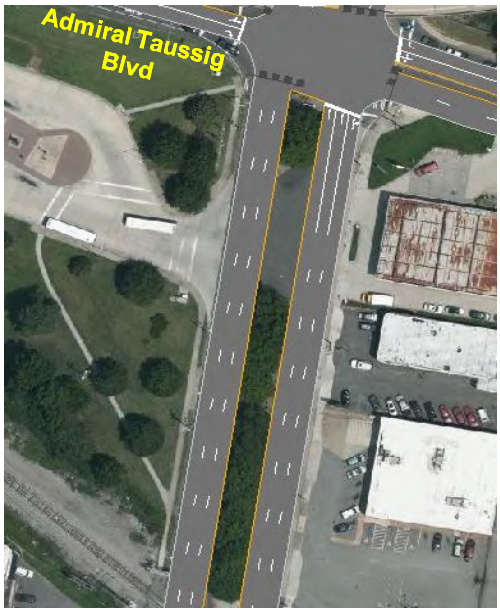
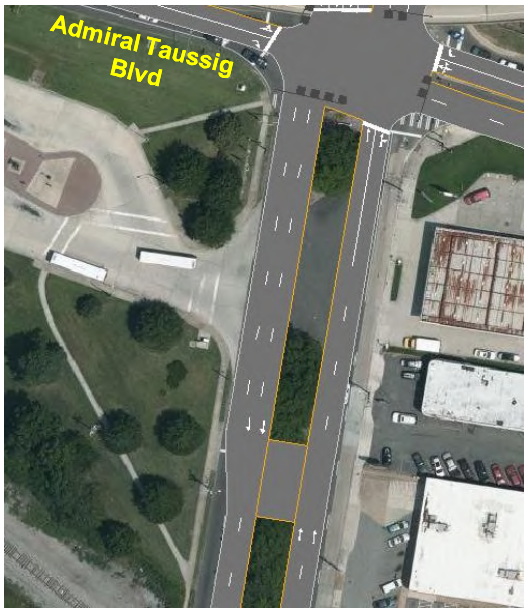
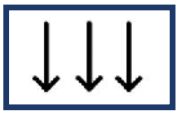
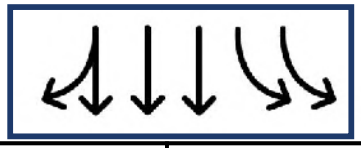




Existing  Build 

Southbound Granby Street at Little Creek Road

Existing  Build 

Kimley»Horn	Granby Street Bike Lanes Traffic Study	2025 Build Conditions Northern Transition Area	Figure 5

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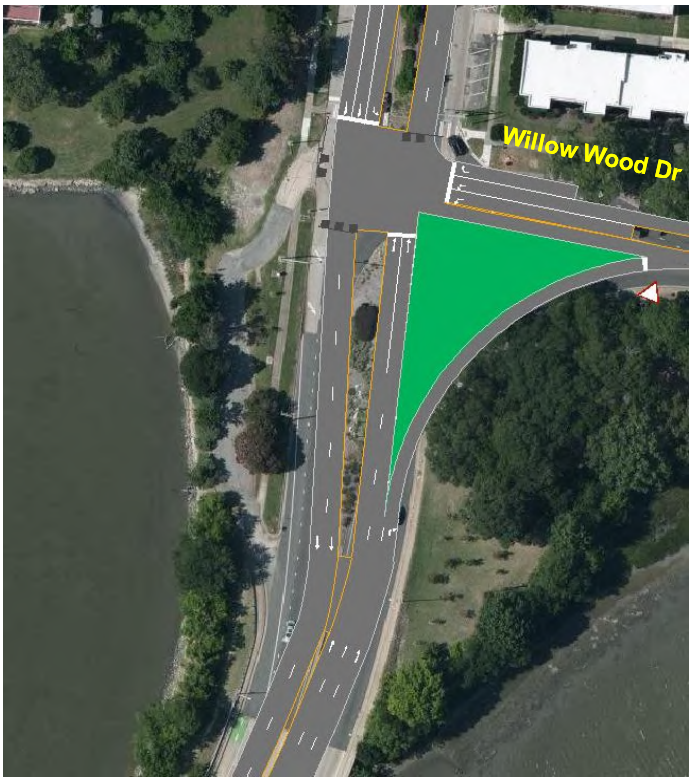
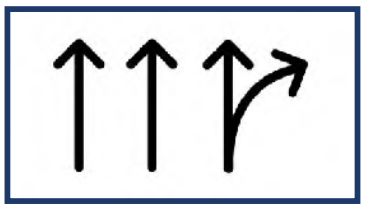
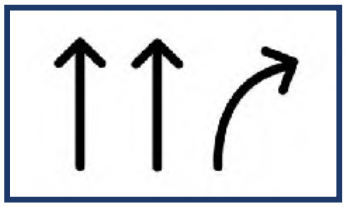
Northbound Granby Street at Willow Wood Drive



Existing



Build



Kimley»Horn	Granby Street Bike Lanes Traffic Study	2025 Build Conditions Southern Transition Area	Figure 6

The two Build alternatives consisted of the following modifications to the base future roadway configuration:

- Build 1 Alternative – Southbound Granby Street (**Figure 7**)
  - Adjusts the start of the southbound bike lane (and therefore the lane transition from three lanes to two lanes) from just south of the HRT Transfer Station ("base" Build condition) to the intersection of Little Creek Road by restriping the existing southbound shared through/right-turn lane as an exclusive right-turn lane, thus keeping three full lanes on southbound Granby Street from Admiral Taussig Boulevard to Little Creek Road.
- Build 2 Alternative – Northbound Granby Street (**Figure 8**)
  - Assumes the northbound bike lane will begin at the base of the Granby Street bridge and continue through the Willow Wood Drive intersection.
  - Modifies the northbound Granby Street approach to the Willow Wood Drive intersection from two through lanes with an exclusive right-turn lane ("base" Build condition) to one exclusive through lane and one shared through/right-turn lane with a bicycle lane.

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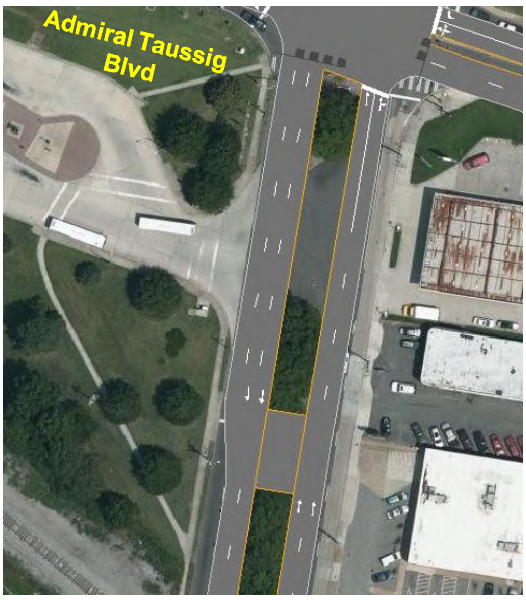
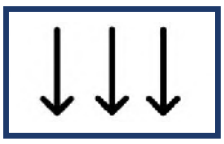
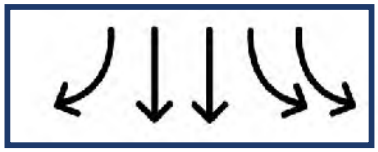
Southbound Granby Street – near HRT Transfer Station



Build  Build 1 

Southbound Granby Street at Little Creek Road

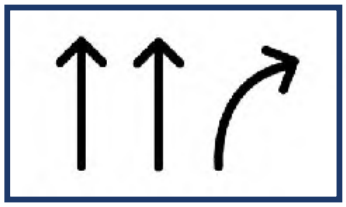
Build  Build 1 

Kimley»Horn	Granby Street Bike Lanes Traffic Study	2025 Build 1 Conditions Northern Transition Area	Figure 7

NOT TO SCALE

Northbound Granby Street at Willow Wood Drive

Build



Build 2

Kimley»Horn	Granby Street Bike Lanes Traffic Study	2025 Build 2 Conditions Southern Transition Area	Figure 8

Analysis Methodology

Traffic operational analyses were conducted using *Synchro 10* traffic analysis software, which utilizes methodologies that are consistent with the *Highway Capacity Manual* (HCM) published by the Transportation Research Board of the National Academies. In addition, the analysis methodology and assumptions were consistent with the standards in VDOT's *Traffic Operations and Safety Analysis Manual* (TOSAM) Version 2.0 and the previously completed VDOT Hampton Roads Express Lane (HREL) Norfolk Traffic Operations Analysis Report, dated November 2020.

For the intersection capacity analyses, three measures-of-effectiveness were evaluated: level of service (LOS), volume-to-capacity ratio (V/C), and 95th percentile queue lengths at critical movements. The planning-level corridor analyses considered overall corridor travel time in each direction as the primary metric for evaluation. For the purposes of this report, simplified definitions of these terms are provided in this section.

LOS describes the amount of traffic congestion at an intersection or on a roadway and ranges from A to F (A indicating a condition of little to no congestion and F a condition with severe congestion, unstable traffic flow, and stop-and-go conditions). LOS is based on the average delay experienced by all traffic using the intersection during the busiest (peak) 15-minute period. Generally, LOS A through LOS D are considered acceptable for overall intersection LOS in urban environments as a standard industry practice. However, it is not atypical for individual intersection approaches and movements to operate at LOS E or LOS F in more developed urban and suburban areas.

Delay and associated LOS for signalized intersections are reported from the Synchro analysis. A graphical depiction of overall intersection LOS is shown in **Figure 9**. **Table 2** shows the corresponding thresholds in delay for signalized intersections.

Figure 9: Overall Intersection Level of Service (LOS) Depiction

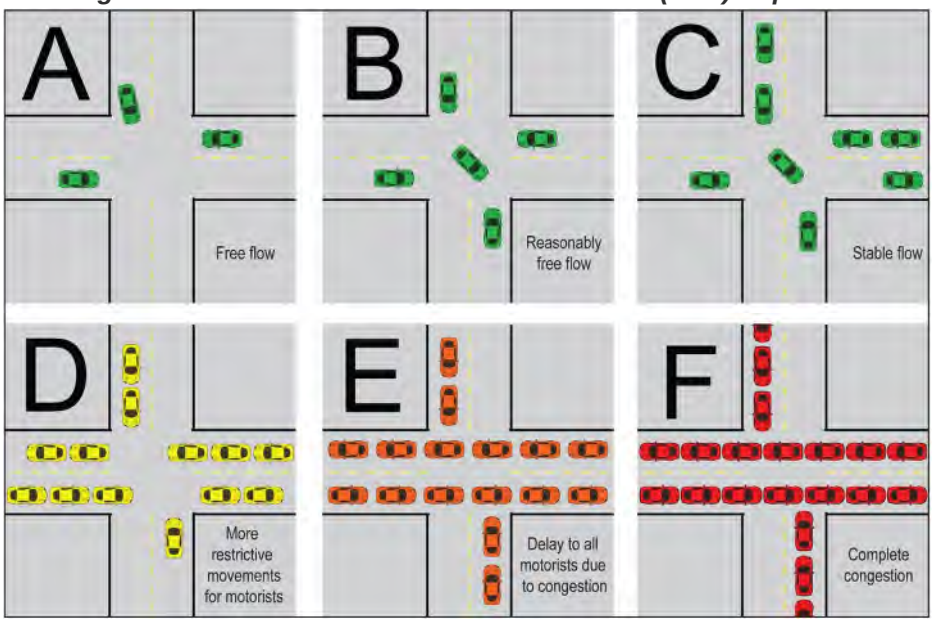


Table 2: LOS Control Delay Thresholds

LOS	Signalized Intersection Control Delay Per Vehicle (Seconds/ Vehicle)	Description
A	≤ 10	Free-flow traffic operations at average travel speeds. Vehicles completely unimpeded in ability to maneuver.
B	> 10 – 20	Reasonably unimpeded traffic operations at average travel speeds. Vehicle maneuverability slightly restricted.
C	> 20 – 35	Stable traffic operations. Lane changes becoming more restricted. Travel speeds reduced to half of average free flow speeds.
D	> 35 - 55	Small increases in traffic flow can cause increased delays. Delays likely attributable to increased traffic, reduced signal progression, and adverse timing.
E	> 55 - 80	Significant delays. Travel speeds reduced to one third of average free flow travel speed.
F	> 80	Extremely low speeds. Intersection congestion and extensive queues at intersections.

Source: Highway Capacity Manual

Intersection capacity is a general measure of the number of vehicles an intersection can process, or how many vehicles can move through the intersection, in a given time period based on the characteristics of the intersection including geometry, number of lanes, and traffic control. Intersection capacity utilization refers to how much of the available intersection capacity is being used by the traffic volume moving through the intersection in a given period, and it is expressed as a volume-to-capacity ratio (V/C ratio). A generally accepted guideline published in the Federal Highway Administration's (FHWA) *Informational Guide on Signalized Intersections* states that a V/C ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the intersection V/C ratio approaches 1.0, delay and queuing conditions may occur. Once the vehicle demand exceeds the capacity of the intersection (i.e., a V/C ratio greater than 1.0), vehicles may require more than one signal cycle to pass through the intersection, depending on several factors, including signal timing (i.e., how much time is allotted to each traffic movement in one signal cycle). The lower the V/C ratio, the more flexibility there is in the traffic signal timing to accommodate overall traffic for all movements.

Vehicle queue length is the general measure of how many vehicles are stopped at an intersection waiting to travel through the intersection. For this study, the 95th percentile queue lengths that exceed the existing turn lane length (example shown in **Figure 10**) were identified for the study area intersections.

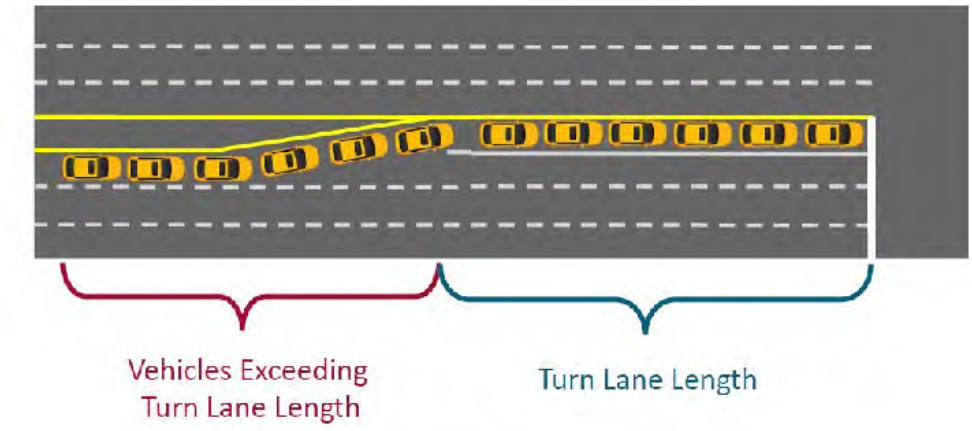


Figure 10: Queue Length Exceeding Turn Lane Length Depiction

Corridor travel time consists of the amount of time to traverse between two predefined points. Corridor travel time includes any stops and delays along the corridor within the study area limits. In this study, corridor travel times are used for reference in comparing traffic conditions across a range of possible future lane configurations.

The model estimates for these measures of effectiveness are theoretical values based on traffic model inputs and assumptions. The inputs and assumptions used for the Synchro models in this study provide a fair comparison between existing and potential future conditions.

Traffic Operational Analysis Results

Capacity Analysis

The LOS and delay results for each intersection by approach are summarized in **Table 3** through **Table 8** for both the AM and PM peak hours under the Existing, No Build, and Build scenarios. Intersections impacted by Build alternatives also include the relevant results. Following this section, **Figure 11** through **Figure 16** graphically depict the LOS, delay, and V/C ratio results. Detailed LOS results by movement are provided in **Appendix A** while Synchro output reports are provided in **Appendix B**.

Granby Street at Admiral Taussig Boulevard

As shown in **Table 3**, the intersection currently operates at overall LOS B and D during the AM and PM peak hours, respectively. Under No Build conditions, overall intersection operations are anticipated to improve even with the increased traffic volumes due to the traffic signal timing optimization and coordination that prioritizes the traffic progression along Granby Street. By operating the signal with a set cycle length in coordination with the adjacent signals, delay for the eastbound approach is anticipated to increase under No Build conditions during the AM peak hour. However, the overall intersection is anticipated to operate at LOS C or better under both No Build and Build

conditions. During the PM peak period, the eastbound and westbound approaches are anticipated to continue to operate at LOS E, similar to existing conditions.

Table 3: Granby Street at Admiral Taussig Boulevard LOS and Delay Summary

Scenario	Level of Service (Delay in seconds/vehicle)									
	AM Peak Hour					PM Peak Hour				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
Existing	D (48.0)	D (47.9)	B (14.1)	A (8.7)	B (17.5)	E (75.5)	E (57.1)	C (24.2)	B (13.2)	D (35.3)
2025 No Build	E (64.4)	C (34.5)	A (6.7)	A (7.5)	B (13.9)	E (69.2)	E (57.2)	B (16.7)	B (15.8)	C (32.1)
2025 Build	E (64.4)	C (33.5)	A (8.2)	A (7.5)	B (14.3)	E (69.2)	E (58.5)	C (23.4)	B (16.4)	C (34.7)

Granby Street at Little Creek Road

As shown in **Table 4**, the intersection currently operates at overall LOS D and E during the AM and PM peak hours, respectively, with multiple approaches operating at LOS E. This is due to the competing traffic volumes along Granby Street and Little Creek Road as well a higher cycle length to accommodate these turning movements. Under No Build conditions, overall intersection operations are anticipated to improve even with the increased traffic volumes due to the traffic signal timing optimization and coordination that prioritizes the traffic progression along Granby Street. The overall intersection is anticipated to improve to overall LOS D during both the AM and PM peak hours under all future scenarios, with only the eastbound Little Creek Road approach operating at LOS E. Under "base" Build conditions with only two southbound lanes, the southbound Granby Street approach is also anticipated to operate at LOS E during the AM peak hour, similar to Existing conditions. However, with the Build 1 alternative configuration, this approach is anticipated to improve to LOS D.

The northbound left-turn movement is anticipated to operate at LOS F during the PM peak hour under all future scenarios and the AM "base" Build scenario. This is because the coordination along Granby Street is prioritized for the through movements, so the left-turn vehicles arriving at the intersection as part of the northbound platoon must wait until the beginning of the next signal cycle to be served. In order to improve operations for the Granby Street left-turn movements, the City is considering implementing an alternate phase sequence that would serve the left-turn phases twice in a signal cycle, thereby reducing the delay for these movements.

Table 4: Granby Street at Little Creek Road LOS and Delay Summary

Scenario	Level of Service (Delay in seconds/vehicle)									
	AM Peak Hour					PM Peak Hour				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
Existing	E (56.3)	C (32.3)	C (34.2)	E (56.0)	D (44.2)	D (49.6)	E (71.7)	D (50.0)	E (61.2)	E (57.4)
2025 No Build	E (61.4)	D (36.1)	C (29.3)	D (42.8)	D (40.8)	E (57.3)	D (43.6)	D (35.1)	D (46.4)	D (45.9)
2025 Build	E (64.1)	D (50.2)	C (34.1)	E (59.9)	D (51.4)	E (76.1)	D (52.7)	D (37.1)	D (51.3)	D (54.6)
2025 Build 1	E (60.2)	D (36.8)	C (30.0)	D (44.5)	D (41.5)	E (67.6)	D (48.6)	D (36.5)	D (45.7)	D (49.7)

Granby Street at Maycox Avenue/Louisiana Drive

As shown in **Table 5**, the intersection currently operates at overall LOS B and C during the AM and PM peak hours, respectively, with both the eastbound and westbound approaches operating at LOS E during both peak hours. The higher delay for the side street approaches is a function of the higher signal cycle length currently in use to maintain coordination between this intersection and the Granby Street/Little Creek Road intersection as well as adjacent intersections along Little Creek Road. The westbound Louisiana Drive approach currently operates just one second below the LOS F threshold during the PM peak hour. Under No Build conditions with increased future traffic volumes, delay for this approach is anticipated by increase by a few seconds, pushing it just over the threshold into LOS F operations. However, overall intersection operations are anticipated to improve due to the traffic signal timing optimization along Granby Street. The overall intersection is anticipated to improve to overall LOS B during both the AM and PM peak hours under all future scenarios, with both side street approaches continuing to operate at overall LOS E/F.

Table 5: Granby Street at Maycox Avenue/Louisiana Drive LOS and Delay Summary

Scenario	Level of Service (Delay in seconds/vehicle)									
	AM Peak Hour					PM Peak Hour				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
Existing	E (59.6)	E (72.6)	B (12.3)	A (6.2)	B (13.7)	E (59.2)	E (79.0)	B (18.5)	B (19.8)	C (23.6)
2025 No Build	E (65.5)	E (70.3)	A (3.6)	A (5.6)	B (10.3)	E (69.2)	F (82.6)	B (18.8)	A (3.5)	B (16.4)
2025 Build	E (65.5)	E (70.3)	A (5.5)	A (7.3)	B (11.9)	E (69.2)	F (82.6)	C (22.6)	A (5.6)	B (19.0)

Granby Street at Thole Street

As shown in **Table 6**, the intersection currently operates at overall LOS B during both the AM and PM peak hours, with all approaches operating at LOS C or better. Under future No Build conditions, delay for the westbound approach is anticipated to increase, resulting in LOS E operations during both peak hours. This is due to a proposed change from the existing "Free" signal operations to running a set cycle length in order to coordinate operations with the adjacent signals and prioritize the traffic progression along Granby Street, which means that vehicles on the side street will need to wait longer before being served. With the lane repurposing under Build conditions, delays will increase slightly along Granby Street, but both Granby Street approaches and the overall intersection will continue to operate acceptably at LOS C or better during both peak periods.

Table 6: Granby Street at Thole Street LOS and Delay Summary

Scenario	Level of Service (Delay in seconds/vehicle)							
	AM Peak Hour				PM Peak Hour			
	WB	NB	SB	Overall	WB	NB	SB	Overall
Existing	C (31.6)	C (22.6)	B (11.7)	B (18.8)	C (29.7)	C (22.0)	B (10.9)	B (18.3)
2025 No Build	E (63.2)	B (10.9)	A (9.2)	B (17.0)	E (68.6)	B (14.1)	A (6.6)	B (17.7)
2025 Build	E (60.1)	C (22.9)	B (12.9)	C (23.2)	E (65.8)	C (21.7)	B (10.8)	C (22.7)

Granby Street at Kingsley Lane

As shown in **Table 7**, the intersection currently operates at overall LOS B during both the AM and PM peak hours, with all approaches operating at LOS C or better. Under future No Build conditions, delay for the eastbound approach is anticipated to increase, resulting in LOS D and E operations during the AM and PM peak hours, respectively. In addition, the northbound left-turn movement is anticipated to operate at LOS E during the PM peak hour under No Build conditions. The increased delay for these movements is due to a proposed change from the existing "Free" signal operations to running a set cycle length in order to coordinate operations with the adjacent signals and prioritize the traffic progression along Granby Street, which means that vehicles on the side street will need to wait longer before being served. With the lane repurposing under Build conditions, delays will increase along Granby Street, particularly in the southbound direction which is anticipated to operate at LOS D during both peak hours. There is currently a near-side HRT bus stop located adjacent to the southbound approach, and this approach will be reduced from three lanes to two lanes (one exclusive through lane and one shared through/right-turn lane) under Build conditions. The overall intersection is still anticipated to operate acceptably at LOS C during both peak periods under Build conditions. In addition, it should be noted that the DePaul hospital facility has closed since the existing traffic volumes were collected, so future intersection delays could actually decrease as a result of decreased volumes.

Table 7: Granby Street at Kingsley Lane LOS and Delay Summary

Scenario	Level of Service (Delay in seconds/vehicle)							
	AM Peak Hour				PM Peak Hour			
	EB	NB	SB	Overall	EB	NB	SB	Overall
Existing	C (25.3)	A (9.8)	C (20.9)	B (16.3)	C (24.6)	A (9.5)	C (22.0)	B (16.9)
2025 No Build	D (49.3)	A (9.4)	C (25.6)	C (20.5)	E (58.2)	A (7.7)	C (21.9)	B (19.6)
2025 Build	D (52.1)	B (13.5)	D (51.6)	C (34.6)	E (58.2)	B (12.5)	D (45.0)	C (32.6)

Granby Street at Willow Wood Drive

As shown in **Table 8**, the intersection currently operates at overall LOS B during both the AM and PM peak hours, with all approaches operating at LOS C or better. Under future No Build conditions, delay for the westbound approach is anticipated to increase, resulting in LOS E operations during both the AM and PM peak hours. In addition, the southbound left-turn movement is anticipated to operate at LOS F during the PM peak hour under No Build conditions. The increased delay for these movements is due to a proposed change from the existing "Free" signal operations to running a set cycle length in order to coordinate operations with the adjacent signals and prioritize the traffic progression along Granby Street, which means that vehicles on the side street will need to wait longer before being served. With the lane repurposing under Build conditions, delays will increase slightly, but both Granby Street approaches and the overall intersection will continue to operate acceptably at LOS C or better during both peak periods. Delay for the northbound approach and overall intersection is anticipated to increase only slightly with the Build 2 alternative configuration (i.e., with the northbound bike lane extending over the Granby Street bridge), with LOS remaining the same as all other future scenarios.

Table 8: Granby Street at Willow Wood Drive LOS and Delay Summary

Scenario	Level of Service (Delay in seconds/vehicle)							
	AM Peak Hour				PM Peak Hour			
	WB	NB	SB	Overall	WB	NB	SB	Overall
Existing	C (29.5)	C (24.7)	B (10.9)	B (19.2)	C (30.4)	C (24.5)	B (10.1)	B (19.0)
2025 No Build	E (59.6)	C (29.1)	B (12.1)	C (26.3)	E (63.2)	C (23.5)	B (13.6)	C (23.8)
2025 Build	E (60.6)	C (28.8)	B (16.9)	C (28.5)	E (66.2)	C (21.9)	B (14.4)	C (23.7)
2025 Build 2	E (63.1)	C (34.1)	B (15.4)	C (30.2)	E (71.2)	C (29.6)	B (13.9)	C (27.6)

Volume-to-Capacity Ratio

Table 9 and **Table 10** show the overall intersection V/C ratios during the AM and PM peak hours, respectively. Detailed Synchro output reports are provided in **Appendix B**.

Table 9: Intersection Volume-to-Capacity Ratio Summary – AM Peak Hour

Intersection	Intersection Volume-to-Capacity Ratio				
	Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Granby Street at Admiral Taussig Boulevard	0.36	0.36	0.40		
Granby Street at Little Creek Road	0.78	0.81	0.94	0.82	
Granby Street at Maycox Avenue/Louisiana Drive	0.45	0.46	0.63		
Granby Street at Thole Street	0.64	0.55	0.73		
Granby Street at Kingsley Lane	0.66	0.63	0.82		
Granby Street at Willow Wood Drive	0.71	0.66	0.73		0.82

Table 10: Intersection Volume-to-Capacity Ratio Summary – PM Peak Hour

Intersection	Intersection Volume-to-Capacity Ratio				
	Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Granby Street at Admiral Taussig Boulevard	0.57	0.58	0.68		
Granby Street at Little Creek Road	0.80	0.82	0.94	0.88	
Granby Street at Maycox Avenue/Louisiana Drive	0.54	0.55	0.74		
Granby Street at Thole Street	0.65	0.56	0.75		
Granby Street at Kingsley Lane	0.66	0.61	0.83		
Granby Street at Willow Wood Drive	0.72	0.66	0.72		0.84

Under existing conditions, all intersections operate with V/C ratios less than 0.85 (i.e., under capacity) during both the AM and PM peak hours. Under the future No Build and Build conditions, the study area intersections are generally anticipated to experience increasing V/C ratios but to continue to operate under capacity during both peak hours. The exception is the intersection of Granby Street at Little Creek Road, which is anticipated to operate near capacity with a V/C ratio of 0.94 during both peak hours under future Build conditions. However, with the Build 1 alternative configuration, the V/C ratio is anticipated to improve to 0.82 and 0.88 during the AM and PM peak hours, respectively. Conversely, with the Build 2 alternative configuration northbound at Willow Wood Drive, the V/C ratio is anticipated to increase to 0.82 and 0.84 during the AM and PM peak hours, respectively.

Granby Street at Admiral Taussig Boulevard

Level of Service Grade
(average delay in seconds per vehicle)

A (≤10)	D (>35–55)
B (>10–20)	E (>55–80)
C (>20–35)	F (>80)

AM Peak Hour

PM Peak Hour

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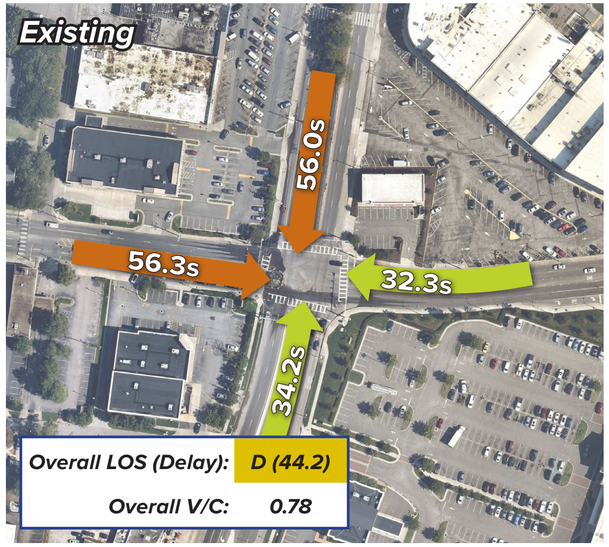
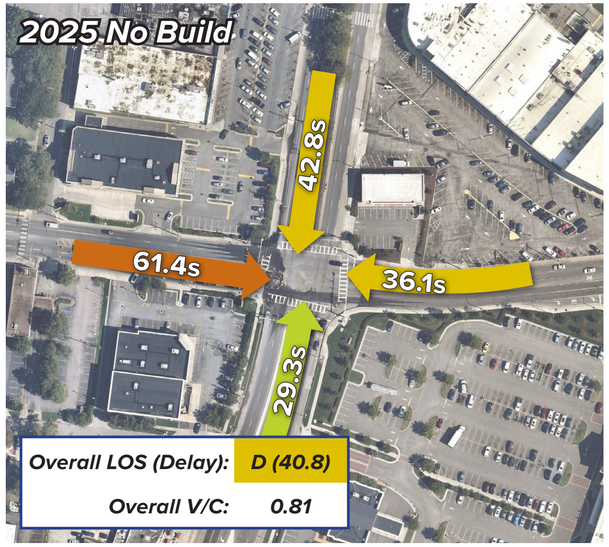
Granby Street at Little Creek Road

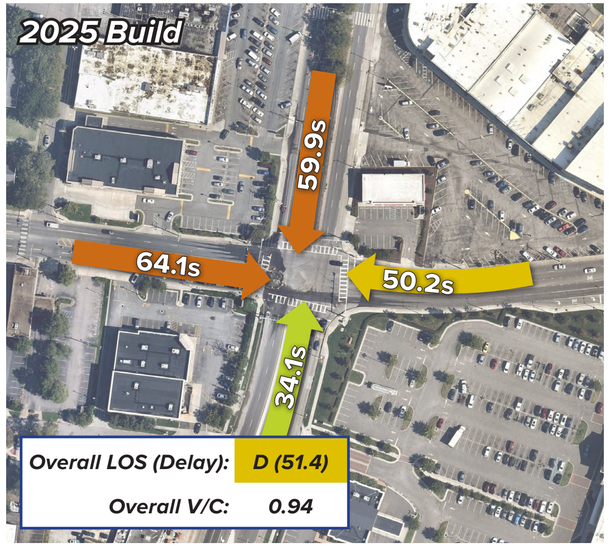
Level of Service Grade
(average delay in seconds per vehicle)

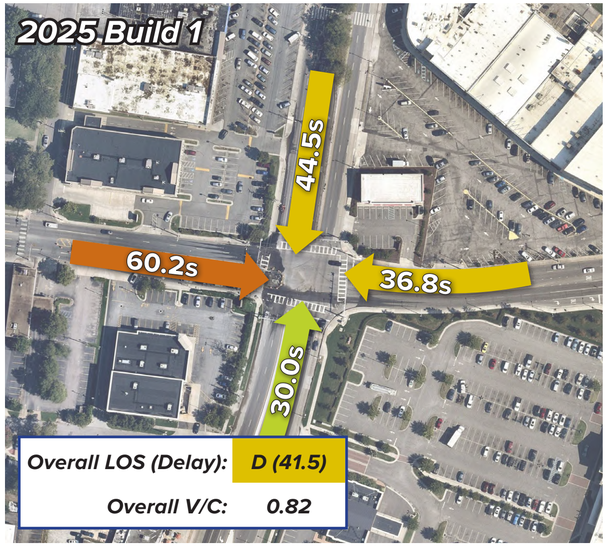
A (≤10)	D (>35–55)
B (>10–20)	E (>55–80)
C (>20–35)	F (>80)

AM Peak Hour

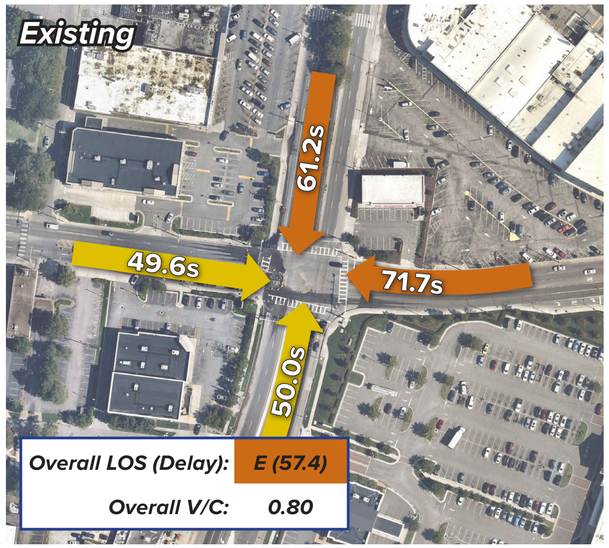


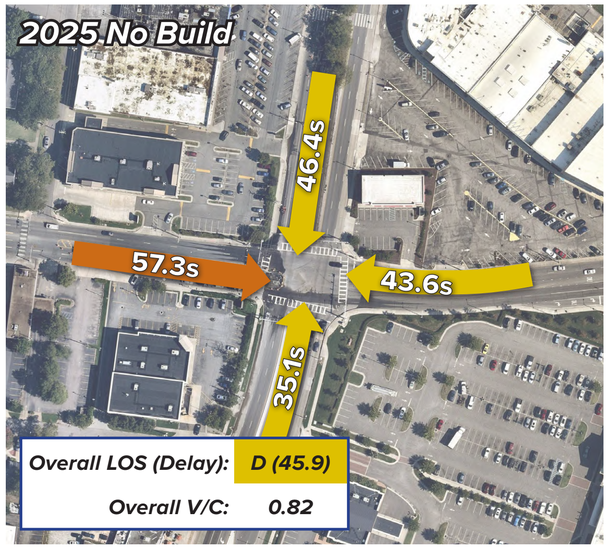


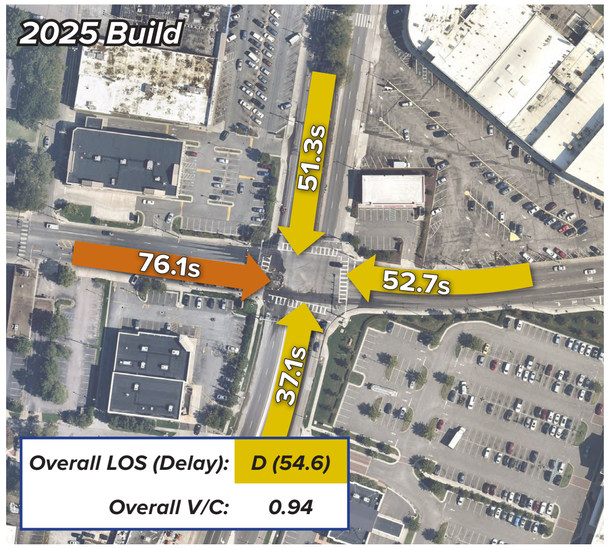


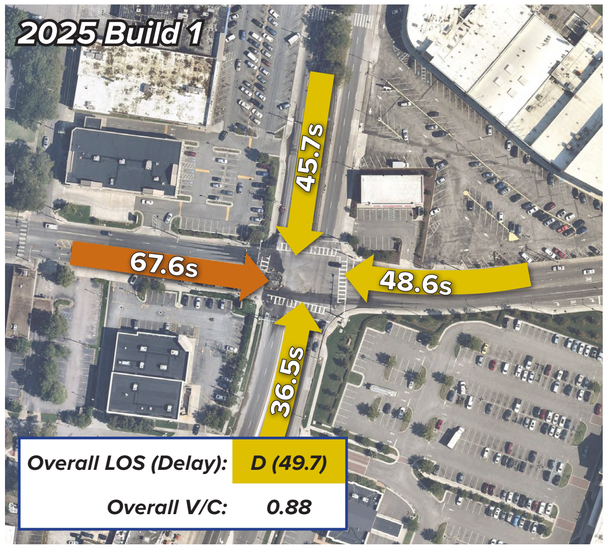


PM Peak Hour









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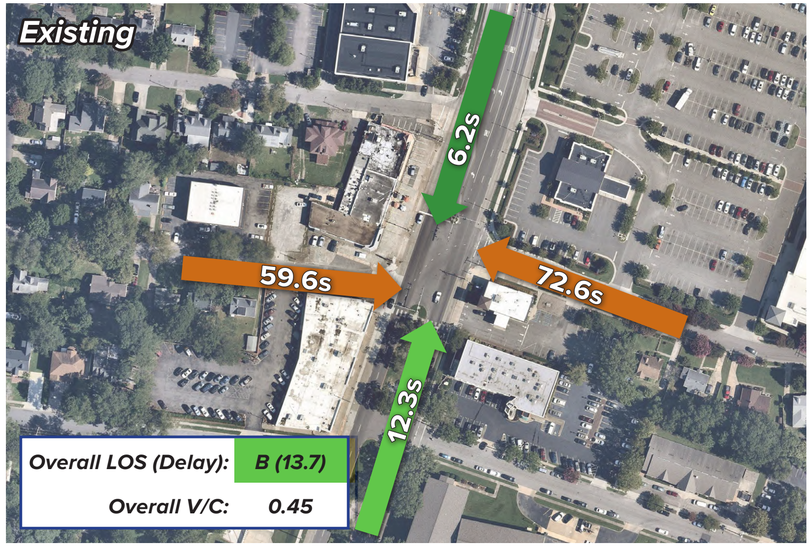
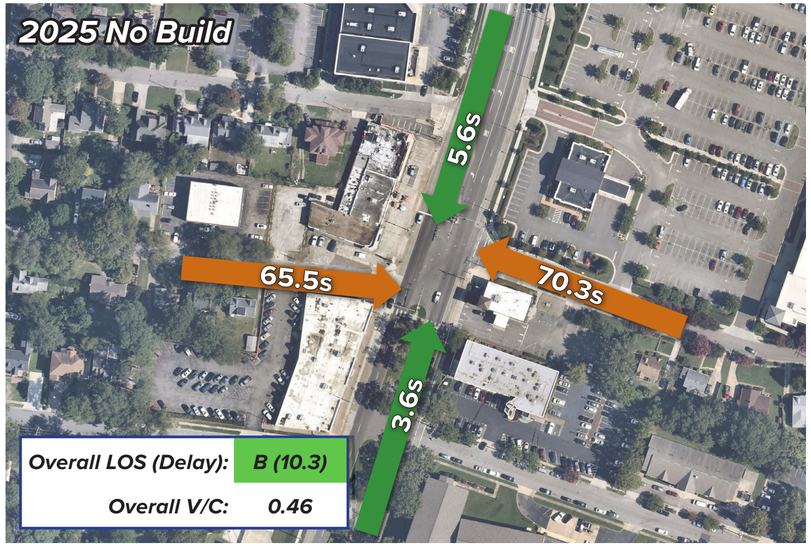
Granby Street at Maycox Avenue/Louisiana Drive

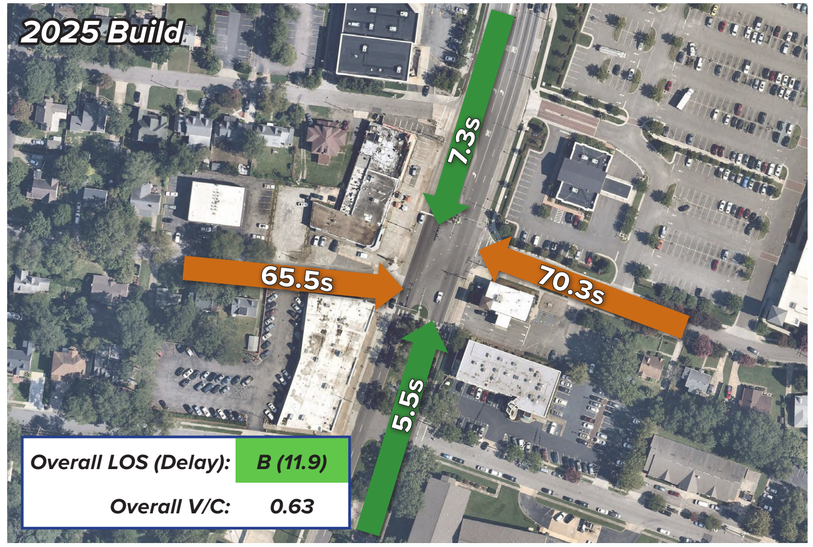
Level of Service Grade
(average delay in seconds per vehicle)

A (≤10)	D (>35–55)
B (>10–20)	E (>55–80)
C (>20–35)	F (>80)

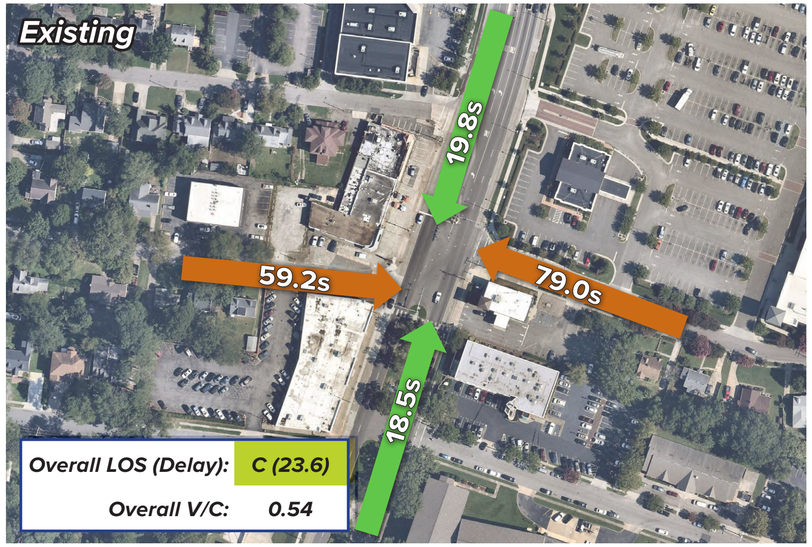
AM Peak Hour

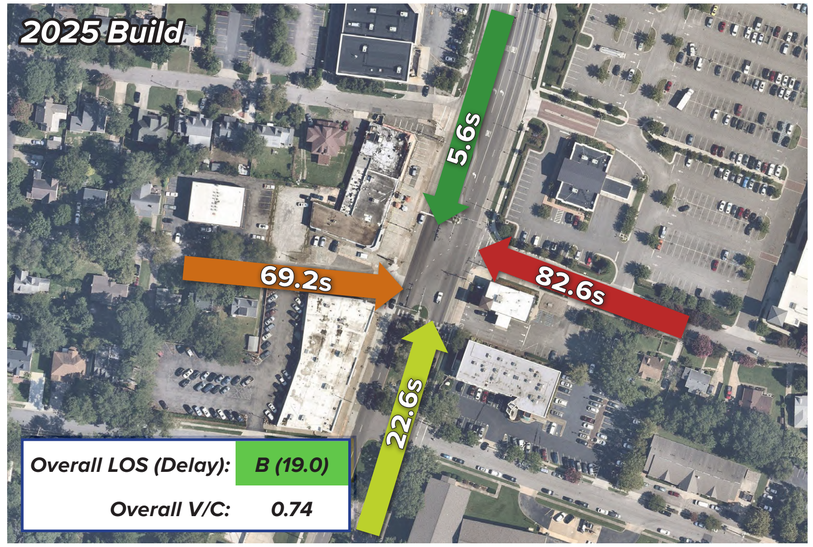






PM Peak Hour





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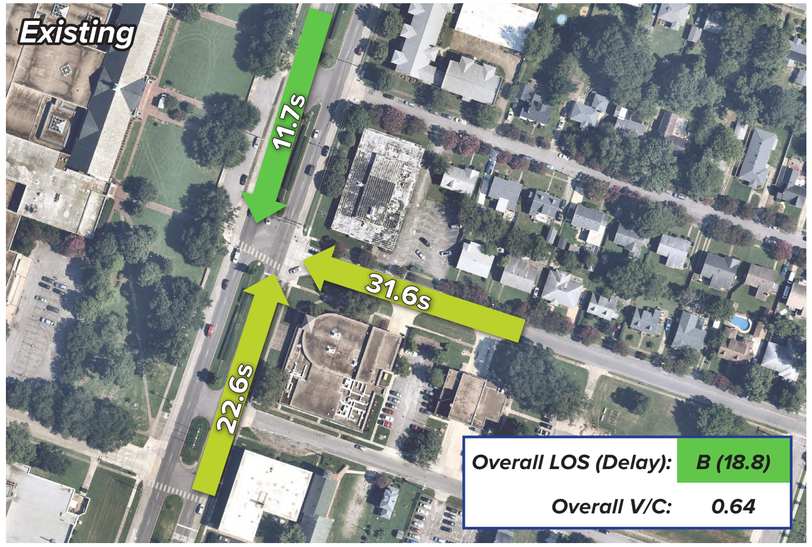
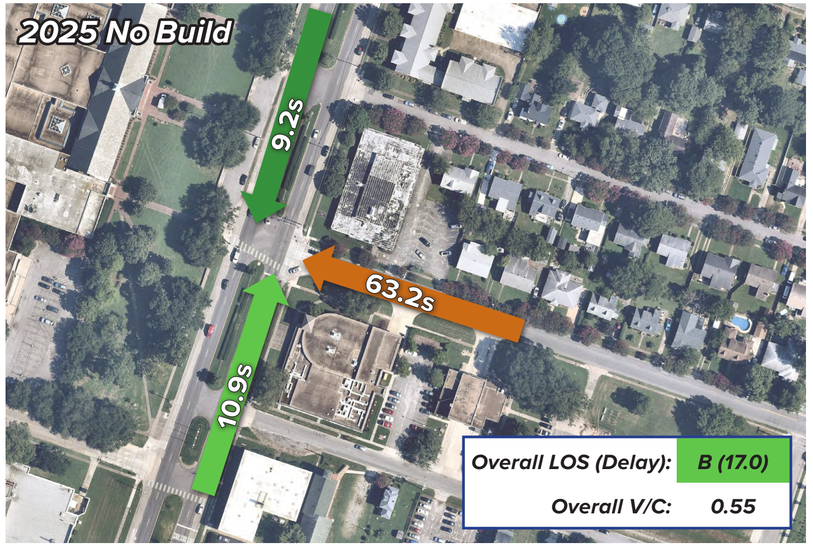
Granby Street at Thole Street

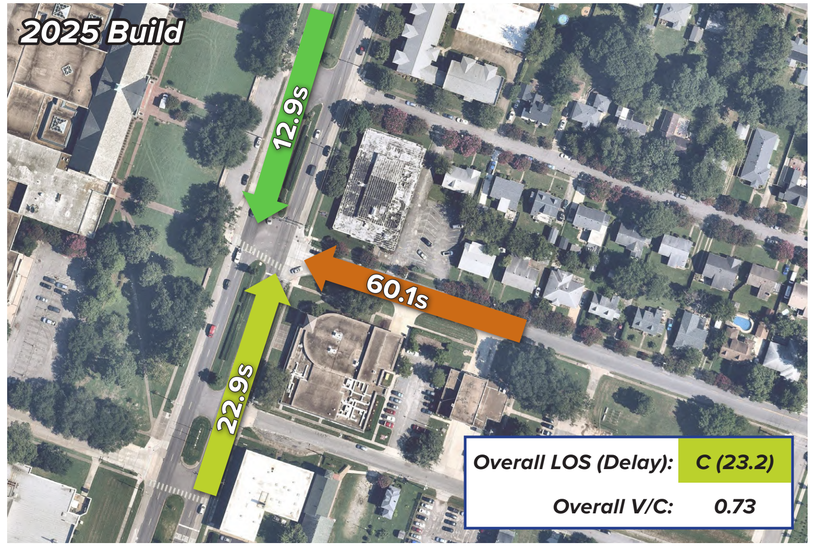
Level of Service Grade
(average delay in seconds per vehicle)

A (≤10)	D (>35–55)
B (>10–20)	E (>55–80)
C (>20–35)	F (>80)

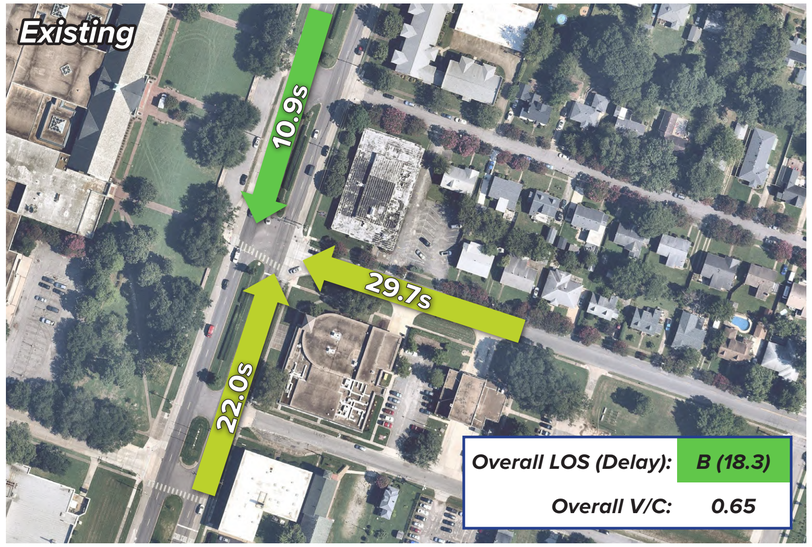
AM Peak Hour

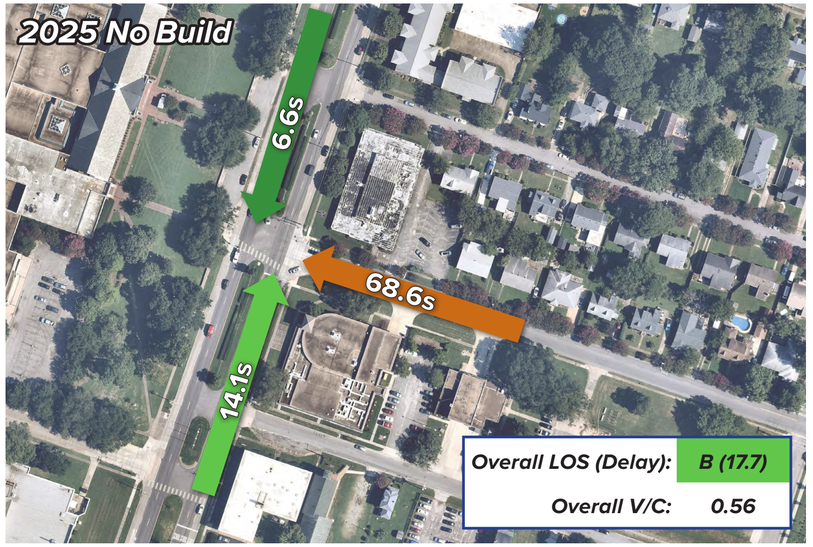


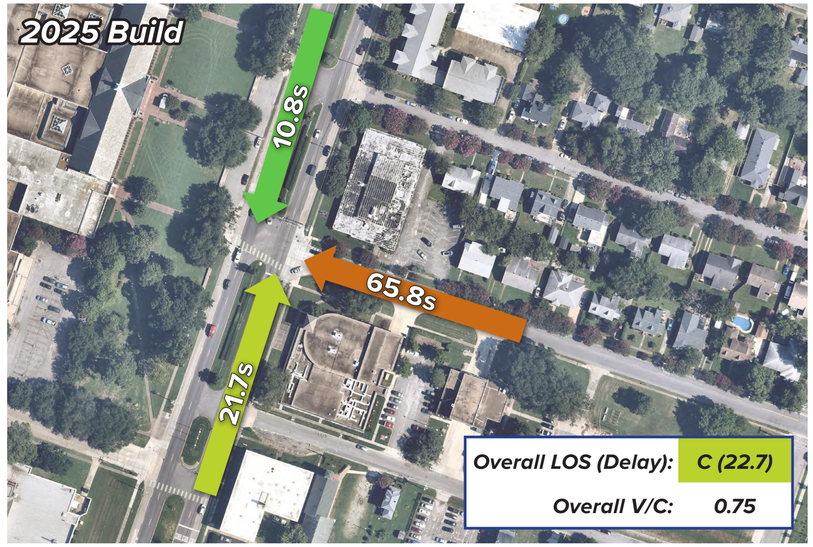




PM Peak Hour







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Granby Street at Kingsley Lane

Level of Service Grade
(average delay in seconds per vehicle)

A (≤10)	D (>35–55)
B (>10–20)	E (>55–80)
C (>20–35)	F (>80)

AM Peak Hour

PM Peak Hour

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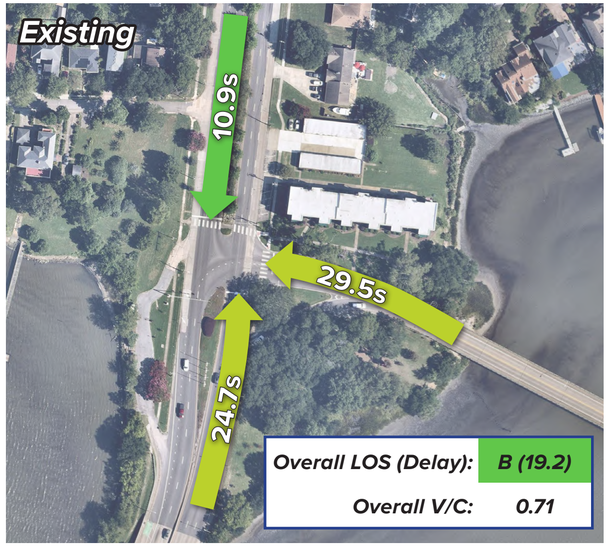
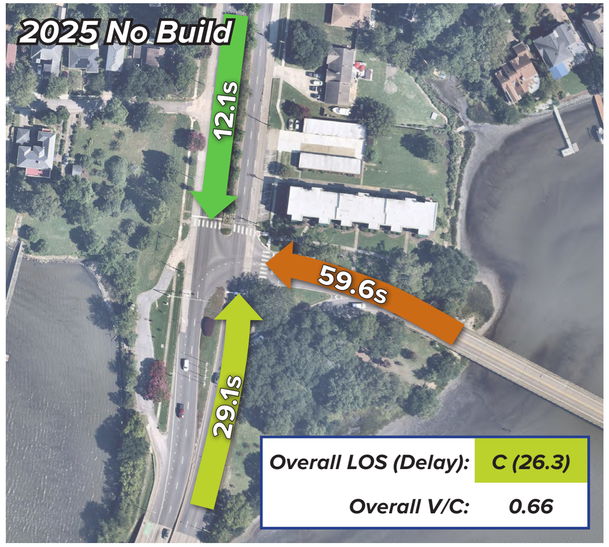
Granby Street at Willow Wood Drive

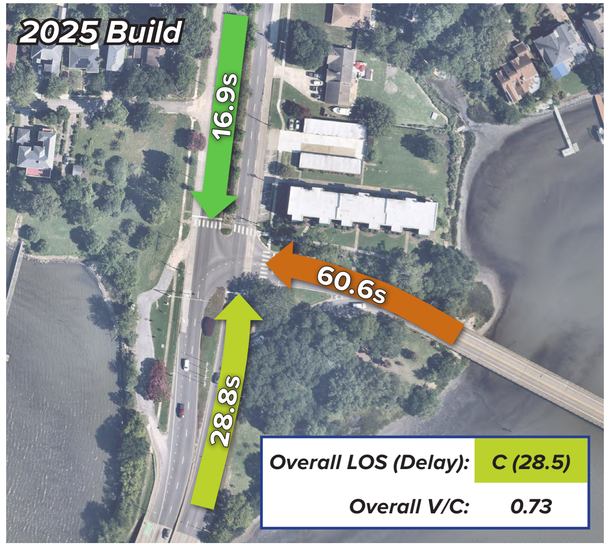
Level of Service Grade
(average delay in seconds per vehicle)

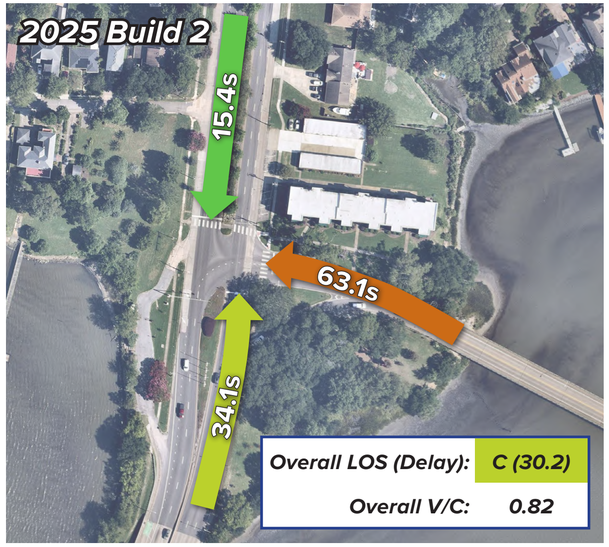
A (≤10)	D (>35–55)
B (>10–20)	E (>55–80)
C (>20–35)	F (>80)

AM Peak Hour

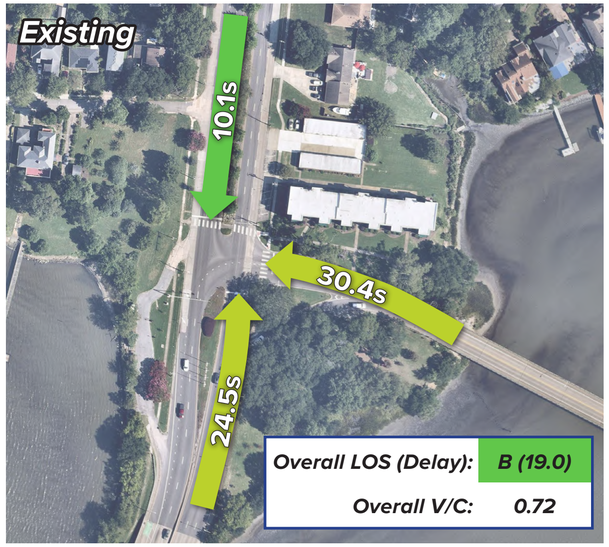


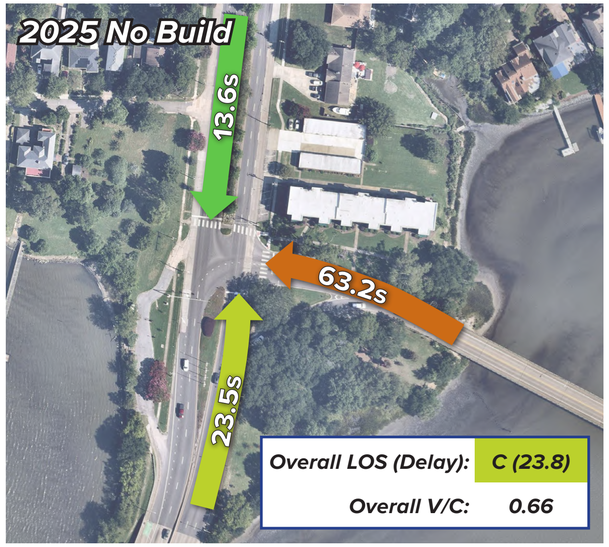


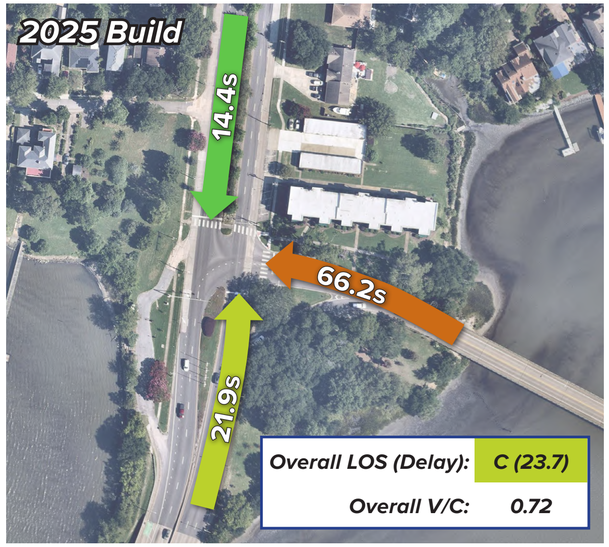


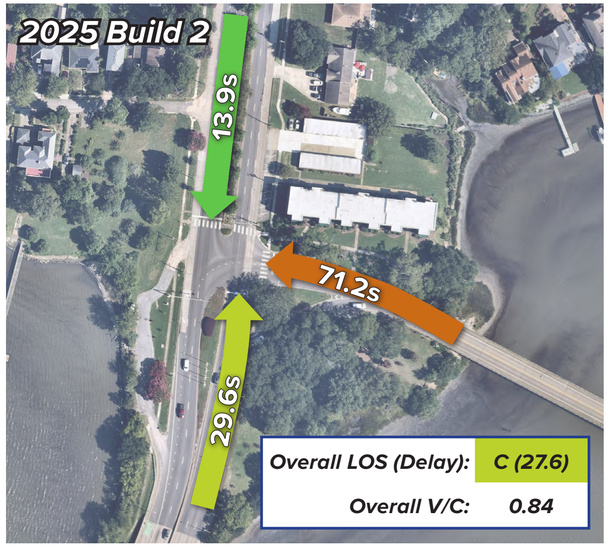


PM Peak Hour









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Queue Analysis

Table 11 and **Table 12** summarize the 95th percentile queue lengths for movements that exceed available turn lane storage lengths during the AM and PM peak hours, respectively. Detailed Synchro output reports are provided in **Appendix B**. Detailed queue results by movement and approach are provided in **Appendix C**.

Table 11: Queue Lengths Exceeding Turn Lane Length – AM Peak Hour

Intersection	Movement Where Queue Exceeds Turn Lane Length				
	Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Granby Street at Admiral Taussig Boulevard					
Granby Street at Little Creek Road	EBR WBL	EBR WBL	EBR WBL	EBR WBL	
Granby Street at Maycox Avenue/Louisiana Drive					
Granby Street at Thole Street	WBL	WBL	WBL		
Granby Street at Kingsley Lane	NBL	NBL	NBL		
Granby Street at Willow Wood Drive		WBL WBR SBL	WBL WBR SBL		WBL WBR SBL

Table 12: Queue Lengths Exceeding Turn Lane Length – PM Peak Hour

Intersection	Movement Where Queue Exceeds Turn Lane Length				
	Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Granby Street at Admiral Taussig Boulevard					
Granby Street at Little Creek Road	EBL EBR WBL	EBL EBR WBL	EBL EBR WBL	EBL EBR WBL	
Granby Street at Maycox Avenue/Louisiana Drive					
Granby Street at Thole Street	WBL	WBL	WBL		
Granby Street at Kingsley Lane		EBL NBL	EBL NBL		
Granby Street at Willow Wood Drive		WBL	WBL WBR		WBL WBR

The Granby Street intersections at Little Creek Road and Thole Street have one or more movements that exceed the available turn lane lengths during both peak hours under Existing conditions, and those same movements are consistent through the future (2025) No Build and Build scenarios. Under future (2025) No Build conditions, the Granby Street intersections at Kingsley Lane and Willow Wood Drive are also anticipated to have one or more movements that exceed the available turn lane lengths during both peak hours, and those same movements also remain consistent through the Build scenario with the proposed lane repurposing.

Corridor Travel Time Analysis

Table 13 summarizes the corridor travel time results during the AM and PM peak hours. Detailed travel time reports are provided in **Appendix D**.

Table 13: Corridor Travel Time Summary – AM Peak Hour

Direction of Travel	Peak Hour	Travel Time in Minutes (Difference from Existing)				
		Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Northbound Granby Street	AM	5.3	4.9 (-23 sec)	5.2 (-2 sec)	5.2 (-5 sec)	5.1 (-9 sec)
	PM	6.0	5.4 (-37 sec)	5.8 (-13 sec)	5.8 (-10 sec)	5.6 (-26 sec)
Southbound Granby Street	AM	5.7	5.5 (-10 sec)	6.3 (+37 sec)	5.3 (-22 sec)	6.2 (+32 sec)
	PM	6.0	5.4 (-38 sec)	5.9 (-8 sec)	5.8 (-14 sec)	5.9 (-5 sec)

Under the future (2025) No Build conditions, the travel time is anticipated to improve compared to existing conditions even with the increase in traffic volumes, due to the implementation of coordinated traffic signal timing at all six traffic signals along Granby Street in the study corridor. and coordination that prioritizes the traffic progression along Granby Street. By prioritizing the traffic progression along Granby Street, the signal timing optimization and coordination results in improved travel times along both northbound and southbound Granby Street by approximately 10 to 40 seconds during both peak hours. Conversely, the signal coordination and prioritization of progression along Granby Street results in increased delay of approximately 5 to 40 seconds for some of the lower-volume, minor streets compared to Existing conditions. The most significant increases in side street delay under future (2025) No Build conditions compared to Existing conditions are incurred at westbound Thole Street, eastbound Kingsley Lane, and westbound Willow Wood Drive. This is due to a proposed change from the existing “Free” signal operations to running a set cycle length in order to coordinate operations with the adjacent signals and prioritize the traffic progression along Granby Street, which means that vehicles on the side street will need to wait longer before being served.

In the northbound direction, it is anticipated that drivers will be able to traverse the corridor under all future (2025) scenarios in the same or less time than it takes today, even with the proposed lane repurposing. In the southbound direction, it is similarly anticipated that future travel times will be the same or less than the existing travel time during the PM peak hour. During the AM peak hour, drivers traveling southbound on Granby Street are anticipated to experience an increase in travel time of approximately 30 to 40 seconds under the future (2025) “base” Build and Build 2 alternative scenarios. This is primarily due to increases in southbound delay at the Granby Street intersections with Little Creek Road and Kingsley Lane. Under the future Build 1 alternative scenario, which provides greater capacity for the southbound approach at Little Creek Road, it is anticipated that drivers in the southbound direction would also be able to traverse the corridor in the same or less time than it takes today.

Findings and Conclusions

Table 14 and **Table 15** summarize the overall intersection LOS and average delay during the AM and PM peak hours, respectively.

Table 14: Intersection LOS and Delay Summary – AM Peak Hour

Intersection	Overall Intersection Level of Service (Delay in Seconds per Vehicle)				
	Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Granby Street at Admiral Taussig Boulevard	B (17.5)	B (13.9)	B (14.3)		
Granby Street at Little Creek Road	D (44.2)	D (40.8)	D (51.4)	D (41.5)	
Granby Street at Maycox Avenue/Louisiana Drive	B (13.7)	B (10.3)	B (11.9)		
Granby Street at Thole Street	B (18.8)	B (17.0)	C (23.2)		
Granby Street at Kingsley Lane	B (16.3)	C (20.5)	C (34.6)		
Granby Street at Willow Wood Drive	B (19.2)	C (26.3)	C (28.5)		C (30.2)

Table 15: Intersection LOS and Delay Summary – PM Peak Hour

Intersection	Overall Intersection Level of Service (Delay in Seconds per Vehicle)				
	Existing	2025 No Build	2025 Build	2025 Build 1	2025 Build 2
Granby Street at Admiral Taussig Boulevard	D (35.3)	C (32.1)	C (34.7)		
Granby Street at Little Creek Road	E (57.4)	D (45.9)	D (54.6)	D (49.7)	
Granby Street at Maycox Avenue/Louisiana Drive	C (23.6)	B (16.4)	B (19.0)		
Granby Street at Thole Street	B (18.3)	B (17.7)	C (22.7)		
Granby Street at Kingsley Lane	B (16.9)	B (19.6)	C (32.6)		
Granby Street at Willow Wood Drive	B (19.0)	C (23.8)	C (23.7)		C (27.6)

Under Existing and No Build conditions, there is available capacity in both directions of Granby Street. The Granby Street at Little Creek Road intersection has the most constrained capacity of all the study area intersections and currently operates at overall LOS D and E during the AM and PM peak hours, respectively. Both Granby Street and Little Creek Road carry significant volume, and additional turn lane capacity, particularly along Little Creek Road, would help improve operations at this intersection. With traffic signal timing optimization and coordination, corridor travel times are expected to improve by 10 to 40 seconds under future (2025) No Build conditions, even with increased traffic volumes. However, this does result in increased delay of approximately 5 to 40 seconds for some of the lower-volume, minor streets compared to Existing conditions.

With the proposed lane repurposing under future (2025) Build conditions, all intersections are anticipated to operate at overall LOS D or better. The overall intersection delay is anticipated to increase by less than 15 seconds when compared to future (2025) No Build conditions, and delay for minor movements is anticipated to increase by less than 30 seconds. With the implementation of the future Build 1 alternative configuration, it is anticipated that drivers in both directions will be able to traverse the corridor under all future (2025) scenarios in the same or less time than it takes today, even with the proposed lane repurposing. The “base” Build condition is anticipated to increase total corridor travel time by 30 to 40 seconds compared to Existing conditions for the southbound direction during the AM peak hour.

Appendix A

LOS Results by Movement

Existing LOS by Movement

LOS & Delay Summary Table | Existing | AM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	D (49.6)	D (45.5)	s	D (48.5)	D (47.3)		B (14.1)	s	A (7.5)	A (8.7)		D (48.0)	D (47.9)	B (14.1)	A (8.7)	B (17.5)
2	Granby Street and Little Creek Road	E (67.0)	D (52.7)	E (56.7)	D (46.3)	C (23.3)	s	E (67.2)	C (25.8)	s	E (63.4)	E (55.5)	s	E (56.3)	C (32.3)	C (34.2)	E (56.0)	D (44.2)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (59.6)	s	F (84.2)	E (60.4)	s	s	B (12.3)	s	A (5.1)	A (6.2)	s	E (59.6)	E (72.6)	B (12.3)	A (6.2)	B (13.7)
4	Granby Street and Thole Street				C (31.6)		s		C (22.6)	s	B (12.1)	B (11.7)			C (31.6)	C (22.6)	B (11.7)	B (18.8)
5	Granby Street and Kingsley Lane	C (32.8)		C (21.0)				D (38.1)	A (5.7)			C (20.9)	s	C (25.3)		A (9.8)	C (20.9)	B (16.3)
6	Granby Street and Willow Wood Drive				C (30.5)		C (28.4)		C (24.7)	s	D (36.6)	A (6.4)			C (29.5)	C (24.7)	B (10.9)	B (19.2)

LOS & Delay Summary Table | Existing | PM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	F (105.7)	D (49.0)	s	E (58.3)	E (55.8)		C (24.2)	s	B (14.1)	B (13.1)		E (75.5)	E (57.1)	C (24.2)	B (13.2)	D (35.3)
2	Granby Street and Little Creek Road	D (49.7)	D (49.4)	D (50.2)	F (82.5)	E (64.5)	s	D (47.2)	D (50.6)	s	E (61.5)	E (61.1)	s	D (49.6)	E (71.7)	D (50.0)	E (61.2)	E (57.4)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (59.2)	s	F (87.5)	E (70.1)	s	s	B (18.5)	s	B (17.1)	C (20.0)	s	E (59.2)	E (79.0)	B (18.5)	B (19.8)	C (23.6)
4	Granby Street and Thole Street				C (29.7)		s		C (22.0)	s	B (12.3)	B (10.8)			C (29.7)	C (22.0)	B (10.9)	B (18.3)
5	Granby Street and Kingsley Lane	C (29.7)		C (20.5)				C (34.6)	A (7.6)			C (22.0)	s	C (24.6)		A (9.5)	C (22.0)	B (16.9)
6	Granby Street and Willow Wood Drive				C (31.3)		C (29.2)		C (24.5)	s	D (36.5)	A (5.5)			C (30.4)	C (24.5)	B (10.1)	B (19.0)

Table Key
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
s *Movements Share Lanes*
-(-) *Free Flow Movements*
Movement Does Not Exist

** Based on Characteristics Tab*

Future (2025) No Build LOS by Movement

LOS & Delay Summary Table | No Build | AM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (68.1)	E (59.1)	s	C (32.5)	D (36.5)		A (6.7)	s	A (6.5)	A (7.5)		E (64.4)	C (34.5)	A (6.7)	A (7.5)	B (13.9)
2	Granby Street and Little Creek Road	E (64.5)	E (57.6)	E (67.3)	D (51.6)	C (26.1)	s	E (73.0)	B (18.3)	s	F (81.5)	D (40.4)	s	E (61.4)	D (36.1)	C (29.3)	D (42.8)	D (40.8)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (65.5)	s	F (80.1)	E (59.8)	s	s	A (3.6)	s	A (4.3)	A (5.6)	s	E (65.5)	E (70.3)	A (3.6)	A (5.6)	B (10.3)
4	Granby Street and Thole Street				E (63.2)		s		B (10.9)	s	B (11.0)	A (9.1)			E (63.2)	B (10.9)	A (9.2)	B (17.0)
5	Granby Street and Kingsley Lane	E (71.8)		D (36.5)				D (52.0)	A (3.3)			C (25.6)	s	D (49.3)		A (9.4)	C (25.6)	C (20.5)
6	Granby Street and Willow Wood Drive				E (61.5)		E (57.7)		C (29.1)	s	E (68.7)	A (2.3)			E (59.6)	C (29.1)	B (12.1)	C (26.3)

LOS & Delay Summary Table | No Build | PM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (78.6)	E (60.8)	s	D (49.3)	E (65.5)		B (16.7)	s	B (17.0)	B (15.7)		E (69.2)	E (57.2)	B (16.7)	B (15.8)	C (32.1)
2	Granby Street and Little Creek Road	E (67.0)	D (54.1)	D (54.9)	E (64.3)	C (29.7)	s	F (111.4)	B (18.6)	s	E (79.7)	D (41.5)	s	E (57.3)	D (43.6)	D (35.1)	D (46.4)	D (45.9)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (69.2)	s	F (89.6)	E (75.3)	s	s	B (18.8)	s	A (5.4)	A (3.4)	s	E (69.2)	F (82.6)	B (18.8)	A (3.5)	B (16.4)
4	Granby Street and Thole Street				E (68.6)		s		B (14.1)	s	B (18.6)	A (5.7)			E (68.6)	B (14.1)	A (6.6)	B (17.7)
5	Granby Street and Kingsley Lane	E (78.2)		D (42.4)				E (78.7)	A (2.4)			C (21.9)	s	E (58.2)		A (7.7)	C (21.9)	B (19.6)
6	Granby Street and Willow Wood Drive				E (65.6)		E (59.7)		C (23.5)	s	F (88.0)	A (0.8)			E (63.2)	C (23.5)	B (13.6)	C (23.8)

Table Key
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
s *Movements Share Lanes*
-(-) *Free Flow Movements*
Movement Does Not Exist

** Based on Characteristics Tab*

Future (2025) Build LOS by Movement

LOS & Delay Summary Table | Build | AM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (68.1)	E (59.1)	s	C (31.3)	D (35.6)		A (8.2)	s	A (7.1)	A (7.5)		E (64.4)	C (33.5)	A (8.2)	A (7.5)	B (14.3)
2	Granby Street and Little Creek Road	E (65.2)	E (59.8)	E (72.2)	E (79.2)	C (31.5)	s	F (97.8)	B (17.9)	B (18.6)	F (82.6)	E (58.5)	s	E (64.1)	D (50.2)	C (34.1)	E (59.9)	D (51.4)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (65.5)	s	F (80.1)	E (59.8)	s	s	A (5.5)	s	A (5.4)	A (7.3)	s	E (65.5)	E (70.3)	A (5.5)	A (7.3)	B (11.9)
4	Granby Street and Thole Street				E (60.1)		s		C (22.9)	s	C (23.7)	B (12.1)			E (60.1)	C (22.9)	B (12.9)	C (23.2)
5	Granby Street and Kingsley Lane	E (78.4)		D (37.2)				D (50.8)	A (8.0)			D (51.6)	s	D (52.1)		B (13.5)	D (51.6)	C (34.6)
6	Granby Street and Willow Wood Drive				E (62.8)		E (58.4)		C (30.6)	B (19.1)	E (61.3)	A (9.2)			E (60.6)	C (28.8)	B (16.9)	C (28.5)

LOS & Delay Summary Table | Build | PM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (78.6)	E (60.8)	s	D (49.8)	E (67.5)		C (23.4)	s	C (21.6)	B (15.7)		E (69.2)	E (58.5)	C (23.4)	B (16.4)	C (34.7)
2	Granby Street and Little Creek Road	E (72.9)	E (77.7)	E (75.5)	E (74.4)	D (38.2)	s	F (115.8)	B (19.9)	C (21.0)	E (78.1)	D (47.3)	s	E (76.1)	D (52.7)	D (37.1)	D (51.3)	D (54.6)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (69.2)	s	F (89.6)	E (75.3)	s	s	C (22.6)	s	B (10.3)	A (5.3)	s	E (69.2)	F (82.6)	C (22.6)	A (5.6)	B (19.0)
4	Granby Street and Thole Street				E (65.8)		s		C (21.7)	s	D (35.1)	A (9.0)			E (65.8)	C (21.7)	B (10.8)	C (22.7)
5	Granby Street and Kingsley Lane	E (78.2)		D (42.4)				E (74.1)	A (7.9)			D (45.0)	s	E (58.2)		B (12.5)	D (45.0)	C (32.6)
6	Granby Street and Willow Wood Drive				E (69.5)		E (61.3)		C (23.5)	B (15.1)	F (89.4)	A (1.4)			E (66.2)	C (21.9)	B (14.4)	C (23.7)

Table Key
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
s *Movements Share Lanes*
-(-) *Free Flow Movements*
Movement Does Not Exist

** Based on Characteristics Tab*

Future (2025) Build 1 LOS by Movement

LOS & Delay Summary Table | Build 1 | AM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (68.1)	E (59.1)	s	C (32.4)	D (37.1)		A (5.5)	s	A (7.1)	A (7.5)		E (64.4)	C (34.8)	A (5.5)	A (7.5)	B (13.6)
2	Granby Street and Little Creek Road	E (62.8)	E (56.8)	E (65.4)	D (52.2)	C (26.9)	s	E (75.3)	B (18.6)	B (18.5)	E (77.3)	D (43.0)	D (40.7)	E (60.2)	D (36.8)	C (30.0)	D (44.5)	D (41.5)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (65.5)	s	F (80.1)	E (59.8)	s	s	A (5.5)	s	A (4.4)	A (6.6)	s	E (65.5)	E (70.3)	A (5.5)	A (6.6)	B (11.6)
4	Granby Street and Thole Street				E (60.1)		s		C (22.9)	s	C (28.0)	B (11.7)			E (60.1)	C (22.9)	B (12.9)	C (23.2)
5	Granby Street and Kingsley Lane	E (78.4)		D (37.2)				D (50.8)	A (8.0)			D (50.2)	s	D (52.1)		B (13.5)	D (50.2)	C (33.9)
6	Granby Street and Willow Wood Drive				E (62.8)		E (58.4)		C (30.6)	B (19.1)	E (61.2)	A (9.1)			E (60.6)	C (28.8)	B (16.8)	C (28.4)

LOS & Delay Summary Table | Build 1 | PM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (78.6)	E (60.8)	s	D (49.8)	E (67.4)		C (21.9)	s	C (21.6)	B (15.7)		E (69.2)	E (58.5)	C (21.9)	B (16.4)	C (34.2)
2	Granby Street and Little Creek Road	E (72.6)	E (65.9)	E (66.3)	E (70.2)	C (34.2)	s	F (107.9)	C (20.6)	C (22.3)	E (77.9)	D (42.3)	C (29.4)	E (67.6)	D (48.6)	D (36.5)	D (45.7)	D (49.7)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (69.2)	s	F (89.6)	E (75.3)	s	s	C (22.7)	s	B (10.8)	A (5.2)	s	E (69.2)	F (82.6)	C (22.7)	A (5.5)	B (19.0)
4	Granby Street and Thole Street				E (65.8)		s		C (24.8)	s	D (36.4)	A (8.8)			E (65.8)	C (24.8)	B (10.8)	C (24.0)
5	Granby Street and Kingsley Lane	E (78.2)		D (42.4)				E (68.2)	A (8.9)			D (44.8)	s	E (58.2)		B (13.0)	D (44.8)	C (32.7)
6	Granby Street and Willow Wood Drive				E (72.2)		E (62.0)		C (22.4)	B (14.8)	F (89.3)	A (1.6)			E (68.1)	C (20.9)	B (14.6)	C (23.5)

Table Key
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
s *Movements Share Lanes*
-(-) *Free Flow Movements*
Movement Does Not Exist

** Based on Characteristics Tab*

Future (2025) Build 2 LOS by Movement

LOS & Delay Summary Table | Build 2 | AM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (68.1)	E (59.1)	s	C (31.3)	D (35.6)		A (8.2)	s	A (7.1)	A (7.5)		E (64.4)	C (33.5)	A (8.2)	A (7.5)	B (14.3)
2	Granby Street and Little Creek Road	E (65.2)	E (59.8)	E (72.2)	E (79.2)	C (31.5)	s	F (97.0)	B (18.8)	B (19.4)	F (82.6)	E (58.5)	s	E (64.1)	D (50.2)	C (34.6)	E (59.9)	D (51.6)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (65.5)	s	F (80.1)	E (59.8)	s	s	A (5.5)	s	A (5.4)	A (7.3)	s	E (65.5)	E (70.3)	A (5.5)	A (7.3)	B (11.9)
4	Granby Street and Thole Street				E (60.1)		s		B (15.8)	s	C (23.7)	B (12.1)			E (60.1)	B (15.8)	B (12.9)	C (20.3)
5	Granby Street and Kingsley Lane	E (78.4)		D (37.2)				E (64.5)	A (6.0)			D (51.6)	s	D (52.1)		B (13.4)	D (51.6)	C (34.6)
6	Granby Street and Willow Wood Drive				E (66.1)		E (60.0)		C (34.1)	s	E (73.9)	A (5.2)			E (63.1)	C (34.1)	B (15.4)	C (30.2)

LOS & Delay Summary Table | Build 2 | PM

ID	Intersection Name	Eastbound			Westbound			Northbound			Southbound			Approach				Intersection
	Unsignalized Intersections in Green	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EB	WB	NB	SB	
1	Granby Street and Admiral Taussig Boulevard	s	E (78.6)	E (60.8)	s	D (49.8)	E (67.5)		C (23.4)	s	C (21.6)	B (15.7)		E (69.2)	E (58.5)	C (23.4)	B (16.4)	C (34.7)
2	Granby Street and Little Creek Road	E (72.9)	E (77.7)	E (75.5)	E (74.4)	D (38.2)	s	F (115.6)	B (19.8)	C (21.0)	E (78.1)	D (47.3)	s	E (76.1)	D (52.7)	D (37.1)	D (51.3)	D (54.6)
3	Granby Street and Maycox Avenue/Louisiana Drive	s	E (69.2)	s	F (89.6)	E (75.3)	s	s	B (17.9)	s	B (10.3)	A (5.3)	s	E (69.2)	F (82.6)	B (17.9)	A (5.6)	B (17.0)
4	Granby Street and Thole Street				E (65.8)		s		B (15.0)	s	D (35.1)	A (9.0)			E (65.8)	B (15.0)	B (10.8)	B (19.5)
5	Granby Street and Kingsley Lane	E (78.2)		D (42.4)				E (77.5)	A (5.1)			D (45.0)	s	E (58.2)		B (10.1)	D (45.0)	C (31.5)
6	Granby Street and Willow Wood Drive				E (76.8)		E (62.9)		C (29.6)	s	F (86.7)	A (1.3)			E (71.2)	C (29.6)	B (13.9)	C (27.6)

Table Key
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
s *Movements Share Lanes*
-(-) *Free Flow Movements*
Movement Does Not Exist

** Based on Characteristics Tab*

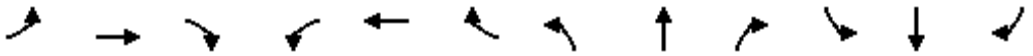
Appendix B

Synchro Output Reports

Existing Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	10	52	17	0	246	0	713	14	63	997	0
Future Volume (vph)	67	10	52	17	0	246	0	713	14	63	997	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.87	0.85		1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1769	1498		1481	1463		4916		1738	4948	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.29	1.00	
Satd. Flow (perm)		1769	1498		1481	1463		4916		533	4948	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	11	57	18	0	267	0	775	15	68	1084	0
RTOR Reduction (vph)	0	0	51	0	114	130	0	1	0	0	0	0
Lane Group Flow (vph)	0	84	6	0	29	12	0	789	0	68	1084	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	1%	2%	4%	6%	2%	3%	2%	3%	21%	2%	3%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		10.9	10.9		9.4	9.4		60.5		72.9	72.9	
Effective Green, g (s)		10.9	10.9		9.4	9.4		60.5		72.9	72.9	
Actuated g/C Ratio		0.10	0.10		0.08	0.08		0.54		0.66	0.66	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		173	146		125	123		2674		418	3243	
v/s Ratio Prot		c0.05			c0.02			0.16		0.01	c0.22	
v/s Ratio Perm			0.00			0.01				0.10		
v/c Ratio		0.49	0.04		0.23	0.10		0.30		0.16	0.33	
Uniform Delay, d1		47.5	45.4		47.5	47.0		13.8		7.3	8.4	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		2.1	0.1		0.9	0.3		0.3		0.2	0.3	
Delay (s)		49.6	45.5		48.5	47.3		14.1		7.5	8.7	
Level of Service		D	D		D	D		B		A	A	
Approach Delay (s)		48.0			47.9			14.1			8.7	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	337	159	364	536	28	182	563	151	63	756	241
Future Volume (vph)	108	337	159	364	536	28	182	563	151	63	756	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.91		*0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1546	3409	1471	1652	3245		3173	4570		3204	4434	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1546	3409	1471	1652	3245		3173	4570		3204	4434	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	123	383	181	414	609	32	207	640	172	72	859	274
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	123	383	181	414	641	0	207	812	0	72	1133	0
Confl. Peds. (#/hr)			2	2			2					2
Heavy Vehicles (%)	9%	3%	1%	2%	3%	4%	3%	3%	1%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	14.1	24.7	24.7	38.9	49.5		13.3	44.9		6.5	38.1	
Effective Green, g (s)	16.4	27.0	27.0	41.2	51.8		15.5	47.1		8.7	40.3	
Actuated g/C Ratio	0.12	0.19	0.19	0.29	0.37		0.11	0.34		0.06	0.29	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2		6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	181	657	283	486	1200		351	1537		199	1276	
v/s Ratio Prot	0.08	0.11		c0.25	0.20		c0.07	0.18		0.02	c0.26	
v/s Ratio Perm			c0.12									
v/c Ratio	0.68	0.58	0.64	0.85	0.53		0.59	0.53		0.36	0.89	
Uniform Delay, d1	59.3	51.4	52.0	46.5	34.6		59.2	37.5		63.0	47.7	
Progression Factor	1.00	1.00	1.00	0.72	0.63		1.11	0.68		1.00	1.00	
Incremental Delay, d2	7.7	1.3	4.7	12.7	1.7		1.6	0.3		0.4	7.8	
Delay (s)	67.0	52.7	56.7	46.3	23.3		67.2	25.8		63.4	55.5	
Level of Service	E	D	E	D	C		E	C		E	E	
Approach Delay (s)		56.3			32.3			34.2			56.0	
Approach LOS		E			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

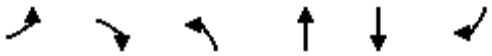
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	4	44	117	0	46	11	874	40	15	1368	15
Future Volume (vph)	3	4	44	117	0	46	11	874	40	15	1368	15
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.91		1.00	0.91	
Frpb, ped/bikes		0.98		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.88		1.00	0.91			0.99		1.00	1.00	
Flt Protected		1.00		0.95	0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1585		1652	1554			4961		1739	4988	
Flt Permitted		0.98		0.95	0.98			0.90		0.24	1.00	
Satd. Flow (perm)		1554		1652	1554			4491		431	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	4	48	127	0	50	12	950	43	16	1487	16
RTOR Reduction (vph)	0	44	0	0	80	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	11	0	91	6	0	0	1005	0	16	1502	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		11.6		10.3	10.3			89.1		97.1	97.1	
Effective Green, g (s)		11.6		10.3	10.3			89.1		97.1	97.1	
Actuated g/C Ratio		0.08		0.07	0.07			0.64		0.69	0.69	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		128		121	114			2858		319	3459	
v/s Ratio Prot				c0.06	0.00					0.00	c0.30	
v/s Ratio Perm		c0.01						0.22		0.03		
v/c Ratio		0.09		0.75	0.06			0.35		0.05	0.43	
Uniform Delay, d1		59.3		63.6	60.3			11.9		7.3	9.4	
Progression Factor		1.00		1.00	1.00			1.00		0.70	0.64	
Incremental Delay, d2		0.3		20.6	0.1			0.3		0.0	0.2	
Delay (s)		59.6		84.2	60.4			12.3		5.1	6.2	
Level of Service		E		F	E			B		A	A	
Approach Delay (s)		59.6			72.6			12.3			6.2	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	339	77	999	316	108	1354
Future Volume (vph)	339	77	999	316	108	1354
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.97		0.96		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3297		4791		1739	4996
Flt Permitted	0.96		1.00		0.11	1.00
Satd. Flow (perm)	3297		4791		195	4996
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	368	84	1086	343	117	1472
RTOR Reduction (vph)	16	0	35	0	0	0
Lane Group Flow (vph)	436	0	1394	0	117	1472
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	16.6		32.5		45.3	45.3
Effective Green, g (s)	16.6		32.5		45.3	45.3
Actuated g/C Ratio	0.21		0.40		0.56	0.56
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	679		1931		259	2807
v/s Ratio Prot			c0.29		0.04	c0.29
v/s Ratio Perm	c0.13				0.21	
v/c Ratio	0.64		0.72		0.45	0.52
Uniform Delay, d1	29.3		20.2		11.7	11.0
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.3		2.4		0.5	0.7
Delay (s)	31.6		22.6		12.1	11.7
Level of Service	C		C		B	B
Approach Delay (s)	31.6		22.6			11.7
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	109	189	186	1272	1349	152
Future Volume (vph)	109	189	186	1272	1349	152
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1733	1556	1739	4956	4881	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1733	1556	1739	4956	4881	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	205	202	1383	1466	165
RTOR Reduction (vph)	0	3	0	0	13	0
Lane Group Flow (vph)	118	202	202	1383	1618	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	13.2	27.4	14.2	57.5	37.3	
Effective Green, g (s)	13.2	27.4	14.2	57.5	37.3	
Actuated g/C Ratio	0.16	0.33	0.17	0.70	0.45	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	276	628	298	3445	2201	
v/s Ratio Prot		0.06	c0.12	0.28	c0.33	
v/s Ratio Perm	c0.07	0.07				
v/c Ratio	0.43	0.32	0.68	0.40	0.74	
Uniform Delay, d1	31.3	20.7	32.1	5.3	18.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.3	6.0	0.3	2.2	
Delay (s)	32.8	21.0	38.1	5.7	20.9	
Level of Service	C	C	D	A	C	
Approach Delay (s)	25.3			9.8	20.9	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

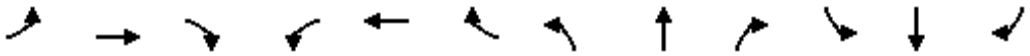
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	269	263	1062	198	221	1283
Future Volume (vph)	269	263	1062	198	221	1283
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.99	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3406	1506	4781		1722	4969
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3406	1506	4781		1722	4969
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	320	313	1264	236	263	1527
RTOR Reduction (vph)	0	256	29	0	0	0
Lane Group Flow (vph)	320	57	1471	0	263	1527
Confl. Peds. (#/hr)		1		1	1	
Heavy Vehicles (%)	1%	4%	3%	4%	3%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	14.6	14.6	30.9		17.0	53.9
Effective Green, g (s)	14.6	14.6	30.9		17.0	53.9
Actuated g/C Ratio	0.18	0.18	0.38		0.21	0.67
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	617	273	1835		363	3327
v/s Ratio Prot	c0.09		c0.31		c0.15	0.31
v/s Ratio Perm		0.04				
v/c Ratio	0.52	0.21	0.80		0.72	0.46
Uniform Delay, d1	29.8	28.0	22.1		29.6	6.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.4	2.6		7.0	0.1
Delay (s)	30.5	28.4	24.7		36.6	6.4
Level of Service	C	C	C		D	A
Approach Delay (s)	29.5		24.7			10.9
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	296	15	354	39	0	220	0	916	73	118	857	0
Future Volume (vph)	296	15	354	39	0	220	0	916	73	118	857	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		0.99	0.98		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.89	0.85		0.99		1.00	1.00	
Flt Protected		0.95	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1765	1550		1469	1427		4923		1673	4996	
Flt Permitted		0.95	1.00		0.99	1.00		1.00		0.19	1.00	
Satd. Flow (perm)		1765	1550		1469	1427		4923		327	4996	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	315	16	377	41	0	234	0	974	78	126	912	0
RTOR Reduction (vph)	0	0	230	0	100	125	0	5	0	0	0	0
Lane Group Flow (vph)	0	331	147	0	39	11	0	1047	0	126	912	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	1%	0%	1%	8%	2%	4%	2%	2%	7%	6%	2%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		24.0	24.0		10.1	10.1		60.2		77.4	77.4	
Effective Green, g (s)		24.0	24.0		10.1	10.1		60.2		77.4	77.4	
Actuated g/C Ratio		0.19	0.19		0.08	0.08		0.46		0.60	0.60	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		327	287		114	111		2288		311	2986	
v/s Ratio Prot		c0.19			c0.03			c0.21		c0.03	0.18	
v/s Ratio Perm			0.10			0.01				0.21		
v/c Ratio		1.01	0.51		0.34	0.10		0.46		0.41	0.31	
Uniform Delay, d1		52.8	47.5		56.5	55.5		23.6		13.2	12.8	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		52.9	1.5		1.8	0.4		0.7		0.9	0.3	
Delay (s)		105.7	49.0		58.3	55.8		24.2		14.1	13.1	
Level of Service		F	D		E	E		C		B	B	
Approach Delay (s)		75.5			57.1			24.2			13.2	
Approach LOS		E			E			C			B	

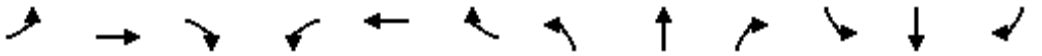
Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	621	218	325	439	46	183	631	225	158	969	113
Future Volume (vph)	256	621	218	325	439	46	183	631	225	158	969	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.91		*0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1636	3442	1415	1636	3288		3268	4575		3204	4617	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1636	3442	1415	1636	3288		3268	4575		3204	4617	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	654	229	342	462	48	193	664	237	166	1020	119
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	269	654	229	342	510	0	193	901	0	166	1139	0
Confl. Peds. (#/hr)	1		10	10		1	3		9	9		3
Heavy Vehicles (%)	3%	2%	4%	3%	1%	0%	0%	1%	1%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	36.3	36.3	36.3	31.8	31.8		11.6	35.8		11.1	35.3	
Effective Green, g (s)	38.6	38.6	38.6	34.1	34.1		13.8	38.0		13.3	37.5	
Actuated g/C Ratio	0.28	0.28	0.28	0.24	0.24		0.10	0.27		0.10	0.27	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2		6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	451	949	390	398	800		322	1241		304	1236	
v/s Ratio Prot	0.16	c0.19		c0.21	0.16		c0.06	0.20		0.05	c0.25	
v/s Ratio Perm			0.16									
v/c Ratio	0.60	0.69	0.59	0.86	0.64		0.60	0.73		0.55	0.92	
Uniform Delay, d1	43.9	45.3	43.8	50.7	47.4		60.5	46.3		60.5	49.8	
Progression Factor	1.00	1.00	1.00	1.32	1.33		0.75	1.06		1.00	1.00	
Incremental Delay, d2	5.7	4.1	6.3	15.8	1.6		1.7	1.8		1.1	11.3	
Delay (s)	49.7	49.4	50.2	82.5	64.5		47.2	50.6		61.5	61.1	
Level of Service	D	D	D	F	E		D	D		E	E	
Approach Delay (s)		49.6			71.7			50.0			61.2	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



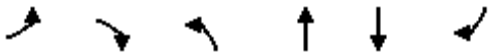
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	0	21	141	6	34	35	1100	129	84	1279	56
Future Volume (vph)	26	0	21	141	6	34	35	1100	129	84	1279	56
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.91		1.00	0.91	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.94		1.00	0.94			0.98		1.00	0.99	
Flt Protected		0.97		0.95	0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1659		1652	1595			4913		1739	4965	
Flt Permitted		0.77		0.95	0.97			0.82		0.14	1.00	
Satd. Flow (perm)		1320		1652	1595			4024		255	4965	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	0	23	153	7	37	38	1196	140	91	1390	61
RTOR Reduction (vph)	0	47	0	0	17	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	4	0	101	79	0	0	1374	0	91	1449	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		11.6		11.0	11.0			83.2		96.4	96.4	
Effective Green, g (s)		11.6		11.0	11.0			83.2		96.4	96.4	
Actuated g/C Ratio		0.08		0.08	0.08			0.59		0.69	0.69	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		109		129	125			2391		254	3418	
v/s Ratio Prot				c0.06	0.05					0.02	c0.29	
v/s Ratio Perm		c0.00						c0.34		0.23		
v/c Ratio		0.04		0.78	0.64			0.57		0.36	0.42	
Uniform Delay, d1		59.1		63.3	62.6			17.5		9.5	9.6	
Progression Factor		1.00		1.00	1.00			1.00		1.77	2.06	
Incremental Delay, d2		0.1		24.2	7.5			1.0		0.2	0.2	
Delay (s)		59.2		87.5	70.1			18.5		17.1	20.0	
Level of Service		E		F	E			B		B	B	
Approach Delay (s)		59.2			79.0			18.5			19.8	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	281	107	1180	271	92	1214
Future Volume (vph)	281	107	1180	271	92	1214
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3267		4830		1739	4996
Flt Permitted	0.97		1.00		0.11	1.00
Satd. Flow (perm)	3267		4830		194	4996
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	305	116	1283	295	100	1320
RTOR Reduction (vph)	33	0	23	0	0	0
Lane Group Flow (vph)	388	0	1555	0	100	1320
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	15.7		32.8		43.6	43.6
Effective Green, g (s)	15.7		32.8		43.6	43.6
Actuated g/C Ratio	0.20		0.42		0.56	0.56
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	659		2036		223	2799
v/s Ratio Prot			c0.32		0.03	c0.26
v/s Ratio Perm	c0.12				0.22	
v/c Ratio	0.59		0.76		0.45	0.47
Uniform Delay, d1	28.1		19.2		11.7	10.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.6		2.8		0.5	0.6
Delay (s)	29.7		22.0		12.3	10.8
Level of Service	C		C		B	B
Approach Delay (s)	29.7		22.0			10.9
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	151	190	98	1306	1423	138
Future Volume (vph)	151	190	98	1306	1423	138
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1733	1556	1739	4956	4890	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1733	1556	1739	4956	4890	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	164	207	107	1420	1547	150
RTOR Reduction (vph)	0	3	0	0	11	0
Lane Group Flow (vph)	164	204	107	1420	1686	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	16.8	27.3	10.5	52.8	36.3	
Effective Green, g (s)	16.8	27.3	10.5	52.8	36.3	
Actuated g/C Ratio	0.21	0.33	0.13	0.65	0.44	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	356	634	223	3206	2175	
v/s Ratio Prot		0.04	0.06	c0.29	c0.34	
v/s Ratio Perm	c0.09	0.09				
v/c Ratio	0.46	0.32	0.48	0.44	0.78	
Uniform Delay, d1	28.4	20.3	33.0	7.1	19.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.3	1.6	0.4	2.8	
Delay (s)	29.7	20.5	34.6	7.6	22.0	
Level of Service	C	C	C	A	C	
Approach Delay (s)	24.6			9.5	22.0	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	244	163	1357	321	228	1316
Future Volume (vph)	244	163	1357	321	228	1316
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.99	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3406	1536	4865		1705	4969
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3406	1536	4865		1705	4969
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	252	168	1399	331	235	1357
RTOR Reduction (vph)	0	140	40	0	0	0
Lane Group Flow (vph)	252	28	1690	0	235	1357
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	1%	2%	1%	2%	4%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	13.4	13.4	33.9		16.2	56.1
Effective Green, g (s)	13.4	13.4	33.9		16.2	56.1
Actuated g/C Ratio	0.16	0.16	0.42		0.20	0.69
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	560	252	2023		338	3420
v/s Ratio Prot	c0.07		c0.35		c0.14	0.27
v/s Ratio Perm		0.02				
v/c Ratio	0.45	0.11	0.84		0.70	0.40
Uniform Delay, d1	30.7	29.0	21.3		30.4	5.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.2	3.2		6.1	0.1
Delay (s)	31.3	29.2	24.5		36.5	5.5
Level of Service	C	C	C		D	A
Approach Delay (s)	30.4		24.5			10.1
Approach LOS	C		C			B

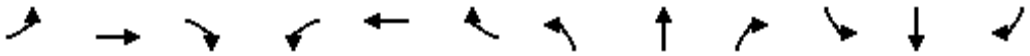
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

No Build Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Future Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.87	0.85		1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1769	1497		1484	1463		4915		1739	4948	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.30	1.00	
Satd. Flow (perm)		1769	1497		1484	1463		4915		541	4948	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	11	60	22	0	277	0	799	16	71	1114	0
RTOR Reduction (vph)	0	0	55	0	118	139	0	1	0	0	0	0
Lane Group Flow (vph)	0	87	5	0	31	11	0	814	0	71	1114	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	1%	2%	4%	6%	2%	3%	2%	3%	21%	2%	3%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Effective Green, g (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Actuated g/C Ratio		0.08	0.08		0.07	0.07		0.63		0.72	0.72	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		147	125		107	105		3092		439	3541	
v/s Ratio Prot		c0.05			c0.02			0.17		0.01	c0.23	
v/s Ratio Perm			0.00			0.01				0.11		
v/c Ratio		0.59	0.04		0.29	0.10		0.26		0.16	0.31	
Uniform Delay, d1		61.8	59.0		61.6	60.7		11.5		6.3	7.3	
Progression Factor		1.00	1.00		0.50	0.59		0.56		1.00	1.00	
Incremental Delay, d2		6.3	0.1		1.5	0.4		0.2		0.2	0.2	
Delay (s)		68.1	59.1		32.5	36.5		6.7		6.5	7.5	
Level of Service		E	E		C	D		A		A	A	
Approach Delay (s)		64.4			34.5			6.7			7.5	
Approach LOS		E			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Future Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.91		*0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1546	3409	1471	1652	3244		3173	4570		3204	4434	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1546	3409	1471	1652	3244		3173	4570		3204	4434	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	392	188	426	625	34	210	659	176	74	886	284
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	125	392	188	426	659	0	210	835	0	74	1170	0
Confl. Peds. (#/hr)			2	2			2					2
Heavy Vehicles (%)	9%	3%	1%	2%	3%	4%	3%	3%	1%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	15.0	21.5	21.5	38.2	44.7		11.4	50.5		4.8	43.9	
Effective Green, g (s)	17.3	23.8	23.8	40.5	47.0		13.6	52.7		7.0	46.1	
Actuated g/C Ratio	0.12	0.17	0.17	0.29	0.34		0.10	0.38		0.05	0.33	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2		6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	191	579	250	477	1089		308	1720		160	1460	
v/s Ratio Prot	0.08	0.11		c0.26	0.20		c0.07	0.18		0.02	c0.26	
v/s Ratio Perm			c0.13									
v/c Ratio	0.65	0.68	0.75	0.89	0.61		0.68	0.49		0.46	0.80	
Uniform Delay, d1	58.5	54.5	55.3	47.7	38.8		61.1	33.3		64.7	42.8	
Progression Factor	1.00	1.00	1.00	0.71	0.65		1.12	0.52		1.25	0.84	
Incremental Delay, d2	6.0	3.1	12.0	17.9	0.9		4.7	0.9		0.7	4.6	
Delay (s)	64.5	57.6	67.3	51.6	26.1		73.0	18.3		81.5	40.4	
Level of Service	E	E	E	D	C		E	B		F	D	
Approach Delay (s)		61.4			36.1			29.3			42.8	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

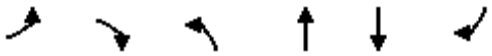
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Future Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.91		1.00	0.91	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.89		1.00	0.91			0.99		1.00	1.00	
Flt Protected		1.00		0.95	0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1594		1652	1550			4961		1739	4988	
Flt Permitted		0.96		0.95	0.98			0.89		0.23	1.00	
Satd. Flow (perm)		1533		1652	1550			4403		423	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	49	130	0	54	16	978	43	16	1533	16
RTOR Reduction (vph)	0	47	0	0	82	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	12	0	95	7	0	0	1037	0	16	1548	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Effective Green, g (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Actuated g/C Ratio		0.05		0.08	0.08			0.67		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		70		129	121			2946		326	3619	
v/s Ratio Prot				c0.06	0.00					0.00	c0.31	
v/s Ratio Perm		c0.01						0.24		0.03		
v/c Ratio		0.17		0.74	0.06			0.35		0.05	0.43	
Uniform Delay, d1		64.3		63.1	59.7			10.0		5.9	7.6	
Progression Factor		1.00		1.00	1.00			0.33		0.73	0.70	
Incremental Delay, d2		1.2		17.0	0.1			0.3		0.0	0.2	
Delay (s)		65.5		80.1	59.8			3.6		4.3	5.6	
Level of Service		E		F	E			A		A	A	
Approach Delay (s)		65.5			70.3			3.6			5.6	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	350	80	1030	325	110	1395
Future Volume (vph)	350	80	1030	325	110	1395
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.97		0.96		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3293		4791		1739	4996
Flt Permitted	0.96		1.00		0.12	1.00
Satd. Flow (perm)	3293		4791		214	4996
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	1120	353	120	1516
RTOR Reduction (vph)	15	0	26	0	0	0
Lane Group Flow (vph)	452	0	1447	0	120	1516
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	24.3		80.4		94.1	94.1
Effective Green, g (s)	24.3		80.4		94.1	94.1
Actuated g/C Ratio	0.17		0.57		0.67	0.67
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	571		2751		238	3358
v/s Ratio Prot			c0.30		0.03	c0.30
v/s Ratio Perm	c0.14				0.31	
v/c Ratio	0.79		0.53		0.50	0.45
Uniform Delay, d1	55.4		18.2		11.9	10.8
Progression Factor	1.00		0.56		0.88	0.80
Incremental Delay, d2	7.8		0.7		0.6	0.4
Delay (s)	63.2		10.9		11.0	9.1
Level of Service	E		B		B	A
Approach Delay (s)	63.2		10.9			9.2
Approach LOS	E		B			A

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	195	190	1310	1390	155
Future Volume (vph)	110	195	190	1310	1390	155
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1713	1556	1739	4956	4882	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1713	1556	1739	4956	4882	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	212	207	1424	1511	168
RTOR Reduction (vph)	0	150	0	0	8	0
Lane Group Flow (vph)	120	62	207	1424	1671	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	14.4	41.1	26.7	101.2	68.5	
Effective Green, g (s)	14.4	41.1	26.7	101.2	68.5	
Actuated g/C Ratio	0.10	0.29	0.19	0.72	0.49	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	176	456	331	3582	2388	
v/s Ratio Prot		0.03	c0.12	0.29	c0.34	
v/s Ratio Perm	c0.07	0.01				
v/c Ratio	0.68	0.14	0.63	0.40	0.70	
Uniform Delay, d1	60.6	36.4	52.1	7.5	27.8	
Progression Factor	1.00	1.00	0.94	0.39	0.87	
Incremental Delay, d2	11.2	0.1	3.0	0.3	1.5	
Delay (s)	71.8	36.5	52.0	3.3	25.6	
Level of Service	E	D	D	A	C	
Approach Delay (s)	49.3			9.4	25.6	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

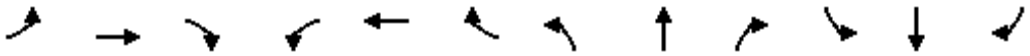
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	270	1095	205	230	1320
Future Volume (vph)	275	270	1095	205	230	1320
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.99	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3406	1505	4779		1722	4969
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3406	1505	4779		1722	4969
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	327	321	1304	244	274	1571
RTOR Reduction (vph)	0	215	25	0	0	0
Lane Group Flow (vph)	327	106	1523	0	274	1571
Confl. Peds. (#/hr)		1		1	1	
Heavy Vehicles (%)	1%	4%	3%	4%	3%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	19.5	19.5	67.4		35.1	108.5
Effective Green, g (s)	19.5	19.5	67.4		35.1	108.5
Actuated g/C Ratio	0.14	0.14	0.48		0.25	0.78
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	474	209	2300		431	3850
v/s Ratio Prot	c0.10		c0.32		c0.16	0.32
v/s Ratio Perm		0.07				
v/c Ratio	0.69	0.51	0.66		0.64	0.41
Uniform Delay, d1	57.4	55.8	27.6		46.8	5.2
Progression Factor	1.00	1.00	1.00		1.42	0.39
Incremental Delay, d2	4.2	1.9	1.5		2.5	0.3
Delay (s)	61.5	57.7	29.1		68.7	2.3
Level of Service	E	E	C		E	A
Approach Delay (s)	59.6		29.1			12.1
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Future Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		0.99	0.98		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.90	0.85		0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1766	1550		1470	1426		4923		1673	4996	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.18	1.00	
Satd. Flow (perm)		1766	1550		1470	1426		4923		322	4996	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	324	21	388	43	0	239	0	1005	80	128	941	0
RTOR Reduction (vph)	0	0	148	0	102	129	0	6	0	0	0	0
Lane Group Flow (vph)	0	345	240	0	41	10	0	1079	0	128	941	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	1%	0%	1%	8%	2%	4%	2%	2%	7%	6%	2%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Effective Green, g (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Actuated g/C Ratio		0.22	0.22		0.07	0.07		0.49		0.59	0.59	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		387	339		100	97		2412		274	2957	
v/s Ratio Prot		c0.20			c0.03			0.22		c0.03	0.19	
v/s Ratio Perm			0.16			0.01				c0.25		
v/c Ratio		0.89	0.71		0.41	0.10		0.45		0.47	0.32	
Uniform Delay, d1		56.8	54.1		67.0	65.5		25.0		15.7	15.4	
Progression Factor		1.00	1.00		0.70	0.99		0.65		1.00	1.00	
Incremental Delay, d2		21.8	6.7		2.7	0.4		0.5		1.3	0.3	
Delay (s)		78.6	60.8		49.3	65.5		16.7		17.0	15.7	
Level of Service		E	E		D	E		B		B	B	
Approach Delay (s)		69.2			57.2			16.7			15.8	
Approach LOS		E			E			B			B	

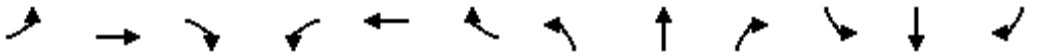
Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Future Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.91		*0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1636	3442	1414	1636	3285		3268	4575		3204	4618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1636	3442	1414	1636	3285		3268	4575		3204	4618	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	279	674	237	353	474	53	200	684	242	174	1053	121
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	674	237	353	527	0	200	926	0	174	1174	0
Confl. Peds. (#/hr)	1		10	10		1	3		9	9		3
Heavy Vehicles (%)	3%	2%	4%	3%	1%	0%	0%	1%	1%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	29.8	38.6	38.6	33.2	42.0		9.2	43.5		9.7	44.0	
Effective Green, g (s)	32.1	40.9	40.9	35.5	44.3		11.4	45.7		11.9	46.2	
Actuated g/C Ratio	0.21	0.27	0.27	0.24	0.30		0.08	0.30		0.08	0.31	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2		6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	350	938	385	387	970		248	1393		254	1422	
v/s Ratio Prot	c0.17	c0.20		c0.22	0.16		c0.06	0.20		0.05	c0.25	
v/s Ratio Perm			0.17									
v/c Ratio	0.80	0.72	0.62	0.91	0.54		0.81	0.66		0.69	0.83	
Uniform Delay, d1	55.9	49.3	47.7	55.7	44.4		68.2	45.5		67.2	48.2	
Progression Factor	1.00	1.00	1.00	0.71	0.66		1.42	0.36		1.11	0.76	
Incremental Delay, d2	11.2	4.7	7.2	24.5	0.6		14.3	2.2		5.4	5.1	
Delay (s)	67.0	54.1	54.9	64.3	29.7		111.4	18.6		79.7	41.5	
Level of Service	E	D	D	E	C		F	B		E	D	
Approach Delay (s)		57.3			43.6			35.1			46.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



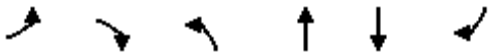
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Future Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.91		1.00	0.91	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.94		1.00	0.94			0.98		1.00	0.99	
Flt Protected		0.97		0.95	0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1659		1652	1599			4912		1739	4963	
Flt Permitted		0.77		0.95	0.97			0.81		0.14	1.00	
Satd. Flow (perm)		1314		1652	1599			3999		257	4963	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	27	158	11	38	38	1234	147	92	1429	65
RTOR Reduction (vph)	0	57	0	0	15	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	3	0	106	86	0	0	1419	0	92	1491	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		12.4	12.4			97.6		110.2	110.2	
Effective Green, g (s)		6.4		12.4	12.4			97.6		110.2	110.2	
Actuated g/C Ratio		0.04		0.08	0.08			0.65		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		56		136	132			2602		255	3646	
v/s Ratio Prot				c0.06	0.05					0.02	c0.30	
v/s Ratio Perm		c0.00						c0.35		0.25		
v/c Ratio		0.05		0.78	0.65			0.55		0.36	0.41	
Uniform Delay, d1		68.9		67.5	66.7			14.2		7.7	7.5	
Progression Factor		1.00		1.00	1.00			1.28		0.68	0.42	
Incremental Delay, d2		0.3		22.2	8.6			0.7		0.2	0.2	
Delay (s)		69.2		89.6	75.3			18.8		5.4	3.4	
Level of Service		E		F	E			B		A	A	
Approach Delay (s)		69.2			82.6			18.8			3.5	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	290	110	1215	280	95	1250
Future Volume (vph)	290	110	1215	280	95	1250
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3262		4830		1739	4996
Flt Permitted	0.97		1.00		0.10	1.00
Satd. Flow (perm)	3262		4830		181	4996
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	120	1321	304	103	1359
RTOR Reduction (vph)	29	0	16	0	0	0
Lane Group Flow (vph)	406	0	1609	0	103	1359
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	23.9		91.3		104.5	104.5
Effective Green, g (s)	23.9		91.3		104.5	104.5
Actuated g/C Ratio	0.16		0.61		0.70	0.70
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	519		2939		211	3480
v/s Ratio Prot			c0.33		0.03	c0.27
v/s Ratio Perm	c0.12				0.31	
v/c Ratio	0.78		0.55		0.49	0.39
Uniform Delay, d1	60.6		17.2		12.0	9.5
Progression Factor	1.00		0.78		1.50	0.57
Incremental Delay, d2	8.0		0.7		0.6	0.3
Delay (s)	68.6		14.1		18.6	5.7
Level of Service	E		B		B	A
Approach Delay (s)	68.6		14.1			6.6
Approach LOS	E		B			A

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	195	100	1345	1465	140
Future Volume (vph)	155	195	100	1345	1465	140
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1718	1556	1739	4956	4891	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1718	1556	1739	4956	4891	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	212	109	1462	1592	152
RTOR Reduction (vph)	0	156	0	0	6	0
Lane Group Flow (vph)	168	56	109	1462	1738	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	19.3	39.4	20.1	106.3	80.2	
Effective Green, g (s)	19.3	39.4	20.1	106.3	80.2	
Actuated g/C Ratio	0.13	0.26	0.13	0.71	0.53	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	221	408	233	3512	2615	
v/s Ratio Prot		0.02	0.06	c0.29	c0.36	
v/s Ratio Perm	c0.10	0.02				
v/c Ratio	0.76	0.14	0.47	0.42	0.66	
Uniform Delay, d1	63.1	42.3	60.0	9.0	25.2	
Progression Factor	1.00	1.00	1.29	0.24	0.82	
Incremental Delay, d2	15.0	0.2	1.2	0.3	1.2	
Delay (s)	78.2	42.4	78.7	2.4	21.9	
Level of Service	E	D	E	A	C	
Approach Delay (s)	58.2			7.7	21.9	
Approach LOS	E			A	C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

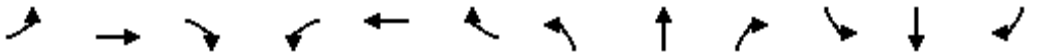
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	170	1400	330	235	1355
Future Volume (vph)	250	170	1400	330	235	1355
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	10	10	10	10	10	10
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.99	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3406	1534	4866		1705	4969
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3406	1534	4866		1705	4969
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	175	1443	340	242	1397
RTOR Reduction (vph)	0	141	31	0	0	0
Lane Group Flow (vph)	258	34	1752	0	242	1397
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	1%	2%	1%	2%	4%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	18.2	18.2	84.5		29.3	119.8
Effective Green, g (s)	18.2	18.2	84.5		29.3	119.8
Actuated g/C Ratio	0.12	0.12	0.56		0.20	0.80
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	413	186	2741		333	3968
v/s Ratio Prot	c0.08		c0.36		c0.14	0.28
v/s Ratio Perm		0.02				
v/c Ratio	0.62	0.19	0.64		0.73	0.35
Uniform Delay, d1	62.7	59.2	22.3		56.6	4.2
Progression Factor	1.00	1.00	1.00		1.45	0.13
Incremental Delay, d2	2.9	0.5	1.2		6.2	0.2
Delay (s)	65.6	59.7	23.5		88.0	0.8
Level of Service	E	E	C		F	A
Approach Delay (s)	63.2		23.5			13.6
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

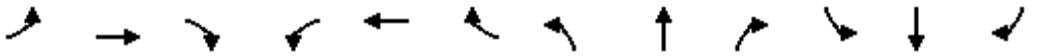
Future (2025) Build Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Future Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.95		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.87	0.85		1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1769	1497		1484	1463		3421		1739	4948	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.28	1.00	
Satd. Flow (perm)		1769	1497		1484	1463		3421		521	4948	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	11	60	22	0	277	0	799	16	71	1114	0
RTOR Reduction (vph)	0	0	55	0	118	139	0	1	0	0	0	0
Lane Group Flow (vph)	0	87	5	0	31	11	0	814	0	71	1114	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	1%	2%	4%	6%	2%	3%	2%	3%	21%	2%	3%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Effective Green, g (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Actuated g/C Ratio		0.08	0.08		0.07	0.07		0.63		0.72	0.72	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		147	125		107	105		2152		425	3541	
v/s Ratio Prot		c0.05			c0.02			c0.24		0.01	c0.23	
v/s Ratio Perm			0.00			0.01				0.11		
v/c Ratio		0.59	0.04		0.29	0.10		0.38		0.17	0.31	
Uniform Delay, d1		61.8	59.0		61.6	60.7		12.6		7.0	7.3	
Progression Factor		1.00	1.00		0.48	0.58		0.61		1.00	1.00	
Incremental Delay, d2		6.3	0.1		1.5	0.4		0.4		0.2	0.2	
Delay (s)		68.1	59.1		31.3	35.6		8.2		7.1	7.5	
Level of Service		E	E		C	D		A		A	A	
Approach Delay (s)		64.4			33.5			8.2			7.5	
Approach LOS		E			C			A			A	

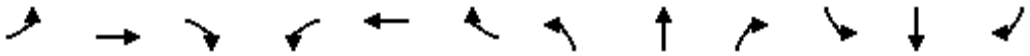
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Future Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.2	4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.95	1.00	*0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1546	3409	1471	1652	3244		3173	3271	1492	3204	3073	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1546	3409	1471	1652	3244		3173	3271	1492	3204	3073	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	392	188	426	625	34	210	659	176	74	886	284
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	125	392	188	426	659	0	210	659	176	74	1170	0
Confl. Peds. (#/hr)			2	2			2					2
Heavy Vehicles (%)	9%	3%	1%	2%	3%	4%	3%	3%	1%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	14.9	20.4	20.4	34.0	39.5		8.8	56.0	56.0	4.6	51.8	
Effective Green, g (s)	17.2	22.7	22.7	36.3	41.8		11.0	58.2	56.0	6.8	54.0	
Actuated g/C Ratio	0.12	0.16	0.16	0.26	0.30		0.08	0.42	0.40	0.05	0.39	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2	6.2	6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	189	552	238	428	968		249	1359	596	155	1185	
v/s Ratio Prot	0.08	0.11		c0.26	0.20		c0.07	0.20		0.02	c0.38	
v/s Ratio Perm			c0.13						0.12			
v/c Ratio	0.66	0.71	0.79	1.00	0.68		0.84	0.48	0.30	0.48	0.99	
Uniform Delay, d1	58.6	55.5	56.4	51.8	43.2		63.6	29.9	28.6	64.9	42.7	
Progression Factor	1.00	1.00	1.00	0.73	0.68		1.23	0.56	0.61	1.26	0.84	
Incremental Delay, d2	6.6	4.3	15.9	41.4	1.9		19.6	1.1	1.1	0.8	22.9	
Delay (s)	65.2	59.8	72.2	79.2	31.5		97.8	17.9	18.6	82.6	58.5	
Level of Service	E	E	E	E	C		F	B	B	F	E	
Approach Delay (s)		64.1			50.2			34.1			59.9	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



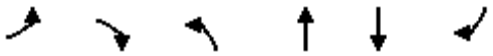
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Future Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.89		1.00	0.91			0.99		1.00	1.00	
Flt Protected		1.00		0.95	0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1594		1652	1550			3453		1739	3472	
Flt Permitted		0.96		0.95	0.98			0.90		0.22	1.00	
Satd. Flow (perm)		1533		1652	1550			3121		403	3472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	49	130	0	54	16	978	43	16	1533	16
RTOR Reduction (vph)	0	47	0	0	82	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	12	0	95	7	0	0	1037	0	16	1548	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Effective Green, g (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Actuated g/C Ratio		0.05		0.08	0.08			0.67		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		70		129	121			2088		312	2519	
v/s Ratio Prot				c0.06	0.00					0.00	c0.45	
v/s Ratio Perm		c0.01						0.33		0.04		
v/c Ratio		0.17		0.74	0.06			0.50		0.05	0.61	
Uniform Delay, d1		64.3		63.1	59.7			11.5		6.8	9.5	
Progression Factor		1.00		1.00	1.00			0.44		0.79	0.73	
Incremental Delay, d2		1.2		17.0	0.1			0.6		0.0	0.4	
Delay (s)		65.5		80.1	59.8			5.5		5.4	7.3	
Level of Service		E		F	E			A		A	A	
Approach Delay (s)		65.5			70.3			5.5			7.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	350	80	1030	325	110	1395
Future Volume (vph)	350	80	1030	325	110	1395
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.97		0.96		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3279		3325		1739	3477
Flt Permitted	0.96		1.00		0.08	1.00
Satd. Flow (perm)	3279		3325		145	3477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	1120	353	120	1516
RTOR Reduction (vph)	16	0	13	0	0	0
Lane Group Flow (vph)	451	0	1460	0	120	1516
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	25.5		78.7		92.9	92.9
Effective Green, g (s)	25.5		78.7		92.9	92.9
Actuated g/C Ratio	0.18		0.56		0.66	0.66
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	597		1869		200	2307
v/s Ratio Prot			c0.44		0.04	c0.44
v/s Ratio Perm	c0.14				0.36	
v/c Ratio	0.76		0.78		0.60	0.66
Uniform Delay, d1	54.3		23.9		20.7	14.0
Progression Factor	1.00		0.84		1.02	0.77
Incremental Delay, d2	5.8		2.8		2.6	1.2
Delay (s)	60.1		22.9		23.7	12.1
Level of Service	E		C		C	B
Approach Delay (s)	60.1		22.9			12.9
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

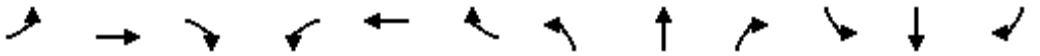


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	195	190	1310	1390	155
Future Volume (vph)	110	195	190	1310	1390	155
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1711	1556	1739	3435	3384	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1711	1556	1739	3435	3384	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	212	207	1424	1511	168
RTOR Reduction (vph)	0	151	0	0	5	0
Lane Group Flow (vph)	120	61	207	1424	1674	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	13.4	40.1	26.7	102.2	69.5	
Effective Green, g (s)	13.4	40.1	26.7	102.2	69.5	
Actuated g/C Ratio	0.10	0.29	0.19	0.73	0.50	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	163	445	331	2507	1679	
v/s Ratio Prot		0.03	0.12	c0.41	c0.49	
v/s Ratio Perm	c0.07	0.01				
v/c Ratio	0.74	0.14	0.63	0.57	1.00	
Uniform Delay, d1	61.6	37.1	52.1	8.7	35.2	
Progression Factor	1.00	1.00	0.92	0.84	0.93	
Incremental Delay, d2	16.8	0.1	2.7	0.7	18.8	
Delay (s)	78.4	37.2	50.8	8.0	51.6	
Level of Service	E	D	D	A	D	
Approach Delay (s)	52.1			13.5	51.6	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	270	1095	205	230	1320
Future Volume (vph)	275	270	1095	205	230	1320
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3406	1505	3416	1465	1722	3449
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3406	1505	3416	1465	1722	3449
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	327	321	1304	244	274	1571
RTOR Reduction (vph)	0	216	0	120	0	0
Lane Group Flow (vph)	327	105	1304	124	274	1571
Confl. Peds. (#/hr)		1		1	1	
Heavy Vehicles (%)	1%	4%	3%	4%	3%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2		
Actuated Green, G (s)	19.0	19.0	71.0	71.0	32.0	109.0
Effective Green, g (s)	19.0	19.0	71.0	71.0	32.0	109.0
Actuated g/C Ratio	0.14	0.14	0.51	0.51	0.23	0.78
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	462	204	1732	742	393	2685
v/s Ratio Prot	c0.10		c0.38		c0.16	0.46
v/s Ratio Perm		0.07		0.08		
v/c Ratio	0.71	0.51	0.75	0.17	0.70	0.59
Uniform Delay, d1	57.8	56.2	27.5	18.6	49.6	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.18	1.37
Incremental Delay, d2	4.9	2.2	3.1	0.5	3.0	0.5
Delay (s)	62.8	58.4	30.6	19.1	61.3	9.2
Level of Service	E	E	C	B	E	A
Approach Delay (s)	60.6		28.8			16.9
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



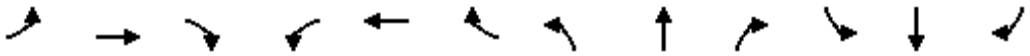
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Future Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.95		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		0.99	0.98		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.90	0.85		0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1766	1550		1470	1426		3426		1673	4996	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.15	1.00	
Satd. Flow (perm)		1766	1550		1470	1426		3426		256	4996	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	324	21	388	43	0	239	0	1005	80	128	941	0
RTOR Reduction (vph)	0	0	148	0	102	129	0	4	0	0	0	0
Lane Group Flow (vph)	0	345	240	0	41	10	0	1081	0	128	941	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	1%	0%	1%	8%	2%	4%	2%	2%	7%	6%	2%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Effective Green, g (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Actuated g/C Ratio		0.22	0.22		0.07	0.07		0.49		0.59	0.59	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		387	339		100	97		1678		239	2957	
v/s Ratio Prot		c0.20			c0.03			c0.32		c0.03	0.19	
v/s Ratio Perm			0.16			0.01				0.28		
v/c Ratio		0.89	0.71		0.41	0.10		0.64		0.54	0.32	
Uniform Delay, d1		56.8	54.1		67.0	65.5		28.5		19.3	15.4	
Progression Factor		1.00	1.00		0.70	1.02		0.76		1.00	1.00	
Incremental Delay, d2		21.8	6.7		2.6	0.4		1.6		2.3	0.3	
Delay (s)		78.6	60.8		49.8	67.5		23.4		21.6	15.7	
Level of Service		E	E		D	E		C		C	B	
Approach Delay (s)		69.2			58.5			23.4			16.4	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Future Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.2	4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.95	1.00	*0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1636	3442	1414	1636	3285		3268	3336	1455	3204	3201	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1636	3442	1414	1636	3285		3268	3336	1455	3204	3201	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	279	674	237	353	474	53	200	684	242	174	1053	121
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	674	237	353	527	0	200	684	242	174	1174	0
Confl. Peds. (#/hr)	1		10	10		1	3		9	9		3
Heavy Vehicles (%)	3%	2%	4%	3%	1%	0%	0%	1%	1%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	28.4	29.4	29.4	31.6	32.6		7.9	54.4	54.4	9.6	56.1	
Effective Green, g (s)	30.7	31.7	31.7	33.9	34.9		10.1	56.6	54.4	11.8	58.3	
Actuated g/C Ratio	0.20	0.21	0.21	0.23	0.23		0.07	0.38	0.36	0.08	0.39	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2	6.2	6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	334	727	298	369	764		220	1258	527	252	1244	
v/s Ratio Prot	0.17	c0.20		c0.22	0.16		c0.06	0.21		0.05	c0.37	
v/s Ratio Perm			0.17						0.17			
v/c Ratio	0.84	0.93	0.80	0.96	0.69		0.91	0.54	0.46	0.69	0.94	
Uniform Delay, d1	57.2	58.0	56.1	57.3	52.6		69.5	36.6	36.6	67.3	44.3	
Progression Factor	1.00	1.00	1.00	0.70	0.68		1.28	0.51	0.52	1.07	0.75	
Incremental Delay, d2	15.7	19.7	19.4	34.5	2.5		26.6	1.1	1.9	5.9	14.1	
Delay (s)	72.9	77.7	75.5	74.4	38.2		115.8	19.9	21.0	78.1	47.3	
Level of Service	E	E	E	E	D		F	B	C	E	D	
Approach Delay (s)		76.1			52.7			37.1			51.3	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



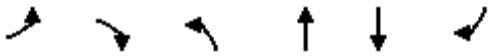
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Future Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.94		1.00	0.94			0.98		1.00	0.99	
Flt Protected		0.97		0.95	0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1659		1652	1599			3419		1739	3454	
Flt Permitted		0.77		0.95	0.97			0.82		0.12	1.00	
Satd. Flow (perm)		1314		1652	1599			2820		222	3454	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	27	158	11	38	38	1234	147	92	1429	65
RTOR Reduction (vph)	0	57	0	0	15	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	3	0	106	86	0	0	1419	0	92	1492	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		12.4	12.4			98.0		110.2	110.2	
Effective Green, g (s)		6.4		12.4	12.4			98.0		110.2	110.2	
Actuated g/C Ratio		0.04		0.08	0.08			0.65		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		56		136	132			1842		227	2537	
v/s Ratio Prot				c0.06	0.05					0.02	c0.43	
v/s Ratio Perm		c0.00						c0.50		0.28		
v/c Ratio		0.05		0.78	0.65			0.77		0.41	0.59	
Uniform Delay, d1		68.9		67.5	66.7			18.1		11.8	9.3	
Progression Factor		1.00		1.00	1.00			1.13		0.87	0.52	
Incremental Delay, d2		0.3		22.2	8.6			2.0		0.2	0.4	
Delay (s)		69.2		89.6	75.3			22.6		10.3	5.3	
Level of Service		E		F	E			C		B	A	
Approach Delay (s)		69.2			82.6			22.6			5.6	
Approach LOS		E			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	290	110	1215	280	95	1250
Future Volume (vph)	290	110	1215	280	95	1250
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3249		3353		1739	3477
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	3249		3353		117	3477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	120	1321	304	103	1359
RTOR Reduction (vph)	30	0	8	0	0	0
Lane Group Flow (vph)	405	0	1617	0	103	1359
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	24.9		89.4		103.5	103.5
Effective Green, g (s)	24.9		89.4		103.5	103.5
Actuated g/C Ratio	0.17		0.60		0.69	0.69
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	539		1998		179	2399
v/s Ratio Prot			c0.48		0.03	c0.39
v/s Ratio Perm	c0.12				0.36	
v/c Ratio	0.75		0.81		0.58	0.57
Uniform Delay, d1	59.6		23.6		23.6	11.8
Progression Factor	1.00		0.79		1.39	0.69
Incremental Delay, d2	6.2		3.0		2.3	0.8
Delay (s)	65.8		21.7		35.1	9.0
Level of Service	E		C		D	A
Approach Delay (s)	65.8		21.7			10.8
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



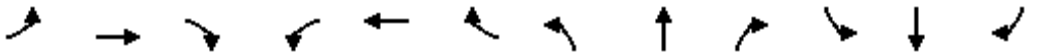
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	195	100	1345	1465	140
Future Volume (vph)	155	195	100	1345	1465	140
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1718	1556	1739	3435	3390	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1718	1556	1739	3435	3390	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	212	109	1462	1592	152
RTOR Reduction (vph)	0	156	0	0	4	0
Lane Group Flow (vph)	168	56	109	1462	1740	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	19.3	39.4	20.1	106.3	80.2	
Effective Green, g (s)	19.3	39.4	20.1	106.3	80.2	
Actuated g/C Ratio	0.13	0.26	0.13	0.71	0.53	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	221	408	233	2434	1812	
v/s Ratio Prot		0.02	0.06	c0.43	c0.51	
v/s Ratio Perm	c0.10	0.02				
v/c Ratio	0.76	0.14	0.47	0.60	0.96	
Uniform Delay, d1	63.1	42.3	60.0	11.1	33.4	
Progression Factor	1.00	1.00	1.22	0.64	0.98	
Incremental Delay, d2	15.0	0.2	1.1	0.8	12.3	
Delay (s)	78.2	42.4	74.1	7.9	45.0	
Level of Service	E	D	E	A	D	
Approach Delay (s)	58.2			12.5	45.0	
Approach LOS	E			B	D	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	170	1400	330	235	1355
Future Volume (vph)	250	170	1400	330	235	1355
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3406	1534	3483	1531	1705	3449
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3406	1534	3483	1531	1705	3449
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	175	1443	340	242	1397
RTOR Reduction (vph)	0	142	0	135	0	0
Lane Group Flow (vph)	258	33	1443	205	242	1397
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	1%	2%	1%	2%	4%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2		
Actuated Green, G (s)	16.5	16.5	88.6	88.6	26.9	121.5
Effective Green, g (s)	16.5	16.5	88.6	88.6	26.9	121.5
Actuated g/C Ratio	0.11	0.11	0.59	0.59	0.18	0.81
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	374	168	2057	904	305	2793
v/s Ratio Prot	c0.08		c0.41		c0.14	0.41
v/s Ratio Perm		0.02		0.13		
v/c Ratio	0.69	0.19	0.70	0.23	0.79	0.50
Uniform Delay, d1	64.3	60.7	21.5	14.5	58.9	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.40	0.24
Incremental Delay, d2	5.2	0.6	2.0	0.6	6.9	0.3
Delay (s)	69.5	61.3	23.5	15.1	89.4	1.4
Level of Service	E	E	C	B	F	A
Approach Delay (s)	66.2		21.9			14.4
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

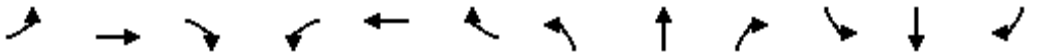
Future (2025) Build 1 Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Future Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.95		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.87	0.85		1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1769	1497		1484	1463		3421		1739	4948	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.28	1.00	
Satd. Flow (perm)		1769	1497		1484	1463		3421		521	4948	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	11	60	22	0	277	0	799	16	71	1114	0
RTOR Reduction (vph)	0	0	55	0	118	139	0	1	0	0	0	0
Lane Group Flow (vph)	0	87	5	0	31	11	0	814	0	71	1114	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	1%	2%	4%	6%	2%	3%	2%	3%	21%	2%	3%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Effective Green, g (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Actuated g/C Ratio		0.08	0.08		0.07	0.07		0.63		0.72	0.72	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		147	125		107	105		2152		425	3541	
v/s Ratio Prot		c0.05			c0.02			c0.24		0.01	c0.23	
v/s Ratio Perm			0.00			0.01				0.11		
v/c Ratio		0.59	0.04		0.29	0.10		0.38		0.17	0.31	
Uniform Delay, d1		61.8	59.0		61.6	60.7		12.6		7.0	7.3	
Progression Factor		1.00	1.00		0.50	0.60		0.40		1.00	1.00	
Incremental Delay, d2		6.3	0.1		1.5	0.4		0.5		0.2	0.2	
Delay (s)		68.1	59.1		32.4	37.1		5.5		7.1	7.5	
Level of Service		E	E		C	D		A		A	A	
Approach Delay (s)		64.4			34.8			5.5			7.5	
Approach LOS		E			C			A			A	

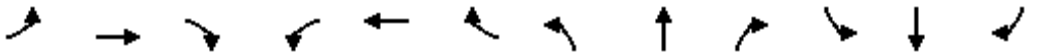
Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Future Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.2	4.0	4.0	6.2
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.95	1.00	*0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1546	3409	1471	1652	3244		3173	3271	1492	3204	3240	1394
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1546	3409	1471	1652	3244		3173	3271	1492	3204	3240	1394
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	392	188	426	625	34	210	659	176	74	886	284
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	125	392	188	426	659	0	210	659	176	74	886	284
Confl. Peds. (#/hr)			2	2			2					2
Heavy Vehicles (%)	9%	3%	1%	2%	3%	4%	3%	3%	1%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.6	22.0	22.0	38.2	44.6		10.6	50.2	50.2	4.6	44.2	44.2
Effective Green, g (s)	17.9	24.3	24.3	40.5	46.9		12.8	52.4	50.2	6.8	46.4	44.2
Actuated g/C Ratio	0.13	0.17	0.17	0.29	0.33		0.09	0.37	0.36	0.05	0.33	0.32
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2	6.2	6.2	6.2	6.2
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	197	591	255	477	1086		290	1224	534	155	1073	440
v/s Ratio Prot	0.08	0.11		c0.26	0.20		c0.07	0.20		0.02	c0.27	
v/s Ratio Perm			c0.13						0.12			0.20
v/c Ratio	0.63	0.66	0.74	0.89	0.61		0.72	0.54	0.33	0.48	0.83	0.65
Uniform Delay, d1	57.9	54.0	54.8	47.7	38.9		61.9	34.3	32.7	64.9	43.1	41.2
Progression Factor	1.00	1.00	1.00	0.72	0.67		1.11	0.50	0.52	1.18	0.83	0.82
Incremental Delay, d2	4.8	2.8	10.6	17.9	0.9		6.7	1.5	1.5	0.8	7.1	6.9
Delay (s)	62.8	56.8	65.4	52.2	26.9		75.3	18.6	18.5	77.3	43.0	40.7
Level of Service	E	E	E	D	C		E	B	B	E	D	D
Approach Delay (s)		60.2			36.8			30.0			44.5	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



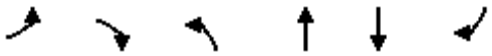
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Future Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.89		1.00	0.91			0.99		1.00	1.00	
Flt Protected		1.00		0.95	0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1594		1652	1550			3453		1739	3472	
Flt Permitted		0.96		0.95	0.98			0.90		0.22	1.00	
Satd. Flow (perm)		1533		1652	1550			3121		403	3472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	49	130	0	54	16	978	43	16	1533	16
RTOR Reduction (vph)	0	47	0	0	82	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	12	0	95	7	0	0	1037	0	16	1548	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Effective Green, g (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Actuated g/C Ratio		0.05		0.08	0.08			0.67		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		70		129	121			2088		312	2519	
v/s Ratio Prot				c0.06	0.00					0.00	c0.45	
v/s Ratio Perm		c0.01						0.33		0.04		
v/c Ratio		0.17		0.74	0.06			0.50		0.05	0.61	
Uniform Delay, d1		64.3		63.1	59.7			11.5		6.8	9.5	
Progression Factor		1.00		1.00	1.00			0.44		0.64	0.61	
Incremental Delay, d2		1.2		17.0	0.1			0.6		0.0	0.8	
Delay (s)		65.5		80.1	59.8			5.5		4.4	6.6	
Level of Service		E		F	E			A		A	A	
Approach Delay (s)		65.5			70.3			5.5			6.6	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	350	80	1030	325	110	1395
Future Volume (vph)	350	80	1030	325	110	1395
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.97		0.96		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3279		3325		1739	3477
Flt Permitted	0.96		1.00		0.08	1.00
Satd. Flow (perm)	3279		3325		145	3477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	1120	353	120	1516
RTOR Reduction (vph)	16	0	13	0	0	0
Lane Group Flow (vph)	451	0	1460	0	120	1516
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	25.5		78.7		92.9	92.9
Effective Green, g (s)	25.5		78.7		92.9	92.9
Actuated g/C Ratio	0.18		0.56		0.66	0.66
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	597		1869		200	2307
v/s Ratio Prot			c0.44		0.04	c0.44
v/s Ratio Perm	c0.14				0.36	
v/c Ratio	0.76		0.78		0.60	0.66
Uniform Delay, d1	54.3		23.9		20.7	14.0
Progression Factor	1.00		0.84		1.23	0.75
Incremental Delay, d2	5.8		2.8		2.6	1.2
Delay (s)	60.1		22.9		28.0	11.7
Level of Service	E		C		C	B
Approach Delay (s)	60.1		22.9			12.9
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

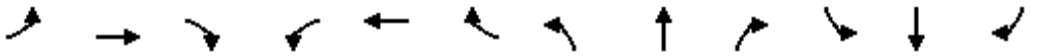


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	195	190	1310	1390	155
Future Volume (vph)	110	195	190	1310	1390	155
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1711	1556	1739	3435	3384	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1711	1556	1739	3435	3384	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	212	207	1424	1511	168
RTOR Reduction (vph)	0	151	0	0	5	0
Lane Group Flow (vph)	120	61	207	1424	1674	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	13.4	40.1	26.7	102.2	69.5	
Effective Green, g (s)	13.4	40.1	26.7	102.2	69.5	
Actuated g/C Ratio	0.10	0.29	0.19	0.73	0.50	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	163	445	331	2507	1679	
v/s Ratio Prot		0.03	0.12	c0.41	c0.49	
v/s Ratio Perm	c0.07	0.01				
v/c Ratio	0.74	0.14	0.63	0.57	1.00	
Uniform Delay, d1	61.6	37.1	52.1	8.7	35.2	
Progression Factor	1.00	1.00	0.92	0.84	0.89	
Incremental Delay, d2	16.8	0.1	2.7	0.7	18.8	
Delay (s)	78.4	37.2	50.8	8.0	50.2	
Level of Service	E	D	D	A	D	
Approach Delay (s)	52.1			13.5	50.2	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	270	1095	205	230	1320
Future Volume (vph)	275	270	1095	205	230	1320
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3406	1505	3416	1465	1722	3449
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3406	1505	3416	1465	1722	3449
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	327	321	1304	244	274	1571
RTOR Reduction (vph)	0	216	0	120	0	0
Lane Group Flow (vph)	327	105	1304	124	274	1571
Confl. Peds. (#/hr)		1		1	1	
Heavy Vehicles (%)	1%	4%	3%	4%	3%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2		
Actuated Green, G (s)	19.0	19.0	71.0	71.0	32.0	109.0
Effective Green, g (s)	19.0	19.0	71.0	71.0	32.0	109.0
Actuated g/C Ratio	0.14	0.14	0.51	0.51	0.23	0.78
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	462	204	1732	742	393	2685
v/s Ratio Prot	c0.10		c0.38		c0.16	0.46
v/s Ratio Perm		0.07		0.08		
v/c Ratio	0.71	0.51	0.75	0.17	0.70	0.59
Uniform Delay, d1	57.8	56.2	27.5	18.6	49.6	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.18	1.36
Incremental Delay, d2	4.9	2.2	3.1	0.5	3.0	0.5
Delay (s)	62.8	58.4	30.6	19.1	61.2	9.1
Level of Service	E	E	C	B	E	A
Approach Delay (s)	60.6		28.8			16.8
Approach LOS	E		C			B

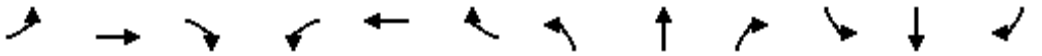
Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Future Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.95		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		0.99	0.98		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.90	0.85		0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1766	1550		1470	1426		3426		1673	4996	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.15	1.00	
Satd. Flow (perm)		1766	1550		1470	1426		3426		256	4996	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	324	21	388	43	0	239	0	1005	80	128	941	0
RTOR Reduction (vph)	0	0	148	0	102	129	0	4	0	0	0	0
Lane Group Flow (vph)	0	345	240	0	41	10	0	1081	0	128	941	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	1%	0%	1%	8%	2%	4%	2%	2%	7%	6%	2%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Effective Green, g (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Actuated g/C Ratio		0.22	0.22		0.07	0.07		0.49		0.59	0.59	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		387	339		100	97		1678		239	2957	
v/s Ratio Prot		c0.20			c0.03			c0.32		c0.03	0.19	
v/s Ratio Perm			0.16			0.01				0.28		
v/c Ratio		0.89	0.71		0.41	0.10		0.64		0.54	0.32	
Uniform Delay, d1		56.8	54.1		67.0	65.5		28.5		19.3	15.4	
Progression Factor		1.00	1.00		0.70	1.02		0.71		1.00	1.00	
Incremental Delay, d2		21.8	6.7		2.6	0.4		1.6		2.3	0.3	
Delay (s)		78.6	60.8		49.8	67.4		21.9		21.6	15.7	
Level of Service		E	E		D	E		C		C	B	
Approach Delay (s)		69.2			58.5			21.9			16.4	
Approach LOS		E			E			C			B	

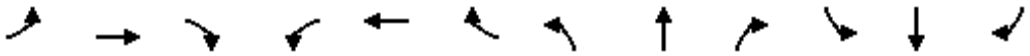
Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Future Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.2	4.0	4.0	6.2
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.95	1.00	*0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1636	3442	1414	1636	3285		3268	3336	1455	3204	3303	1391
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1636	3442	1414	1636	3285		3268	3336	1455	3204	3303	1391
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	279	674	237	353	474	53	200	684	242	174	1053	121
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	674	237	353	527	0	200	684	242	174	1053	121
Confl. Peds. (#/hr)	1		10	10		1	3		9	9		3
Heavy Vehicles (%)	3%	2%	4%	3%	1%	0%	0%	1%	1%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	28.5	32.4	32.4	32.1	36.0		8.4	50.9	50.9	9.6	52.1	52.1
Effective Green, g (s)	30.8	34.7	34.7	34.4	38.3		10.6	53.1	50.9	11.8	54.3	52.1
Actuated g/C Ratio	0.21	0.23	0.23	0.23	0.26		0.07	0.35	0.34	0.08	0.36	0.35
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2	6.2	6.2	6.2	6.2
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	335	796	327	375	838		230	1180	493	252	1195	483
v/s Ratio Prot	0.17	c0.20		c0.22	c0.16		c0.06	0.21		0.05	c0.32	
v/s Ratio Perm			0.17						0.17			0.09
v/c Ratio	0.83	0.85	0.72	0.94	0.63		0.87	0.58	0.49	0.69	0.88	0.25
Uniform Delay, d1	57.1	55.1	53.2	56.8	49.5		69.0	39.4	39.3	67.3	44.8	35.0
Progression Factor	1.00	1.00	1.00	0.69	0.66		1.28	0.49	0.51	1.07	0.75	0.81
Incremental Delay, d2	15.4	10.8	13.1	30.9	1.5		19.2	1.4	2.3	5.9	8.7	1.1
Delay (s)	72.6	65.9	66.3	70.2	34.2		107.9	20.6	22.3	77.9	42.3	29.4
Level of Service	E	E	E	E	C		F	C	C	E	D	C
Approach Delay (s)		67.6			48.6			36.5			45.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Future Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.94		1.00	0.94			0.98		1.00	0.99	
Flt Protected		0.97		0.95	0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1659		1652	1599			3419		1739	3454	
Flt Permitted		0.77		0.95	0.97			0.82		0.12	1.00	
Satd. Flow (perm)		1314		1652	1599			2820		222	3454	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	27	158	11	38	38	1234	147	92	1429	65
RTOR Reduction (vph)	0	57	0	0	15	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	3	0	106	86	0	0	1419	0	92	1492	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		12.4	12.4			98.0		110.2	110.2	
Effective Green, g (s)		6.4		12.4	12.4			98.0		110.2	110.2	
Actuated g/C Ratio		0.04		0.08	0.08			0.65		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		56		136	132			1842		227	2537	
v/s Ratio Prot				c0.06	0.05					0.02	c0.43	
v/s Ratio Perm		c0.00						c0.50		0.28		
v/c Ratio		0.05		0.78	0.65			0.77		0.41	0.59	
Uniform Delay, d1		68.9		67.5	66.7			18.1		11.8	9.3	
Progression Factor		1.00		1.00	1.00			1.14		0.90	0.50	
Incremental Delay, d2		0.3		22.2	8.6			2.0		0.2	0.6	
Delay (s)		69.2		89.6	75.3			22.7		10.8	5.2	
Level of Service		E		F	E			C		B	A	
Approach Delay (s)		69.2			82.6			22.7			5.5	
Approach LOS		E			F			C			A	

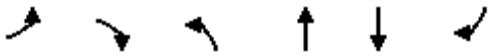
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	290	110	1215	280	95	1250
Future Volume (vph)	290	110	1215	280	95	1250
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3249		3353		1739	3477
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	3249		3353		117	3477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	120	1321	304	103	1359
RTOR Reduction (vph)	30	0	8	0	0	0
Lane Group Flow (vph)	405	0	1617	0	103	1359
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	24.9		89.4		103.5	103.5
Effective Green, g (s)	24.9		89.4		103.5	103.5
Actuated g/C Ratio	0.17		0.60		0.69	0.69
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	539		1998		179	2399
v/s Ratio Prot			c0.48		0.03	c0.39
v/s Ratio Perm	c0.12				0.36	
v/c Ratio	0.75		0.81		0.58	0.57
Uniform Delay, d1	59.6		23.6		23.6	11.8
Progression Factor	1.00		0.92		1.45	0.68
Incremental Delay, d2	6.2		3.0		2.3	0.8
Delay (s)	65.8		24.8		36.4	8.8
Level of Service	E		C		D	A
Approach Delay (s)	65.8		24.8			10.8
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



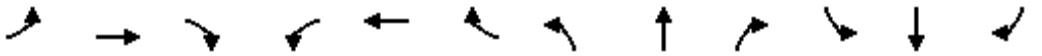
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	195	100	1345	1465	140
Future Volume (vph)	155	195	100	1345	1465	140
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1718	1556	1739	3435	3390	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1718	1556	1739	3435	3390	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	212	109	1462	1592	152
RTOR Reduction (vph)	0	156	0	0	4	0
Lane Group Flow (vph)	168	56	109	1462	1740	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	19.3	39.4	20.1	106.3	80.2	
Effective Green, g (s)	19.3	39.4	20.1	106.3	80.2	
Actuated g/C Ratio	0.13	0.26	0.13	0.71	0.53	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	221	408	233	2434	1812	
v/s Ratio Prot		0.02	0.06	c0.43	c0.51	
v/s Ratio Perm	c0.10	0.02				
v/c Ratio	0.76	0.14	0.47	0.60	0.96	
Uniform Delay, d1	63.1	42.3	60.0	11.1	33.4	
Progression Factor	1.00	1.00	1.12	0.73	0.97	
Incremental Delay, d2	15.0	0.2	1.1	0.8	12.3	
Delay (s)	78.2	42.4	68.2	8.9	44.8	
Level of Service	E	D	E	A	D	
Approach Delay (s)	58.2			13.0	44.8	
Approach LOS	E			B	D	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	170	1400	330	235	1355
Future Volume (vph)	250	170	1400	330	235	1355
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3406	1534	3483	1531	1705	3449
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3406	1534	3483	1531	1705	3449
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	175	1443	340	242	1397
RTOR Reduction (vph)	0	143	0	108	0	0
Lane Group Flow (vph)	258	32	1443	232	242	1397
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	1%	2%	1%	2%	4%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2		
Actuated Green, G (s)	15.7	15.7	90.0	90.0	26.3	122.3
Effective Green, g (s)	15.7	15.7	90.0	90.0	26.3	122.3
Actuated g/C Ratio	0.10	0.10	0.60	0.60	0.18	0.82
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	356	160	2089	918	298	2812
v/s Ratio Prot	c0.08		c0.41		c0.14	0.41
v/s Ratio Perm		0.02		0.15		
v/c Ratio	0.72	0.20	0.69	0.25	0.81	0.50
Uniform Delay, d1	65.1	61.4	20.5	14.1	59.5	4.3
Progression Factor	1.00	1.00	1.00	1.00	1.36	0.31
Incremental Delay, d2	7.1	0.6	1.9	0.7	8.1	0.3
Delay (s)	72.2	62.0	22.4	14.8	89.3	1.6
Level of Service	E	E	C	B	F	A
Approach Delay (s)	68.1		20.9			14.6
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

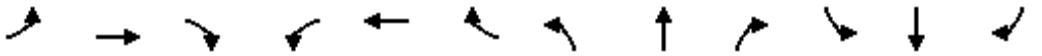
Future (2025) Build 2 Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Future Volume (vph)	70	10	55	20	0	255	0	735	15	65	1025	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.95		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.87	0.85		1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1769	1497		1484	1463		3421		1739	4948	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.28	1.00	
Satd. Flow (perm)		1769	1497		1484	1463		3421		521	4948	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	11	60	22	0	277	0	799	16	71	1114	0
RTOR Reduction (vph)	0	0	55	0	118	139	0	1	0	0	0	0
Lane Group Flow (vph)	0	87	5	0	31	11	0	814	0	71	1114	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	1%	2%	4%	6%	2%	3%	2%	3%	21%	2%	3%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Effective Green, g (s)		11.7	11.7		10.1	10.1		88.1		100.2	100.2	
Actuated g/C Ratio		0.08	0.08		0.07	0.07		0.63		0.72	0.72	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		147	125		107	105		2152		425	3541	
v/s Ratio Prot		c0.05			c0.02			c0.24		0.01	c0.23	
v/s Ratio Perm			0.00			0.01				0.11		
v/c Ratio		0.59	0.04		0.29	0.10		0.38		0.17	0.31	
Uniform Delay, d1		61.8	59.0		61.6	60.7		12.6		7.0	7.3	
Progression Factor		1.00	1.00		0.48	0.58		0.61		1.00	1.00	
Incremental Delay, d2		6.3	0.1		1.5	0.4		0.4		0.2	0.2	
Delay (s)		68.1	59.1		31.3	35.6		8.2		7.1	7.5	
Level of Service		E	E		C	D		A		A	A	
Approach Delay (s)		64.4			33.5			8.2			7.5	
Approach LOS		E			C			A			A	

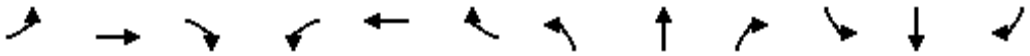
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Future Volume (vph)	110	345	165	375	550	30	185	580	155	65	780	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.2	4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.95	1.00	*0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1546	3409	1471	1652	3244		3173	3271	1492	3204	3073	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1546	3409	1471	1652	3244		3173	3271	1492	3204	3073	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	392	188	426	625	34	210	659	176	74	886	284
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	125	392	188	426	659	0	210	659	176	74	1170	0
Confl. Peds. (#/hr)			2	2			2					2
Heavy Vehicles (%)	9%	3%	1%	2%	3%	4%	3%	3%	1%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	14.9	20.4	20.4	34.0	39.5		8.8	56.0	56.0	4.6	51.8	
Effective Green, g (s)	17.2	22.7	22.7	36.3	41.8		11.0	58.2	56.0	6.8	54.0	
Actuated g/C Ratio	0.12	0.16	0.16	0.26	0.30		0.08	0.42	0.40	0.05	0.39	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2	6.2	6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	189	552	238	428	968		249	1359	596	155	1185	
v/s Ratio Prot	0.08	0.11		c0.26	0.20		c0.07	0.20		0.02	c0.38	
v/s Ratio Perm			c0.13						0.12			
v/c Ratio	0.66	0.71	0.79	1.00	0.68		0.84	0.48	0.30	0.48	0.99	
Uniform Delay, d1	58.6	55.5	56.4	51.8	43.2		63.6	29.9	28.6	64.9	42.7	
Progression Factor	1.00	1.00	1.00	0.73	0.68		1.22	0.59	0.64	1.26	0.84	
Incremental Delay, d2	6.6	4.3	15.9	41.4	1.9		19.6	1.1	1.1	0.8	22.9	
Delay (s)	65.2	59.8	72.2	79.2	31.5		97.0	18.8	19.4	82.6	58.5	
Level of Service	E	E	E	E	C		F	B	B	F	E	
Approach Delay (s)		64.1			50.2			34.6			59.9	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



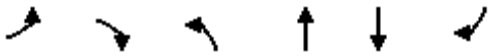
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Future Volume (vph)	5	5	45	120	0	50	15	900	40	15	1410	15
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.89		1.00	0.91			0.99		1.00	1.00	
Flt Protected		1.00		0.95	0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1594		1652	1550			3453		1739	3472	
Flt Permitted		0.96		0.95	0.98			0.90		0.22	1.00	
Satd. Flow (perm)		1533		1652	1550			3121		403	3472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	49	130	0	54	16	978	43	16	1533	16
RTOR Reduction (vph)	0	47	0	0	82	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	12	0	95	7	0	0	1037	0	16	1548	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Effective Green, g (s)		6.4		11.0	11.0			93.7		101.6	101.6	
Actuated g/C Ratio		0.05		0.08	0.08			0.67		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		70		129	121			2088		312	2519	
v/s Ratio Prot				c0.06	0.00					0.00	c0.45	
v/s Ratio Perm		c0.01						0.33		0.04		
v/c Ratio		0.17		0.74	0.06			0.50		0.05	0.61	
Uniform Delay, d1		64.3		63.1	59.7			11.5		6.8	9.5	
Progression Factor		1.00		1.00	1.00			0.43		0.79	0.73	
Incremental Delay, d2		1.2		17.0	0.1			0.6		0.0	0.4	
Delay (s)		65.5		80.1	59.8			5.5		5.4	7.3	
Level of Service		E		F	E			A		A	A	
Approach Delay (s)		65.5			70.3			5.5			7.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	350	80	1030	325	110	1395
Future Volume (vph)	350	80	1030	325	110	1395
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.97		0.96		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3279		3325		1739	3477
Flt Permitted	0.96		1.00		0.08	1.00
Satd. Flow (perm)	3279		3325		145	3477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	1120	353	120	1516
RTOR Reduction (vph)	16	0	13	0	0	0
Lane Group Flow (vph)	451	0	1460	0	120	1516
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	25.5		78.7		92.9	92.9
Effective Green, g (s)	25.5		78.7		92.9	92.9
Actuated g/C Ratio	0.18		0.56		0.66	0.66
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	597		1869		200	2307
v/s Ratio Prot			c0.44		0.04	c0.44
v/s Ratio Perm	c0.14				0.36	
v/c Ratio	0.76		0.78		0.60	0.66
Uniform Delay, d1	54.3		23.9		20.7	14.0
Progression Factor	1.00		0.54		1.02	0.77
Incremental Delay, d2	5.8		2.8		2.6	1.2
Delay (s)	60.1		15.8		23.7	12.1
Level of Service	E		B		C	B
Approach Delay (s)	60.1		15.8			12.9
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	195	190	1310	1390	155
Future Volume (vph)	110	195	190	1310	1390	155
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1711	1556	1739	3435	3384	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1711	1556	1739	3435	3384	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	212	207	1424	1511	168
RTOR Reduction (vph)	0	151	0	0	5	0
Lane Group Flow (vph)	120	61	207	1424	1674	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	13.4	40.1	26.7	102.2	69.5	
Effective Green, g (s)	13.4	40.1	26.7	102.2	69.5	
Actuated g/C Ratio	0.10	0.29	0.19	0.73	0.50	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	163	445	331	2507	1679	
v/s Ratio Prot		0.03	0.12	c0.41	c0.49	
v/s Ratio Perm	c0.07	0.01				
v/c Ratio	0.74	0.14	0.63	0.57	1.00	
Uniform Delay, d1	61.6	37.1	52.1	8.7	35.2	
Progression Factor	1.00	1.00	1.20	0.62	0.93	
Incremental Delay, d2	16.8	0.1	2.3	0.6	18.8	
Delay (s)	78.4	37.2	64.5	6.0	51.6	
Level of Service	E	D	E	A	D	
Approach Delay (s)	52.1			13.4	51.6	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

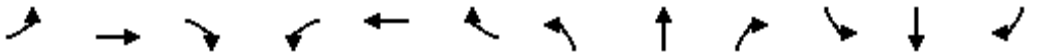
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	270	1095	205	230	1320
Future Volume (vph)	275	270	1095	205	230	1320
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3406	1505	3317		1722	3449
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3406	1505	3317		1722	3449
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	327	321	1304	244	274	1571
RTOR Reduction (vph)	0	218	13	0	0	0
Lane Group Flow (vph)	327	103	1535	0	274	1571
Confl. Peds. (#/hr)		1		1	1	
Heavy Vehicles (%)	1%	4%	3%	4%	3%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	17.9	17.9	74.9		29.2	110.1
Effective Green, g (s)	17.9	17.9	74.9		29.2	110.1
Actuated g/C Ratio	0.13	0.13	0.54		0.21	0.79
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	435	192	1774		359	2712
v/s Ratio Prot	c0.10		c0.46		c0.16	0.46
v/s Ratio Perm		0.07				
v/c Ratio	0.75	0.54	0.87		0.76	0.58
Uniform Delay, d1	58.9	57.2	28.2		52.1	5.9
Progression Factor	1.00	1.00	1.00		1.32	0.80
Incremental Delay, d2	7.2	2.9	5.9		5.3	0.5
Delay (s)	66.1	60.0	34.1		73.9	5.2
Level of Service	E	E	C		E	A
Approach Delay (s)	63.1		34.1			15.4
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Future Volume (vph)	305	20	365	40	0	225	0	945	75	120	885	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		0.95	0.95		0.95		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		0.99	0.98		1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt		1.00	0.85		0.90	0.85		0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1766	1550		1470	1426		3426		1673	4996	
Flt Permitted		0.96	1.00		0.99	1.00		1.00		0.15	1.00	
Satd. Flow (perm)		1766	1550		1470	1426		3426		256	4996	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	324	21	388	43	0	239	0	1005	80	128	941	0
RTOR Reduction (vph)	0	0	148	0	102	129	0	4	0	0	0	0
Lane Group Flow (vph)	0	345	240	0	41	10	0	1081	0	128	941	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	1%	0%	1%	8%	2%	4%	2%	2%	7%	6%	2%	2%
Turn Type	Split	NA	Perm	Split	NA	Perm		NA		pm+pt	NA	
Protected Phases	3	3		4	4			6		5	2	
Permitted Phases			3			4				2		
Actuated Green, G (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Effective Green, g (s)		32.9	32.9		10.3	10.3		73.5		88.8	88.8	
Actuated g/C Ratio		0.22	0.22		0.07	0.07		0.49		0.59	0.59	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		4.0		3.0	4.0	
Lane Grp Cap (vph)		387	339		100	97		1678		239	2957	
v/s Ratio Prot		c0.20			c0.03			c0.32		c0.03	0.19	
v/s Ratio Perm			0.16			0.01				0.28		
v/c Ratio		0.89	0.71		0.41	0.10		0.64		0.54	0.32	
Uniform Delay, d1		56.8	54.1		67.0	65.5		28.5		19.3	15.4	
Progression Factor		1.00	1.00		0.70	1.02		0.76		1.00	1.00	
Incremental Delay, d2		21.8	6.7		2.6	0.4		1.6		2.3	0.3	
Delay (s)		78.6	60.8		49.8	67.5		23.4		21.6	15.7	
Level of Service		E	E		D	E		C		C	B	
Approach Delay (s)		69.2			58.5			23.4			16.4	
Approach LOS		E			E			C			B	

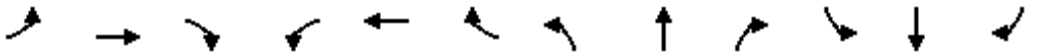
Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Future Volume (vph)	265	640	225	335	450	50	190	650	230	165	1000	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.2	4.0	4.0	
Lane Util. Factor	1.00	*0.99	1.00	1.00	0.95		0.97	0.95	1.00	*0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1636	3442	1414	1636	3285		3268	3336	1455	3204	3201	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1636	3442	1414	1636	3285		3268	3336	1455	3204	3201	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	279	674	237	353	474	53	200	684	242	174	1053	121
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	674	237	353	527	0	200	684	242	174	1174	0
Confl. Peds. (#/hr)	1		10	10		1	3		9	9		3
Heavy Vehicles (%)	3%	2%	4%	3%	1%	0%	0%	1%	1%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	6	6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	28.4	29.4	29.4	31.6	32.6		7.9	54.4	54.4	9.6	56.1	
Effective Green, g (s)	30.7	31.7	31.7	33.9	34.9		10.1	56.6	54.4	11.8	58.3	
Actuated g/C Ratio	0.20	0.21	0.21	0.23	0.23		0.07	0.38	0.36	0.08	0.39	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3		6.2	6.2	6.2	6.2	6.2	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	334	727	298	369	764		220	1258	527	252	1244	
v/s Ratio Prot	0.17	c0.20		c0.22	0.16		c0.06	0.21		0.05	c0.37	
v/s Ratio Perm			0.17						0.17			
v/c Ratio	0.84	0.93	0.80	0.96	0.69		0.91	0.54	0.46	0.69	0.94	
Uniform Delay, d1	57.2	58.0	56.1	57.3	52.6		69.5	36.6	36.6	67.3	44.3	
Progression Factor	1.00	1.00	1.00	0.70	0.68		1.28	0.51	0.52	1.07	0.75	
Incremental Delay, d2	15.7	19.7	19.4	34.5	2.5		26.6	1.1	1.9	5.9	14.1	
Delay (s)	72.9	77.7	75.5	74.4	38.2		115.6	19.8	21.0	78.1	47.3	
Level of Service	E	E	E	E	D		F	B	C	E	D	
Approach Delay (s)		76.1			52.7			37.1			51.3	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



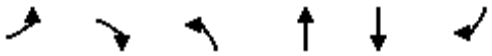
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Future Volume (vph)	30	0	25	145	10	35	35	1135	135	85	1315	60
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Lost time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Lane Util. Factor		1.00		0.95	0.95			0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.94		1.00	0.94			0.98		1.00	0.99	
Flt Protected		0.97		0.95	0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1659		1652	1599			3419		1739	3454	
Flt Permitted		0.77		0.95	0.97			0.82		0.12	1.00	
Satd. Flow (perm)		1314		1652	1599			2820		222	3454	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	27	158	11	38	38	1234	147	92	1429	65
RTOR Reduction (vph)	0	57	0	0	15	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	3	0	106	86	0	0	1419	0	92	1492	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	3			6		5	2	
Permitted Phases	4						6			2		
Actuated Green, G (s)		6.4		12.4	12.4			98.0		110.2	110.2	
Effective Green, g (s)		6.4		12.4	12.4			98.0		110.2	110.2	
Actuated g/C Ratio		0.04		0.08	0.08			0.65		0.73	0.73	
Clearance Time (s)		7.0		7.0	7.0			6.4		6.4	7.0	
Vehicle Extension (s)		3.0		2.0	2.0			4.0		2.0	4.0	
Lane Grp Cap (vph)		56		136	132			1842		227	2537	
v/s Ratio Prot				c0.06	0.05					0.02	c0.43	
v/s Ratio Perm		c0.00						c0.50		0.28		
v/c Ratio		0.05		0.78	0.65			0.77		0.41	0.59	
Uniform Delay, d1		68.9		67.5	66.7			18.1		11.8	9.3	
Progression Factor		1.00		1.00	1.00			0.88		0.87	0.52	
Incremental Delay, d2		0.3		22.2	8.6			2.0		0.2	0.4	
Delay (s)		69.2		89.6	75.3			17.9		10.3	5.3	
Level of Service		E		F	E			B		B	A	
Approach Delay (s)		69.2			82.6			17.9			5.6	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	290	110	1215	280	95	1250
Future Volume (vph)	290	110	1215	280	95	1250
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	5.0		5.0		5.0	5.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	0.99		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3249		3353		1739	3477
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	3249		3353		117	3477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	120	1321	304	103	1359
RTOR Reduction (vph)	30	0	8	0	0	0
Lane Group Flow (vph)	405	0	1617	0	103	1359
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	4	4	0	0
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	4				6	
Actuated Green, G (s)	24.9		89.4		103.5	103.5
Effective Green, g (s)	24.9		89.4		103.5	103.5
Actuated g/C Ratio	0.17		0.60		0.69	0.69
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	4.0		4.0		2.0	4.0
Lane Grp Cap (vph)	539		1998		179	2399
v/s Ratio Prot			c0.48		0.03	c0.39
v/s Ratio Perm	c0.12				0.36	
v/c Ratio	0.75		0.81		0.58	0.57
Uniform Delay, d1	59.6		23.6		23.6	11.8
Progression Factor	1.00		0.51		1.39	0.69
Incremental Delay, d2	6.2		3.0		2.3	0.8
Delay (s)	65.8		15.0		35.1	9.0
Level of Service	E		B		D	A
Approach Delay (s)	65.8		15.0			10.8
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	195	100	1345	1465	140
Future Volume (vph)	155	195	100	1345	1465	140
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1718	1556	1739	3435	3390	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1718	1556	1739	3435	3390	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	212	109	1462	1592	152
RTOR Reduction (vph)	0	156	0	0	4	0
Lane Group Flow (vph)	168	56	109	1462	1740	0
Confl. Peds. (#/hr)	5					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	6	6	6
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	19.3	39.4	20.1	106.3	80.2	
Effective Green, g (s)	19.3	39.4	20.1	106.3	80.2	
Actuated g/C Ratio	0.13	0.26	0.13	0.71	0.53	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	3.0	3.0	4.0	4.0	
Lane Grp Cap (vph)	221	408	233	2434	1812	
v/s Ratio Prot		0.02	0.06	c0.43	c0.51	
v/s Ratio Perm	c0.10	0.02				
v/c Ratio	0.76	0.14	0.47	0.60	0.96	
Uniform Delay, d1	63.1	42.3	60.0	11.1	33.4	
Progression Factor	1.00	1.00	1.28	0.41	0.98	
Incremental Delay, d2	15.0	0.2	0.8	0.6	12.3	
Delay (s)	78.2	42.4	77.5	5.1	45.0	
Level of Service	E	D	E	A	D	
Approach Delay (s)	58.2			10.1	45.0	
Approach LOS	E			B	D	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	170	1400	330	235	1355
Future Volume (vph)	250	170	1400	330	235	1355
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3406	1534	3377		1705	3449
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3406	1534	3377		1705	3449
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	175	1443	340	242	1397
RTOR Reduction (vph)	0	144	12	0	0	0
Lane Group Flow (vph)	258	31	1771	0	242	1397
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	1%	2%	1%	2%	4%	2%
Bus Blockages (#/hr)	0	0	4	4	0	4
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	14.7	14.7	91.0		26.3	123.3
Effective Green, g (s)	14.7	14.7	91.0		26.3	123.3
Actuated g/C Ratio	0.10	0.10	0.61		0.18	0.82
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	333	150	2048		298	2835
v/s Ratio Prot	c0.08		c0.52		c0.14	0.41
v/s Ratio Perm		0.02				
v/c Ratio	0.77	0.20	0.86		0.81	0.49
Uniform Delay, d1	66.0	62.3	24.4		59.5	4.0
Progression Factor	1.00	1.00	1.00		1.32	0.25
Incremental Delay, d2	10.7	0.7	5.2		8.1	0.3
Delay (s)	76.8	62.9	29.6		86.7	1.3
Level of Service	E	E	C		F	A
Approach Delay (s)	71.2		29.6			13.9
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

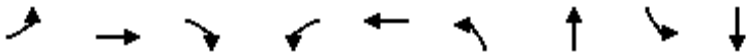
Appendix C

Synchro Queue Reports

Existing Queues

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	84	57	143	142	790	68	1084
v/c Ratio	0.48	0.23	0.60	0.56	0.29	0.16	0.34
Control Delay	58.1	2.2	23.0	17.2	14.8	8.6	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	2.2	23.0	17.2	14.8	8.6	9.2
Queue Length 50th (ft)	57	0	12	0	105	15	108
Queue Length 95th (ft)	115	2	82	65	168	39	172
Internal Link Dist (ft)	823		1296		1128		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	389	415	423	432	2704	545	3811
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.14	0.34	0.33	0.29	0.12	0.28

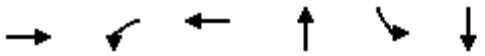
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	123	383	181	414	641	207	812	72	1133
v/c Ratio	0.68	0.56	0.61	0.85	0.52	0.59	0.53	0.32	0.92
Control Delay	77.8	53.6	60.4	52.1	23.5	72.0	27.1	65.3	60.9
Queue Delay	0.0	0.0	0.0	5.9	0.4	0.0	0.0	0.0	0.0
Total Delay	77.8	53.6	60.4	58.1	23.8	72.0	27.1	65.3	60.9
Queue Length 50th (ft)	108	169	160	343	247	93	217	32	358
Queue Length 95th (ft)	173	191	213	#632	270	133	49	57	#444
Internal Link Dist (ft)		607			397		385		1128
Turn Bay Length (ft)	245		185	295		240		225	
Base Capacity (vph)	209	876	378	486	1229	430	1536	343	1248
Starvation Cap Reductn	0	0	0	41	192	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.44	0.48	0.93	0.62	0.48	0.53	0.21	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	55	91	86	1005	16	1503
v/c Ratio	0.29	0.75	0.36	0.33	0.05	0.43
Control Delay	20.0	98.4	5.5	13.3	7.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	20.0	98.4	5.5	13.3	7.6	7.5
Queue Length 50th (ft)	6	87	0	106	2	112
Queue Length 95th (ft)	41	#150	9	287	m7	273
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	413	153	267	3028	440	3510
Starvation Cap Reductn	0	0	0	0	0	1143
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.59	0.32	0.33	0.04	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	452	1429	117	1472
v/c Ratio	0.63	0.71	0.44	0.51
Control Delay	32.9	24.1	17.7	14.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.9	24.1	17.7	14.1
Queue Length 50th (ft)	81	152	17	102
Queue Length 95th (ft)	228	#605	106	436
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	1148	2015	432	3443
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.71	0.27	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	118	205	202	1383	1631
v/c Ratio	0.36	0.33	0.67	0.38	0.73
Control Delay	32.2	16.0	46.3	8.0	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	16.0	46.3	8.0	24.6
Queue Length 50th (ft)	54	65	93	86	232
Queue Length 95th (ft)	103	105	224	276	#592
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	515	744	450	3814	2226
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.28	0.45	0.36	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	320	313	1500	263	1527
v/c Ratio	0.52	0.59	0.82	0.73	0.46
Control Delay	34.6	9.1	26.8	45.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	9.1	26.8	45.9	7.4
Queue Length 50th (ft)	76	0	233	118	106
Queue Length 95th (ft)	128	51	338	#283	196
Internal Link Dist (ft)	1453		221		2611
Turn Bay Length (ft)	135	90		315	
Base Capacity (vph)	924	636	2802	445	4310
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	0.49	0.54	0.59	0.35

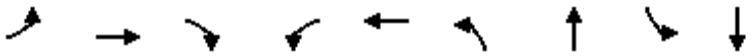
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	331	377	139	136	1052	126	912
v/c Ratio	1.01	0.73	0.65	0.58	0.46	0.40	0.31
Control Delay	105.1	22.7	31.0	19.1	24.8	15.7	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.1	22.7	31.0	19.1	24.8	15.7	13.4
Queue Length 50th (ft)	275	69	25	0	205	42	125
Queue Length 95th (ft)	#534	208	98	67	291	81	174
Internal Link Dist (ft)	823		1296		1128		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	327	517	361	376	2289	383	3245
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.73	0.39	0.36	0.46	0.33	0.28

Intersection Summary

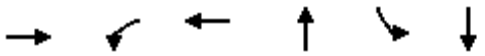
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	269	654	229	342	510	193	901	166	1139
v/c Ratio	0.60	0.69	0.59	0.86	0.64	0.60	0.73	0.55	0.92
Control Delay	50.6	49.9	51.2	86.5	66.1	52.2	53.2	67.3	62.9
Queue Delay	0.0	0.5	1.9	1.2	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	50.4	53.1	87.6	66.1	52.2	53.2	67.3	62.9
Queue Length 50th (ft)	215	271	182	329	256	87	317	75	380
Queue Length 95th (ft)	313	339	276	#436	315	110	367	113	#508
Internal Link Dist (ft)		607			397		385		1128
Turn Bay Length (ft)	245		185	295		240		225	
Base Capacity (vph)	452	951	391	444	892	350	1240	343	1233
Starvation Cap Reductn	0	0	0	21	0	0	0	0	0
Spillback Cap Reductn	0	72	65	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.74	0.70	0.81	0.57	0.55	0.73	0.48	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	51	101	96	1374	91	1451
v/c Ratio	0.21	0.78	0.68	0.56	0.35	0.42
Control Delay	1.9	99.7	74.0	21.3	19.4	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	1.9	99.7	74.0	21.3	19.4	24.3
Queue Length 50th (ft)	0	96	73	246	47	383
Queue Length 95th (ft)	0	#165	137	499	m79	m417
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	423	165	175	2433	333	3471
Starvation Cap Reductn	0	0	0	0	0	1624
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.61	0.55	0.56	0.27	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	421	1578	100	1320
v/c Ratio	0.58	0.73	0.38	0.46
Control Delay	29.9	23.8	16.8	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.9	23.8	16.8	13.4
Queue Length 50th (ft)	69	169	13	82
Queue Length 95th (ft)	200	#696	92	378
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	1228	2155	452	3678
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.73	0.22	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	164	207	107	1420	1697
v/c Ratio	0.46	0.32	0.48	0.45	0.78
Control Delay	32.0	16.3	43.1	9.5	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	16.3	43.1	9.5	25.3
Queue Length 50th (ft)	72	67	48	97	230
Queue Length 95th (ft)	134	107	126	287	#608
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	503	829	437	3800	2163
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.25	0.24	0.37	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	252	168	1730	235	1357
v/c Ratio	0.45	0.43	0.85	0.70	0.40
Control Delay	35.2	9.3	26.7	45.9	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	9.3	26.7	45.9	6.4
Queue Length 50th (ft)	61	0	266	110	84
Queue Length 95th (ft)	111	53	452	#274	186
Internal Link Dist (ft)	1453		221		2611
Turn Bay Length (ft)	135	90		315	
Base Capacity (vph)	914	534	2827	435	4269
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.61	0.54	0.32

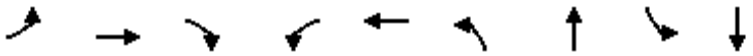
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Future (2025) No Build Queues

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	87	60	149	150	815	71	1114
v/c Ratio	0.59	0.26	0.66	0.61	0.26	0.16	0.31
Control Delay	77.7	2.7	21.5	16.1	7.0	7.6	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	2.7	21.5	16.1	7.0	7.6	8.0
Queue Length 50th (ft)	77	0	23	17	53	17	117
Queue Length 95th (ft)	136	0	51	37	75	40	178
Internal Link Dist (ft)	823		1296		1128		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	176	255	311	328	3134	465	3540
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.24	0.48	0.46	0.26	0.15	0.31

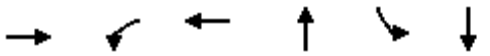
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	125	392	188	426	659	210	835	74	1170
v/c Ratio	0.66	0.68	0.76	0.89	0.61	0.68	0.47	0.40	0.80
Control Delay	74.3	61.0	74.4	56.7	28.7	79.9	18.0	86.2	40.4
Queue Delay	0.0	0.0	0.0	8.6	0.5	0.0	0.0	0.0	0.0
Total Delay	74.3	61.0	74.4	65.3	29.2	79.9	18.0	86.2	40.4
Queue Length 50th (ft)	110	171	165	368	165	76	242	36	364
Queue Length 95th (ft)	172	222	#271	#596	228	136	135	63	188
Internal Link Dist (ft)		607			397		385		1128
Turn Bay Length (ft)	245		185	295		240		225	
Base Capacity (vph)	232	586	252	477	1088	317	1897	187	1615
Starvation Cap Reductn	0	0	0	36	143	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.67	0.75	0.97	0.70	0.66	0.44	0.40	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	59	95	89	1037	16	1549
v/c Ratio	0.44	0.74	0.36	0.33	0.04	0.42
Control Delay	32.0	93.3	5.8	3.4	4.9	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	32.0	93.3	5.8	3.4	4.9	6.0
Queue Length 50th (ft)	9	91	0	22	3	148
Queue Length 95th (ft)	56	150	12	29	m5	208
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	133	188	297	3111	374	3667
Starvation Cap Reductn	0	0	0	0	0	1193
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.51	0.30	0.33	0.04	0.63

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	467	1473	120	1516
v/c Ratio	0.80	0.51	0.49	0.44
Control Delay	64.0	11.6	16.5	10.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.0	11.6	16.5	10.4
Queue Length 50th (ft)	203	354	8	37
Queue Length 95th (ft)	261	546	91	532
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	649	2885	254	3473
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.72	0.51	0.47	0.44

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	120	212	207	1424	1679
v/c Ratio	0.68	0.32	0.62	0.39	0.67
Control Delay	79.8	4.6	57.6	4.0	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	4.6	57.6	4.0	24.8
Queue Length 50th (ft)	106	0	109	15	317
Queue Length 95th (ft)	175	34	m#393	417	#704
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	196	653	332	3695	2505
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.32	0.62	0.39	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

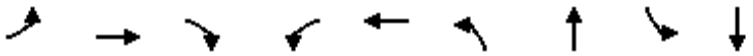
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	327	321	1548	274	1571
v/c Ratio	0.69	0.76	0.67	0.63	0.41
Control Delay	64.6	25.5	28.9	73.6	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	25.5	28.9	73.6	2.4
Queue Length 50th (ft)	149	60	358	260	49
Queue Length 95th (ft)	174	132	425	332	55
Internal Link Dist (ft)	1453		221		2611
Turn Bay Length (ft)	135	90		315	
Base Capacity (vph)	512	439	2886	432	3923
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.73	0.54	0.63	0.40

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	345	388	143	139	1085	128	941
v/c Ratio	0.89	0.80	0.71	0.61	0.45	0.47	0.32
Control Delay	81.7	40.4	31.9	20.9	17.2	20.5	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	40.4	31.9	20.9	17.2	20.5	16.4
Queue Length 50th (ft)	322	189	52	41	120	55	167
Queue Length 95th (ft)	#475	321	116	94	157	96	214
Internal Link Dist (ft)	823		1296		1128		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	423	515	236	259	2417	277	2957
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.75	0.61	0.54	0.45	0.46	0.32

Intersection Summary

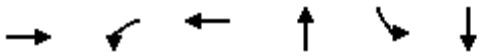
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	279	674	237	353	527	200	926	174	1174
v/c Ratio	0.80	0.72	0.62	0.91	0.54	0.81	0.66	0.69	0.83
Control Delay	72.4	55.3	57.3	68.1	32.8	116.5	18.5	87.5	41.3
Queue Delay	0.0	0.0	0.0	4.3	0.0	0.0	0.1	0.0	0.0
Total Delay	72.4	55.3	57.3	72.4	32.8	116.5	18.6	87.5	41.3
Queue Length 50th (ft)	260	305	206	342	241	94	176	91	256
Queue Length 95th (ft)	351	#420	#339	#515	334	#175	110	m127	270
Internal Link Dist (ft)		607			397		385		1128
Turn Bay Length (ft)	245		185	295		240		225	
Base Capacity (vph)	380	937	385	403	970	248	1769	259	1817
Starvation Cap Reductn	0	0	0	21	0	0	159	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.72	0.62	0.92	0.54	0.81	0.58	0.67	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	60	106	101	1419	92	1494
v/c Ratio	0.32	0.78	0.69	0.54	0.36	0.40
Control Delay	4.3	101.5	78.9	19.6	7.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	4.3	101.5	78.9	19.6	7.0	3.7
Queue Length 50th (ft)	0	109	86	482	9	77
Queue Length 95th (ft)	0	174	151	6	m27	151
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	190	198	206	2639	276	3693
Starvation Cap Reductn	0	0	0	0	0	1157
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.54	0.49	0.54	0.33	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	435	1625	103	1359
v/c Ratio	0.79	0.53	0.48	0.38
Control Delay	66.8	15.1	22.7	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	66.8	15.1	22.7	6.6
Queue Length 50th (ft)	196	431	12	56
Queue Length 95th (ft)	254	620	96	287
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	615	3058	222	3587
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.53	0.46	0.38

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	168	212	109	1462	1744
v/c Ratio	0.76	0.35	0.47	0.40	0.64
Control Delay	84.5	5.2	79.4	2.9	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.5	5.2	79.4	2.9	21.4
Queue Length 50th (ft)	159	0	87	13	325
Queue Length 95th (ft)	242	40	#292	85	700
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	252	608	232	3617	2725
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.47	0.40	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

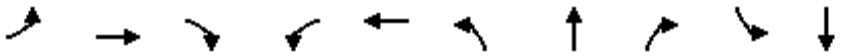
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	258	175	1783	242	1397
v/c Ratio	0.63	0.54	0.64	0.73	0.35
Control Delay	68.9	16.6	23.9	92.1	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	16.6	23.9	92.1	0.8
Queue Length 50th (ft)	126	13	401	239	10
Queue Length 95th (ft)	162	84	560	299	11
Internal Link Dist (ft)	1453		221		2611
Turn Bay Length (ft)	135	90		315	
Base Capacity (vph)	418	328	3138	333	4116
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.53	0.57	0.73	0.34

Intersection Summary

Future (2025) Build Queues

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	87	60	149	150	815	71	1114
v/c Ratio	0.59	0.26	0.66	0.61	0.37	0.16	0.31
Control Delay	77.7	2.7	21.3	16.0	8.7	7.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	2.7	21.3	16.0	8.7	7.7	8.0
Queue Length 50th (ft)	77	0	24	17	83	17	117
Queue Length 95th (ft)	136	0	50	37	111	40	178
Internal Link Dist (ft)	823		1296		236		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	176	255	311	328	2180	451	3540
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.24	0.48	0.46	0.37	0.16	0.31

Intersection Summary

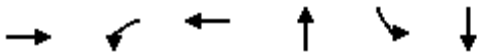


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	125	392	188	426	659	210	659	176	74	1170
v/c Ratio	0.66	0.71	0.79	1.00	0.68	0.84	0.48	0.29	0.41	0.99
Control Delay	74.6	63.3	79.6	81.0	34.1	103.1	17.9	18.8	87.4	58.7
Queue Delay	0.0	0.0	0.0	9.2	0.6	0.0	0.3	0.0	0.0	0.0
Total Delay	74.6	63.3	79.6	90.2	34.7	103.1	18.1	18.8	87.4	58.7
Queue Length 50th (ft)	110	172	166	~394	282	92	167	67	36	552
Queue Length 95th (ft)	172	222	#274	#595	232	#165	226	151	63	#685
Internal Link Dist (ft)		607			397		385			811
Turn Bay Length (ft)	245		185	295		240			225	
Base Capacity (vph)	231	560	241	428	967	249	1387	609	183	1186
Starvation Cap Reductn	0	0	0	14	83	0	247	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.70	0.78	1.03	0.75	0.84	0.58	0.29	0.40	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	59	95	89	1037	16	1549
v/c Ratio	0.44	0.74	0.36	0.47	0.05	0.61
Control Delay	32.0	93.3	5.8	5.3	5.1	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.5
Total Delay	32.0	93.3	5.8	5.3	5.1	9.2
Queue Length 50th (ft)	9	91	0	30	0	269
Queue Length 95th (ft)	56	150	12	101	m0	m334
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	133	188	297	2204	361	2552
Starvation Cap Reductn	0	0	0	0	0	761
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.51	0.30	0.47	0.04	0.86

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	467	1473	120	1516
v/c Ratio	0.76	0.75	0.59	0.64
Control Delay	60.3	23.1	25.4	14.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	60.3	23.1	25.4	14.3
Queue Length 50th (ft)	202	661	8	210
Queue Length 95th (ft)	249	#1112	127	#982
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	836	1957	216	2387
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.75	0.56	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	120	212	207	1424	1679
v/c Ratio	0.74	0.33	0.62	0.55	0.95
Control Delay	86.9	4.7	56.2	10.2	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	4.7	56.2	10.2	40.5
Queue Length 50th (ft)	108	0	127	17	703
Queue Length 95th (ft)	#197	36	m#396	748	#1196
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	171	643	332	2587	1761
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.33	0.62	0.55	0.95

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	327	321	1304	244	274	1571
v/c Ratio	0.71	0.76	0.75	0.28	0.70	0.59
Control Delay	66.2	26.4	30.7	2.7	63.9	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	26.4	30.7	2.7	63.9	9.9
Queue Length 50th (ft)	149	60	491	0	260	194
Queue Length 95th (ft)	178	136	451	28	m#354	163
Internal Link Dist (ft)	1453		221			2611
Turn Bay Length (ft)	135	90			315	
Base Capacity (vph)	514	439	2025	967	394	2713
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.73	0.64	0.25	0.70	0.58

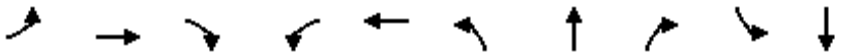
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	345	388	143	139	1085	128	941
v/c Ratio	0.89	0.80	0.71	0.61	0.65	0.54	0.32
Control Delay	81.7	40.4	31.9	21.2	24.3	23.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	40.4	31.9	21.2	24.3	23.2	16.4
Queue Length 50th (ft)	322	189	51	41	203	55	167
Queue Length 95th (ft)	#475	321	116	96	506	96	214
Internal Link Dist (ft)	823		1296		232		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	423	515	236	259	1681	243	2957
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.75	0.61	0.54	0.65	0.53	0.32

Intersection Summary

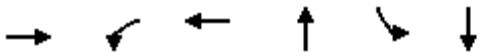
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	279	674	237	353	527	200	684	242	174	1174
v/c Ratio	0.84	0.93	0.80	0.96	0.69	0.91	0.54	0.46	0.69	0.94
Control Delay	78.2	77.3	76.2	77.6	41.9	116.8	19.9	21.1	85.9	47.6
Queue Delay	0.0	0.9	0.0	1.8	0.0	0.0	1.0	0.9	0.0	0.0
Total Delay	78.2	78.2	76.2	79.4	41.9	116.8	20.9	22.0	85.9	47.6
Queue Length 50th (ft)	261	334	225	349	264	96	158	96	90	585
Queue Length 95th (ft)	366	#461	#372	#548	#342	m#160	220	m169	m127	#713
Internal Link Dist (ft)		607			397		385			816
Turn Bay Length (ft)	245		185	295		240			225	
Base Capacity (vph)	381	728	298	370	765	220	1289	541	256	1281
Starvation Cap Reductn	0	0	0	4	0	0	341	120	0	0
Spillback Cap Reductn	0	8	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.94	0.80	0.96	0.69	0.91	0.72	0.57	0.68	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	60	106	101	1419	92	1494
v/c Ratio	0.32	0.78	0.69	0.76	0.40	0.58
Control Delay	4.3	101.5	78.9	23.9	7.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	4.3	101.5	78.9	23.9	7.5	6.4
Queue Length 50th (ft)	0	109	86	714	14	120
Queue Length 95th (ft)	0	174	151	297	m18	m141
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	190	198	206	1868	234	2570
Starvation Cap Reductn	0	0	0	0	0	714
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.54	0.49	0.76	0.39	0.80

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	435	1625	103	1359
v/c Ratio	0.76	0.78	0.57	0.55
Control Delay	63.6	22.0	34.0	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	63.6	22.0	34.0	11.0
Queue Length 50th (ft)	195	92	21	74
Queue Length 95th (ft)	244	#1237	#120	735
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	788	2079	182	2474
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.78	0.57	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	168	212	109	1462	1744
v/c Ratio	0.76	0.35	0.47	0.58	0.92
Control Delay	84.5	5.2	75.4	9.9	37.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.5	5.2	75.4	9.9	37.6
Queue Length 50th (ft)	159	0	83	14	738
Queue Length 95th (ft)	242	40	m#282	808	#1302
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	252	608	232	2507	1889
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.47	0.58	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	258	175	1443	340	242	1397
v/c Ratio	0.69	0.56	0.70	0.33	0.79	0.50
Control Delay	74.0	18.5	24.2	2.4	89.9	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	18.5	24.2	2.4	89.9	1.5
Queue Length 50th (ft)	126	13	528	5	249	15
Queue Length 95th (ft)	173	90	553	44	m#298	m13
Internal Link Dist (ft)	1453		221			2611
Turn Bay Length (ft)	135	90			315	
Base Capacity (vph)	380	313	2229	1098	305	2857
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.56	0.65	0.31	0.79	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Future (2025) Build 1 Queues

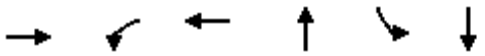
Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	87	60	149	150	815	71	1114
v/c Ratio	0.59	0.26	0.66	0.61	0.37	0.16	0.31
Control Delay	77.7	2.7	21.5	16.2	5.9	7.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	2.7	21.5	16.2	5.9	7.7	8.0
Queue Length 50th (ft)	77	0	24	18	51	17	117
Queue Length 95th (ft)	136	0	53	41	94	40	178
Internal Link Dist (ft)	823		1296		236		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	176	255	311	328	2180	451	3540
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.24	0.48	0.46	0.37	0.16	0.31

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	125	392	188	426	659	210	659	176	74	886	284
v/c Ratio	0.63	0.66	0.74	0.89	0.61	0.73	0.53	0.32	0.41	0.82	0.65
Control Delay	71.5	59.7	72.4	58.3	30.7	82.4	18.0	17.9	82.2	42.5	40.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	71.5	59.7	72.4	58.3	30.7	82.4	18.2	17.9	82.2	42.5	40.2
Queue Length 50th (ft)	110	171	165	373	118	88	202	80	37	391	139
Queue Length 95th (ft)	167	216	244	#640	#380	129	180	121	63	219	161
Internal Link Dist (ft)		607			397		385			811	
Turn Bay Length (ft)	245		185	295		240			225		
Base Capacity (vph)	247	599	258	477	1085	294	1471	647	183	1342	555
Starvation Cap Reductn	0	0	0	0	0	0	215	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.65	0.73	0.89	0.61	0.71	0.52	0.27	0.40	0.66	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	59	95	89	1037	16	1549
v/c Ratio	0.44	0.74	0.36	0.47	0.05	0.61
Control Delay	32.0	93.3	5.8	5.3	4.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	32.0	93.3	5.8	5.3	4.3	7.5
Queue Length 50th (ft)	9	91	0	30	3	268
Queue Length 95th (ft)	56	150	12	101	m4	369
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	133	188	297	2204	361	2552
Starvation Cap Reductn	0	0	0	0	0	556
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.51	0.30	0.47	0.04	0.78

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	467	1473	120	1516
v/c Ratio	0.76	0.75	0.59	0.64
Control Delay	60.3	23.1	28.6	14.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	60.3	23.1	28.6	14.0
Queue Length 50th (ft)	202	661	19	212
Queue Length 95th (ft)	249	#1112	124	#982
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	836	1957	216	2387
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.75	0.56	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	120	212	207	1424	1679
v/c Ratio	0.74	0.33	0.62	0.55	0.95
Control Delay	86.9	4.7	56.2	10.2	39.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	4.7	56.2	10.2	39.4
Queue Length 50th (ft)	108	0	127	17	802
Queue Length 95th (ft)	#197	36	m#396	748	#1196
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	171	643	332	2587	1761
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.33	0.62	0.55	0.95

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	327	321	1304	244	274	1571
v/c Ratio	0.71	0.76	0.75	0.28	0.70	0.59
Control Delay	66.2	26.4	30.7	2.7	63.8	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	26.4	30.7	2.7	63.8	9.8
Queue Length 50th (ft)	149	60	491	0	260	193
Queue Length 95th (ft)	178	136	451	28	m#354	164
Internal Link Dist (ft)	1453		221			2611
Turn Bay Length (ft)	135	90			315	
Base Capacity (vph)	514	439	2025	967	394	2713
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.73	0.64	0.25	0.70	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	345	388	143	139	1085	128	941
v/c Ratio	0.89	0.80	0.71	0.61	0.65	0.54	0.32
Control Delay	81.7	40.4	31.9	21.2	22.8	23.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	40.4	31.9	21.2	22.8	23.2	16.4
Queue Length 50th (ft)	322	189	51	41	196	55	167
Queue Length 95th (ft)	#475	321	116	96	506	96	214
Internal Link Dist (ft)	823		1296		232		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	423	515	236	259	1681	243	2957
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.75	0.61	0.54	0.65	0.53	0.32

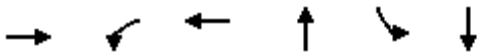
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	674	237	353	527	200	684	242	174	1053	121
v/c Ratio	0.83	0.85	0.72	0.94	0.63	0.87	0.58	0.49	0.69	0.88	0.25
Control Delay	77.4	66.2	68.0	73.8	37.9	109.9	20.4	22.2	85.7	42.1	28.7
Queue Delay	0.0	0.4	0.0	3.5	0.0	0.0	0.7	0.7	0.0	0.0	0.0
Total Delay	77.4	66.6	68.0	77.3	37.9	109.9	21.2	22.8	85.7	42.1	28.7
Queue Length 50th (ft)	261	323	218	347	255	96	160	102	90	318	67
Queue Length 95th (ft)	366	#473	#382	#537	#342	m#160	220	m169	m127	347	m96
Internal Link Dist (ft)		607			397		385			816	
Turn Bay Length (ft)	245		185	295		240			225		
Base Capacity (vph)	383	796	327	381	837	231	1289	541	256	1321	535
Starvation Cap Reductn	0	0	0	10	0	0	298	98	0	0	0
Spillback Cap Reductn	0	13	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.86	0.72	0.95	0.63	0.87	0.69	0.55	0.68	0.80	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	60	106	101	1419	92	1494
v/c Ratio	0.32	0.78	0.69	0.76	0.40	0.58
Control Delay	4.3	101.5	78.9	24.0	8.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	4.3	101.5	78.9	24.0	8.5	6.1
Queue Length 50th (ft)	0	109	86	714	13	117
Queue Length 95th (ft)	0	174	151	298	m21	m133
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	190	198	206	1868	234	2570
Starvation Cap Reductn	0	0	0	0	0	618
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.54	0.49	0.76	0.39	0.77

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	435	1625	103	1359
v/c Ratio	0.76	0.78	0.57	0.55
Control Delay	63.6	24.3	35.0	10.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	63.6	24.3	35.0	10.8
Queue Length 50th (ft)	195	92	21	74
Queue Length 95th (ft)	244	#1237	#119	730
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	788	2079	182	2474
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.78	0.57	0.55

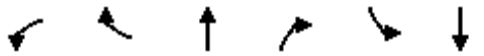
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	168	212	109	1462	1744
v/c Ratio	0.76	0.35	0.47	0.58	0.92
Control Delay	84.5	5.2	70.6	11.0	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.5	5.2	70.6	11.0	37.4
Queue Length 50th (ft)	159	0	80	115	827
Queue Length 95th (ft)	242	40	m#266	841	#1302
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	252	608	232	2507	1889
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.47	0.58	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	258	175	1443	340	242	1397
v/c Ratio	0.73	0.58	0.69	0.33	0.81	0.50
Control Delay	77.1	19.5	23.8	4.6	91.3	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.1	19.5	23.8	4.6	91.3	1.7
Queue Length 50th (ft)	126	13	500	29	249	16
Queue Length 95th (ft)	#191	93	635	85	m275	m13
Internal Link Dist (ft)	1453		221			2611
Turn Bay Length (ft)	135	90			315	
Base Capacity (vph)	361	305	2096	1028	386	2857
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.57	0.69	0.33	0.63	0.49

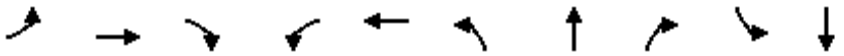
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Future (2025) Build 2 Queues

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	87	60	149	150	815	71	1114
v/c Ratio	0.59	0.26	0.66	0.61	0.37	0.16	0.31
Control Delay	77.7	2.7	21.3	16.0	8.7	7.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	2.7	21.3	16.0	8.7	7.7	8.0
Queue Length 50th (ft)	77	0	24	17	83	17	117
Queue Length 95th (ft)	136	0	50	37	111	40	178
Internal Link Dist (ft)	823		1296		236		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	176	255	311	328	2180	451	3540
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.24	0.48	0.46	0.37	0.16	0.31

Intersection Summary

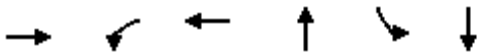


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	125	392	188	426	659	210	659	176	74	1170
v/c Ratio	0.66	0.71	0.79	1.00	0.68	0.84	0.48	0.29	0.41	0.99
Control Delay	74.6	63.3	79.6	81.0	34.1	102.3	18.7	19.7	87.4	58.7
Queue Delay	0.0	0.0	0.0	9.2	0.6	0.0	0.3	0.0	0.0	0.0
Total Delay	74.6	63.3	79.6	90.2	34.7	102.3	19.0	19.7	87.4	58.7
Queue Length 50th (ft)	110	172	166	~394	282	92	185	74	36	552
Queue Length 95th (ft)	172	222	#274	#595	232	#165	226	151	63	#685
Internal Link Dist (ft)		607			397		385			811
Turn Bay Length (ft)	245		185	295		240			225	
Base Capacity (vph)	231	560	241	428	967	249	1387	609	183	1186
Starvation Cap Reductn	0	0	0	14	83	0	247	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.70	0.78	1.03	0.75	0.84	0.58	0.29	0.40	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	59	95	89	1037	16	1549
v/c Ratio	0.44	0.74	0.36	0.47	0.05	0.61
Control Delay	32.0	93.3	5.8	5.3	5.1	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.5
Total Delay	32.0	93.3	5.8	5.3	5.1	9.2
Queue Length 50th (ft)	9	91	0	30	0	269
Queue Length 95th (ft)	56	150	12	101	m0	m334
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	133	188	297	2204	361	2552
Starvation Cap Reductn	0	0	0	0	0	761
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.51	0.30	0.47	0.04	0.86

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	467	1473	120	1516
v/c Ratio	0.76	0.75	0.59	0.64
Control Delay	60.3	18.0	25.4	14.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	60.3	18.0	25.4	14.3
Queue Length 50th (ft)	202	113	8	210
Queue Length 95th (ft)	249	#1112	127	#982
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	836	1957	216	2387
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.75	0.56	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	120	212	207	1424	1679
v/c Ratio	0.74	0.33	0.62	0.55	0.95
Control Delay	86.9	4.7	67.3	7.6	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	4.7	67.3	7.6	40.5
Queue Length 50th (ft)	108	0	169	19	703
Queue Length 95th (ft)	#197	36	m#352	762	#1196
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	171	643	332	2587	1761
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.33	0.62	0.55	0.95

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	327	321	1548	274	1571
v/c Ratio	0.75	0.78	0.87	0.76	0.58
Control Delay	70.0	28.3	33.5	74.7	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	28.3	33.5	74.7	5.5
Queue Length 50th (ft)	149	60	663	260	43
Queue Length 95th (ft)	186	142	549	m#354	104
Internal Link Dist (ft)	1453		221		2611
Turn Bay Length (ft)	135	90		315	
Base Capacity (vph)	488	430	1976	359	2713
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.75	0.78	0.76	0.58

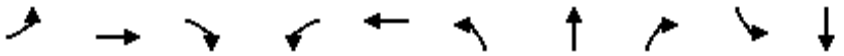
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	345	388	143	139	1085	128	941
v/c Ratio	0.89	0.80	0.71	0.61	0.65	0.54	0.32
Control Delay	81.7	40.4	31.9	21.2	24.3	23.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	40.4	31.9	21.2	24.3	23.2	16.4
Queue Length 50th (ft)	322	189	51	41	203	55	167
Queue Length 95th (ft)	#475	321	116	96	506	96	214
Internal Link Dist (ft)	823		1296		232		393
Turn Bay Length (ft)						245	
Base Capacity (vph)	423	515	236	259	1681	243	2957
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.75	0.61	0.54	0.65	0.53	0.32

Intersection Summary

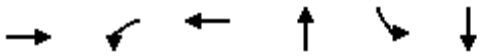
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	279	674	237	353	527	200	684	242	174	1174
v/c Ratio	0.84	0.93	0.80	0.96	0.69	0.91	0.54	0.46	0.69	0.94
Control Delay	78.2	77.3	76.2	77.6	41.9	116.6	19.8	21.1	85.9	47.6
Queue Delay	0.0	0.9	0.0	1.8	0.0	0.0	1.0	0.9	0.0	0.0
Total Delay	78.2	78.2	76.2	79.4	41.9	116.6	20.8	22.0	85.9	47.6
Queue Length 50th (ft)	261	334	225	349	264	96	158	96	90	585
Queue Length 95th (ft)	366	#461	#372	#548	#342	m#160	220	m169	m127	#713
Internal Link Dist (ft)		607			397		385			816
Turn Bay Length (ft)	245		185	295		240			225	
Base Capacity (vph)	381	728	298	370	765	220	1289	541	256	1281
Starvation Cap Reductn	0	0	0	4	0	0	341	120	0	0
Spillback Cap Reductn	0	8	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.94	0.80	0.96	0.69	0.91	0.72	0.57	0.68	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	60	106	101	1419	92	1494
v/c Ratio	0.32	0.78	0.69	0.76	0.40	0.58
Control Delay	4.3	101.5	78.9	18.9	7.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	4.3	101.5	78.9	18.9	7.5	6.4
Queue Length 50th (ft)	0	109	86	610	14	120
Queue Length 95th (ft)	0	174	151	297	m18	m141
Internal Link Dist (ft)	546		474	2635		385
Turn Bay Length (ft)					115	
Base Capacity (vph)	190	198	206	1868	234	2570
Starvation Cap Reductn	0	0	0	0	0	714
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.54	0.49	0.76	0.39	0.80

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	435	1625	103	1359
v/c Ratio	0.76	0.78	0.57	0.55
Control Delay	63.6	16.9	34.0	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	63.6	16.9	34.0	11.0
Queue Length 50th (ft)	195	160	21	74
Queue Length 95th (ft)	244	#1236	#120	735
Internal Link Dist (ft)	752	3278		2635
Turn Bay Length (ft)	185		160	
Base Capacity (vph)	788	2079	182	2474
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.78	0.57	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	168	212	109	1462	1744
v/c Ratio	0.76	0.35	0.47	0.58	0.92
Control Delay	84.5	5.2	76.7	6.6	37.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.5	5.2	76.7	6.6	37.6
Queue Length 50th (ft)	159	0	112	30	738
Queue Length 95th (ft)	242	40	m#207	612	#1302
Internal Link Dist (ft)	1159			2611	3278
Turn Bay Length (ft)	200		185		
Base Capacity (vph)	252	608	232	2507	1889
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.47	0.58	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	258	175	1783	242	1397
v/c Ratio	0.78	0.60	0.87	0.81	0.49
Control Delay	82.1	20.6	30.5	88.7	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	82.1	20.6	30.5	88.7	1.3
Queue Length 50th (ft)	126	13	756	205	15
Queue Length 95th (ft)	#197	94	#957	m250	m13
Internal Link Dist (ft)	1453		221		2611
Turn Bay Length (ft)	135	90		315	
Base Capacity (vph)	338	296	2061	386	2857
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.59	0.87	0.63	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Appendix D

Synchro Travel Time Reports

Existing Travel Times

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	35	32.7	26.8	59.5	0.27	16.5	D
Kingsley Ln	III	35	61.2	8.0	69.2	0.51	26.5	B
Thole St	III	35	65.4	24.1	89.5	0.64	25.6	B
Louisiana Dr	III	35	61.7	13.3	75.0	0.51	24.7	B
Little Creek Rd	III	35	11.9	27.1	39.0	0.09	8.1	F
Admiral Taussig Blvd	III	35	27.5	14.8	42.3	0.23	19.5	C
Total	III		260.4	114.1	374.5	2.25	21.6	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	121.6	9.2	130.8	1.18	32.5	A
Little Creek Rd	III	35	27.5	60.9	88.4	0.23	9.3	F
Maycox Ave	III	35	11.9	7.3	19.2	0.09	16.5	D
Thole St	III	35	61.7	14.1	75.8	0.51	24.4	B
Kingsley Ln	III	35	65.4	24.6	90.0	0.64	25.4	B
Willow Wood Dr	III	35	61.2	7.4	68.6	0.51	26.7	B
Total	III		349.3	123.5	472.8	3.16	24.1	B

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	35	32.7	26.7	59.4	0.27	16.5	D
Kingsley Ln	III	35	61.2	9.5	70.7	0.51	26.0	B
Thole St	III	35	65.4	23.8	89.2	0.64	25.7	B
Louisiana Dr	III	35	61.7	21.3	83.0	0.51	22.3	C
Little Creek Rd	III	35	11.9	53.2	65.1	0.09	4.9	F
Admiral Taussig Blvd	III	35	27.5	24.8	52.3	0.23	15.7	D
Total	III		260.4	159.3	419.7	2.25	19.3	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	121.6	13.4	135.0	1.18	31.5	A
Little Creek Rd	III	35	27.5	62.9	90.4	0.23	9.1	F
Maycox Ave	III	35	11.9	23.4	35.3	0.09	9.0	F
Thole St	III	35	61.7	13.4	75.1	0.51	24.6	B
Kingsley Ln	III	35	65.4	25.3	90.7	0.64	25.2	B
Willow Wood Dr	III	35	61.2	6.4	67.6	0.51	27.1	B
Total	III		349.3	144.8	494.1	3.16	23.0	C

Future (2025) No Build Travel Times

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	28.9	63.5	0.27	15.5	D
Kingsley Ln	III	30	64.7	4.0	68.7	0.51	26.7	B
Thole St	III	30	76.3	11.6	87.9	0.64	26.0	B
Louisiana Dr	III	30	65.3	3.4	68.7	0.51	26.9	B
Little Creek Rd	III	30	12.4	18.0	30.4	0.09	10.4	E
Admiral Taussig Blvd	III	30	29.1	7.0	36.1	0.23	22.8	C
Total	III		282.4	72.9	355.3	2.25	22.8	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	8.0	131.2	1.18	32.4	A
Little Creek Rd	III	30	29.1	40.4	69.5	0.23	11.9	E
Maycox Ave	III	30	12.4	5.8	18.2	0.09	17.4	D
Thole St	III	30	65.3	10.4	75.7	0.51	24.5	B
Kingsley Ln	III	30	76.3	24.8	101.1	0.64	22.6	C
Willow Wood Dr	III	30	64.7	2.4	67.1	0.51	27.3	B
Total	III		371.0	91.8	462.8	3.16	24.6	B

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	23.9	58.5	0.27	16.8	D
Kingsley Ln	III	30	64.7	2.9	67.6	0.51	27.1	B
Thole St	III	30	76.3	15.1	91.4	0.64	25.0	B
Louisiana Dr	III	30	65.3	19.6	84.9	0.51	21.8	C
Little Creek Rd	III	30	12.4	18.5	30.9	0.09	10.3	E
Admiral Taussig Blvd	III	30	29.1	17.2	46.3	0.23	17.8	D
Total	III		282.4	97.2	379.6	2.25	21.3	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	16.4	139.6	1.18	30.5	A
Little Creek Rd	III	30	29.1	41.3	70.4	0.23	11.7	E
Maycox Ave	III	30	12.4	3.5	15.9	0.09	19.9	C
Thole St	III	30	65.3	6.6	71.9	0.51	25.7	B
Kingsley Ln	III	30	76.3	21.4	97.7	0.64	23.4	C
Willow Wood Dr	III	30	64.7	0.8	65.5	0.51	28.0	B
Total	III		371.0	90.0	461.0	3.16	24.7	B

Future (2025) Build Travel Times

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	30.7	65.3	0.27	15.0	D
Kingsley Ln	III	30	64.7	10.2	74.9	0.51	24.5	B
Thole St	III	30	76.3	23.1	99.4	0.64	23.0	C
Louisiana Dr	III	30	65.3	5.3	70.6	0.51	26.2	B
Little Creek Rd	III	30	12.4	17.8	30.2	0.09	10.5	E
Admiral Taussig Blvd	III	30	29.0	8.7	37.7	0.23	21.8	C
Total	III		282.3	95.8	378.1	2.25	21.4	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	8.0	131.2	1.18	32.4	A
Little Creek Rd	III	30	29.0	58.7	87.7	0.23	9.4	F
Maycox Ave	III	30	12.4	7.7	20.1	0.09	15.8	D
Thole St	III	30	65.3	14.3	79.6	0.51	23.3	C
Kingsley Ln	III	30	76.3	40.5	116.8	0.64	19.6	C
Willow Wood Dr	III	30	64.7	9.9	74.6	0.51	24.6	B
Total	III		370.9	139.1	510.0	3.16	22.3	C

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	24.2	58.8	0.27	16.7	D
Kingsley Ln	III	30	64.7	9.9	74.6	0.51	24.6	B
Thole St	III	30	76.3	22.0	98.3	0.64	23.3	C
Louisiana Dr	III	30	65.3	23.9	89.2	0.51	20.8	C
Little Creek Rd	III	30	12.4	19.9	32.3	0.09	9.8	F
Admiral Taussig Blvd	III	30	29.1	24.3	53.4	0.23	15.4	D
Total	III		282.4	124.2	406.6	2.25	19.9	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	16.4	139.6	1.18	30.5	A
Little Creek Rd	III	30	29.1	47.6	76.7	0.23	10.7	E
Maycox Ave	III	30	12.4	5.5	17.9	0.09	17.7	D
Thole St	III	30	65.3	11.0	76.3	0.51	24.3	B
Kingsley Ln	III	30	76.3	37.6	113.9	0.64	20.1	C
Willow Wood Dr	III	30	64.7	1.5	66.2	0.51	27.7	B
Total	III		371.0	119.6	490.6	3.16	23.2	C

Future (2025) Build 1 Travel Times

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	30.7	65.3	0.27	15.0	D
Kingsley Ln	III	30	64.7	10.2	74.9	0.51	24.5	B
Thole St	III	30	76.3	23.1	99.4	0.64	23.0	C
Louisiana Dr	III	30	65.3	5.3	70.6	0.51	26.2	B
Little Creek Rd	III	30	12.4	18.0	30.4	0.09	10.4	E
Admiral Taussig Blvd	III	30	29.0	5.9	34.9	0.23	23.6	C
Total	III		282.3	93.2	375.5	2.25	21.6	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	8.0	131.2	1.18	32.4	A
Little Creek Rd	III	30	29.0	42.5	71.5	0.23	11.5	E
Maycox Ave	III	30	12.4	6.9	19.3	0.09	16.4	D
Thole St	III	30	65.3	14.0	79.3	0.51	23.3	C
Kingsley Ln	III	30	76.3	39.4	115.7	0.64	19.8	C
Willow Wood Dr	III	30	64.7	9.8	74.5	0.51	24.6	B
Total	III		370.9	120.6	491.5	3.16	23.1	C

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	23.8	58.4	0.27	16.8	D
Kingsley Ln	III	30	64.7	11.0	75.7	0.51	24.2	B
Thole St	III	30	76.3	24.3	100.6	0.64	22.8	C
Louisiana Dr	III	30	65.3	24.0	89.3	0.51	20.7	C
Little Creek Rd	III	30	12.4	20.4	32.8	0.09	9.7	F
Admiral Taussig Blvd	III	30	29.1	22.8	51.9	0.23	15.9	D
Total	III		282.4	126.3	408.7	2.25	19.8	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	16.4	139.6	1.18	30.5	A
Little Creek Rd	III	30	29.1	42.1	71.2	0.23	11.6	E
Maycox Ave	III	30	12.4	5.5	17.9	0.09	17.7	D
Thole St	III	30	65.3	10.8	76.1	0.51	24.3	B
Kingsley Ln	III	30	76.3	37.4	113.7	0.64	20.1	C
Willow Wood Dr	III	30	64.7	1.7	66.4	0.51	27.6	B
Total	III		371.0	113.9	484.9	3.16	23.5	C

Future (2025) Build 2 Travel Times

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	33.5	68.1	0.27	14.4	D
Kingsley Ln	III	30	64.7	7.6	72.3	0.51	25.4	B
Thole St	III	30	76.3	18.0	94.3	0.64	24.3	B
Louisiana Dr	III	30	65.3	5.3	70.6	0.51	26.2	B
Little Creek Rd	III	30	12.4	18.7	31.1	0.09	10.2	E
Admiral Taussig Blvd	III	30	29.0	8.7	37.7	0.23	21.8	C
Total	III		282.3	91.8	374.1	2.25	21.6	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	8.0	131.2	1.18	32.4	A
Little Creek Rd	III	30	29.0	58.7	87.7	0.23	9.4	F
Maycox Ave	III	30	12.4	7.7	20.1	0.09	15.8	D
Thole St	III	30	65.3	14.3	79.6	0.51	23.3	C
Kingsley Ln	III	30	76.3	40.5	116.8	0.64	19.6	C
Willow Wood Dr	III	30	64.7	5.5	70.2	0.51	26.1	B
Total	III		370.9	134.7	505.6	3.16	22.5	C

Arterial Level of Service: NB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Willow Wood Dr	III	30	34.6	30.5	65.1	0.27	15.1	D
Kingsley Ln	III	30	64.7	6.6	71.3	0.51	25.7	B
Thole St	III	30	76.3	16.9	93.2	0.64	24.6	B
Louisiana Dr	III	30	65.3	18.9	84.2	0.51	22.0	C
Little Creek Rd	III	30	12.4	19.8	32.2	0.09	9.8	F
Admiral Taussig Blvd	III	30	29.1	24.3	53.4	0.23	15.4	D
Total	III		282.4	117.0	399.4	2.25	20.3	C

Arterial Level of Service: SB Granby St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Terminal Blvd/I-564	III	35	123.2	16.4	139.6	1.18	30.5	A
Little Creek Rd	III	30	29.1	47.6	76.7	0.23	10.7	E
Maycox Ave	III	30	12.4	5.5	17.9	0.09	17.7	D
Thole St	III	30	65.3	11.0	76.3	0.51	24.3	B
Kingsley Ln	III	30	76.3	37.6	113.9	0.64	20.1	C
Willow Wood Dr	III	30	64.7	1.3	66.0	0.51	27.8	B
Total	III		371.0	119.4	490.4	3.16	23.2	C